

10 1792

NINE BOOKS

OF

PHYSICK

James AND Price 1700

CHIRVRGERY

Written by that Great and
Learned Physitian D

SENNERTUS



the first five being his *Institutions* of the
whole Body of Physick : The other
four of *Fevers* and *Agues* : With their
Differences, Signs, and Cures.

L O N D O N,

Printed by J. M. for Lodowick Lloyd, at
the Castle in Corn-hill,



1670

THE
INSTITUTIONS
OR
FUNDAMENTALS
Of the whole Art, both of
PHYSICK
AND
CHIRURGERY,

Divided into five Books.

Plainly discovering all that is to
be known in both; as the Subject
and end of Physick; the Nature of all
Diseases, their *Causes, Signs, Differences,*
Events and Cures.

ALSO

The Grounds of *Chymistry*, and the way of
making all sorts of Salves, and preparing of Medi-
cines according to Art; nothing of the like nature in
English before.

Written first in Latine by that Great and Learned Phy-
sician D. *Sennertus*, Doctor and Professor of Physick.

Made English by *N. D. B. P.* late of Trinity
Colledge in Cambridge.

London, Printed for *Lodowick Lloyd*, and are to be sold at his Shop
next door to the Sign of the Castle in *Cornhill*. 1656.

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To the Lovers of the Study
of *Physick*, especially those who desires
to attain to the true knowledge thereof.

OF all the Arts and Sciences that the Sons of Men so much covet after, there is none so pleasant and profitable as *Physick*; *Physick* doth not onely teach thee to preserve thy selfe from the assaults of those manifold Enemies which Nature is liable unto, but it teaches thee to restore Health when lost, and to heal thy selfe though wounded by thy greatest adversary; besides in the Anatomical part it entertains thy fancy with the wonderfull work of Nature

To the Reader.

where the unsearchable wisdom of the Creator is as legible, as in those things we count more sublime and Celestial; which if considered, Physicians cannot be so Atheistical as the world reports them to be. I undertook not this work out of design to prejudice the Colledge, by making that English, which they would have remain in Latine; nor to advantage my self by any private gain, but to benefit those who are unskilled in the Latine, but lovers of the Study. I say for the benefit of such, have I put this into English. Although by my Profession

To the Reader.

feſſion I am otherwiſe obliged: its ſomething unſuitable to my ſpirit to have that Monopolized into the hands of a few, which ſhould be in common to all: ſuch is the practice of Phyſick, yet would I not have thoſe to Adminiſter, who are ignorant of the Inſtitutions of Phyſick, as too many have done of late, to their own and others detriment: He that can but well digeſt this Book, his underſtanding will ſufficiently be enriched in the very inſide of the whole body of Phyſick, and will need no other foundation to go upon, being the beſt that ever the Doctors

To the Reader.

met with for their own informations. I shall not need to acquaint thee with the Authors Method, that thou wilt find by the Contents of Chapters before the Book, nor of the Authors worth, for that thou wilt sufficiently understand by his works, which speaks aloud in their Masters praise, whose fame and worth is well known to the Commonwealth of Learning throughout the world.

If thou meetst with any Errata's in thy reading, thou art desired to correct them, the Translators absence sometimes from the Press occasioned them.

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THE FIRST

G R O U N D

OR

FUNDAMENTALS

Of the whole Art of

PHYSICK,

AND

CHIRURGERY.

Book I.

CHAP. I.

Of the Nature of Physick.



THE word *Medicina*, since it is derived from *Medendo*, that is, helping such as are sick, doth properly belong indeed to the Therapeutical part only; which part being the most necessary, was first invented and garnished; and in this sense the word was formerly taken. Yet afterwards when that part was added, which shewed the preservation of present health; the same ancient Appellation was still retained; and is now attributed to the

The name of Physick;

The Definition of Physick;

B

whole

whole Art. Physick is an Art (as far as it is possible) of preserving mans present health, and restoring it when it is lost.

The Genus of Physick. Physick is most properly set down amongst the Arts, because it propounds to it self, not knowledge onely, but effecting somewhat; namely, gaining of health. For the distinction betwixt Disciplines are taken from their next end: neither doth Physick observe the other principles that are requisite in a Science.

The Subject of Physick. The Subject of Physick is mans Body, as it is indued with health, and obnoxious to diseases. And this Subject hath one excellency peculiar to it self, beyond the Subjects of all other Arts; in that they do nothing, onely they perform obedience, and undergo the operation of the Artificer; but this hath a certain in-bred power striving for health of its own accord.

The End of Physick. The End of Physick is Health; and that is the true and last aim of it, the first mover, and that for which it is; but the scope or means, and that to which it aims is to heal, as *F. C. Scaliger* in his first Book of Plants teacheth; for although the Physitian do not alwaies obtain his chief end, since it is impossible to cure all that are sick, yet the Physitian hath performed his Office, if he have omitted none of those things that are in the power of Nature and Art.

The Excellency of Physick. For out of those two the Excellency and Dignity of Physick is manifested; for it is imployed about mans Body, of all natural Bodies the most noble. The end it aims at is health; then which (amongst all things that may be called good by Mortals) nothing is better, and that which alone is sought by it self. Whereas all the rest of the Arts aim at nothing themselves; but perform all things because of some outward end.

CHAP. II.

Of the Division of Physick.

The division and parts of Physick. SEEING that the end of Physick, is to preserve present health, and to restore it when it is lost; it is properly divided into the Preserving and Curing part; yet there are also higher things pertaining to these parts which are necessary to be known by the Physitian, and they are to be added. For sithence a Physitian cannot heal unless he know the Subject whereon he ought to work, and since all Arts begin from the knowledge of their end: first he should acquire the knowledge of mans body, wherein he ought to work, and wherein health doth consist, 'tis necessary he should understand; and since that a disease is repugnant to health, he ought to know the nature, differences, causes and effects of a disease; and by what rules to find these in every individual. And so Physick is conveniently

veniently divided into five parts, the Physiological, Pathological, Semeiotal, Hygieinal, and Therapeutical.

Physiologic handles the subject and end of Physick; and so treats of mans body, and shews the constitution thereof, and all its parts, their uses and actions, and the faculties of the mind. *Physiologic*

Pathologic teacheth the nature of diseases and Symptomes, their differences and causes, and explains all things whatsoever, by which mans body recedes from a natural constitution. *Pathologic*

The Semeiottick part shews the Signs, whereby we may know whether a man be sick or well, and by which we may discover diseases and causes that lie hid in mans body, and the events of diseases. *Of signs of sickness and health.*

The Hygieinal part shews, by what rules present health may be preserved, and how a man may beware before-hand (as much as is possible) lest he should fall into a disease. *Of preservation of health.*

The Therapeutical part teacheth, by what means health is to be recovered; and how diseases with their causes and symptomes may be repelled and taken away. *Of curing diseases.*

If there be any other besides these which are counted parts of Physick, they are not principal, but lesser, into which these are subdivided, such are the Diatetical, Chirurgical, and Pharmaceuticall parts, and such like.

CHAP. III.

Of Health.

First, as for the Physiological part, indeed very many dispose of it, and place it otherwise, and in that comprehend things called Naturals, without which our bodies cannot subsist whole, and they account them seven; Elements, Temperaments, Humours, Spirits, Parts, Faculties, Actions; but since the handling of them as they are such, is properly the work of a Physician; they are considered by a Physician in this place, as they conduce to the knowledge of the subject, which is mans body; to the explication of the end, which is health: to which also we are willing to order the handling of them. And indeed, to it belongs, principally the description and knowledge of all the parts of mans body; which since it is more copious then to be contained in a Compendium, that is to be sought in Anatomical books; but especially by seeing bodies dissected: afterwards followeth the explication of the end of Physick which is health.

But since that all men do then think themselves well, when they can rightly perform the natural and necessary actions of life, Health is defined truly to be a power of mans body to perform those actions which are according to nature, depending on the natural constitution of health. *What Physiologic handles. Of things called Naturals. The definition of health.*

on of all the parts: for health doth not consist in the action it self, since that those who sleep, or are quiet in what manner whatsoever, and cease from certain actions, are sound, and as *Galen* hath it in the 2 cap. of the differences of diseases; not to operate, is to be well, but to be able to operate: nor is he onely well who performs his natural actions; but also he that doth them not, so that he be able to do them: And so the formal reason of health is, a potency of body to perform natural actions; but because *Galen* in the place above-mentioned, makes health to be a natural constitution of all the parts of the body, and in the first Chapter of the Differences of Symptomes, a framing made according to nature fit for operation, or a natural constitution of all the parts of the body, having power to undergo those things which are according to nature; therefore it comes to passe, that that position or constitution is rather subject to the actions of a Physician, then to the power of acting.

The Subject of health.

The subject of health is a living body, or the parts of a living body, as to that, to which alone the power of acting belongs; but those which live not, and have no power to perform natural actions, those are neither said to be sick nor well.

The efficient cause of health.

But the cause of health, or that whereby a body and its parts are said to be sound, is a natural constitution of them: But seeing there is a twofold constitution of a body, and of all its parts, the one Essential, which consists of matter, and substantial form; the other accidental, which follows the former, and is such a disposition of qualities and other accidents in the several parts of the body, by which the essential form may exercise all its actions, and according to its diversity, it acteth variously: Health doth not consist in the essential but accidental constitution; for the mind cannot be hindred or hurt, but remains alwaies the same and unchanged; so that it have instruments constituted in the same manner. The Essential constitution also, so long as a man lives, is immutable, and at length is changed by death; but the accidental constitution of the body is subject to many alterations, whence the same soul in the same body acts one way and another way.

The definition of similar and dissimilar parts.

And because the parts of the body are several, the natural constitution of them also is not the same. The parts of the body are two-fold, similar, and dissimilar. Similar parts are such whose particles have the same form, and are alike to the whole, and to one another; and indeed, some are truly and exactly such, wherein no difference can be found, neither by accurate sense, nor by reason: such are a Bone, a Gristle, simple flesh, a very small vein, Fat: Others are so onely to the sense, which although at the first sight they seem

seem such; yet if they are viewed more diligently, they are perceived to be composed of more, as flesh of muscles, substance of Veins, Nerves, Arteries.

Dissimilar, are such as are compounded of more, which are also called for the most part organick. For although, if we may speak properly, an Organick is not opposite to similar, but a dissimilar or compound, and similar may be organick also, as you may see in bones, which have their organick constitution: Yet because singular parts, for the most part, do not perform a whole and entire action, which *Galen* requires in an organick part strictly so taken, hence it comes to pass the Physicians, for the most part, oppose an organick to a similar.

But the constitution of similar parts, even as of those which consist of Elements, and other mixed bodies, consists in the lawful mixture of the four primary qualities.

But besides that temperature of primary qualities, other qualities also are in them which are more occult, arising from their forms, which parts all of them possesse, as is manifest by their sympathy and antipathy with other natural bodies, and by several actions, and kinds and manners of actions, which are beyond the force of Elements.

The natural constitution of organick parts, consists in a composition fit to perform actions; namely in number, magnitude, conformation, composition or situation.

There is a common unity in them both, as well similar as dissimilar and organick: for not onely the whole body, but every part thereof, whether similar or organick, ought to be whole and entire. And if our bodies obtain these three things, it is sound, if either be wanting, it becomes sick.

Yet, there is a certain latitude of health, nor do all men acquire the same perfection of performing actions; but in regard of age, sex, and other circumstances, some do perform all or certain actions better then others, yet all of them nevertheless are sound; but Physicians call all those that deviate from perfect health, and yet are not sick, Neuters; and place a neutral constitution, as it were, in the middle betwixt the sick and well. For although, if we rightly weigh the matter, there is no such thing as middle disposition, differing from health and a disease, and every man is either sick or well; yet Physicians consider Neuters, not as the mean betwixt sick and well, but as differing from perfect health peculiarly, and distinguish Neuters from those that are sound, not as differing in kind, but in respect of more or lesse.

Of a Dissimilar.

Whether a similar part be opposite to an organick.

The constitution of similar parts

Occult qualities.

The constitution of dissimilar parts.

The latitude of health.

Whether there be a Neutral disposition.

CHAP. IV.
Of Temperaments.

What a Temperament is. BUT that the nature of health may be the more manifest, something shall be spoken particularly of this three-fold constitution of a body which is necessary to health; and first, for what belongs to the constitution of similar parts, as they are such, that is a Temperament, which is a quality arisen from the mutual action and passion of primary qualities, and resulting out of them separated and joyned together. But not the form it self of a mixt substance; sithence it is subject to the senses, acquired by change (or motion) subject to alteration, and hath its rise from the primary qualities; Nor is it onely a harmony (although there be a certain proportion of qualities in a Temperament) since it is the immediate instrument of actions, which doth not belong to a bare proportion which is an accident.

A Temperament of a mixt body two-fold. But from the Temperament, things are said to be temperate or intemperate; and indeed, any thing is said to be temperate two wayes, either simply and absolutely, and in its own kind, or in relation to some other; for if there be that proportion of qualities, that they wholly concur in equal strength, such a Temperament is said to be simply and absolutely such, and such a Temperament is commonly called a Temperament *ad pondus*, or according to weight, (as if it were weighed in a ballance) and is of an Arithmetical proportion; But if there be a certain inequality of qualities in relation to their strength, it is called a Temperament to Justice, and this is called a Geometrical proportion; although, if you strictly regard the proportion of the qualities amongst themselves, it is then an Intemperament, not a Temperament.

To weight.
To Justice. Now this Temperament (as we call it) wherein there is not an equality of primary qualities, takes its denomination from that quality which doth exceed the rest, whether it be one or two. And the action which proceeds from the Temperament, is ascribed to the quality that doth predominate; although the rest are no wayes to be excluded from having a share in the action.

Temperate to Justice two-fold. Simple. Of these Temperaments some are simple, others compound. Simple, is when one quality onely exceeds its contrary, and the rest are equal, whereof there are four kinds, according to the number of the primary qualities; Hot, wherein heat doth rule over cold the moisture and drowth being equal; Cold, where cold overcometh the heat, but the moisture and driness are equal; Moist, wherein moisture exceeds driness, the heat and cold being equal; Driness, wherein

wherein drowth dries up moisture, the heat and cold as before being equal.

But when two qualities exceed their contraries there ariseth a *Compound* compound Temperament : whereof there are likewise four kinds according to the combinations, (as far as possibly they may combine) of the four primary qualities : to wit, Hot and Moist, Hot and Dry, Cold and Moist, Cold and Dry. In every one of these there is a great latitude, and in the simple Temperament some have more, some lesse of heat or cold by much then other. In compound Temperaments some one, sometimes both qualities, exceed the rest in an extraordinary, yet different manner.

Any thing is said to be Hot, Cold, Moist, or Dry, not only simply regard being had to the universal nature of mixt bodies, wherein if you consider a middle sort of body exceeding in neither, and in respect of this you account all others that differ from it Intemperate, and from the quality excellling is called, Hot, Cold, Moist or Dry; but besides this, there is made a comparison to three : First, the comparison is made to the next Genus, or kind in nature, as if in the whole sort of living Creatures, you appoint one living Creature to be temperate, all others in respect of that, are called intemperate; Secondly, a comparison is made with a middle sort of the same kind, so a Boy is said to be hot, an old man cold; Thirdly, respect is had to every individual, that so this compared to that as being Hotter, is Cold, but compared to a colder is hot.

Man, for whose sake these things of Temperaments are spoken, since his body is not simply mixed but organick and living, there is required in him a double Temperament, one of the body, as it is absolutely and simply mixt; The other as it is living. This is lost by death, and is often changed by old age; but that remaineth sometimes in the dead carcass after death; yet at length by putrefaction and corruption of that which is mixed tis dissolved. In that also, according to Heat, Cold, Drowth and Moisture, there is a great diversity of parts. But the matter which is proper to living Creatures in all, is Heat and Moisture.

Again the Temperament of a living man is twofold, the one Innate, the other Influent. Innate, is that which is imbibed in the living parts of man, & by reason of the Innate heat is inherent in him from his first being. Influent, is that which floweth from the principal parts, and is communicated to the whole body. And that it is not the same with Innate, is manifest from those that fall into a Swoun; when the body becomes extreme cold, and yet the Innate Temperament is not changed. These three Temperaments though

Of Temperaments.

they may be considered severally: Yet they concur to constitute one Temperament of a sound man. And, therefore although without all doubt, amongst all other living Creatures man is of the most temperate, so that other living Creatures, as also medicines compared to him, are said to be Hotter, Colder, Moister, or Drier;

The Temperament of a man, of what sort it is.

Yet simply and absolutely he is not temperate; for common sense tells us, that Heat in man is predominate over the other qualities; for the Temperature of a man to perform his actions best is Hot and Moist, and our lives consist of Heat and Moisture: on the contrary, coldness and driness lead us to death, and by how much sooner a man is cooled and dried, by so much sooner he grows old and dyes.

The differences of the Temperaments of man.

Yet, that heat and that moisture have their degrees. For if the heat exceed the cold and the moisture the drowth moderately, that Temper is best and is accounted Temperate. All others differing from this are called either Hot and Moist, Hot and Dry, Cold and Moist, or Cold and Dry; although all in general are Hot and Moist.

Sanguine, Choleric, Phlegmatic, Melancholy.

These differences of Temperaments are commonly explained by the names of Sanguine, Choleric, Phlegmatic and Melancholy Temperaments. These differences and appellations may be admitted or, if they are not taken from the diversity of excrementitious humours, in various bodies; but from the variety of blood, which is the nutriment of the body.

Occult qualities.

For those whose Blood is temperate, or moderately hot and moist, are called Sanguines: Those who have hotter and dryer blood, and their bodies from thence become hotter and dryer, are called Choleric Persons: Those who have colder and moister, and their bodies from thence grows colder and moister, are called Phlegmatics: Those who have cold and dry blood, and their bodies from thence become cold and dry, are Melancholians.

But we must not rest at the Primary qualities; for there are others more noble and more abstruse, the causes of many actions, and of Sympathy, and Antipathy, with other alterations that must be granted; although in this humane imbecillity, for the most part, they are unknown to us.

The opinions of the Astrologers.

The Astrologers, that they may some way express the various Constitutions of Bodies, according to the occult diversities of Stars, call some Solar bodies, born under the influence of the Sun; so Jovial under Jupiter; others Martial, Venereal, Mercurial, Saturnial, as being born under one of these; and also admit of mixt constitutions born under several Planets; nor indeed absurdly altogether

ther, since there is a great agreement and consent betwixt Superior and Inferior bodies.

But since there are divers parts of a body, and each part hath its peculiar Temperature, not onely proceeding from the mixture of Elements; but some are hotter, some have lesse heat in them; nevertheless they agree together, to make the Temperament of the whole, which is hot and moist; and so heat with cold, moisture with dry things are equal'd. So that from thence there proceedeth a certain Harmony, and the Temperament of the whole, is moderately hot and moist.

But to constitute that Temperament of the whole, the noble parts of the body perform more then the rest, and most especially the Heart, the Fountain and Treasury of the native heat, and vital spirits. From whence all the parts of the body receive the influent spirits and heat. Next to it the Liver, which furnisheth the whole body with aliment, namely blood; afterwards the Stones; then the Brain, the shop of Animal spirits; last the Stomack, the place for the first Concoction.

The Temperament of the whole wherein it depends.

Concerning the Temperament of several parts, the most Temperate is the skin; especially that in the Palm of the hand, to which as to the mean, the other parts being compared, tend to heat, cold, drowth or moisture.

The Temperament of the parts of the body.

The Hot parts are the Heart, of all the parts the hottest, the Fountain of native heat, and Closet of vital spirits. Also the Liver, flesh of the Muscles, Spleen, Reins, Lungs, Veins and Arteries, Fat also and fatness.

The Hot Parts.

The Cold, are Bones, Gristles, Ligaments, Tendons, Nerves, Membranes, Spinal Marrow, the Brain.

Cold.

The Moist parts are Fat, the marrow of the bones, the Brain, the marrow of the back, the Duggs, the Stones, the Lungs, the Spleen, Reins, flesh of Muscles, the Tongue, Heart and softer Nerves.

Moist.

The Dry, are Bones, Gristles, Ligaments, Tendons, Membranes, Arteries, Veins, hard Nerves.

Dry.

There is a certain difference of Temperaments in mans body by reason of Sex and Age: As for what belongeth to Sex, Females are colder then Males, as having contracted a colder nature from their principles of generation, lest that the blood necessary for future generation by a stronger heat should be consumed.

The Temperament of Sex.

The Temperament is also changed according to age; to wit, the age which is principally ordained for certain internal changes by heat and moisture. Authors for the most part divide mans life into three ages, Child-hood, Manly-age, and Old-age; or Youthful,

The Temperament of ages.

Age

Age of perfection, Declination; or if you please, into the first, middle, and last age; to which differences other ages, spoken of by Authors, may be referred.

The first age therefore is our Infancy, which remaineth till the seventh year; the second our Child-hood, which for the most part continueth to the fourteenth year of our age: then our youthfull age from the fourteenth to the five and twentieth, when our growth for the most part in stature ceaseth. And sometime Hippocrates in his first Book of Aphorisms and fourteenth chap. accounts these ages before mentioned, ages of growth. From thence to the five and thirtieth is our manly or flourishing age; from thence to the forty eighth year is our prime or most principal age, then begins old age; which hath its degrees also, for each age hath its Temperament, Infants and Boys are hot and moist; youthful age is most Temperate, and obtains the most convenient temper for humane actions; the flourishing manly age, or prime Viril age is hot and dry; lastly old age by reason of the wasting of the Radical moisture, and defect of the promigenial Innate heat is cold and dry; and by how much the older, by so much the colder and dryer.

CHAP. V.
Of Innate Heat.

Innate
heat.

THAT those things may the better be understood which we spake concerning Temperaments, we will say something of primigenial heat; for these things are the chief Instruments of the Vegetative soul. By the innate heat we do not understand that heat which belongeth to the mixt body, as mixed; but that heat which is proper to living Creatures; the which with the radical moisture is the next and immediate subject and domicil of the Soul, diffused through all the parts of the body. Nor by heat and moisture do we understand the bare quality, but the quality, with the Subject; to wit, a body hot and moist; the matter namely or Subject wherein heat is, and the quality from whose predominancy the Subject hath its name; to wit, the most pure, subtle, and hottest portion of the similar parts, and especially of the Spermatick parts. This heat is otherwise called both by Physicians and Philosophers, by the name of the within seated Spirit, or the native Spirit; and it is more conveniently called, the within seated spirit, then the innate heat. For although in all the substance be hot; yet heat is not sensibly perceived in all bodies, but onely in living Creatures, and the more perfect of them, which by touching are perceived to be hot.

The In-
nate heat.

This

This Innate heat consists of three things, which make up its Essence, Radical moisture, the within seated spirit, and heat; hence *Fernelius* defines it to be the Primigenial humidity spread through all the body, by the innate heat and spirit. And these three, Heat, Spirit, and Moisture are linked together by the nearest conjunction in the world; for since that heat ought to be (as it were) Governour and Ruler of our lives, it is onely of an aërius or spiritual nature, and so by it self moveable and separable, or apt to be dispers'd, it could not subsist alone, but that life might be prolonged, it ought to subsist in a more stable, moist and durable body, more permanent; namely, not a thin and watry body, but a fat and oylie body which is inserted within the fibers of the similar parts, and is called the radical moisture.

Concerning the nature and original of the innate spirit and heat, there is a great controversy amongst Physicians and Philosophers, and 'tis disputable, whether it be Elementary, or of another nature; And although in such an obscure thing, since very learned men disagree, it be very hard to determine any thing, yet I think theirs to be the more probable opinion, who consent with *Aristotle* in his second Book of Generation of living Creatures, and third Chapter; That Innate heat is not Elementary, nor hath its original from fire or other Elements; nor yet is it of a Heavenly nature, but proportionable to the stability of Stars. For every specifical form requires its peculiar domicil and proper subject, and the more noble form requires the more noble habitation, and a more Divine power then Elementary, requires a more noble mansion then a body that is composed of Elements.

Moreover, more noble actions, and Sympathy and Antipathy are in it, which purely from Elements can't proceed; & again this Innate heat and inborn Spirit, in many Plants is preserved in winter time, and in the midst of frosts safe and secure; Moreover this Innate heat, and radical moisture is founded in the parts which are fashioned in the first generation of an embryo; but the greatest plenty of it is in the heart, which from thence is called by *Galen*, the fire-sewel of the Innate heat.

This inborn heat, is the chiefest instrument of the soul, by which it perfects, undergoes all the actions of life and whatsoever healthy thing in us, and profitable in generation, in nutriment, or in expulsion of a disease, is performed by that. From this benefit and excellency of Innate heat, some have taken it and the Soul for the same thing, and have called it the Essence of the vital faculty; the faculty governing us, the substance of the soul, and the Author of all our actions; but since the Innate heat is neither the

Whereof
the Innate
heat con-
sists.

Of the
original
and nature
of the In-
nate heat.

The sub-
ject of the
Innate
heat.

The use of
the Innate
heat.

The In-
nate soul is
not a soul.

Soul,

soul, nor the chief cause of our actions, it is only the chief instrument in performing the actions of the soul, in operation, which is not corporal.

The changing of the innate heat

This Innate heat doth not remain alwaies the same, but is changed in the course of our age. For at our first coming into the world, it is most, and age increasing, the radical moisture wasteth by degrees, and drieth up. So that in the end the radical moisture being clearly gone, the heat also wanting wherewithall to support it self, goes out, and a natural death followeth.

CHAP. VI.

Of Spirits.

Influent Spirits.

BUT although every part of the body have this heat innate in it, yet that alone sufficeth not to undergo all actions, but requires heat and spirits flowing from elsewhere; by which it may be stirred up and cherished; for by it self it hath no power to perform all actions, but soon languisheth, and so is scattered and vanisheth, except it be daily stirred up, nourished, and strengthened by the spirits of the principal parts, especially the heart.

What the Influent Spirit is.

Although the name of Spirit may admit of various significations yet in this place it is taken for the purest, finest, thinnest, hottest, most moveable body, proceeding from the most purest and subtilest part of the blood; and although the name of Spirit be attributed to the Innate heat, yet it especially belongs to those that are most fluent and moveable. These Spirits are the bond by which the body and soul are united, and the chief instrument of performing our actions, and being wrought in the principal parts of the body are conveyed through their channels into the whole body; and are joined with the Innate heat, that they may help the powers and faculties to perform their actions. But that is false which some teach, That the Spirit is the Vehicle of the faculties, and that the faculties and power of performing, are carried by these Spirits from the principal parts; for the faculties of the soul are unseparable proprieties, and the soul is fitted with its faculty in all its parts, nor doth it take them from any other parts, but there useth them, where it hath fit instruments.

The Use of Spirits.

Spirits are not the Vehicle of the faculties.

Spirits how many sorts.

These Spirits are of three sorts, Natural, Vital, Animal. The Natural are generated in the Liver, and are said to flow from thence into all the parts of the body; but although the name of Spirit may in some measure be attributed to the most thin and subtile parts of the blood, which oftentimes comes forth out of the Veins with the blood: yet there is not a little difference betwixt them and the
other

other Spirits, properly so called; and so properly doth not deserve the name of Spirits, as the rest do, since they are not the proper instruments of our actions, nor the bond of the soul, which uniteth it with the body, and is not generated in any peculiar cavity as the Vital Spirits are. The use of the Natural Spirits are to strengthen the Innate Spirit in all its parts, that it may supply the Vital Spirits with matter, and may serve for the more convenient distribution of blood through the Veins.

*The name
of Natural Spirit.*

Its use.

The Vital Spirit is generated in the heart, of the thinnest and purest blood, or the natural Spirit, commonly so called, and aer, by help of respiration drawn, & by the dilatation of the Arteries in the left Ventricle of the heart, and being there freed from all fuliginous vapours is distributed through the Arteries into all the parts of the body; but the Blood out of which this Spirit is generated, for the most part is conveyed through the arterious vein, from the right Ventricle of the heart into the Lungs, and from thence with aer drawn by breathing in is carried through the arterious vein into the left Ventricle of the heart. Now this Spirit with its innate heat in the heart, is not only the chief instrument of the actions of the heart, but is distributed through the Arteries into the whole body, and stirreth up, cherisheth, increaseth, and strengthneth the innate heat in all the parts, and doth, as it were, give action and perfection thereunto, whence it is called by some, the Influent heat; besides which it affords matter fit for the generation of the animal spirits.

*The Vital
Spirits
whence
generated.*

Their Uses

Thirdly, there are Animal Spirits really different from the Vital, for they are generated in a peculiar place, namely the Brain, and from thence through peculiar Channels, to wit Nerves, are dispersed over the whole body; nor can the Vital Spirit perform what the Animal can, since it is a living part, overspread with a Vital Spirit. Nevertheless being toucht may be deprived of sense and motion through the defect of the Vital Spirit. They are generated of the purest part of that blood, which is contained in the corners or cavities of the brain, which comes from the mixt vein and artery, and is overspread with the vital and natural Spirit, the purest part being poured out through little branches and small furrows in the substance of the brain; for in this, and not in the Ventricles of the brain, the purest and most subtile part of the blood is changed into animal spirits. The Animal Spirit serves for the use of living creatures; namely to perform internal and external senses; as also, it serves for motion in Animals, and its presence occasioneth the faculty of the soul, actually to perform the operations of the internal and external senses, and it perfecteth animal motion, and can occasion local motion.

*The Ani-
mal Spirit.*

*Where and
whence ge-
nerated.*

Its Uses.

CHAP. VII.

Of the natural constitution of Organick parts, and the common Unity of parts alike, and not alike, called similar and dissimilar parts.

The natural constitution of the Organick parts. Their Number.

Magnitude. Conformation.

Site and connexion.

Unity.

THE natural Constitution of the Organick parts, consists in the due composition, and a convenient knitting of the similar parts into one form, fit and profitable for action; for making up whereof these things ensuing are necessary.

First, a certain number of the parts compounding, which in some are lesse, others more, according as the instruments are more or lesse compounded, till at length there is made up a perfect instrument, which can perform perfect actions.

Secondly, a due magnitude of the parts compounding, being neither bigger nor lesser then they ought.

Thirdly, due framing: which comprehends first a convenient figure; secondly, cavities and pores, that in case a part be not solid, but porous, it may contain the just number and magnitude of those pores; thirdly, a certain disposition of the secondary qualities, namely, that some parts may have a sharp superficies, some parts light, others heavy, some soft, others hard, some coloured, others not; light colour, or dark colour, according as the nature and use of the part requireth: Fourthly, situation and connexion, that every part may be in its own place, and may agree with others. Lastly, it is requisite that there be a common unity, as well of parts alike, as dissimilar, which is a coherence and growing together of divers bodies into one; which if it be wanting and taken away, the natural action is hindered.

CHAP. VIII.

Of the faculties of the Soul, and of the differences of actions in mans body.

The actions and differences of the faculties of the mind.

AFter that we have shewed wherein health consists, and what is requisite for the performing of actions, now we are to explain what are the differences of the faculties of the mind, and of actions in a body.

Physitians (whom we here follow) divide Actions (for their purpose) into Natural, Vital, and Animal, according to the three principal members, the Liver, Heart, and Brain, by which all Actions in the body are governed. For Physitians purposes are not the same with Philosophers, to inquire or search the kinds

or differences of Souls of living creatures, which appears by the distinct manners of life, which is in Plants, in brute beastes, living creatures, and man, but onely ought to find out in man the differences of actions, whose actions it is their businesse to preserve, and if offended to restore; and moreover a Physitian doth not so much consider the faculties themselves, which hurt not, as the Organs and instruments, and then distinguish actions according to the differences of them.

CHAP. IX.

Of the Natural faculty; and first of Nutrition, and Augmentation.

That we may begin with the natural faculty, I mean the Natural faculty so called peculiarly by Physitians, (for as it is taken generally it is opposed to preternatural, and so the Vital and Animal faculties may be called Natural;) The Natural faculty by the Philosophers, is called a growing or flourishing power. All its actions tend to the preservation of its kind, or else of the Individuals of its species. Now to the preservation of its individuals belongs Nutrition, and Augmentation, to the preservation of its kind Generation belongs.

The nourishing faculty whose action is called Nutrition, is that which turneth aliment into the substance of the body living, and restores what is taken away, and performs this work during all ones life time.

The faculty increasing whose action is called Augmentation is, that which extendeth the body to its due and just bigness, whose office is most performed in our growing age, and is extended till it compleateth and perfecteth its due magnitude.

The generating faculty whose action is called Generation is, that by which man by his kind continues to perpetuity, which by Individuals cannot be done.

And these three faculties being as it were the Princes, have others as it were their servants added to them; The Attractive, the Retentive, the Alterative, or Digestive, the Expulsive.

The Attractive draweth profitable nourishment to the parts; The Retentive, retains it so long there till it be digested. The Digestive altereth aliment, changeth it, & renders it fitting for that which is living. The Expulsive faculty rejects that as excrementitious, which is dull and unfit to be converted into the substance of the body.

The principal natural faculties.

Nutrition, or alteration.

Augmentation.

Generation.

The servants, or vile faculties, Attraction, Retention, Expulsion.

The Attractive, Retentive, and Expulsive faculties perform their actions principally by the benefit of the fibers. Attraction is made by the right fibers placed along the length of a member; Retention by the oblique or flanting fibers; Expulsion by those that passe overthwart; but Digestion or Concoction are performed by the Heat of the member. But in the other parts of the body, the same faculties want not the help of the fibers, but perform their operations only by the help of the Innate heat which is in each part.

But although aliment in nourishing be in a capacity to be like to the body yet actually it is unlike at the first; and therefore is changed by little and little untill it be rendered like to that into whole substance it is to be turned, which is performed by several Concoctions.

One Concoction is publick, another private.

Concoction is either private, and is appointed onely for nourishment and use of the part where it is made; or publick, which is made for the common use of the whole body. That is made in the several parts: this in the Stomack, Liver, and Spleen. Hence there is commonly accompted three Concoctions necessary for nourishment of the body: The first is that which is made in the Stomack, the second in the Liver, from which that of the Spleen is not to be excluded; the third in the several parts of the body. There are other actions which passe through the Fabrick of the whole body, such as that of the Vital spirits in the Heart, the Animal in the Brain, and that of milk in the Duggs, the generation of seed in the Stones, unless you will refer this to the Generative faculty; not by reason of the part wherein it is generated, but by reason of the end for which it was instituted (namely) publick use.

The first Concoction is made in the Stomack.

Appetite two-fold. Natural. Animal.

The first Concoction is made in the Stomack, which first prepares Nutriment for the whole body: To which for this reason, not onely the power of Concoction, but also a double Appetite is given; Natural, by which it desires nourishment necessary for it self; Animal, by which it requires nutriment for the whole body. The Natural Appetite doth not sensibly want nutriment; but as the other part by a natural instinct requires and draws nutriment. But the Animal Appetite hath an exquisite sense joyned to this desire, living in the upper Orifice of the Stomack, by which it can perceive not onely its own wants, but the wants of all the body besides. For after the whole body is emptied, it draws out of the Veins, and the Veins which require to be filled again, suck upward again from the Stomack, and their sucking is again received in the Orifice of the Stomack, whence ariseth the Animal Appetite, which is two-fold, Hunger and Thirst. But before Food descend into the Stomack, it is first prepared in the mouth

The first preparation of meat.

mouth, where it is chewed into pieces by the teeth, moistened by the *in the* spittle and by the heat of the mouth, and of the tunicle which is *mouth.* common both to the Ventricle and the mouth, it is altered by attraction.

The meate chewed and so altered in the mouth by the motion of the tongue, is sent down through the gullet into the stomach, which by the help of the oblique fibers is there retained and imbrace., untill by the Digestive faculty and proper heat of the stomach and the adjacent heat it be changed into one form and masse, not unlike to the scum of Prisan, and is called Chyle. Meat being taken, that animal appetite ceaseth, or hunger and thirst ceaseth, to wit the twitching and plucking for want of Aliment ceaseth; but the natural appetite is not satisfied, except perfectly nourished and refreshed with the blood of its own body. The Chyle generated in the stomach is sent down through its lower orifice into the first guts, by which, with their digestive force which they have by reason of their community with the stomach, is here somewhat wrought and perfected.

The Chyle.

But seeing that all nourishment is proper for nourishing certain parts of the body; Nature in this concoction separates nourishment, whence their ariseth a double sort of Excrements, the one thin, the other thick. The thick which is called the ordure of the paunch, whilst the Guts contract themselves up by the circular or transverse fibers, and the Muscles coming in the Guts by the paunch, the paunch is prest and the siege is thrust out, and voided through it. The other thin and watry which is not forthwith sent out through the paunch, but continues mixed with the chyle, that it may the more easily passe through the narrow Veins of the Mesentery, of the Port and of the Liver, afterward it is separated by the veins and expelled by Urine.

The excrement of the first concoction twofold: thick.

Watery.

The Chyle being separated in the Guts from the thicker dregs, is drawn by the Meseraick Veins, and is somewhat altered by them, and first it receives the rudiments of blood, and hence it is carried to the branches of the gate Vein, and Liver; and there by the innate heat and power of the Liver is turned into blood, which action is Sanguification, or turning into blood. The Liver retains a part of this so gotten blood, that it may by it be nourished, the rest through the hollow Vein, in which some part of it is hitherto retained and perfected, it distributes it through the whole body.

The second concoction in the Liver.

That the purer blood may be generated in the Liver, the Spleen draweth to it self from the trunk of the Meseraick Veins, before the Chyle be carried to the Liver by an inbred faculty through the splenick branch of the gate Vein, the more earthy and thicker part of the Chyle, and generates blood, though not so good blood, yet fit

The use of the Spleen.

and proper for its own nourishment, and for the nourishment of the more ignoble parts of the lower Ventricle, that thereby the purer and better part of the Chyle may be drawn through the branch of the right side of the gate Vein, called the Mesentery to the Liver, and there purer blood might be generated; and so in one work the Spleen serveth to cleanse the blood from dreggs and generate a worse sort of blood; For the Spleen is not appointed only for the drawing and evacuating the Melancholy blood from the Liver. The beginning of the Splenick branch, which ariseth not out of the Liver but the gate Vein; The Symptomes of Diseases in the Spleen do shew the constitution of it to be neer that of the Liver, and there is a connexion of the Spleen with the stomack by Vessels. But that which cannot be turned into blood by the Spleen, by convenient passages is evacuated, and the thick and dreggish matter for the most part is sent through the paunch, either with the excrements or without them through the Hæmerod Veins, and trunk of the gate Vein; yet sometimes tis evacuated by Urine. The aqueous matter most commonly is drawn through the Splenick arterics to the Veins and purged out there; yet sometimes that also is expelled by the paunch, by sweats, by the stomack.

The excrements of the second concoction. In Sanguification in the Liver, two excrements are generated Yellow Choler and Urine. The Yellow Choler is gathered into the bladder of the Gall, and from thence the most part is sent into the Guts, and the sharpness of it stirs up the expulsive faculty to do its office, to stir the dreggs of the paunch, and is cast out with the ordure. But the serous matter and the aqueous humor is drawn by the Veins, through the emulgent vessels, and is transmitted through the Ureters to the bladder; by which afterwards it is cast out, and is called Urine.

Urine. The Urine therefore consists, first of aqueous and potent matter sent with the Chyle to the Liver, but unprofitable to nourish the body, afterwards of a clammy or salt excrement of blood, and thirdly of natural contents in sound bodies, but in bodies diseased of many other things which are mingled with the Urine. And so Urine is properly called an excrement of the second concoction, to wit, wherein the serous part of Urine is separated from blood, and mixed with potent matter, affords Urine.

Urine consists of three things. Blood thus separated and cleansed from its excrements, nevertheless is said to contain in it self many humours; Nor is that masse of blood so elaborated and wrought in the Liver, and contained in the Hollow Vein plainly Homogeneous or of the same kind, but some parts in it are Temperate, others colder, others hotter, others dryer, others moister; The most Temperate in its kind is called blood, the hotter and dryer part by reason of its consanguinity with choler

is called Choleric blood, the colder and moister is called Pituitous blood, the colder and dryer is called Melancholy blood. Yet all these parts of blood are contained under the form or essence of blood, and are profitable for the nourishment of the body. Nor do the humors in a sound body constitute a masse of excrementitious blood, neither in the Veins of a man most healthy are these humors Cholera, Phlegme, Melancholy, accounted excrements.

Hence ariseth the decision of the question, whether our body's be nourished by blood only, or by the four humors; For when Aristotle says that animals that have blood in them are nourished by blood only, he intended the whole masse of blood; but Physicians when they say that our bodies are nourished, not only by blood but by other humors, by blood they understand the most temperate part of blood, or one part of the masse of blood, and this they would have, that not only that part, but the rest of the masse, to be profitable for the nourishment of the body. But that our bodies are nourished by excrementitious humors, no man in his wits ever said.

The blood being perfected in the Liver, is distributed through the branches of the Hollow Vein over the whole body, to nourish it and all its parts: That change by which it is assimilated to other parts, is called the third concoction, which is performed by the innate heat, in each part. In this concoction the blood before it assimilates the parts, receives some external dispositions, and is changed into four humors called secondary humors. The first is called Innominate, or without a name, when the blood passeth through the capillar Veins, and admits of a sensible mutation by reason of the heat of the external parts, and in the Spermatick parts turns white, in the fleshy parts remains red. 2 The second is Dew, namely that blood which passeth without the orifice of the Veins. 3 The third is called Glue, because while it is still more concocted it becomes clammy and thick. 4 The fourth is called dry Exchange which turneth into the substance of the part, and exchangeth and changeth its nature with it.

This third concoction hath also its excrements; one thick, to wit or ex-filthiness in the skin, which is collected in the garments, also in the brain, eyes, and ears; the other thin, which is dissolved by insensible transpiration, sometimes also it is evacuated by sweat. For although all things are rightly performed in the body, and the nourishment be well concocted, and moreover nothing external and violent befall the body, as Baths, Heat, Violent exercises, no sweat passe through the skin in the night; yet because even in the most healthy all things are not ever exactly performed, and many deviate from their best condition as to health, and moreover many

errors are committed in diet; Nature useth to expel such superfluities by sweats.

*Augmen-
tation.*

*Nutrition
and Aug-
mentation
how they
differ.*

Another office of the natural function is Augmentation or increasing, by which mans body, out of nourishment taken and assimilated to the parts, is extended in all its dimensions, and acquires magnitude convenient to perform actions. Although this function ariseth from the same soul with nutrition, and is perfected with the same Instrument, Innate Heat; hath the same matter out of which it proceeds, blood; the same subject, a living body; yet it ariseth from another efficient determinate cause, to wit, from the increasing faculty; it differs in form, which in nutrition is a coagulation of aliment, but in augmentation there is a motion of Extension of the whole & of every part therof; it differs also in regard of the end, which in Nutrition is only a restoration of that which is taken away; but in Augmentation an acquiring or a getting of a greater magnitude to exercise perfectly all the necessary actions of our life; and lastly in time, for Nutrition dureth the whole time of our lives, Augmentation to a certain time in our life. For man as other living creatures doth not alwayes grow, but to the certain time of his age; which comes not to passe by reason of the soul, which alwayes retains its force and strength, but by reason of the body, especially of the bones, which in proceſſe of time are so hardned, that they are not apt to any farther extension of growth.

CHAP. X. Of Generation.

*The gene-
rative
power.*

*The distin-
ction of
Sexes.*

*The instru-
ments of
generation.*

BUT since man although he be nourished, cannot live perpetually and in individuals, as other living Creatures also cannot indure to perpetuity; the generative power is granted and given by the Creator of all things, that mankind might be preserved, and the third kind of Natural actions is Generation, which by ejaculation of seed begets his like. For although this faculty and Action be common to plants, yet in man and other more perfect Creatures it requires greater preparation, and distinction of sex, as male and female concur in Generation, and it is necessary that both of them do some way help and conduce to Generation, and the male not in himself but in another, but the female in her self doth generate. For the male ejaculates his prolificke sperm into the female womb, which mingled with hers, is cherished by the same, it is also nourished, and retained until it hath the shape of a perfect man. For which purpose the Creator hath made necessary Instruments for both Sexes, for the male Testicles, Vessels prepar-
ring,

ring, and conducting sperm, and a yard necessary to ejaculate it into the part most fit to receive it, for the Females, Stones, seminary vessels, and the womb.

There are two principles which concur to the Generation of a *The Principles of* Child, the seed of the male and female, and the menstruous blood. *generation.* The seed is a body hot and moist, & full of that divine Spirit of the first Principles (or Elements,) and proportionable to the *Quint-Seed.*

essence or Element whereof Stars were made, fit for the propagation of the Soul, and generation of a living Creature like it self; and is generated in the Stones, whither the purest part of the blood & Spirits, and heat, is sent through the Veins, Arteries, and Nerves, from the remote parts of the body, and is changed into a white frothy or slimy matter; The male and female seed both confer, seeing the same Instruments are appointed (by nature) for generating and emitting of sperm, and the same cause efficient, and the same matter in each; for the forms of each alike do manifest themselves in the off-spring, although the power and force be greater in the male than the female. But the menstruous blood is only the material principle; wherefore it is ordered by the Creator, that at the time when females are apt and fit for procreation; which for the most part is from the fourteenth till the five and fortieth year of their age, that blood which the other parts wants not, each month is sent to the womb to supply what may be wanting for a little one, or if the female be not great, may be by it evacuated. This menstruous blood of it self is not offensive, nor is it expelled because it is hurtful, but because it aboundeth in quantity; but when it becomes pernicious, 'tis by reason of its remaining too long in the body & by its comixture with other humours.

Blood.

Menstruous blood.

The forming of the young is caused by the Soul, which is in the seed, and there shews it self in two actions, in putting life into the conception, and forming of all the parts: and the Soul, as *Scaliger* writeth out of *Themistius*, is its own architect, which builds a convenient domicill for its own habitation; But it receiveth this power from the Creator, whose Instruments and hands as it were the Souls are, and he hath given this energy to them at the Creation of them, then which nothing can be more wonderful to be thought on.

The formation of the young.

The Generative faculty, hath two others whereby it performs its Office; The Alterative and Formative. The Alterative is that which *The Alterative.* changeth the generative matter into the substance of the young, and all its parts; the formative is that which *The Formative.* forms all the members, and gives them their quantity, figure, number, place, and the rest. The Instrument, which the Soul and formative power useth, is the formative

- mative or plastick heat, or that Spirit proportionable to the Element of the Stars, for the seeds being received into the womb are mingled together, retained, cherished, and the power which lyes hidden in the seed is stirred up by the innate heat of the womb, and then a Conception is said to be made, and then begins a sending forth of the instruments of the body to be made, & then is it called a Conception, which commonly is said to continue til the seventh day.
- Conception.** But first of all, the membranes about the Child are formed, by which the seed is shut in, and the Spirit and heat thereof is covered, and as it were intrenched. They are two in number, the first is called
- The order of framing.** Chorion, and covers the whole Child, and is fastened to the vessels
- First the membranes, whereof are framed two.** belonging to the Navel, & by their intervening the whole cleaveth to the womb; the other coate doth immediately cover the Child and is called Amnios. These two coats in the birth seem to be one as it were, and come forth after the Child, and are therefore called the
- Chorion.** Afterbirth.
- Amnios.** But the solid and Spermatick parts shall be explained in the first
- The Secondine.** place, and afterwards according to their nobleness, and as necessity requires, the rest shall be perfectly shewn.
- The Spermatick parts are described together.** The Infant in the womb doth not take that nourishment, which it receiveth by the mouth, but from the Mother, for the receiving whereof there are appointed by nature four vessels belonging to the
- The Umbilical vessels.** Navel; namely a Vein which is a branch which comes from the Gate-vein, which is as it were the infants nurse, two Arteries branches arisen from the Iliak Vein, by which the Infant breaths
- The Veins belonging to the Navel.** (although later Authors, who teach us that the vital Spirits by which the Child breaths proceed not from the Mother, but from the Childs own heart, do assign another use to the said Iliak branches; to wit, that the Vital Spirits should be carried from the heart of the Child to the exterior parts thereof, namely the Secondines) and the
- Two Arteries.** Urine-passage which is carried from the bottom of the bladder unto the Navel.
- Urachus.** The time from the conception to the bringing forth, Physitians
- The time of formation.** divide into two parts; the first is called the time of formation, from the conception till the time when first the Child begins to move; the second the time of adorning, which is the time from
- Of adorning.** its motion till its coming forth. Hippocrates in his book of the Nativity of a Child, makes the time of Females formation to be two and fourty dayes, but males thirty dayes, which is to be conceived from their more imperfect formation; but afterwards nature more elaborately frames the parts, which are not framed in males till three months, nor in females till the fourth month.
- When all the members are framed and rendered more firm, the Infant

fant begins to spring and kick, in males in the third, in females in the fourth month as tis commonly reported, so that the time of formation being doubled is the time of quickning, the time of motion being trebled is the time of bringing forth. Yet one quickning is more obscure, another more manifest, which about the middle of time of a Womans going with Child, as all Women commonly perswade themselves, is first perceived.

The time that Women go with Child although it be uncertain and various; yet for the most part, it is nine months end or the beginning of the tenth month, that a natural birth happens: for the most part such Children as live come into the World at that time, and that time for humane birth is most natural. But before half a years time experience tells us, that a Child can hardly be brought forth and live; and if it so happen that before the seventh month be ended, a Child be borne and live, it is a great rarity and very strange. But in the seventh month because the perfection is finished of all the parts, the Child may live, and especially, which, as Hippocrates in his book of beginnings says; is of two hundred and ten dayes, that is, about the end of the seventh month brought forth. But Hippocrates says that a Child borne in the eighth month cannot live. Yet others say, that some that are borne in the eighth month may live. After the tenth month, the Child being great wants nourishment and roome to be in, although we read some are delivered after the tenth month, yet that is seldome. For a legitimate birth (according to the Law of Nature) is then when there is not roome enough for the Child to live and move in, nor alimēt enough to satisfy him, for then 'tis time to shake off his shackles those tunicles, and endeavour to make away for its own birth, and the Mother finds paines, and the womb strives to put out that bagg, and by its expulsive faculty sends forth the young, which thing the Voluntary endeavour of the mother much helpeth, which is done by her contracting her Spirits, and depression of her Midriff and squeezing the muscles of the paunch.

CHAP. XI.

Of the Vital Faculty.

THE Vital faculty which Physitians call the second faculty, although some would refer it to the Animal, some to the Natural faculty, and others think it to be mixed of them both; Yet since it differs not only from those actions, which are performed by the natural and Animal faculties, but also goes forth by its own organs, nor doth it move hither and thither by the assistance of the Animal

Spirits, but by its own proper Spirits, which from thence are called Vital Spirits, it is deservedly to be esteemed a peculiar faculty, distinct from the Vegetable and Animal faculties.

Its actions are three.

There are three sorts of Vital faculties, and so many motions of the heart wherein they reside. The first is the generation of the Vital Spirit and heat; The second is the Pulse; The third is the Inscible faculty.

Generation of Vital Spi. its.

A Pulse.

Its definition.

Of Dilating.

Of Contracting.

The first to wit, is the generation of the Vital Spirits, and influent heat; The second, without the which the first cannot perform its office is the Pulse, namely the motion of the heart and of the Arteries, consisting in dilating and contracting, that so the Vital Spirits may be generated and distributed, and the natural heat may be preserved in its natural harmony: By Dilatation the heart is filled, and attracts to its self air, with blood from the right Ventricle, by the Venous Artery (which goes from thence to the heart) and attracts from the lungs air and blood by help of the Arterial Vein into the left Ventricle of the heart; for the generation and refreshing, and restauration of the Vital Spirits and heat. By the Systole or Contraction of the Heart, it distributeth the Vital Spirits and Arterious blood through and by the help of the great Artery into the whole body, and sends the fuliginous excrements to the Lungs by the Arterial Vein. In like manner the Dilatation of the Artery through its little Orifices, terminating in the skin, attracts to it self ambient air to form and cool its heat; the Orifices that are terminated near the Heart, draw from it the hottest and thinnest blood, full of Vital Spirit; But as the mouths of the Arteries with the Orifices of the Veins, do draw the purest and finest Spirits to foster and cherish their heat, but by Contraction they expel fuliginous excrements, which action is called a steaming through or transpiration, which is made through the hidden Pores of the skin, and by the Latines is called *Transpiratio*.

The Inscible faculty.

In the third place the Inscible faculty belongeth to the Vital faculty, from whence, Anger, Joy, Fear, Sadness, and terrour, and other passions of the mind arise. And that its residence is in the Heart is most evident, because the motion of the Heart and the Pulse of the Arteries are most evidently changed in the passions of the mind.

Breathing.

Respiration is also added to the Vital faculty as principally necessary to further its action, and hath the same end and purpose, as the Pulse hath, and is instituted for the benefit of the Heart. It is performed principally by the Lungs, and the Lungs are as it were the fan or bellows of the Heart, and are the primary Instruments of breathing, and are indued with a peculiar power of moving themselves

elves, even as the Heart is, differing only from the Animal faculty. Nor are the Lungs moved only by the motion of the breast, but by their proper force and power. And although the motion of the Lungs and Breasts are made together; yet neither are the cause of the others motion, but they therefore move together, because they con-^{The motion of the}spire to bring one end to pass: so: the Lungs are stretched that air ^{Lungs.} may come into them, as into a pair of bellows drawn wide, and are so much dilated and extended, as the distating of the Breast will give way to; and on the other side the Breast is dilated more or lesse, as there is more or lesse air to be drawn in.

As the Pulse consists of two motions Dilatation and Contraction, ^{A two-fold} so Respiration is performed by a double motion, Inspiration, and ^{motion of} Expiration. By inspiration, the Lungs and Breast being extended the ^{respirati-} air by the mouth and nostrils is drawn in: by expiration the Lungs ^{on Inspira-} and Breast being contracted, the hotter air and fuliginous vapours ^{in Expi-} are sent forth at the mouth and nostrils. ^{ration.}

CHAP. XII.

Of the Animal Faculty, and first of the external senses.

THE Third sort of faculties and actions in man, Physicians call ^{The Ani-} Animal faculties, which either are resident in the brain, or de- ^{mal facul-} rived from it, and takes necessary helps or the performance of its acti- ^{ty.} ons from adjacent parts. They distinguish the Animal faculties, into the sensitive, motive, and Princes, and under the sensitive only the external senses are comprehended; under the Princes, the internal and rational power is involved: we will handle them in this order; first we will treat of the external senses, afterwards of the internal and rational faculties, at last of the appetite and moving faculty.

The external senses are those by which we perceive and judge ^{The exter-} sensible external objects, without the precedence of any other facul- ^{nal senses} ty. But that a perception may be made four things ought to con- ^{are five.} cur, first the mind perceiving, secondly the instrument which is double; first the Spirit, secondly the member, wherein the sense is; thirdly the object or perceivable things, fourthly the medium interceding betwixt the instrument and the object.

The external senses are five, Seeing, Hearing, Smelling, Tasting, ^{The five} Touching or Feeling. ^{external}

The Sight is an external sense, discerning and knowing by the ^{senses.} benefit of the Eye, the several kinds of visible things; whose ^{Seeing.} adequate Instrument is the Eye; the Eye consists of divers Tunics, the adnate or conjunctive, the Horny, the Gapey, in the middle whereof is a round hole, which is called the Pupil, and is the inlet

and window as it were of visible Species; then the Tunicle in manner of a Net, the Pannicle without a name, the Cobweblike and the Vitreous Membranes; three humors, the watery, Crystalline, and Vitreous; a nerve optick and muscles. The object of sight is whatever is visible, to wit, colours, which are visible *in potentia*, in that they are capable of being seen, but in action to be visible light is required. The medium is any transparent and diaphanous body.

Hearing.

Hearing is an external sense, perceiving by the benefit of the eare any sound that is audible; the adæquate instrument, or that without which a sound cannot be heard is the Eare, but especially as *Galen* teacheth in his first Book and third Chapter, of the causes of Symptoms, the term and extremities of the Auditory Pores, where the end being dilated, the Auditory Nerves receive part of the sound. The Object is whatever is audible, or sound: the medium which it is conveyed through, is water and aire.

Smelling.

Smelling is an external sense discovering smells by the benefit of the Nose, or mammillary processes. Its adæquate instrument are the Nostrils, but principally the mammillary processes; Its object odours, the medium by which odours are conveyed, is aire, and water.

Tasting.

Tast is an external sense, perceiving favours by help of the tongue; Its proper Instrument is the Tongue, a thin flesh soft and spongy, like to no other part of the body; the Object is favours, the medium a spongy skin, or porous cover of the Tongue, and spittle moisture.

Feeling.

Touch lastly is an external sense, discovering by the benefit of a membrane all Tangible bodies. But though the skin be the chiefest instrument of the sense of feeling, and covereth the whole body, that it may descry external objects and injuries happening to the body; and the skin in the hand be the chiefest rule to try all tangibles: yet there is no adæquate Instrument of touch; since it is more largely diffused, and other parts are likewise indued with that sense. But the adæquate organ that is of touch is a membrane; For wheresoever a membrane is there may be a touch, and wheresoever a membrane is not, there cannot be a touch, and the skin itself obtains that whereby it is sensible, as it participates of the fibers and little membranes of the Nerves.

CHAP. XIII.
Of the Internal Senses.

THE Internal Senses are those, that are conversant about sensible revealed by the external senses; and they are three, according to the diversity of their functions and operations, which are administered by them; The Common sense, the Phantasie and the Memory. *The Internal Senses are three.*

The common sense is an internal sense, perceiving all external objects by the help of the external senses, discerning them asunder, judging of their absence, and bringing sensible Species to the Phantasie. *The common sense.*

The Phantasie is an Internal sense, which considereth more diligently, and longer retaineth the sensible Species received from the common-sense, and those Species that are formed by it self. *The Phantasie.*

The Memory is that which receiveth and retaineth the sensible Species, which are known by the Phantasie, and when occasion requireth exhibits and brings them forth again. But there are two acts of the memory, the one is called by the name of the faculty of the memory, the other is Reminiscence. The memory is a prompt apprehension or repetition of any thing heretofore known and perceived, as it was perceived and repeated and that readily. Reminiscence is that which out of the remembrance of one or more things spoken of, by regression comes to remember that, which before could not come readily into the mind. *The Memory. Reminiscence.*

The principle and immediate Instrument of all the internal senses, and of all principal actions is the brain, which other things shew, but this especially; That if that be hurt these actions are hurt, and because that in curing these, the remedies must be applied to the brain.

Now all these action are performed in the substance of the brain, nor are those faculties distinguished by their seats or places in the brain, neither are their distinct operations performed in distinct places of the brain. For there is not sufficient reason given why the common sense should be seated in the former part of the brain: for although it be the Center where all the external senses meet and concur; yet the Nerves that are subservient to the external senses, take not their beginning from the fore most part of the brain. So no evident reason can appear to persuade why the Memory should be separated from the Phantasie, and by consequence from the reasonable faculty; and why the Phantasie in the former, the Rational in the middle, and the Memory in the hinder part of the brain should be placed;

placed; for the Imagination and Memory are conversant about the same things though after a different manner; But although oftentimes one of these faculties being offended the others remain unprejudiced, as oftentimes the Memory is lost, the imagination, and rational faculties not hurt, and on the other side the apprehension and ratiocination offended, and the Memory sound and perfect; yet that cometh not so much to passe through the diversity of organs, parts of the brain from whence those actions arise, as by the change of their proper dispositions, and of those things which are required to perform those actions.

The affections of the senses are two. Sleep.

The affections of those senses hitherto explained are sleep and watchfulness. Sleep is a cessation of the natural and common sense, & of the external senses ordained for the health of living Creatures, by detaining of the Animal Spirits in the brain, & hindering them from flowing to the Instruments of sense and motion. The causes that bring it to passe that the Animal Spirits flying into the brain, are there detained, and are as it were smitten and cease, are several, whereof some perform it by taking them away, as watching, labour and other things in the like nature; or by rendring them lesse moveable and benumm'd, or as others conceive by penning in, and stopping their way as vapours ascending after taking of meat and drink, or as it were pleasingly and contentedly stopping; inviting from motion to rest, which sweet melodies, murmuring streams, gentle rocking and the like occasion; The end of sleep is the refreshing and strengthening of the Spirits and external senses, by taking away their motions and operations, and from hence comes a recovery of their strength and vigour.

Watching.

Watchfulness is opposed to sleep, and it is nothing else but the efficacy or force of sense, or solution rather of the senses, proceeding from the hinderance of the free flowing of the Animal Spirits into all the members of the body. Man waketh or is stirred up out of his sleep after a two-fold manner; Either of his own accord, when concoction is performed, the vapours that hindred the Spirits coming forth are dissolved and separated, or sharp vapours are carried to the brain and trouble the Animal Spirits, that they cannot freely flow into the instruments of the senses; or by an external cause, when from a more violent external cause, as Clamour, or touch, the sensitive faculty being stirred up converts its self to perceive. Nor do the organs of the senses wholly want Animal Spirits in sleep, but some still remain in them, sufficient to discern more vehement objects.

CHAP. XIV.
Of the Intellectual Faculty.

AT length we come to the understanding or rational faculty, whereby a man is elevated above other living Creatures; and is near to, and as it were like unto his maker. The understanding abstracts things from their matter, and without considerations of matter, without quantity, without figure, knoweth things, understands things freed from their matter; it is almost capable of infiniteness, it reflects back upon its self, and knoweth it self, and understandeth that it doth understand, and because of that it hath an unsatiabable desire of the knowledge of eternity and blessedness. It performs its functions without all corporeal instruments; yet it hath need of the Phantasie as its object to understand, and the Imagination supplies the mind with intelligible matter; And therefore although it have not its seat in the brain, as in its organ by it self; yet because it worketh by the help of the Phantasie, and it behoveth the understanding to watch the Imagination, by accident and by the consequence its seat is appointed, where the imagination is, namely the brain.

The reasonable soul comprehends two faculties, the Intellect *The Understanding.* whereby we apprehend things, and the Will whereby we are carried to chose things which we understand under the notion of *The Will.* good; And things, as they are beings, we know them; and as they are good, we desire them.

CHAP. XV.
Of the desire and moving faculty.

BEsides the knowing faculty, there is given to man an appetite and force of moving; The Object of mans appetite is good, whether *Appetite two-fold,* it be really so, or seemingly so. The appetite is two-fold, sensitive *sensitive;* and rational: sensitive is that which desires that which seems good *rational.* to the senses, rational is that which desires that good, that seems so to reason, and the motions of the sensitive faculty are often resisted by the motions of the rational faculty, and there ariseth strife & discord betwixt the sensitive & rational faculty. Out of the appetite, as its actions, arise the affections and passions of the mind, as we call them.

Voluntary Animal motion follows the desire, for after that an external object is brought by the external senses, and common sense to the Phantasie, it is known as profitable, and acceptable, or as hurtful, *Voluntary motion.*

*The motive
faculty.*

full, displeasing. Love, or hatred followeth this knowledge, or the desire of what is pleasing, and flight of what is displeasing. Motion presently follows the desire in brute beasts, but in man there is the Judgment of the intellective faculty, which values what is truly good and what hurtfull. Then the motive faculty follows that motion which is commanded by the rational or sensitive faculty, as the one or the other over-rueth, by the contraction of the muscles the adequate Instruments of motion, which draw the tendons, these the bones, and they being moved, the members and whole body is carried from place to place, either to accept of what is grateful, or to resist and fly from what is hurtful.

*The In-
strument of
motion.*

But although a muscle be the adequate instrument of motion, yet the chiefest part of it consists of fibers or smal strings, which being contracted, the muscle is contracted and motion performed. Although there are four different motions of the muscles, whilst they are contracted, or extended, or moved transverse, or remain straight, as *Galen* says in his first Book of the motion of muscles and eighth Chapter, or as others explain it, contraction, conservation of contraction or tonick motion, relaxation, and perseveration of relaxation: yet contraction only, to which tonick motion belongs, is the proper action of the muscles; but extension which is a passion rather than an action, is not the immediate cause of motion; for whilst a muscle contracted by its opposite muscle is extended, it suffers, it doth not act.

THE SECOND BOOK:

PART I.

OF DISEASES.

C H A P. I.

Of the nature of a Disease.

Hereas we have hither treated of those things that are incident to the body according to Nature, and so have discoursed about health: now I will speake of those things that are preter-natural or contrary to Nature, (for I do not intend to make any distinction betwixt these) They are in number three, a Disease, the cause of a Disease, and Symptomes: in the handling whereof the Pathological part of Physick is delivered.

*Things pre-
ter-natural
how many.*

And first for what belongs to a disease; Although as the name of health is generally attributed to all things that happen to a man according to nature, so the name of a disease is given to all things that befall a man contrary to nature, and those are said to be morbi-fick: yet if we may speak properly, these three, a Disease, the cause of a Disease, and Symptomes, as they differ in the thing, so they may be discerned by their names also.

But whereas a disease is contrary to nature; but health is that power of acting which is to be performed according to nature; a disease is an impotency of performing natural actions; and as those who are apt to do those things which are according to nature, are said to be sound; so those are deservedly said to be sick, who are unapt to perform those actions.

*The formal
reason of a
disease.*

Moreover the Subject of a disease, as also of health, is only the living parts of a body, as being those to which alone a power of undergoing natural actions is given; But all those things which are not in the number of the living, as humors and other things, which are not able to perform natural actions in a man, cannot be the Subject of a disease.

*The Sub-
ject of a
disease.*

The cause of a Disease or of impotency to perform actions, is an ill

The causes of a disease. ill constitution of the parts, as the cause of health is a right disposition of the same.

Hence a Disease is defined to be an impotency of the living parts of man to perform natural actions, arising from their constitution contrary to nature.

Although according to *Galen* also to be sick, is not to be able to operate, and so this definition is not contrary to the sense of *Galen*: yet that out of the definition of diseases, differences, and profitable observations may the better be drawn, *Galen* retains the same terms of the definition, but places them otherwise, and in the second Chapter of the differences of Diseases, defining a Disease saith; That a constitution of a vitious function contrary to nature is the cause thereof, and in his first Chapter of the differences of Symptomes calls it a disposition contrary to nature, by which action is hurt.

Namely as health is a certain quality, or harmony in the qualities in magnitude, number, figure, and other things necessary for the constitution of each part, by reason whereof the body is disposed, and made fit to perform natural actions: So a Disease is such a quality by reason of which the same body is rendered unfit to perform the same actions. For the word *Diathefis* taken generally signifies every quality according to which a man is well and ill disposed, whether it be easily or difficultly taken away. And therefore as certain later Physicians will have it, a Disease is not simply the want of health, and nothing positive, but such a want as proceedeth from a disposition contrary to that disposition, on which health depends, which is wholly something positive, and when a part is wounded or diminished, a quality and disposition is brought into it contrary to that which was present there before in time of health: as a hand that is wounded, is otherwise disposed then that which is well, and that which hath four fingers, otherwise then that which hath five. In brief; a Disease consisteth not only in privation of a good constitution, but in a contrary and vitious constitution.

Diathefis what it is.

A Disease is not only a privation.

CHAP. II.

Of the differences of Diseases.

The Essential differences of Diseases.

THE differences of Diseases are two-fold; Essential or Proper, which are taken from the essence it self of a disease, and so agree to one kind that they cannot be common to another; or accidental, which are taken from those things which follow the essence of a disease, and from other circumstances. But because as 't is said before; there is one natural constitution of the similar parts, as they are

are such and another of the organick, and a common Unity in them both: the regression from that natural constitution of every one affords several kinds of Diseases.

First therefore, the proper Diseases of the similar parts are Diseases of Intemperature, when that due proportion of the primary qualities is not observed, but when one doth excell the other three, or two overrule the other two, contrary to nature.

Moreover there are found in similar parts Diseases of hidden qualities, or of the whole substance, as they call them; when there is not only in the constitution of the similar parts, a due congruity of the primary qualities, but a certain disposition also of the occult qualities is requisite.

Secondly, there are so many signes of Organick Diseases as we have said, are requisite for the composition, and constitution of an Organ; namely four, Diseases of Confirmation, of Number, Magnitude and Composition.

Lastly, the third kind of Diseases, which are common to them both; They call solution of Unity, or continuity.

CHAP. III. Of Diseases of Intemperature.

Diseases of Intemperature, as is said, are when that due proportion of primary qualities is not observed, which ought to be, but either one overcomes the other three, or two the other two. Whence one distemper is said to be simple, another compound. Simple is that wherein one quality exceedeth, and this according to the number of the four qualities is quadruple, hot, cold, moist, dry. Compound is that wherein two qualities exceed, and this according to the quadruple mixture of the primary qualities is four-fold, hot and moist, hot and dry, cold and moist, and cold and dry. And so in the whole there are eight Diseases of Intemperature.

But these distempers are again distinguished divers wayes, which distinctions nevertheless produce not new kinds but differences, which are found in many differing in kind. For first, one distemper is with matter, another without matter. Intemperature with matter is when it hath a humour joyned with it, and is cherished by it; Distemper without matter, is that which is cherished by no preternatural humour, as when heat is sent into any part from the fire or heat of the Sun.

Moreover one distemper is equal, another unequal: equal is that which is a little and equal in all living parts, and affects them all alike

Unequal.

like, and equally: Unequal, is that which is more intense in one part, and more remiss in another, and affects one more, another less. For since that the members of our body are constituted of many particles, it may come to pass, that all may not be equally affected by the altering cause, but some more, others less, whence an unequal distemper ariseth. But if the action thereof proceed so far, until that all are altered and affected equally, that is an equal distemper; Whence an unequal distemper is joyned with pain and trouble, as being that wherein the part is as yet to be altered; but in an equal distemper no pain, nor molestation is perceived, as being that wherein the part is already altered, and the Intemperature becomes as it were familiar and domestick.

C H A P. I V.

Of Diseases of the whole substance or of hidden qualities.

Whether there are any Diseases besides those of Intemperature.

It is a controverſie amongst Physicians, whether there are any other Diseases in the ſimilar parts, beſides thoſe of Intemperature. Truly the ancient Phyſicians make no mention of them; but the Moderne do and principally *Fernelius* in *Lib. 1. Pathol. Cap. 2.* and *Lib. 2. of the Hidden cauſes of things, Cap. 9.* and afterwards he largely endeavours to prove that there is yet another kind of Diſeaſe beſides Intemperature in the ſimilar parts, and that is twofold: the one is of the whole ſubſtance; the other in the matter, which may be ſeen in the fore-quoted places. But 'tis not our purpoſe largely to reckon up the opinions of others, for this Epitome will not permit it.

There are Diseases of hidden qualities. The reaſon.

But that we may briefly propound our opinion, we determine that there is another kind of Diſeaſe in the ſimilar parts, beſides Diſeaſes of Intemperature, being ſo perſwaded for theſe reaſons; firſt, becauſe every agent which acteth, deſires to make the patient like it ſelf. But there are agents from the whole ſubſtance or ſuch things, whoſe actions can be reduced into no manifeſt quality, and which are beyond the power of Elements, as elſewhere is proved; It neceſſarily follows that thoſe agents from the whole ſubſtance, whiſt they being in Diſeaſes, an' act in our bodies, do not change the primary, but Occult qualities, and introduce Diſeaſes agreeable, and correſpondent to their nature. Alſo becauſe contraries may be cured and reſiſted by their contraries: But the whole ſubſtance, or things acting in Occult qualities cure many Diſeaſes; It neceſſarily follows that there are ſuch Diſeaſes to which ſuch Medicines are oppoſed; and unpoſſible there ſhould be certain Occult Diſeaſes, in vain are Medicines

invented which act in the whole substance. Thirdly, since there are actions hindred or hurt which neither can be referred to any Disease commonly known, nor to any external error, as may appear in the plague and other Venemous Diseases, hence we may well conclude that there are other Diseases of Intemperature, from whence these kind of mischiefs happen.

But which and what those Diseases are is likewise controverted. We setting aside the opinions of others determine, those Diseases of the whole substance, or of hidden quality, to be those which consist in a certain occult, and malignant disposition of the similar parts, and to be no other then such whose mischiefs cannot be referred to the primary qualities, and such as the agent cause excites, which is endued with a malignant, venemous and occult quality; and which are cured not by primary qualities, but by those things which are said to act in the whole substance.

Which are Diseases of the whole substance.

But Diseases of matter which *Fernelius* brings there, are no new Diseases of similar parts, but either Organick Diseases, as softnesse and hardnesse in parts, wherein they ought not to be such, or Symtomes, or causes of Diseases.

Whether there be any Diseases of matter.

CHAP. V. Of Organick Diseases.

THE second kind of Diseases, are of the Organick parts, which in general are called Evil composition; namely, when the natural constitution of the parts, as they are Organick is vitiated, which although it may agree also to the similar parts, yet it happeneth to them not as they are such, but as they are Organick. Again the differences hereof are so many, as there are qualities belonging the natural constitution of an Organick part; Namely, first a definite number of the parts constituting, then a convenient magnitude of the same; Thirdly a due framing, or conformation; which comprehends a decent figure, cavity, or solidity, and smoothnesse and roughnesse, and such like qualities. Lastly, it is also necessary that every part may enjoy its own natural place, and be joynd with those which it ought.

Organick Diseases.

The difference of Organick Diseases.

Therefore from all and every of these things, which belong to the constitution of an Organick part, since a regression may be made to the state that is contrary to nature, there ariseth so many kinds of Organick Diseases also, namely Diseases of Number, magnitude, conformation and composition; But if you would divide Diseases of conformation into those three or more, which belong unto them: namely Diseases of figuration, of cavities, and of super-

ficies, and secondary qualities, there will arise six kinds of Organick Diseases; which moreover, if you are pleased to divide Diseases of composition into those of situation and of connexion, there will arise seven kinds of Organick Diseases.

C H A P. VI.

Of Diseases of Conformation.

How many Diseases of Conformation.

A Digression from the natural conformation causeth Diseases of conformation, but seeing that three things are required to the natural conformation of an Organick part, a convenient figure, hollownesse of passages, smoothnesse and roughnesse of the superficies, there are also three kinds of Diseases of conformation constituted in figure, cavity, and superficies: But because other qualities are required also in some Organick parts, besides smoothnesse, and roughnesse; namely that some may be soft, others hard, some thin, and full of pores, others thick, some coloured; others void of colour, some dark, others perspicuous; and the change of these qualities breed Diseases, because when these qualities are changed, the Actions of those parts are hindred.

Diseases in figure.

A Disease in regard of figure is when the natural figure of a part is so vitiated, that by reason of it the action of the part is hurt; namely when those, which are straight are made crooked, or otherways disposed contrary to nature; those are affected with such Diseases which we call crook legged, when the legs bend inward, crook-legged outward; such as are disfigured with the small pox, splay-footed; to these beleng crook backed, and flat-nosed persons.

How many Diseases of passages.

Moreover Diseases of conformation are when the passage, through which matter passeth from one place to another, such as are the throat, wind pipe, Veins, Arteries, Nerves, Ureters, Guts, Pores of the Skin, Cavities, and Receptacles, such as are the stomach, bladder, womb, when they are affected. As for Diseases of the passages, they consist either in number, or multitude, or differ from the natural condition in magnitude; and again both of them either in

Excess and Defect in

cess or in defect.

multitude, in magnitude.

Excess in multitude of passages, is when there are more pores, or wayes then there ought to be according to nature. Defect in number is, when they are Fewer then they ought. Excess in magnitude is when any way or passage is dilated more then it ought; Defect in magnitude is when it is become straiter then it is.

The difference of opening of Vessels.

To excess belong these infirmities which are called *Anastomasis*, *Diapedesis*, and *Diairesis*.

Anastomasis is when the mouths of the vessels are opened and dilated too much. *Diapedesis* is when the Tunicles of the vessels are become so thin, that the humours may as it were sweat through them; *Diairesis* is when from some cause that happens by Erosion or by breaking, some passage is opened which ought not. That *Diairesis*, which is made from some incident cause, or by breaking, is called (in Greek) *Rexis*, that which happens by Erosion is called *Diabrosis*.

Defect on the other side according to the variety of causes that occasion it, is five-fold, Obstruction, Constipation, Coalescence, Compression, Descension. All which in general are called straitness of passage. *The differences of narrowness of Vessels.*

Obstruction, which the Greeks call *Emphraxis*, is when some passage is stopped either by plenty of humours, or thickness of them, or clotted blood, or Gravel, or such like. Constipation which the Greeks call *Stenochoria*, is when a passage is stopped by some tumour in it, Compression which the Greeks call *Tblipsis* is when a part is pressed together by some external matter. *Obstruction Constipation.*

Coalescence is when (after an Ulcer) the sides of the passage grow together. *Coalescence.*

Subsidence in the Greek *Sunizesis*, is, when the parts of the vessels consent as it were in pressure and squeezing of themselves together, to which no constriction is added, when from some external cause, or by reason of cold the passages are contracted. *Conjunction and Constriction.*

Diseases of cavity are either in multitude, or magnitude: in multitude it seldom happens unless from ones nativity, there happen more or less passages in the body then there ought. In Magnitude passages offend either in excess or defect: excess of magnitude is too great dilatation of the receptacle, or cavity; defect in magnitude is when they are too strait, which is either from our first original, or afterwards, from repletion, compression, subsidence or constriction. *Diseases of Cavity.*

Thirdly, Diseases of the superficies, are ruggedness and smoothness, for when according to nature, some parts are rougher, and others smoother; if those which should be more rough become smoother, or those that should be smoother become more rugged, and so any action be thereby hindered from thence, ariseth Diseases of the superficies. *Diseases of Superficies.*

Softness and hardness, as we said before, may be referred to these Diseases, as when the bones which ought to be hard are become soft, or the tendons are so hardened, that they cannot be contracted. Also Rarity and Density, when a part which ought to be full of pores lose them, and become thick. *Softness Hardness. Rarity, Density.*

Colour in
the face.

Hitherto belongeth colour in the eye, for although colour be not necessary for the conformation of other parts, yet that the eye may become the fit instrument for sight, it is necessary that it be so fashioned, that it may be fit to receive (for such there are) visible species; Therefore it is requisite that the horny coat, and the watry, crystal, and glassy humors of the eye be not only cleer and transparent, but without colour. If the eye lose this natural constitution, and that those parts which ought to be perspicuous and void of colour, are darkened or coloured, the sight is hindered, and visible species either are not received, or are received in a colour differing from their own.

Darknesse.

CHAP. VII.

Of Diseases in Number.

Of Diseases
in num-
ber.

THE second sort of Diseases of Composition or Organick Diseases are Diseases in number; for when there is a certain number of the parts compounding to make up the natural composition of every organ, how often soever that is not observed a Disease in number doth arise.

The differ-
ence of a
Disease of
number.

A Disease in number is two-fold, either in defect, when that is wanting which should be present, or in excess, when that is present which should be wanting.

Abound-
ing.

That which aboundeth is either to nature, as the sixth finger, or preter-natural, as stones, and Worms are according to *Galen*; which nevertheless is disputable. Nor indeed are such things, since they are substances, as such Diseases; but as some conclude causes, by which an aptness and a certain disposition against nature is brought into the part, whether it be in respect of number, or passages, about which authors disagree.

Wanting.

Deficiency in number, is when there is a Disease by which either a whole part perisheth, or is wasted: those which are wholly wanting are cleerly according to nature, nor can it be a defect against nature; such a Disease may they be said to have who want their number of fingers, or of teeth.

CHAP. VIII.

Of Diseases of Magnitude.

Diseases of
magnitude.

THardly, amongst Organick Diseases, are Diseases of Magnitude, when the natural bignes of the part is so altered, that for that reason it cannot perform its natural action.

Diseases of Magnitude are two-fold, either when there is an increase, or a Diminution of Magnitude, according as the whole or part,

part be increased or diminished. To the increasing of magnitude belong all tumors, and growth of parts contrary to nature; to diminution belongs leanness and wasting of parts.

But because Diseases in Magnitude, and in Number, are sometimes complicate, therefore they are thus to be distinguished; If a whole part be wanting or abound, it is properly called a Disease in number. But if only some particles of a part be wanting, or that it be bigger then it ought, it is called a Disease in magnitude. Secondly, if with a portion of any organ many particles are taken away, a Disease is deficient in number, and diminished in Magnitude.

CHAP. IX.

Of Diseases of Composition.

THE last kind of Organick Diseases are Synthetical, commonly called Diseases of Composition; but although *Avicenna* doth account all Organick Diseases, Diseases of composition, yet in this place we do not, we only take them for a peculiar kind of Organick Diseases.

Diseases of Composition.

Since that two things are to be considered in Diseases of composition, situation and connexion; Diseases of composition are of two kinds, the one is when the parts do change their situation, which is called a Disease of place; The other is when they are not knit together as they ought; but they are separated which ought to be joynd together, and the contrary, as when the eyebrows grow together, which are called Diseases of connexion or vicinity, others call them Diseases of consent, society, collegiate.

Twofold.

Diseases in site.

In Connexion.

The most common Disease in place, is a loosng of a joynt, the Greeks call it *Exarthrosis*, when the joynts or heads of the bones go out of their hollow places or cavities. Yet other parts besides the bones go out of their places, which happeneth in ruptures, when the paunch or guts fall down into the Cods, or when by great wounds the guts come forth: also in the falling out of the womb, or of an eye.

Luxation.

Another kinde of Disease of composition is, when the parts are separated, that ought to be joynd together; which happeneth if the bonds by whose intervenc they are linked together are loosened, made longer or broken, which happeneth sometimes in the womb and other parts of the body; or it happens if thole are joynd together, that should be parted a sunder; as when one is tongue-tyed, or the eye-lids grow together, or two fingers grow together, or the fundament be closed.

CHAP. X.

Of Diseases of Solution of Unity.

Diseases of Solution of continuity. THE third kind of Disease is common to similar and Organick parts, and is called Solution of Unity, when the parts which ought to be one, and continued, lose their continuity and are divided.

Their differences. There are many differences of Diseases of Unity, principally taken from the part affected, and the causes dissolving Unity. Those things which dissolve Unity, some of them cut and prick, others erode, others bow and break, others beat in pieces. But the parts which are dissolved are either soft or hard; if a soft part be dissolved

A wound. by a thing that cutteth, it is called by the Greeks *Trauma*, by the Latines *Vulnus*, i. e. a wound.

A puncture. But if a soft part be dissolved by a sharp instrument pricking, it is called a Puncture.

Contusion. But if a soft part be offended by a blunt weapon and a hard one, and be straitned within it self, it is called a Contusion, the Greek *Tblasia* and *Tblasma*.

Rupture. If a soft part be broken by any thing that bendeth it, 'tis called a Rupture; and in the nervous parts peculiarly, it is called a Spasme.

Fracture. But if there be solution of continuity in a hard part or bone from any other cause than Erosion, namely from cutting or contusion, it

Caries. is called a fracture, in Greek *Agma* and *Catagma*; but if by Erosion it is called Caries, in Greek *Teredon*, i. e. rottenness in bones.

An Ulcer. If continuity be dissolved in soft parts by Erosion, it is called *Elkos* in Greek, in Latin *Ulcus*. (*Anglice* an Ulcer.)

An Apospasme. Lastly, if there be solution of Unity of compound parts, and those which naturally are different from each other in kind are nourished and grow together, they are called *Apospasmes*, as when the skin from a membrane, the membranes from the muscles, and a muscle from a muscle are separated.

CHAP. XI.

Of the Accidental and common differences of Diseases.

The accidental differences of Diseases.

Hitherto we have spoken of the essential differences of Diseases: there remains the accidental differences, which are taken from those things which follow the essence of a Disease,

Of the accidental and common differences, &c.

ease; or from the subject, and causes, and other circumstances, and are also common to many.

First, a body sometimes is sick of one disease, sometimes of another: and that is said to be one disease which onely seizeth on one part, and offends its actions, or when one disease afflicts the whole body; but there are many diseases, which in a different manner affect many and different parts of the body.

A disease which occupieth one part of a body, is either simple, or compound. Simple, is when no other disease is joyned with it. Compound, is when it is coupled with one, or more other diseases, in the same part, whether they are of the same nature, or of some other; but diseases which are knit together, not with other diseases, but with some grievous symptoms, are not properly called complicate diseases; *Fernelius* calleth them diseases of fellowship, even as he calleth those that are neither joyned with any other disease, nor with any grievous symptom Solitary diseases. As for diseases that are not joyned together in one part, there are many, they are divided by *Fernelius* into separated, and implicate; connexed and consequent.

Separated are such as consist in divers parts, which neither have common use, nor action, neither do they communicate the affect by turnes from one part to another: as, the Podagra, or Gout in the foot, the Ophthalmie, or Inflamed Eye.

Those are called implicate diseases which afflict divers parts which have one common use, and action, as if divers parts of the breasts are afflicted.

Moreover, he calleth them connexed and consequent diseases, when one disease is the cause of another, which principally cometh to pass when one part communicates its effects to another.

Secondly, from the manner of generation and subsistence, some are called diseases Making, others Made.

Diseases Making are such, that although they are produced out of their cause, and now are; yet they cannot subsist without their efficient cause, but their cause retreating, they also withdraw from their subject.

Made diseases may continue, though their efficient cause be taken away.

Thirdly, in respect of the subject, one disease is called Universal, which afflicts the whole, another particular, which affects any part of the body, another externall which occupieth the outward parts of the body; another internall which possesseth the inward parts thereof. Some diseases also are congruous, such as are agreeable

agreeable to the Temperament and constitution of the body; Others are Incongruous, and disagreeable to the Temperament, and constitution thereof.

Of Age.

Sex.

Fourthly, in respect of age, some are diseases of Infants, others of children, others of boyes, others of youths, others of young men, others of middle aged men, and others of old men: as also in Relation to sex, some of Males, others of Females.

By the being of a thing.

By consent.

Fifthly, diseases some are by Idiopathy, or Essence, others by sympathy, or consent. A disease by essence is that which hath its beginning, from a cause begotten in that place wherein the disease is stirred up. By sympathy, or consent is that which is stirred up by matter severed from the part, where the disease is.

Legitimate.

Spurious.

Sixthly, some diseases are legitimate, others Spurious, Legitimate are such as proceed from one simple and onely cause; Spurious are such as proceed from mixt humours.

Hereditary

Congenite

Whether a Congenite deformity be a disease.

Seventhly, some diseases are inherent to man from his first beginning, others happen to him after he is begotten. Those which come from our first beginning, are twofold; first, hereditary whose causes, and dispositions are derived from the seed and menstruous blood of the parents to their children; and cause a disease, in them which they were troubled with; secondly, from ill conformity some evil may happen to the child, from its first beginning, although the parents were not troubled therewith; and therefore all diseases communicated to man from his generation are not Hereditary. They seek a knot in a bull-rush, who think such recels from the naturall state and condition, ought not to be called a Disease, but a fault; and they conceive that not every defect, and regression from the naturall state; but those onely they think, ought to be called diseases of defect, which are defects of perfections which they once had. But a Disease is not only a privation of perfection once had, but to be had, which agreeth to every one of the Species: and as a man is said to be found, which hath that perfection in all the parts of the body, which ought to be in mankind; so he may be said to be born sick, to whom any of those perfections are wanting.

Contagious.

Not contagious.

Common.

Eighthly, some diseases are Infections which transfuse their seed, and pullation into other bodies, and affect them with the same disease. Not Infections, are such as cannot infect others with their venom.

Ninthly, some diseases are spread, as when many diseases of divers kinds invade. Some are common, wherewith many are affected at the same time, with the same disease. These again are divided

vided into Endemialls, and Epidemicall. Endemialls are (as it were) *Endemialls* native; and genuine diseases, which often frequent one place, and afflict the inhabitants of one region, by reason of their common and domestick cause: such is the Scurvy to the inhabitants of the Baltick Seas.

Epidemicall, are such as infect many from one cause, but not *Epidemicall* genuine to that people at the same time.

Tenthly, in respect of the time of the year, some are Vernall, *Diseases of* some Estivall, some Autumnall, and others Hibernall, namely, the severall such as are agreeable to this or that season of the year. In respect times of of the time of the day, some are called Diurnall, others Nocturnal, *the year.*

In the Eleventh place, some diseases are called great, others *Great.* small. A great disease is said to be such, either by its self, or by accident. A disease is said to be great by it self three wayes; first, *How ma-* in regard of dignity, when it hurteth the organs, and instruments, *nifold.* that are most necessary for the preservation of life, and in this sense, Diseases of Intemperature, amongst Diseases are of greatest dignity; Next those Diseases of solution of continuity; next to them diseases of composition: 2. By it self a disease is said to be great, in respect of its going back from its naturall state, for by how much the more it recedes from that, by so much is it the more venement: 3. It is said to be great in respect of ill Manners, as when an ill quality is joyned with it. By accident it is said to be great, in respect of the best part which it possesseth, in which regard a disease which otherwise was small, is said to be great, as a wound in the heart, or in the brain, which in musculous flesh, were not dangerous. 2. When it hurts the faculty that governs our body.

In the twelfth place from the manner, a disease is benigne, or *Benigne.* maligne: Benigne is when besides its own nature, no grievous symptom is joyned. Maligne, is when it hath worse symptomes, *Maligne.* joyned with it, then the nature of the disease affords of it self, from some occult qualities.

Thirteenthly, in respect of duration, some diseases are short, *Short.* some long, which soon terminate, or continue long, before they *Long.* come to amend.

Fourteenthly, some are acute, others not acute, and all acute *Acute.* diseases are short, but all short diseases are not acute. That a disease *Not acute.* may be said to be acute, tis requisite that it may not onely be terminated in a short time, but may have some grievous symptoms joyned with it, that may speedily not without danger end it in *Which a-* health or death; For an acute disease is that which swiftly with *cute.* violence, and danger comes to its height. Acute diseases are again distinguished

How manifold. distinguished into very acute, simply acute, and such as degenerate from acute. The very acute terminate by the seventh day; the simply acute end by the twentieth day; such as degenerate from acute are extended beyond the twentieth, even to the fortieth day; But all those diseases that are extended beyond the fortieth day, are Diurnall, and Chronicall.

Salutary. Deadly. Fifteenthly, in regard of the end, some diseases are salutary, which terminate with the health of the sick, others mortall, which destroy the sick; and both either absolutely, or *secundum quid*. Simply and absolutely, those are Salutary that terminate with the perfect health of the sick; Mortall, are such as kill the sick; on the other side, salutary and deadly may be such, *secundum quid*, when they terminate in health; but not sound and perfect health.

Continual. Sixteenthly, some diseases are continuall, which continually afflict, and intermit not, in the whole term of their duration.

Intermittive. Intermitting, are such as have certain periods, and do sometimes intermit, or cease between while.

Ordinate. Inordinate. Seventeenthly, some are ordinate, which afflict at certain times, which the Greeks call at Periods, as Tertian, Quartan, Feavers: Inordinate, are such as observe no certain periods.

CHAP. XII.

Of the Times of Diseases.

The times of diseases.

Such as age is said to be in living creatures, time is said to be in diseases. For as animals are first generated, thence increased, and come to their perfection and state, and then waste, and lastly dye, so diseases have their beginnings, encrease, vigour, afterwards they decline, are lessened, and at length vanish.

Universal.

The times of diseases are two-fold, Universal, and Particular. Universal times are said to be such wherein the course of the whole disease is included; for since there are diseases which have certain intervals, and again new fits, or certain extensions, and remissions; Particular times are limited by the end of the fit.

Particular.

Universal times how many.

The Universal times are four. The beginning, The augmentation, The state, and Declination.

Beginning. Increase.

The beginning is that time, when the morbid matter of the disease is yet crude, and no signes of concoction appear.

The augmentation is when the symptoms become grievous, and the signes of concoction begin to appear in such diseases, as tend to recovery of the sick, or contrary signes in those that are mortall.

Height.

The state is when the greatest concoction is betwixt a disease, and

and nature, and when all the symptoms are most vehement.

The Declination is, when a disease beginneth to abate, being conquer'd by nature. *Declination.*

But all diseases have not these four times, but such as tend to health onely; in deadly diseases, the sick (nature being overcome) may dye either in the beginning, increase, or state, for such come not to the declination, for no man ever dyed in the declination of a disease.

In the same manner Particular times may be limited, and every course hath its fit, which course Remission, or an Intervall follows. A fit hath its beginning, increase, state, and declination, *Particular times.* which Particular times may happen during the Universal times.

The end of the first part of the second Book.

THE SECOND BOOK.

PART. II.

Of the Causes of

DISEASES.

CHAP. I.

Of the Causes of Diseases.

Seeing that nothing can perfectly be known unless the causes thereof are known whither can diseases be avoided unless the causes are shun'd; neither can the same be taken away, unless the causes if they are present, be first taken away: We will now treat of the causes of Diseases.

The sorts of causes.

The Physician treats of efficient cause.

The causes of diseases are four-fold.

The proximate.

The remote

Although by the Philosophers there are rightly constituted four kinds of causes, the Materiall, Formall, Finall, and Efficient; yet here we are to speak onely of the Efficient causes of diseases; for the form, such as accidents have, is already explained. Diseases have not matter unless it be the subject wherein they are inherent; the end also is not since they arise from the want of perfection, and therefore Physicians when they handle the cause of diseases understand the efficient cause onely.

But Efficient causes of Diseases are considered either in respect had to a disease and a body, or absolutely, and as they are things which can take upon them the nature of mortifique causes. If causes as they are referred to a disease, or its effects, they are considered thus; first, one cause is proximate and immediate, another remote. The proximate is that cause betwixt which and the disease nothing intercedes. The remote is that betwixt which and the disease there comes another nearer cause. The proximate (since nothing

can come to pass without a cause) is in all diseases; but the remote is not so.

Secondly, since that of those causes which conduce to the generation of a disease, and indeed such as some matter doth excite, some are neerer, others more remote, and oftentimes there is a long rank of them: Physicians call some causes containing, others antecedent, others primitive.

A cause containing, which is also named consummative, is that which proximately adheres to a disease in a body, and cherisheth it, and which being put the disease is, being taken away, the disease is taken away: so a stone is the cause containing of obstruction of the bladder. A humour in a tumour is the cause of increasing of Magnitude, but a cause containing and immediate, is not absolutely the same, for as much as all diseases have a proximate cause, since nothing can be done without a cause, but they have not all the cause containing; namely, the stroke of a sword is the proximate cause of a wound, but not the cause containing. And those diseases only have a cause containing, which are joynd with matter, and are cherished by it, as tumours, obstructions, putrid Feavers. Yet you are here to be admonished that those things which are here spoken of a cause containing, as also of the differences of other causes, are all spoken of in respect of a disease, defined by Galen, *per dispositionem*, or casually as they say; for in respect of this, not all but some diseases only have a cause containing. But if a disease be defined formally and through impotency, all diseases whatsoever have a cause containing, namely some vitious disposition of body.

The antecedent causes are certain dispositions lying hid in the body which go before a disease, and out of which a disease may arise. For although that be most properly called a cause which doth now act; yet Physicians call those things causes which as yet produce not any disease, so that they may produce them. Antecedent causes are defined not by the act, but by the power of effecting, so some vitious humour which lyeth lurking in the body, produceth not a disease as yet; yet it may generate one, that is called the antecedent cause thereof.

The primitive causes which anciently they called *Prophosis*, are such as move the antecedent in a body, and give occasion that they may become proximate causes; such are watchings, cares, anger, too much exercise, and motion, and such like. But primitive causes and evident are not the same, for every Procatarctick is evident or manifest, but every evident and manifest is not a Primitive, as the sword is the evident cause of a wound, but not the primary; for an

evident or manifest cause is whatsoever produceth a disease in a manifest manner, whether it be immediate or remote, but the primitive can never be the proximate, but always requires preceding preparation of the body, and a nearer cause in the body which it may move.

Nor is the primitive cause the same with the external; for external is only in respect of the body, and every thing which is without the body, after what manner soever, it produceth a disease, it is called an external cause, but Primitive is spoken in respect to other causes, and is that which stirreth up and moveth the hidden causes of the body, either within the body or out of the body; whence Sleep, Watchings, Passions of the mind, and other causes which are in the body, are named primitive, not external.

Thirdly, some causes are evident, others hidden, and obscure: evident and manifest are such as are obvious to the senses, neither is there need of any other signes to know them by. Occult and hidden are such as lurk in the body, and require signes to be known by.

Fourthly, some causes are internal, others external; internal are such as are within the body, external are such as are without the body.

Fifthly, some causes are by themselves, others by accident. Causes by themselves are such as produce diseases by their own proper force and violence, and not by the assistance of other causes; so fire heateth, water cooleth. A cause by accident is when it performs ought by the intervening of another cause, and not by its own force; so cold water by accident is the cause of heat, whilst by its binding, and closing the pores of the skin, the hot exhalations are detained within, which otherwise would evaporate by insensible transpiration.

Also some causes are common, as Air, Meat and drink, when many use them in one place; others are proper which are peculiar to certain men.

Lastly, some causes are positive, others privative; positive are such as by their presence produce an effect like themselves, after which sort water cooleth. Privative are such as by their absence produce an effect like themselves; so heat returning to the internal parts, and leaving the external, is the cause of refrigeration of the outward parts.

3.
Evident
causes.
Occult.

4.
Internall.
Externall.

5.
Per se
By acci-
dent.

Common.
Proper.
Positive.

Privative.

CHAP. II.

Of things which are the Causes of a Disease, and first of
Non-naturals.

Moreover the efficient causes of Diseases considered absolutely, or as they are such; all things are the causes of Diseases, which can hurt the natural constitution, and turn it into a preternatural: and such things are either without the body, or within it.

Things that are without our bodies, are either necessary, and External to be suffered by all, and none can avoid them; or not necessary, Causes. but may be avoided. Of the first sort are those things called non-naturals, and are in number six, Air, Meat and Drink, Necessary, Sleeping and Waking, Exercise and Rest, Repletion and Inani- Unnecessa- nation, and the Passions of the Mind; whereof the four latter are ry. rather to be called evident than external. Things befalling us Non-natu- not necessary, are those that wound us, knock us, or in such ral things. like manner hurt our bodies, which befall us by chance, which are not included within a certain number.

But both those, as well necessary as unnecessary, may be re- Four ranks duced to four heads; those things which are taken in, those which of things. are carried; those that are put out and retained; and lastly, those non-natu- ral. that befall us externally.

Under the notion of those things which are taken, are com- Those prehended Air by breathing, Meat and Drink, and Medicine in- which are wardly taken. taken.

By those things that are carried about, we comprehend all the Which are motions of the body and mind, of what kind soever; such as carried. the perturbations of the mind, anger, grief, joy, sleep, waking, rubbing the body, navigation, the course of our lives, and such like.

By Excretion and Retention is understood whatever is thrown Which are out of the body; such are the Ordure, Urine, all sorts of Hu- retained mors, Seed, Menstruis; for these as those that are emitted, alter and reje- the constitution of the body, belong to those which are called ted. Excretions; and the same when they are detained, are referred to Retentions.

Moreover those things that externally happen to us, compre- Those hend them that encompass us, as the Air, Baths, and those which hap- things that are applyed to our bodies; as Garments and Cove- pen out- rings, Oyls, Unctions, and such like. Lastly, those things that wardly. by force and impulsions befall us, as Wounds, Contusions, and

such like; but since there is no certain number of them, we will onely speak of non-naturals, as they are the causes of Diseases.

Air.

First from the air is made a great alteration, as being that wherein we continually live, and without which we cannot live a moment; for it alters us in a twofold manner; namely, as we draw it in by breathing, and as it encompasseth us, and by the Pores penetrates us, and communicates that distemper which

The effect of hot Air.

it hath to our bodies; for the hot Air heats our bodies, dissolves humours, melts, attenuates, increaseth choler, and whets, inflames the spirits, so begets hot Diseases; for by calling forth and dissipating the natural heat, it weakens the concoction.

Of Cold. Of moist.

The cold Air, on the contrary, cooleth, condenseth, closeth the Pores, thickens the humours. The moist moistens the body, h ageth up superfluous humours, drives out the natural heat, generates crude distillations, especially joyned with cold. But

Of dry.

if joyned with heat, it is the greatest cause of putrefaction. Dry Air dries our bodies, and being joyned with heat, burns them.

The constitution of the Seasons of the year.

First the constitution of the Air depends upon the season of the year, whereof the Spring is temperate, the Summer hot and dry, Autumn cold and dry, Winter cold and moist; and hence several Diseases happen at the several seasons of the year; of

Of Wind and of Situation.

which *Hippocrates* in the third of his Aphorismes, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 20, 21, 22, 23. The winds also conduce to the alteration of Air; so do Countries and Situations,

Pestilent Air.

of which *Hippocrates* 3. Aphorisme, 15, 17. And in his Book of Air, Water, and Places, and it doth not onely affect our bodies with primary qualities, but impresseth in us a malignant and pestilent disposition (if it be infected therewith) and can communicate to us those effects which it hath, and so excite malignant and epidemical Diseases in us; of which is spoken in the doctrine of malignant and pestilent Fevers.

Meat and Drink.

Secondly, Meat and Drink, if either it be taken in too great measure, or be unwholsome, or if any fault be committed in the taking of it, may be the occasion of many diseases. Dyer

It offends in quantity.

then offendeth in quantity, manner of taking it, and quality; for if too great a quantity of meat stuff the Stomach, it cannot be well concocted, but sendeth abundance of vapours to the braine, which offend it, and is the cause of divers fluxes of Rhumes; and when the error of the first concoction is not corrected in the second, that Crudity is the occasion of many Diseases which arise afterwards in the whole body; and as an im-

moderate quantity of meat and drink, is the occasion of many Diseases. So the want of them is hurtful; for thereby the good humours of the body are wasted, and the body dried, 1. *Apher.* 14. In an impute body it stirs up ill humours, whence divers parts are ill affected; for it is hurtful to eat meat whilst any is unconcocted in the stomach: variety of meats is also hurtful.

As for the qualities of meats, those which have in them certain qualities, by which they can alter our bodies, are called medicinal, and they are charged into humours of a like quality with them, and in a sound body cause a like distemper, and in a sick body may introduce an unlike and contrary distemper; to wit, if they are contrary to the preternatural distemper, but if they agree with it, they encrease it. Meats differ not onely in the first qualities, but also in others, nay in the whole substance; some thick, others thin; some much, others little; some cause good Aliment, some bad; of which *Galen* in his books of the faculties of the Aliments, and in his book of good and evil Juice treateth; and we shall speak more in our fourth Book.

Thirdly, sleeping and waking moderately preserve health, immoderately destroy it, 2. *Apher.* 3. For too much sleep hindreth the natural evacuations and excrements, and dulls the heat of the body, and so is the occasion of cold diseases, and principally of Distillations. On the other side, too much waking dissipates the Spirits, dries the body, and whilst the humours are kindled and become acrid, they are of themselves the causes of hot distempers; and whilst they dissipate the Spirits, the native heat is weakened, and the radical moisture is consumed, and by accident are the causes of cold diseases.

Fourthly, there is the same reason of exercise and rest; for idleness and too much rest fills the body with Excrements, dulls the native heat, and renders the body slow and feeble; on the other side, too much exercise dissipates the Spirits, consumes the body, and by consequence cooles the whole body, hinders concoction; the veins and vessels often break, stirs up untimely humours, heats them, and causeth fevers; and especially if the body be full of vitious humours, they being stirred are carried through the whole body, and stir up fevers and other distempers and symptoms.

Fifthly, the affections of the mind make great alterations in the body; for in anger the Blood and Spirits become extream hot, and are hurried to the external parts from the internal, whence

they inflame the whole body, and often kindle Fevers, and raise other Symptomes. Too much joy may so dissipate the Spirits, that it is observed one may die therewith; in fear and trembling the Spirits and heat desert the exterior parts, and fly to the heart, and suffocate the heart; sorrow by degrees dissolveth the Spirits, cooleth the Body, dryes, spoils concoction, causes watchings, and begets melancholly diseases.

Excretions and retentions.

Lastly, those things that are retained in, and sent out of our bodies, are the causes of Diseases; for if the profitable humors be untimely sent out, it debilitates the body, and consumes it; but if the excrements are retained, diseases are bred that are like unto them.

CHAP. III.

Of the internal causes of Diseases, and first of fullness of Blood.

Internal things, the causes of diseases.

Internal things which are the causes of diseases, either are generated in the body according to nature, or are found in the body contrary to nature; those which are generated according to nature, are those three of *Hypocrates*, containing, contained, and doing violence; or as others would have it, solid, humid, and spirituous; those are called preternatural humours, which are found in the body contrary to nature; as stones, gravel, wormes, and all things that are generated in the body differing from natural; whereunto belongeth those things that are sent into the body, and there stick and remain, as darts, bullets of lead, and suchlike.

How many ways.

But these things are made to be the causes of diseases, either as they are in their whole kind, contrary to nature; or as they offend in quantity, quality, motion, or place.

The fault of humors twofold.

The fault of humours in Specie is divided into *Plethorick* and *Cacochimick*; for humours are either apt to nourish the body, or not fit: plenty of the one is called *Plethorick*, of the other *Cacochimick*; for *Plethory* is when blood and humours profitable for the nourishment of the body abound, and are beyond mediocrity.

Plethoric.

This plenitude is twofold, either as to the vessels when blood so abounds, as that the vessels wherein it is contained are stretched beyond their ordinary bigness; the other as to the strength, when there is more blood than the strength can bear; to which *Horatius Augenius* adds this mixt

Plethoric twofold.

of them both, to wit, when there is so great plenty of blood as stretcheth and extendeth the veins, and so great pains, that the strength cannot bear it.

To the vessels.

To the strength.

Chacochimy is an excess of othe: humours besides blood, *Chacochi-* namely, when natural excrementitious humours offend in plenty, *my.* or preternatural excrementitious humours abound, and whilest either these or those putrifie, and bring in a strange nature.

The seat of Plethory is only in the veins; but *Chacochimy* is *Plethory* not only in the veins, but also out of them, and in the whole *and Chacochimy.* body, or some parts, especially the bowels.

But sometimes Plethory and *Cha cochimy* are mixed, whence *Both pure* both are divided into spurious and legitimate; pure Plethory is, *and spuri-* when there is too great plenty of pure blood and humours, with- *ous.* out any vitious ones. Pure *Chacochimy* is, when there is too *Pure Ple-* great plenty of ill humours, and no good blood with them; but *thory.* when good juyce aboundeth, and ill humours are mixed there- *Pure Cha-* with, it is called a spurious Plethory, or *Chacochimy,* accor- *cochimy.* ding as blood and ill humours do more or lesse abound. *Spurious.*

There are many causes of Plethory, as plenty of Dyer sup- *The causes* plies matter to cause it; nourishment of good juyce, and great *of Pletho-* plenty of such nourishment: the Efficient causes are Constitu- *ry.* tion of the Body, and principally of the Heart and Liver, hot and moist, and youthful age, which may be occasioned in the Spring time, and a temperate constitution of the Air, idleness, moderate sleep, a life without care and paines, suppression of accustomed evacuations of blood,

Chacochimy according to the variety of excrementitious hu- *The kinds* mours is manifold; for sometimes phlegm, sometimes cholera, *of Chaco-* sometimes melancholly, and adust melancholly, and sometimes *chimy,* ferous humours abound; of which humours there are again various differences.

CHAP. IV.

Of Phlegm.

THere are divers kinds of Phlegm which are commonly di- *The kinds* vided into natural and preternatural. Natural is a cold *of Phlegm.* and moist juyce, or blood not perfectly concocted; but if *Natural* we rightly observe the matter, this humour is not properly to *Phlegm.* be reckoned amongst the excrementitious humours, because the blood is crude, and may be turned into the aliment of the parts.

Of the preternatural Phlegm there are four kinds, unfavory, *The kinds* sharp, vitreous, salt, *of preter-*

Unfavory Phlegm peculiarly and principally may be called *natural* a Crude Humour, which for want of concoction hath not ac- *Plegm.* quired that perfection which it ought in the stomach; and *Unfavory.* there

therefore can no where in mans body be turned into good substance.

Acride. Acride Phlegm is also crude and called so from the taste it relishes of to them that void it, and proceeds from the defect of heat.

These two kinds proceed from the same causes, which according to greater or lesser power they have of introducing coldness and crudity; so sometimes this, sometimes that kind is generated: such are cold meates, hard to be digested; too great plenty of meat and drink, and taken at unseasonable times, a cold constitution of the stomach, and the adjacent intrails which way soever occasioned.

Salt. Salt Phlegm, so called from the savour, and is occasioned by the mixture of a serous humidity, and a salt with Phlegm: whence it is not simply cold, but mixed with heat and driness; and as there is more or lesse of the salt humour mixed, so is it more or lesse hot.

Vitreous. Lastly, Phlegm is vitreous, so called by *Praxagoras*, because in substance and colour it somewhat doth resemble melted glasse; this is exceeding cold, clammy, and thick.

CHAP. V.

Of Choller.

The kinds of Choller. **C**Holler is threefold, Alimentary, Natural, and Contrary to Nature; but the first is not an Excrement, but the hotter and dryer part of the Masse of Blood, of a different nature, from that which is in the bladder of the Gall. Excrementious Choller is twofold, Natural, and Contrary to Nature.

Yellow Choller. Natural is yellow, and is generated by Nature; and that only is properly called Choller: it is an Excrement of the second concoction, and generated in the Liver, and collected into the Bladder of the Gall; it is generated out of the hotter and dryer parts of nutriment.

Preternatural. Preternatural is that which is not generated in our bodies according to the law of Nature, whereof for the most part we account four kinds; Vitelline, Leekeblade colour, Verdegrease colour, and Woad colour, or a blewish green.

Vitelline. The Vitelline is so called from the yolk of an Egge; it is yellow, hotter and thicker; it is generated of yellow and burnt Choller, whence it is sometimes called roasted Choller: And there is another kind of Vitelline Choller, but not so properly so called, which is neither so hot nor so yellow, which is compounded of Phlegm and yellow Choller.

Leeke-

Leekgreen Choller, so called, because it represents their green-*Leekgreen*
ness, which is often voided with the Excrements of children by
the panch, and is often generated in the stomach by corrupt nu-
triment, and sometimes also in the Veins, and about the Liver,
out of the Vitelline, from the great heat of the Liver, and 'tis of
a venemous nature, and it is hot and very biting, the likest to
Verdegrease.

The *Æruginous* which comes neer to the colour of rusty green-*Ærugi-
nous.*
nish Brasse, is generated out of corrupt aliment, when the heat is
more vehement in the Stomach, in the Liver and Veins from
the inflammation of the Liver, and the too great heat of the
Veins.

Lastly, Woad colour, or a blewish green Choller is more deep *Blewish*
in sence then the Leek colour, and is caused by more adust *Æru-
ginous* Choller.

Aliment hot and dry, affords matter fit for all the kinds of *Causes of*
Choller, and especially sweet and fat things. A constitution *Choller.*
hot and dry, hath regard to the Efficient cause, and those things
that are so it are youth full age, Air that is hot and dry, watch-
ing, anger, too much exercise of the body.

CHAP. VI. Of Melancholly.

THe third is the Melancholly humour, which commonly *Melan-
cholly.*
is distinguished into Alimentary and Excrementitious; but
Alimentary is nothing else then the colder and dryer part
of the Masse of Blood.

The Excrementious is twofold, Natural and Preternatural; *Twofold.*
Natural is that thick and feculent Excrement, which in sanguine *Natural.*
fication which is made in the Spleen, as is above said, is collected
and separated for the generation, whereof much meat conduceth,
'Tis of a terrestrious and thick juyce of every sort, especially be-
ing hardened with salt and fuliginous vapours, old Cherie, Cab-
bage, all sorts of pulse, as Peas, &c. a cold and dry constitution
of all, cares, fear, sorrow.

The black Melancholly which is generated contrary to nature, *Preterna-
tural.*
although it be sometimes also called by the name of melancholly,
yet Physicians for the most part call that Excrement which is na-
turally generated, black juyce, not black Melancholly; but that
which proceeds from adustion is called black Melancholly; and
that Excrement is naturally cold and dry; but this Preternatural
hot and dry, the worst of all humours.

Its kinds.

But adust Melancholly is commonly accounted threefold, One is that which is occasioned by adust blood, and is counted the least; the second is that which is generated of Melancholly humours if they are burnt. The third is that which proceeds from adust colour, which is of all the worst. Hence it is manifest, that although all which can generate Melancholly humours, or yellow Choller, conduce to the generation of black Choller: yet the generation of black Choller, principally depends upon the too great heat burning the humours.

CHAP. VII.

Of the Serous Humour, and of Wind.

*Serous
what.*

AMongst the humours that are the causes of diseases, we are not to slight Serous Humours and Wind; by Serous Humours we sometimes understand all thin humours and watery: sometimes peculiarly we mean not those only which are watery, but have a saltness joyned therewith, which *Galen* calls *A salt serous moisture*: the greatest part of this serous humour turns to Urine, and is ejected by it; yet some part thereof is mingled with the Blood to clarify it, and make it more easie to be distributed: and lastly, through the Pores of the skin, or insensible transpiration, or sweat is emitted. Of this serous humour there is found but small quantity in the Veins in sound bodies; yet sometimes for some causes Preternatural, there is found greater quantity. The matter that breeds it, are Meats that contain much Whey in, and watery juyce in them, much Drink; Obstructions and Distempers of the Bowels, by reason whereof this serous matter is not rightly separated, it is detained and gathered together, because the reins do not draw enough, and by reason of the weakness of the expulsive faculty, and the suppression of its passages by Sweat and Urine.

Its cause.

Wind.

Of humours oftentimes are generated Vapours and Wind, which are the causes of many evils; windy meats afford matter for wind; so doth much drink, especially when yellow and black Choller is spread over the stomach. Also wind is generated from debility of heat, which rusheth out of the abundance of matter, that it cannot overcome it all; and that is such, either simply and in its own nature, or in respect of the matter, from the plenty whereof, although it be otherwise strong enough, it breaks

CHAP. VIII.

Of humours according to the opinion of latter Physicians, and
of Chymists.

Although some Chymists plainly reject these things that have hitherto been said, according to the opinion of the Galenists; and having rejected them, they have in their stead and place put the names of Salt, Sulpher, and Mercury; yet they have no reason for it; for as *Galen* in his first Book of Places affected, and second Chapter writeth, That that which put, we are diseased; and which taken away, we are freed; 'Tis taken for granted by all to be the cause of a disease; but we see the humours being present we are diseased; and being taken away, we are freed; therefore humours are the causes of diseases. Yet this we grant, that humours are not confined to the first qualities, but that they have in them secondary qualities; such are, bitter, acide, salt, sharp, which may offend and hurt the body no lesse then the primary, as *Hippocrates* of ancient Physick teacheth, which he calleth the Powers and Efficacies; also the force and strength of humours. Whence *Galen* also, and other Physicians, call them Salt, Nitrous, Aluminent Humours, which plainly manifest themselves in many diseases, as the Gout, Scurvy, Cankers and others. And so such humours are not to be rejected, but to be explained by the principles of Chymists; and such things as have affinity with themselves: and hence venenare humours bred of poyson and poysonous matter, do not seem so properly to be referred to Choller, Phlegm, Melancholly; although in colour it seems to have some affinity with some of these, yet their nature is far different, and therefore are to be described by their Powers Hippocratically.

The opinion of Chymists about humours.

Venenous humours.

Lastly, of the Melancholly and black humour. It is to be noted, that by it self it is thick, earthy, feculent, or salt, and for the most part 'tis so much moistened by many serous and watery humours, that it becomes like unto Lee, which consist of watery adust, and salt parts; and therefore it is called by some Water.

The Melancholly humour explained.

CHAP.

CHAP. IX.

Of the generation of Stones and Worms.

Besides Wormes there are other things found and generated in the body, which are the causes of diseases: as stones and worms; that Stones for the most part are generated in all bodies; experience and the observations of Physicians do manifest.

Stones.

They are generated of feculent matter, earthy, slimy, muddy, and of moisture apt to putrifie; which when the passages are straiter and narrower in the body, sticks, and of its own accord tends to coagulation and concretion.

Worms.

Wormes also may be generated in most parts of the body, out of corrupt and putred matter, containing in it Seed, or some proportionable principle to Seed, namely, some vital principle.

CHAP. X.

Of the causes of Diseases, of Intemperature without Matter.

The causes of hot distemper.

1. Exercise.

2. Putrefaction.

3. The proximity of a hot thing.

4. Costiveness.

5. Mixtures of a hot thing. Causes of a cold distemper.

Hitherto we have explained the causes of Diseases generally now we will handle them severally. And First, for Diseases of Intemperature: *Galen* accounts five sorts of Diseases of distemperature by heat; Motion of the body and mind, which causes heat by too much stirring of the humours and spirits. Putrefaction which is the cause of heat, because in putrefaction the internal heat, is called forth by the external, and being outward, is more sensibly hot. Hot things touching our body, and impressing their qualities on our bodies. Costiveness of body, and Retention of the hot steame which should passe through our Pores. Lastly, mixture with some hot thing, or hot things taken into our bodies, as Air, Meate, Drink, hot Medicines. *Galen* in his fourth Book of the Causes of Diseases of Distemperature by cold, reckons these. The presence of cold things, the quantity and quality of meats and drinks condensing & rarifying, idleness and immoderate exercise; all which, and if there be any other, may conveniently be reduced into four ranks. For, whatsoever brings a cold distemper to the body, do it either by altering, and by its proper force cooling the body; such are cold things, whether outwardly applied to the body, or taken inwardly, or suffocating the innate heat; such are those things that prohibit the ventilation and blowing of the

fuliginous vapours; or extinguish the heat by their too great abundance, or dissipate the same by overmuch exercise of the body or mind; a hot constitution of Air, and such like; or through want of food, which poverty may occasion, or by letting too much blood.

3. Dissipation

Hence it is manifest, that the causes of hot Distempers when they are in excess, become the causes of cold Distempers; by dissipating, extinguishing, or suffocating the innate heat.

4. Drawing away food.

The causes of overmoist Distempers, may be reduced unto two, the proximity to moist things, or those things that hinder transpiration, and so retain the cold steem of the body.

Moist.

Dry distemper is occasioned by the contrary causes, to wit, by Dry, alteration of drying things, and want of aliment.

Compound distempers are from compound causes; and if the causes of simple distempers are joyned together, there ariseth a compound distemper: yet complication of causes is not always necessary for production of compound distempers; since there are many causes which have in them double qualities, which therefore, if they have equal strength and force, cause a compound distemper; so that the body be so disposed; as it be fit to receive the actions of them both alike.

Of compound distempers.

CHAP. XI.

Of the causes of distemper with matter.

Since every humour hath its peculiar Temperature, and communicates it, and imparts the part which it adheres to, The blood which is hot and moist, heats and moistens; yellow Choller which is hot and dry, heats and dries; Phlegm which is cold and moist, causeth a cold and moist distemper; Melancholly which is cold and dry, causeth a cold and dry distemper.

The causes of distemper, with matter.

The matter which is the cause of distemper in the affected, either is collected by degrees, or else falls on it on a suddain; 'Tis collected either through the error of the Aliment, or default of the part; through the fault of the part it is collected; when either the faculty of concoction is weak, and doth not rightly elaborate the Aliment; and from thence causes excrements, which either the expulsive faculty can expel, or the weaknesse of expulsion is such, that it cannot expel; that too great quantity, or some disease of conformation, and straitnesse of the passages, suffers not the Excrements to be cast forth; But by default of the Aliment the matter is collected, when that is not good, but such

A collection of matter.

such, by reason whereof great store of excrements are generated, or slimy and viscid humours are produced, that the expulsive faculty cannot expel them.

A flux made by drawing.

A flux is either when humours are drawn to a part, or sent to a part. Attraction is principally through heat and pain; not because they draw, but because they afford occasion for humours to flow to the part, to which you may adde, for the supply of vacuity.

Transmission.

But humours flow to the parts affected, though they are not drawn for two reasons; first because the humours collected in the vessels, by their own violence begin to flow into some part, according to its situation, and its respect to the vessels. Secondly, because the parts which have strong expulsive power, tire, or decay in their strength, or quality, or being burthened with plenty of humours; unlade themselves, and lend that which is troublesome to another part; either the whole body sends forth venomous humours, or else some parts.

Yet that there be made a flux, there is required not onely the part flowing, but the part receiving, which is either weak, or apt and disposed to receive fluxions.

CHAP. XII.

Of the causes of Diseases of the whole substance.

Causes of diseases of the whole substance.

Diseases of the whole Body, or of Occult qualities which are in the similar parts, besides diseases of intemperature, are all produced from causes of the whole substance, or acting in a hidden manner; such are all venomous, malignant things, and such as act in a hidden manner: Of such causes some are produced in the Body, some happen to it from without.

Internal.

Those which are in the body are humours and excrements, if they contain in them malignant and venomous qualities, as putrified Blood, Seed, and other corrupt humours.

External.

As for external causes, First venomous and malignant Air. Secondly, Virulent and contagious Diseases. Thirdly, Poyson drunk, or after what manner soever taken into the Body. Fourthly, Poysons which come by the snitings, or bitings of venomous creatures, or some other way communicated to the body externally.

Aire.

Venom is either generated in the Air, or else the Air receives it from some other thing; It receives it from some other thing by malignant exhalations and vapours, from Cattel, Marshy grounds, dead Carcasses, and other such like exhalations. Poyson is generated

generated in the Aire, by reason of its hot and moist constitution, or the occult influences of stars.

Contagion is a Granary, or if you please, an Affect contrary to nature, which is communicated to another body, from a body affected likewise contrary to nature. This Infection is twofold, either by touch, when the body which is infected toucheth that body which is next to it; or at distance, when a body far distant from another, by that which it emits, it infects the distant body.

Poysons taken into the body, are either Plants, or living Creatures, or Minerals, or poysonous Metals.

Poysons which happen externally to the body, are the biting of venomous Creatures, Stroakes, Exhalations, or venomous Unguents and Powders.

CHAP. XII.

Of the causes of Organick Diseases.

NOW for the causes of Organick Diseases, and first the figure of Conformation is vitiated either by it selfe, or by accident.

By it selfe it is vitiated first in the womb, through some error of the formative faculty. Secondly, out of the womb through violent motion, either of those things that happen externally, or those which are with us, or in us, or by the errors of our Midwives, Nurses, or Chyrurgions. Thirdly, by too great repletion and increase, and on the contrary, by Inanition, or Defect of Aliment, and lesning the due magnitude, or in default in number. By accident the figure is hurt, when any parts grow not, as they ought, but another way, through loosening of Nerves, Convulsion, Inflammation, or swelling, a Scyrthus or hard bunch on the Liver, the cutting of a Nerve or Tendon, or by some hard skin growing in them.

Moreover to what belongs to Diseases in the Channels of the Body. Diseases in the Channel, are either in excess or defect; in excess the passages are too much dilated by something, filling them contrary to nature, and stretching them sometimes too much; But straitness of the passages is either from our first formation when our stomachs are narrower then they ought, or by repletion, or when in an *Empyema*, an Impostumation or Ulcer is generated in the breast, and there broken, and flowes, and makes it narrower; or whilest a stone groweth in some hollow part; or by compresseure, when from what cause soever a hollow member

lying

The causes of the figure vitiated, comes

Diseases of the passages.

lying under its Cavity is pressed too close, or by the closing of its outides, or by constriction, when by too much use of binding things the Stomach is contracted.

The causes of Diseases of passages Diseases of the passages since they are in excess or in defect; An *Anastomasis* is caused first by the too great quantity, or the quality of humours irritating the expulsive faculty, or the mouth, of the vessels opening themselves; moreover sometimes by Medicines, and other things which have power to relax and

Diarefis. loosen the mouths of the vessels. A *Devision* is made by some gnawing or cutting cause, such may be sharp humours, or fretting Medicines, either stretching them too much, as too great store of

Diapedesis. humours, or else breaking them, as violent motion, clamours, heavy burthens, knocking. An opening the Tunicles of the vessels is by moistning and rarefying things.

The causes of defect and straitnesse of passages. The causes of the defect of passages, or of narrowness of them are five; *Obstruction*, *Constipation*, *Coalescence*, *Compression*, *Subsidence*. The cause of obstruction is, first, that which is contained in a passage, and is not generated, for such are thick or viscid humours, clots of blood, quitture, hard dung, stones, worms, and too great abundance of humours.

Constipation. The cause of Constipation is hard flesh; as when there is a *Tumour*, the flesh grows in the passage; *Coalescence* its cause when after a wound the walls of the passages grow together.

Coalescence. *Compression* is made by things externally happening which have power by weight and violence, or otherwise to press the passages, and have strength to force them inward, as divers tumours and bones out of joynt, are amongst the internal causes; amongst the external, Bones, Contusions, Strokes,

Subsidence. and such like; *Subsidence* is when the outides of the passages, by too much moisture are made looser than they ought to which some adde *Constriction*, by cooling and astringent things.

The causes of Diseases in the Superficies. The causes of Diseases on the outside, or extremities of the body, are such as make it rough or smooth; rugged things make it rough; so does gnawing things; and such as dry overmuch, as sharp humours, and medicines endued with such qualities, sharp vapours, Wind, Smoak; sharp Meares, things endued with contrary qualities make the body smooth. Moistning things make the body soft, contrary to nature; drying things make it harder, the mixture of black humours, and such as give a tincture, spoyle the clearnesse of complexion.

The cause of Diseases of defect, in number are either from a *Causes of* mans birth; namely defect of matter, or imbecillity of the facul- *Diseases in*
ty; drawing matter, being not able to retain and elaborate the *number*
same, or error of formation: Or else after one is born, by cut-
ting, burning, gnawing, putrefying, and too much cooling, *quibus*
either natural things abound contrary to nature, and that from *quod hinc*
our beginning, the cause whereof is either too great plenty of *quod*
profitable matter, and the strength and error of the formative *quod*
faculty; or after our birth, as is a Membrane, a Tubercle, the *quod*
cause whereof is plenty of good matter, and by it occasion is gi-
ven of breeding an Ulcer; or somewhat contrary to nature a-
boundeth, as Warts, Stones, and such like; the cause whereof *quod*
is peccant matter.

Magnitude is increased contrary to nature, either accor- *Of Mag-*
ding to some dimensions only, or according to all. First, it *nitude en-*
is increased by things contrary to nature; as by wind, as in a *creased.*
Timpany, and a windy Tumour; or by water, as in a Dropic;
or by the falling of one part into another, as when one is bur-
sten. Augmentation is made according to all the dimensions,
by the spreading of humours over all the substance of the body,
which comes to passe either by reason of profitable humours,
which happens to fat people, and in the encrease of certain parts;
or from an unprofitable and Excrementitious, which happens in
divers kinds of tumours.

Magnitude is lessened by weaknes of virtue, and want of suste- *Diminish-*
nance, or by cutting, burning, gnawing, putrefaction, refrige- *ed.*
ration.

Lastly, parts change their places by reason of the loosenesse, or *Of chan-*
solution of unity of those parts wherein they are contained, or *ging place.*
contraction of ligaments, or when they are violently put out of
their places.

The vicinity and connexion for the most part is hurt by the *Of Con-*
same means; namely, if the parts by whose intervening they are *nexion.*
knit together, are loosened, broken, or wounded.

CHAP. XIII.

Of the causes of Diseases of Solution of Unity.

THE causes of Diseases of Solution of Unity, although they are *Causes of*
very many, yet all may be reduced into five ranks; for all *Diseases of*
things that dissolve the continuity of any part, either cut, or *Solution of*
gnaw, or knock, or bend and break, or burn: those that cut are *Unity.*
all sharp bodies, which whether edglings, or wound with the *Of cutting*
point,

- point, as all kinds of weapons and darts, thorns, the biting of living Creatures, and such like. All sharp things erode, as humours, and all sharp, eroding, putrifying, burning medicines.
- Eroding.** Those that are heavy, and great, and blunt, knock, as stones, woods, dashing the body against hard things; which if they happen to a part that can give way to it, they bruise it; if they happen to a hard part which cannot yield, they break it; they knock and break those things that fill the part, as plenty of humours, and store of wind, or they powerfully dry or violently dilate the part, as dancing, and all loud singing, and heavy burthen oppressing, to which belong immoderate cold. Lastly,
- Burning.** hot Irons burnt, and other mettals, and hot and fiery things.

The end of the Second Part of the Second Book.

THE

CHARACTERS

Book. II.

PART. III.

O F

S Y M P T O M E S.

SECT. I.

Of the Differences of Symptomes.

CHAP. I.

what a Symptome is.

THE name of Symptome, although sometimes it be taken generally for every thing which befalls the body contrary to nature; so that both Diseases, and causes of Diseases are comprehended under the notion of Symptomes. Yet Physicians take not this name so generally; But by Symptome understand something different from a Disease, and a cause of a Disease; and so a Symptome is an affect, or accident contrary to nature in those things which are necessary to perform natural actions, without the constitution of the parts, some other thing contrary to nature following: or 'tis an accident different from natural, and changing the natural constitution.

F

The word Symptome.
Its defini-
stitution

stitution of the body, which to perform natural actions, is not necessary; whether the action it selfe be hindered, or some accident contrary to nature in the humours and excrements, or even in the living parts, so that it hinder not their actions; for a Symptome may consist even in the living parts. For example, heat caused by a Bath, or exercise, so that there be not any effect which can hinder action.

CHAP. II.

Of the causes and differences of Symptomes in general.

Its division.

A Symptome of a Disease.

A Symptome of a Cause.

Whether hurt by external means be Symptomes

SO that in respect of the causes, a Symptome is properly divided into a Symptome of a Disease, a Symptome of a Cause, and a Symptome of a Symptome; for they labour in vaine who endeavour to draw all Symptomes from Diseases.

A Symptome of a Disease is that which immediately follows a Disease, no other affect contrary to nature coming between, as when an ill concoction follows a distemper of the stomach, which is called in Greek *Cylofis*. A Symptome of a cause is when the action is hurt, although the faculty, and its organ be well; the faculty being hindered by an external fault, as when the Liver, though sound, cannot languifie, by reason of vitious chyle; they trouble themselves exceedingly here, who endeavour to deduce every Symptome from a Disease, and actions hindred, which happen without a Disease, no way worthy the name of a Symptome, but think them worthy to be called certain natural differences, or imbecilities, since that they are accounted to perform nothing beyond their own strength: but they plainly erre in the matter, for that any worke may be perfected, not onely the agent, and that rightly disposed, but also the patient which receives the operation of the agent, is required: For as in voluntary actions; as for example, in gesture, or lifting of a weight, the businesse is in the free will of man, but that some work may be performed in the body; as for example; Sanguification, Nourishment. It is necessary that the patient be joyned and coupled with the agent, but since the action of him that moves, and the patient moveable is but one motion, and differ onely in reason, as *Aristotle* teacheth, in the second Book of his natural Philosophy, *Chap. 3. Title 23*. Deservedly therefore in natural actions, when that is not performed which ought to be, especially in natural concoctions, all that which either is hurt, or frustrated, is deservedly called a Symptome, whether it be done by reason of the agent, or of the patient; for although

in respect of the agent, it be impotent. Yet some fault doth happen by reason of the patient; and therefore it is the office of a Physician if he will govern a mans body aright, to govern as well the patient, as agent in such actions.

A Symptome of a Symptome is that which follows another preceding Symptome, no other affect contrary to nature coming between. *A Symptome of a Symptome.*

Moreover there is a common division of Symptomes into an action hurt, errors of excretion, and retention, and qualities of Symptomes, namely such as doe not hinder the actions of our bodies. *A division of Symptomes.*

Actions hurt are of two kinds, the one is so called when the faculty is hurt; The other by reason of some external fault, as is said. *Manner of actions hurt.*

When the faculty is hurt, the action is said to be hurt; since the agent is not right, or since the instrument (for the faculties of the mind cannot be hurt) is affected contrary to nature. That the natural constitution of the part, which is the next instrument of the faculty is vitiated, which being spoiled, the mind cannot perform its actions. Again, some divide the faculty hurt into the faculty hurt alone by its selfe, and into certain actions hindred. The faculty hurt by it selfe they say is, when the next instrument which it useth, in performing whereof that action is ill affected: as for example, when the Bladder doth not expel Urine, by reason that the Fibers which are used in expelling, are ill disposed. Again, to the good constitution of the instrument is required not only as above said, constitution of the part, as it is mixed, temperatenesse, and innate heat, but spirits, and influent heat, which being deficient, the faculty cannot rightly perform its actions, as most plainly appears in the senses. But they then say the faculty is hindered, when the next instrument of the faculty is well, yet the faculty is hindered in its action, by some Organick Disease; as when the expulsive faculty in the Bladder will not send forth Urine, though it be well, by reason of obstructions of the Uriters, occasioned by the Stone. *How many ways are actions hurt when the faculty is hurt.*

On the other side, if the agent and instrument are in all respects sound, and they be well constituted; yet neverthelesse for some other cause, which is without the constitution of the part, the faculty is frustrated in acting, and is hindred that it cannot perform its action. The action is said to be hindered by some external error. *Through some external error.*

To external error first belongs the patient or object, betwixt which and the agent, there ought to be a proportion; for if

the patient be not fit to receive the operation of the agent, a perfect action is not brought forth. Hitherto belong all these things by which actions are performed, or without which they cannot be performed, as time, place, and order in some, and moreover the use and necessity of actions.

The cause of excretions, and retentions, and of qualities changed.

The other two kinds of Symptoms, to wit, the fault of excretion and retention, and the qualities changed by hurting of the natural actions, depends on them, and the humours proceeding from them; for from evil concoction proceeds ill excrements: and hence also the qualities of the body are changed, for such as the humours are in the body, such colours, smells, tastes, and such like qualities the body sends forth.

CHAP. III.

Of the differences in general of actions hindered.

The differences of actions. Abolished. Diminished. Depraved.

Moreover of actions hindered, there are accounted commonly three differences; namely, actions abolished, diminished and depraved; an action is said to be Abolished when it ceaseth: to be lessened when nature acts weakly, and imperfectly, and performs its actions either in longer time then is fit, or else never acquies that perfection which it ought, or if there be any other manner whereby it may deviate from its perfection; but an action is said to be depraved as often as it is performed otherwise then it ought to be, and erroneously.

Increased.

But not undeservedly ought we to adde to these; Action increased, which is performed more strongly and violently, then ought to be in its kind; such are too much watchings, strong breathings, and pulsations, much hunger and thirst, and other such like, which exceed mediocrity.

CHAP. IV.

Of the Symptoms of the Natural faculty.

The differences of Symptoms of natural faculty.

But that we may handle the kinds of Symptoms severally, first the Symptoms of the natural faculty respect nutrition, augmentation, or generation; which again have their servants, attraction, retention, concoction, and evacuation, and indeed every action is abolished, or weakened, or made worse, or increased. Whence arise great variety of the Symptoms of the natural faculty,

Nutrition taken away.

First, for what belongs to the action abolished, which they call the third; nutrition is taken away to our senses, or rather

it is diminished in an Atrophy, when it will not nourish well, *Depraved,*
and in leanness either of the whole body, or some parts thereof, but
the nutriment is depraved in a Cachexy, or ill habit of the body,
Itch, Scabs, Leprosie, and such like affects thereof.

Those Symptomes which happen in the first & publike conco- *Symp-*
tion, which is in the Stomach, are first appetite, and truly first *comes of*
when the appetite is dejected; when a man desires not meat, *of the Sto-*
whereunto belongs also daily abstinence from meat. Secondly, *mach.*
appetite is lessened. Thirdly, encreased, as in a *Boulomia,* or *The appe-*
insatiable desire to meat. Fourthly, *Depraved,* as in a *Mala-*
tachia. *tite en-*
creased and

As the desire of Meat, so desire of Drink is either encrea- *depraved.*
sed, diminished, depraved, or abolished. *Thirst.*

Secondly, the Symptomes of swallowing are, when it is taken *Symp-*
away, as when a man can swallow nothing; or 'tis lessened, when *comes*
one swalloweth with difficulty; or depraved, when we swallow *of swal-*
with panting, trembling, twitching. *lowing.*

Thirdly, the fault of the retentive faculty, is when the Sto- *Symp-*
mach cannot retain meat as it ought, or cannot retain it at all, *comes of*
or not long enough, when occasion requires; or offends in all *retention.*
these: the Stomach doth not rightly retain meat, when it em-
braceth it, with panting, or with twitching, or with trembling,
or shaking. If meat be not retained, or not long enough retain-
ed, it turneth into corruption, or is distributed with uncon-
cocted meat, or ejected by ordure, as in a Lyentary. If the
embracing of the meat be weak, swimings, or flatulencies are
occasioned.

Fourthly, the errors of concoction in the Stomach, or the er- *The errors*
rors of the Chyle are Crudity, slow, or dull concoction, or cor- *of conco-*
ruption of the meat. *ction.*

Lastly, the Symptomes of expulsion are Hiccock, mutation in *Symptomes*
the uppermost parts of the Stomach, whereby it strives to put *of expuls-*
and cast out that which is offensive, and sticks in the orifice *ion.*
thereof. *The Hic-*

Disposition to vomit, or loathing, or abhorring of meates is *cock.*
a depraved mutation in the Stomach, when it is streightned in *Loathing.*
the lower part of it, and dilated in the upper, and stirs to cast
forth upwards what offends it, but cannot cast it forth.

Vomiting is a depraved motion in the Stomach, whereby the *Vomiting.*
things which are contained in the Ventricle of the Stomach are
cast out at the mouth of it.

Choller is a depraved motion in the Stomack, whereby the *Choller.*
peccant matter is evacuated by both O:ifices.

Belching. Belching is an excretion of Wind from the Stomach out of the Mouth, with noise.

To the expulsion which is made by this concoction; these **Alimentary.** vitious Symptomes belong which happen to the guts. **Alimentary,** which is a flux of the panch contrary to nature, whereby meat and drink is cast out unchanged.

A Celiack affect. A Celiack affect, which also is a Flux of the Belly, is, when Crude and unconcocted Chyle is ejected.

ADiarhæa. A Diarhæa, is a plentiful and often emission of excrementitious humours by the panch.

A Dysentary. A Dysentary is an avoiding of the excrements of the Belly contrary to nature, wherein the biting matter is cast forth with blood, twitching and pinching of the Guts.

A Tenesmus. A Tenesme, which is an immoderate and continual desire, yet in vain, of going to stool, where nothing is ejected from the body, but a little slimy matter and blood.

A slow panch and shut. The contrary fault is the suppression of the panch when it is dull, and putteth forth nothing in a long time.

An Illiak. To these belong the Illiak, which is, when the dung, which ought to be ejected by the panch, that being closed, 'tis cast out of the mouth with the meat.

Symptomes of Sanguification. For the other publike concoction, which is made in the Liver, Sanguification is either abolished, when for the most part there is no change of the Chyle, and in stead of good blood, serous, and Petuitous is generated, or else it is diminished, when halfe raw blood is elaborated; or it is depraved, when hot and adust blood is generated.

Symptomes about making Water. The Symptomes which belong to the evacuation of the excrements of the second concoction, are, an Iscury, or suppression of Urine, or stopping of Water, or a Dusury, or difficulty in making Water, a Strangury, or dropping of Urine, when it comes away drop by drop, and that there is a continual irritation to expel Urine.

Iscury. **Dusury.**

A Strangury. Incontinence of Urine, is when it goeth from us against our wills; **Diabetes.** or plentiful making Water, is when whatsoever is drunk cometh away by Urine, not changed at all, or altered very little.

Urin. Hitherto belong the Symptomes which belong to the generation of milk, when too much, or none, or not enough is generated, or it proves scurvey, and is coagulated and curdled.

Generat. Hitherto we refer the Symptomes, which belong to the other **Flux of** concoctions, as the running of the Reins, suppressions of **Months.** courses

Courses, diminishing, dropping, flowing in too great plenty, the Flux of the Womb.

Increasing is hindered, when either the whole body, or some Symptoms part is not increased enough, and ceaseth to increase before it of encreases to its just magnitude, or it encreaseth too much, and *sing.* grows to too great a bigness.

Lastly, there are some hurts of the generative faculty, for ge-Symptomes-
neration is either taken away when no Children are generated, of genera-
or diminished when few and weak ones are begotten, or depraved tion.
when Monsters, or a Cripple, or any way an imperfect thing is
begotten: and because to the generation of mankind, there is re-
quired male and female joynd; hitherto belongs impotency
in men, extinction of lust in women, barrenness and other
Symptomes of this kind.

CHAP. V.

Of the Symptoms of the vital faculty.

FOR the Symptoms of the vital faculty there is a palpitation *Palpitation*
of the heart (a *Lypothymy*, or an absence of Spirits for a short *on of heart*
time) or an *Aphyxy*, or no Pulse. Palpitation of the
heart is when there is a depraved motion of it, swifter then it
ought to be, when the heart leaps and strives to fly from that
which troubles it.

A *Lypothymy*, or want of vital spirits is when the Pulse beats *A Lypo-*
swift on a sudden, and then ceaseth to beat at all, or is suddenly *thymy.*
taken away with a small, slow and weak Pulse, to which some add
an *Eclusie*, or absence of the vital soule.

A *Syncope* again is a motion depraved, when the Pulse is *A swoon-*
much lesser, slower, and weaker then a *Lypothymy.* *ing.*

An *Asphuxy* is a total absence, as it were, of the Pulse, and *Absence of*
the highest degree of swooning, and nearest to death: of the other *Pulse.*
preternatural differences of Pulses we will speak in another
place.

Respiration, which is caused by the heart, either is wholly ta- *Respirati-*
ken away, Which Symptome the Greeks call *Apnoia*, or is de- *on hurt*
praved, which they call *Dyspnoia*; besides these, the respiration *Taken a-*
is either too great, or too small; too often, or too seldome; too *way.*
swift, or too slow; equal, or unequal. And lastly, of swift and *Depraved.*
slow breathings, there are some differences, according to more *Shortbrea-*
and lesse; for the first degree is a *Dusopme*, the second is an *thing.*
Asthma, the third is an *Orthopnie*, when the sick are forced to *Shorter.*
sit upright to breath. *Shortest.*

Of the Symptoms of the external senses.

Symptomes of sight. **F**OR as much as belongs to the external senses, first of the sight, that either is wholly lost, as in blindness, & the Disease called *Amagrosis*, or it is diminished in the disease, which is called *Ambluopia* and dimness of sight, or *Muopia* which is to see as Mice do; that is, to discern objects which are near us, and seeming less to us then they are. *Nutolopez* is when any one sees well by day, but very bad in the evening and not by night, or the sight is depraved. When these things which are white seem red, or yellow, those things which are strait, crooked, those things which are whole, seem halfe, and perforated, those things which are single, double; when Cobwebs appear before the eyes, and Flyes, and Gnats, when shinings and glistnings appear, which the Greeks call *Marmarugase*.

Depravation of sight.

Symptomes of hearing.

The hearing is either taken away, which disease is called *Deafness*, when the diseased can neither hear a great nor small sound, or it is diminished when loud sounds are heard, but with difficulty, small sounds not at all; which disease is called hardness of hearing; the Greek name *Barucoia*, *Ducecoia*, *Hypocophosis*; or it is depraved when there is a hiding in the ears, which disease the Greeks call *Ecos* and *Sorigmos*, i. e. a hiding, a whistling, a hissing.

Symptomes of smelling

The smell is hurt when it is abolished, diminished, or depraved; when things seem to stink, have in them no ill smell.

Of tasting.

Moreover the taste is either plainly taken away, or else diminished or depraved, when a thing seems to taste otherwise then it doth.

Of feeling

The touch is either wholly lost and can feel nothing, or is diminished, which is called *Numness*, or 'tis depraved, as in pain, or itching, hitherto also belongs want of sense in the teeth.

CHAP. VII.

Of the Symptomes of the Internal senses.

THe Symptomes of the Internal senses are watchings and sleepings; when either of them are contrary to nature; as likewise dreams; the error in watchings are when men either sleep not at all for a long time, or if they do, they sleep too little. *Symptomes of the common sense. Too much watching.*

Sleep is opposite to watching, if it be too much, which comes to passe when it is natural, but not absolutely such; but longer either from the repletion of the head by vapours, and exhalations, as in drunkenness, or by the consuming of the heat and spirits through too much labour. *Too much sleep.*

But preternatural sleep is such as doth proceed from a morbid cause, which is a *Cataphora*, or a *Coma*, that is, a diminution of the action of the common sense, which, as it were, wreathes; neither suffers the Animal Spirits to be diffused into the external senses; nor being entertained by them, doth know, and judge aright of other objects. A *Coma* is two-fold, *Coma two-fold.* somnolent and vigilant; somnolent is that which is oftentimes called an absolute *Coma*; with which disease those that are affected, the eyes being shut, do sleep sound and too much: but a *Vigilant.* vigil is when the sick have a propensity to sleep, yet nevertheless they cannot; but onely shutting their eyes and winking, they are possessed with too great a desire of sleep.

In sleep there oftentimes happens dreams, wherein the action of the phantasia doth concur; for dreames are nothing else but the deliriums of the brains of sleepers, although dreams happen to those which are well, yet contrary to custome, they often remain longer, and during the whole night, or are terrible, and trouble the mind exceedingly, and bring great anxiety in sleep, and wearisomness when one is awake. *Dreams.*

To this kind of Symptomes belongs an extasie, and that natural, which is nothing else but a heavy sleep, with heavy dreams, and hence so sometimes cometh a *delirium* therewith. *An Extasie.*

As also the affects of Sleep-walkers, who whilst they sleep, arise out of their beds, walk, and perform certain works, as walking people do, at that time when they ought to rest; yet if the imagination be together offended, these Symptomes may be referred to that rank wherein many internal senses are hurt. *Sleep-walkers.*

Whether the Phantastic, and reasonable faculty be always hurt together. As for whar belongs to the offending of the rest of the Internal senses, sometimes one of them is offended, sometimes many together; for the most part the Phantastic and Ratiocinativa are offended together, yet not alwayes; for although the understanding be busied about Phantasms, yet the understanding acting, illustrates the Phantasms, and frees them from their supposed matter, and runs from one thing to another, and is busied about the *Idea's* retained by the memory, by which the error of the Phantastic may often be known, sometimes also the memory is together offended; yet sometimes remains safe from the errors of the phantastic, and the reasonable faculty.

The Memory abolished and diminished. But those actions are either abolished, or diminished, or depraved; nevertheless the memory whose office it is not to judge, but only to receive representations, may be so much debilitated and abolished, namely when it does not receive, and retain those things which it ought, or it receives nothing, and retains nothing, and so a man forgets all things: it cannot be depraved, but if sometimes it receives and retains false objects that is not to be ascribed to it, but to that faculty which discovers absurd and false representations, the memory seems then to be depraved to some, when it doth not render things in that order which it received them, but errs in order; but this seems to happen onely by reason of the weakness of the memory.

The Phantastic, and rational faculty diminished and abolished. The principal actions are abolished and diminished in the imbecility and dulness of the mind, slowness of the Wit, stupidity, when a man hath a certain knowledge of the chief things, and draws some conclusions from them, but with great labour.

The greatest fault, and the greatest hurt of the Phantastic, and Ratiocination, yet without *delirium*, is fatuity.

Folly. Foolishness. Madnes. But when a man is so destitute of all ingenuity, and the phantastic and Ratiocination are so hurt that they can neither know the first principles, and can beget no conceits, it is called foolishness, and madness; especially if the action depraved concur, and a man judgeth not only a little but false.

A Delirium. But the imagination and reasonable faculty is depraved in *deliriums*, whereof there are several kinds; for a *delirium* is either with a Fever, or without a Fever; with or without a Fever, is either simple, *viz.* A moderate *delirium*, and without madness stirred up by hot vapours in a Fever, or by watching, or drinking too much Wine, which the Greeks call *Paraphrosune*, or *Paraphroa*.

A Frenzy is with a Fever, which is a continued *delirium*, arising

arising from the inflammation of the Brain and its Membranes.

But a *delirium* without a Fever is Melancholy, and madness; Melancholy is a *Delirium* without a Fever, with sorrow and sadness, as it is commonly defined; or a failing of the Phantasie and reasonable Faculty about one certain thing: and indeed the Phantasie is principally offended, but the reasonable Faculty not always nor in all, but the memory for the most part is safe.

To melancholy *Deliriums* also is referred Mad Love, wherein concur various passions, now they conceive joy with hope of obtaining the thing beloved; where they do many things, and speak beyond decency, and now sorrow and anger when they despair of obtaining the thing beloved. *Mad love.*

Madness is a *delirium* without a Fever, with Fury, Fear, Audacity, Anger, Quarrels, and Ferocity. *Madness.*

To madness are referred Wolf-madness, Dog-madness, Badger-madness, fear of Water, viz. a Disease wherein if one be bitten with a Dog, a Wolfe, a Badger, or any other ravenous Animal, he becomes altogether averse to all liquid and potent drinks, although as for other things, they do not shun them; also those that are bitten by a *Tarantula*, leap and dance, and a *Corea* or company of *S. Viti*, which is a kind of *delirium* and madness, with which those that are affected strive to dance night and day.

CHAP. VI II.

Of the Symptomes of the motive Faculty.

A Nimal motion is either abolished, diminished, or depraved; motion is abolished, not onely in the Palsey, which is impotency of motion, wherein the next instruments of motion are relaxed, and ceased from their action, and are not contracted, but cannot be moved by reason of putting out of jeyat, fractures of bones, wounds of the muscles, dryness and induration of the parts serving for motion. It is diminished in the green sickness, or in laziness when the motion is become weak. *Symptomes about motion.*

It is depraved in trembling, which the Greeks call *Tremos*, wherein the part cannot move freely, but is now elevated, and anon depressed: for although in respect of the motive faculty, trembling is onely imbecility of the motive faculty; yet because the motive *Palsie.* *Lassitude.* *Trembling*

tive faculty doth not wholly faile, but the member which contrary to the dictate of the will is depressed by its own weight, it endeavours in some measure to elevate it selfe; here is made a depraved motion, where in the smallest intervals of time the member is lifted up, and depressed in a continual course.

**Kinds of
Convulsion
fits.**

As also in the Convulsion, which is a preter-natural contraction of a Muscle, towards its beginning, contrary to the will; and a violent stretching out of the part, into which a Tendon is inserted. A Convulsion is either Universal or Particular, Universal is three-fold, *Emprosthotonos*, i. e. when the Neck and the rest of the Body is bowed forward, so that the diseased cannot set himselfe upright. *Opisthotonos*, when the body is bent backward. *Tetanos*, when the body is so stiff that it cannot bend any way. A particular Convulsion in regard of several particular parts, hath divers names, *Aspasmos Cynicus*, a Convulsion of the Muscles of the Mouth. *Trismus*, a Convulsion of the Muscles of the Jaws, with grating and grinding of the Teeth. *Strabismus*, a Convulsion of the Muscles of the Eye.

**Convulsive
motions.**

To these belong Convulsive Motions, wherein is made a Contraction of the Muscle towards his beginning, but continues not in one difference of Location; but it happens with various concussions and agitations of the Member, as in an Epilepsie.

**A Palfie.
Cramp.
Complicate
Voice hurt.**

Sometimes also a Palfie and a Spasme are complicate, so that by changes and turnes they afflict, and so the part is sometimes contracted, and sometimes dilated.

**Hurt of
Speech.**

Hitherto is to be referred the error of the voice, which either is abolished, as in *Aphonia*, or dumbnesse, or diminished, as in an inward and oblique, or small and low voice, or it is depraved, being broken in a shrill, sharp, hoarse, or trembling voice.

The speech also is hurt, which is either taken away, as in those which are called mute, or else it is difficult, as in those who pronounce certain Letters, especially R, with great difficulty; or it is depraved, as in those who in speaking now stop, and anon precipitate their speech, which evil, the Greeks call *Traulotes* and *Psellotes*, the English, *Stammering*.

Amongst these errors of Motion, those Symptoms are to be reckoned wherein the natural expulsive Motion, being stimulated by a preternatural cause, ariseth up to expel; it cannot perform motion without the help of the animal vertue, and Organ, such as are a cough, sneezing, yawning, quaking, stretching.

A Cough.

A Cough is a depraved motion, and vehement efflation occasioned

sioned from the sudden constriction of the Lungs, and Brest, whereby that may be expelled, which was troublesome, and be sent forth by the instruments of breathing.

Sneezing is a motion of the Muscles, primarily of the Brain, *Sneezing*, secondarily of the Brest, and inferiour Muscles, whereby that may be expelled, which is troublesome to the Brain.

Yawning, or Gaping, is that motion whereby nature endeavours to expel the flatucus vapours by breathing them out of the mouth. *Yawning*.

Stretching is a distention of the members in the whole Body, *Stretching* discharging the vapours in them.

Shaking fits, that is a concussion of the skin of the whole body, *Horror*, to shake off some troublesome thing.

Cold fits, that is a shaking of the whole body, to put off that which offends it. *Cold fits*.

CHAP. IX.

Of the Symptoms wherein all, or most part of the animal actions are hurt.

But sometimes it happens that either all, or most of the animal functions are offended together: amongst these Symptoms, a Vertigo is the first, the Greek *Dinos* and *Iliggos*, 'tis such a mischief, and depravation of the imagination, sometimes of the common sense, that all things seem to run round in a circle, and for the most part, the motion is so hurt, that a man falls down. Sometimes the external senses are affected likewise, which if it happen at the same time, the eyes are obscured by a fuliginous mist; the Greeks call it *Scotoma*, and *Scotodinos*, i. e. a shady disease. Sometimes the hearing is somewhat depraved, or some certain swimming ariseth, or some other senses are affected.

Moreover an Incubus, or a riding of the Mare, or an hindrance of breathing, and interruption of speech, and hindrance of motion, as it were, an oppression of the body, with a false dream of a weight lying upon the brest.

A Lethargy, which is a perpetual desire of sleeping, with a giddinelle of the head, with forgetfulnelle of all things, or it is a continual *Delirium*, with a weak Fever, heavynesse to sleep, and destruction of memory.

A Carus, which is a profound, or dead sleep, wherein the sick hear not, and being pricked, scarce perceive it, or a deep sleep

A Vertigo.

An Incubus.

A Lethargy.

A Carus.

with diminution, or taking away of sense, motion, and imagination, the breathing being gone.

5.

A Catoch.

A Catoch, or Carolepsis is a Diminution of the principal functions, or external senses, especially of feeling, and voluntary motion by abolition; or 'tis a sudden apprehending, whereby those which are affected being stiff, remain in the same place and gesture of body as they were in when they were taken, and opening, and not moving their eyes, they neither see nor hear, nor perceive; the breath and pulse only remaining safe.

6.

An Epeleptic.

An Epeleptic is an ablation of the principal actions, and of sense and voluntary motion, with a preternatural Convulsion, or Convulsive motion of the whole body.

An imperfect Epeleptic.

To the Epeleptic also are referred certain Diseases, as it were, small Epeleptics, wherein the sick are not velified in the whole body, neither do they fall down, but some parts only are twitched, as either the head is shaken, or the eyes are drawn, or the hands and feet are snatched this way and that way, or the hands are held shut, or the diseased is turned round, or runs up and down, and in the mean time speaks nothing, hears nothing, perceives nothing.

An Apoplexie.

Lastly, an Apoplexy, which is an abolition of all animal actions, to wit, of motion and sense, in which the whole body, with the hurt of the principal faculty of the mind, respiration after a sort being safe.

CHAP. X.

*Of the Symptoms of the changeable qualities of the Body.**The difference of qualities changed.*

THe second kind of Symptoms are those which consist in a simple affect of the body, or the qualities of the body changed; namely, when some natural quality of the body is changed, by reason of which change, there follows no hurt of the actions; their differences are to be sought out of the number of the external senses.

Colours changed.

The visible qualities changed are colours contrary to nature, either in the whole body, as in the yellow Jaundice, or in a *Cachochymy*, or ill habit of the body, or in some part, as in the Face, Tongue, an inflammation, black Teeth, yellow Nails, and such like.

Smells changed.

Smells contrary to nature are changed, when a man breaths forth

forth an ill smell, either out of the whole body, or from some part, as the Mouth, Nose, hollow of the Arm-pits, or soles of the Feet.

Tastes or Savours are changed when the spittle, or any thing else which swims in the Mouth is spit out, and gives a sharp, salt, bitter, or other taste; but since these qualities are not the parts of the Body, but Excrements; they may be more fitly referred to the third kind of Symptoms.

To the fourth belong Tactil qualities onely, as they are contrary to nature, and troublesome, but do not hinder actions, as Heat, Cold, Softness, Hardness, Hoarseness.

To Hearing may be referred, sounds, warbling, crackling, grinding of Teeth, and such like, which are perceived by hearing.

Lastly, hitherto are to be referred common sensible things, as Figure, Magnitude; if they are preternatural, and all those things which are spoken of in the Hypocritical Face, and are described in his First Booke of Prognosticks.

CHAP. XI.

Of the Symptoms of Excretions and Retentions.

THe third sort of Symptoms comprehend the errors of those things which we ought to be cast out of the body, or use to be retained in it, contrary to nature; in which kind of Symptoms regard is not to be had to the excession it selfe, or action of casting forth, whose faults are the Symptoms of actions hurt, but onely to the matter which is cast out, which as it recedes from the natural state, constitutes this or that sort of Symptoms.

Retentions and Excretions offend either in the whole substance, or in quality, or in quantity. First, in the whole substance they offend, which ought never to be found in the whole body, in the stead of an Excrement; such are Stones, and divers sorts of Wormes, little Hairs, and such like. Secondly, those which in their whole substance are not contrary to nature, but are cast forth in this or that manner, or place, contrary to nature; such are the Courses out of the Nose, Eys, or Tears, the Ordure by the Mouth. Thirdly, those things which are plainly natural, yet ought rather to be retained then evacuated, as too much profusion of blood by the Mouth, Panch, Nose, Bladder,

Pores

Pores of the Skin, which happens in a bloody sweat. To these belongs particular ejections out of the Lungs, and other parts. In quality they offend many wayes, in heat and cold, moisture and drinesse; In colour, smell, and taste, in quantity, excretions offend, when either more or lesse then ought to be cast forth, which often happen in the dregs of the Panch, Urine, and Courfes..

*The end of the third Part and first Section;
of the second Book.*

THE

Book. II.

PART. III.

SECT. II.

OF THE

CAUSES

OF

SYMPTOMES.

CHAP. I.

Of the causes of the Symptomes of the natural faculty.

Sithence we have reckoned all the differences of Symptomes, order now requires that we may shew their Causes in the same order we have set down them; and as for the Symptomes of the Natural Faculty, amongst them the first is *Atrophy*, or want of nourishment; and that is either in the whole, or in some part. Atrophy in the whole is occasioned through the debility of the faculty, or default of the nourishment; the vertne is weakned through a

dry distemper, and sometimes hot, which principally proceeds from the Heart, labouring with the like distemper, as in Hecticks, and other Fevers; yet sometimes from the defect of other parts which may communicate their affects also with the Heart, diseases may perform the same. Atrophy is occasioned through defect of Aliment, when either it is not communicated in sufficient quantity, or when it is affected with some ill quality: 'Tis wanting when too small a quantity is received, or although sufficient quantity be taken, yet 'tis not concocted through the weaknesse of the bowels; or being concocted, 'tis not distributed by reason of the narrownesse of the Veines about the Liver; or it is dispersed, or not conglutinated, by reason of distempers of the parts, especially hot and dry. Atrophy is made through the pravity of nutriment, when ill blood by reason of the distemper of the bowels is generated, especially hot and dry, and not so profitable. Atrophy is in some part whilst its force is weak, through cold distemper and defect of native heat, or through want of nourishment, by reason of the straitnesse of the passages, by which it should be communicated to the part, or occasioned by what cause soever.

In part.

The cause of ill habit of Body.

The immediate cause of depravation of nutrition, and of ill habit, is vitious and raw nourishment in the bowels, appointed for publike concoctions, arising from the vitious disposition there; to which sometimes a cold and moist distemper, and habit of the body is added.

Of the scab, leprosie, &c.

The Scabs, the Leprosie and other known cutaneous diseases have their original from ill nourishment, but not crude, but sharp, salt nitrous, or having some other pravity which since it is various, various diseases from thence do arise.

The cause of the appetite taken away and diminished.

But amongst the Symptoms which happen to the concoction which is made in the stomach. The first is when the appetite is hurt; and the reason of abolishing or diminishing of the appetite is, because either little or no juice is made, or else is not perceived; juice is not made, or very little is made, when many crude and watery humours compress the mouth of the stomach; or the chyle hitherto sticks in the stomach, or because aliment abounds in the body, which may be when it is not evacuated, by reason of the thicknesse of the skin, or idlenesse, or weak heat, or because it is not attracted, through some distemper of the Veins, or straitnesse of the Meseraick veins, and of the hollow Vein of the Liver, or because concoction and distribution is hindered in the stomach. The sucking is not perceived either through the error of the sensitive faculty, when the animal spirits which

which should flow are deficient, or when the action is converted another way, as in such as are out of their wits, or when the nerves of the conjugation are defective, or when the mouth of the stomach is ill with some distemper, as swelling, or ulcer, or by the dulness of the stomach occasioned by some stupefactive Medicines,

Hitherto belongs the daily abstinence of those men who abstained not only some dayes and months, but years also from all meats; of which wonderful Symptome, although it be not easie to render a reason, yet it is probable that all such had not need of restoring, and that because nothing is taken away, or not in a long time wasted, because of the humours which preserves our bodies, is so disposed, and proportioned to the heat of the same, that it could not be destroyed by it.

On the contrary, the cause of the encrease of the appetite is too much sucking, which comes to passe either from some humour sticking in the stomach; such is Melancholly, which by its sharpnesse and austerenens binds the stomach, or through want of nourishment, which happens by reason of Wormes, which consumes the Chyle, or by too much labour and exercise, watchings, long fastings, evacuations of blood, vomiting, or from some old distemper, binding the stomach.

But the appetite is depraved by a vitious humour peculiarly corrupted and fixed to the Tunicles of the stomach, which is either generated in the stomach by ill food, or else flows from some other part, especially the Womb, into the stomach.

Thirst is abolished, or diminished, either from cold, sweat, unsavory, petuitous, aqueous, many humours generated in the stomach, want of meat and drink, or flowing from some other parts, continually moistening the stomach, or because the stomach doth not perceive its want of drink, as it often comes to passe in Frensie and burning Fevers.

Again the Thirst is encreased through want, and driness of humours, which proceed from those things which have drying faculties, and such as consume the primogenial humidity of the stomach; such are all drying and heating things, as hot humours, sharp and salt, a hot and dry distemper in the mouth of the stomach, proceeding either from the whole, which is in Fevers, or in some part neer to the stomach, which either sends hot and dry vapours and humours to the stomach; or by reason of the communion of the Tunicles and Membranes which cover the stomach, the orifice of the stomach, the Wind-pipe, and the neighbouring parts, communicating a hot and dry distemper

The cause of daily abstinence.

The cause of the appetite encreased.

The cause of diminishing of thirst.

Of encreased.

to the Orifice of the stomach: external causes which are evident perform the same as those which have a power of heating, drying, and consuming the humidity in the Orifice of the Ventricle.

*Vitious
thirst.*

Vitious thirst is caused by some vitious humour in its whole kinde contrary to nature, sticking in the mouth of the stomach,

*Of swallow-
ing
hurt.*

The swallowing is hurt either when the faculty is offended, or through some external error; and indeed the faculty either natural, or animal may be hurt: the natural is hurt whilst either the attractive faculty cannot draw meat through the strait fibres of the internal Pannicle into the parts; or the expulsive through the Transverse fibers inserted into the external Tunicle, cannot thrust food which is drawn into the mouth of the stomach, farther down into the stomach; which is caused through the relaxation of the fibers of the Orifice of the stomach, by reason of a cold and moist distemper, when the matter flows from the head to the chops; or by reason of their driness occasioned by some Tumour, Ulcer, or Excoriation.

The animal faculty is hindered when the Muscle which is before the gullet, either is inflamed, which use to be in the Quinsie; or 'tis contracted either by Convulsion, or Palsie; it is hindered also by reason of the straitness of the entrance into the stomach, which proceeds from divers causes, as Tumours in the Throat, Relaxation of the Vertebraes of the Neck, and Back: external things being swallowed, as when Fish-bones, Pins, and other things stick in the mouth of the stomach, as also Wormes.

The swallowing is hindered by some external error when any thing, hard, dry, sharp, rough, viscid, or ungrateful is swallowed.

*The causes
of Reten-
tion of
meat hurt.* The retention of meat swallowed is hindered, when it is abolished, diminished, or depraved. Retention taken away and diminished proceed from the same causes, the one from the greater the other from the lesser: and this comes to pass if the Retentrix be weak. The Oblique fibres loosned by a cold and moist distempers, or if any Tumour, as an Inflammation or Ulcer be present. The cause of windiness in the stomach, is windy meats, and a stomach not cold enough, but the cause of floating with a noise, is when the stomach is freed from that which might be turned into wind, yet still remaining full of drink, or extremely cooled.

*Of Palpi-
tation.*

But the retentive faculty is depraved when the stomach doth not rightly infold the meat, and indeed a Palpitation with heat.

floating and noise happens through the weakness of retention and thick winds pen'd into the stomach, which arise either from the *Of Con-* causes of crudity, or from flatulent meat, or yellow, or black *vulsion.* choller spread over the stomach; But a constriction, and a certain sighing, or Hiccock happens, when after emptinesse and defect of aliment, the stomach too violently contracts it self, having newly received meat.

Trembling is caused by the imbecility of the retentive faculty *Of trem-* from a cold distemper, and the wait of the meat oppressing: *bling.* and a certain Quavering when the Ventricle is molested by any *Of Shak-* biting thing, especially choller. *ing.*

For as much, as what belongs to the concoction hurt, is ei- *The cause* ther abolished or diminished in the stomach, they both proceed *of abolish-* from the same causes, they onely differ according to Major *ing and* and Minor, and the concoction is hindered, either primarily and *diminish-* by it selfe, when it cannot do its office without the hurt of the *of con-* rest of the faculties. Or secondarily, and by accident, when it *coction in* is vitiated by the retentive or expulsive faculty. For unless *the sto-* meat can be retained so long as it ought. The concoction cannot *mach.* be rightly performed. The concoction is hurt by its self, either *Faculty* when the faculty is hindered, or by some external error, the fa- *hurt.* culty being hurt is hindered through some distemper of the sto- *External* mach, from what cause soever ariseth, or other diseases of the *error.* stomach, tumours, ulcers, and such like which hinder concocti- on; the concoction is hindered through external errors; first, by reason of Excrements, which if they abound in the stomach and offend with cold, they are the cause of abolition, and diminution thereof. Secondly, by meats which offend either in quantity, or else divers and various kinds are taken, or in quality, if the meats are cold, or hard, and clammy, and hard to be concocted. Thirdly, by reason of the time of taking food; namely, if meat raw betaken, before it is boyled. Fourthly, after the taking of meat, if a man watch the whole night, or sleep very little, or exercise himselfe violently, or suffer the passions of the mind.

The corruption of meat is two-fold, the one nitrous, the *Depravol.* other acide; the nitrous hath its beginning from a hot distemper of the stomach, the chollerick excrements being collected in the ventricle by hot aliments which are obnoxious to corruptions; such as are sharp, oily, pinguious things, Milk, Mustrooms, garden Fruit, and such like; but crudity produceth acidity, through the cold distempers aboundin; with cold aliments; cold, pituitous, and melancholy humours in the stomach.

We have said the Symptomes of the expulsive faculty of the stomach, are Hiccock, Loathing, Vomiting, Choller, Belching.

Hiccock.

The immediate cause of Hiccock is something troublesome to the superiour part of the stomach, especially to the Orifice thereof, which it endeavours by that motion to put away and expell, but the causes which trouble the stomach on this manner, are either in the Stomach it selfe, or in the parts which can draw the Ventricle by consent. The cause of Hiccock in the Stomach it selfe, is matter either oppressing by its plenty, or offending in quality, as sharp meats, and biting, and such like humours, sharp medicines, malignant and foul vapours, either generated in the stomach, or sent thither from elsewhere, Worms, an immoderate cold distemper, and those things which outwardly press the stomach, which may happen by the pressing and bending the extremities of the ribs to the stomach. But Hiccock by consent happens when the nerves of the sixth conjugation suffer together, in an inflammation and percussio[n] of the braine; as also inflammations of the Midriff, the Lungs, the Liver, the Gullion.

Causes of loathing and vomiting.

Loathing and Vomiting have their rise from the same causes differing according to Major and Minor, either in the stomach it selfe ill affected and weak, or from something contrary to nature, tearing the stomach. The stomach is ill affected by a cold and moist distemper; or by conformation thereof, or by a certain native straitnesse thereof, by reason of drynesse and leanness, swelling an Ulcer, whereunto belongs frequent vomiting, which indeed it selfe disposeth the stomach to more frequent vomiting: as also the shutting of the inferiour Orifice of the Ventricle by some tumour, as an obstruction also of the Guts and mesentary, and inverted motion of the fibres of the Guts. The diseases called the Chollick and Stone, by the communion of the Membranes; and lastly, wounds and hurts of the Braine and its Membranes. But the matter which Irritates the stomach to expel, either loading it with its plenty, or twitching it with its sharpnesse, or mollifying the superior Orifice, or by stimulating it with a malignant quality it coth it; whether it be meat and drink, or medicines, poysons, worms, blood, quittance; choller effused into the stomach, which happens to those which have a vitious implantation of the Pores of the Vessel that carries the Choller into the bottem of the stomach. The evident external causes are too much exercise of the body, and the sight of loathsome things.

The cause of Choller is offensive, and sharp matter irritating *Moist* the expulsive faculty of the stomach by its plenty, and its quali- *Choller.* ty to expulsion, and stimulating it to evacuate, upwards and downwards. Such is Choller collected about the Liver, Pancreas, and parts adjacent, also sharp adust humours, salt, nitrous, and other peccant humours bred of corrupt food, as Mushrooms, Garden-fruits, and such like strong purging Medicines and Poysons do the same, and stir up this matter.

As for the difference betwixt the other Choller and this, *Dry Chol-* which we have newly explained; that is dry, this is moist, the *ler.* cause is a flatuous and sharp spirit stirred up by yellow, black, and adust Choller spread over the stomach.

Belching is occasioned by thick and fuming vapours breaking *Belching.* out upward, and stimulating the stomach to expulsion.

Concerning a loosenesse, the causes of a Lyentary and Coeli- *Alientary* ack affects are for the most part the same, differing onely in mag- *and Celi-* nitude; And in this also that a Coeliack is rather a Disease of the *ack affects.* Guts, then of the Stomach, although its name seems to signifie otherwise; For in a Lyentary, as hath been said, the meat is cast forth crude.

In a Coeliack the Chyle is ejected contrary to nature; and therefore the cause of a Lyentary is the hurting of the retentive faculty of the Ventricle and Intestines, by reason whereof the meat before it be perfectly concocted, descends into the Guts and is cast out, And indeed in a Lyentary the retentive faculty of the stomach is principally hurt. Nor can it be that meat unconcocted can be cast forth out of the Panch, unless it be sent too soon into the Guts, by reason of some fault of the retentive faculty of the stomach; but the Coeliack is occasioned rather by some hurt of the retentive faculty of the Intestines, because Chyle generated in the stomach, ought to remain some time in the Guts; that it might there be in some manner elaborated, and be conveniently drawn by the meseraik veins, and the ordure should be throughly elaborated: If the retentive faculty of the Intestines be hurt, all these things cannot be performed, but the Chyle untimely, and in some, as measure crude is cast out of the Panch, but the retentive faculty of the Stomach and Guts is hurt either of its selfe, or by accident: of it selfe through a cold and moist distemper, and that either alone, or joynd with a phlegmatick humour, as also by cicarrifing after a dysentary, and the immoderate use of fat things, and such as caute Lubricity. By accident it is hurt when the expultrix being stir'd up exceedingly, drives the meat presently downward, by reason of

the ulcerous disposition of the Stomach and Guts caused by biting and sharp humours, sometimes also by a hidden quality, or from hurtful and poisonous meats, or ill disposition of air.

A Diar-
hæa.

A Diarhæa proceeds from the expultrix of the Guts stin'd up by plenty of humours, crudity, or pravity, whether they proceed from corruption in the stomach, and guts, or flow from the whole body, or any part to the guts, from what cause soever they are generated and collected. The more remote causes of Diarhæa are imbecility of concoction, and distribution, through the distemper of the stomach, and parts adjacent; ill diet, untemperate air, omitting exercises of the body, or taking a strong purge.

A Dysen-
tary.

The cause of a Dysentery improperly so called, or of voiding of blood without exulceration of the Guts are the opening of the mouths of the Mesentary Veines, either by too great plenty of this blood, or by crudity, by reason of the concoction of the Liver, or being retained too long in the Liver Veines, and by a burning with a preternatural heat. But as for Dysentery properly called, the causes are sharp and biting humours, whether they flow from the whole, or from some part to the Guts, or are generated in them, and are peculiarly troublesome to them, of which kind also are sharp gnawing drugs, especially violent purges, sharp quittance and poysons,

A Tenesm.

A Tenesmus, or desire to go to stoole and cannot void any thing but blood, comes for the most part from the same cause, yet principally, salt phlegm, and a sharp humour, clammy, thick, closely sticking to the skin of the Gut, called *Rectum*.

Suppressi-
on of the
belly.

The Belly on the contrary is suppressed either because the expulsive faculty of the Intestines is hurt, or because the Muscles of the belly do not help to expel, or because the ordure doth not stimulate, or because the Guts are not alwayes sensible of pricking and stirring up: the expulsive faculty doth not expel, either because it is hurt or frustrated by some external error, or fault in the object. 'Tis hurt either because it is weakened by a cold and dry distemper, or it is hindered by the strength and driness of the retentive faculty, or by the narrowness of the Guts which proceed, first from astringent and drying things. Secondly from their inflammation, or a Tumor bred in them. Thirdly, from growing together, especially of the Fundament. Fourthly, from the going out and turning of them which happens in a Rapture. Fifthly, from obstruction, by reason of the hardnesse of the sledge, Worms, Stones, viscus Phlegm. Sixthly, from

from the Muscles refrigerated and straitned, shutting the Gut *Rectum*.

The belly is supprest through default of the object when the Ordure is too thick, viscid and hard, the Muscles of the Panch do not help to expel, either because they are weak, or because they, or the parts under them endure pain; the Ordure doth not stimulate when either there is but little, or when there is no mordication, or it hath no sharpness, or by reason of eating of cold meats, or because yellow Choller is not mingled therewith.

The Guts are not sensible of stimulation, either because their preception is dull, or because through long retention they are accustomed to, and become familiar with the Ordure, or because they are stopt with phlegm.

The Illiack passion hath its original from the inverted motion of the fibres of the Intestines, which proceed from some inflammation, or obstruction, from hard dung, or from a Rupture, or from Exulceration, or a Canker, or from a high flowing of humours. *Illiack.*

Moreover for what belongs to elaboration of blood, that is *Sanguif-* hindered either primarily, and by its selfe, or secondarily, and *cation* by accident; Primarily it is offended either when the faculty is *hurt.* hindered, or by some external accident; when the faculty is offended, 'tis done by reason of some diseases of the Liver, distemper (by reason of which alone, without any other manifest disease of the Liver; those which are troubled with its imbecility are called Hepaticks) obstructions, tumors, ulcers. But it is hurt by some external error, when either the Chyle is not rightly elaborated in the stomach, or when it is throughly elaborated, some peccant matter is mingled therewith. Secondarily, or by accident it is hurt, either when the attractive faculty is hindered, by reason of diseases of the Liver, or obstruction of the Mesentary, or because the retentive faculty in like manner is hindered through some disease of the Liver, and especially through its moist distemper, opening and gnawing of the vessels, and thinness of Chyle, or by the expulsive faculty; principally by cold distemper, and obstructions of the gibbous parts of the Liver; by reason whereof the blood cannot be distributed.

But as for the Symptoms which happen in making of Urine, *The cause* the first is an Iscury, or suppression of Urine, and making of *of an Is-* less Urine: 'tis properly so called when the Urine is in the *cury, and of* Bladder, and is not ejected, or very little is cast out; which *little Urin.*

Symp-

Symptomes arise from the same causes, differing only according to Major and Minor; but the Urine is suppressed, or little is made, because the expulsive faculty is either hurt and weakened, or hindered. It is hurt whilst either the sensitive faculty of the Bladder being hurt, doth not perceive the pricking of the Urine; namely, when the proper Nerves of the Bladder are affected either by some stroke, sliding, loosening of the Vertebraes in that part, wounds of the spinal Marrow and Tumors, as also stupefactive Medicines being applied thereto, or it may happen when the expulsive faculty is hurt, and the transverse fibres of the Bladder appointed for expulsion, or affected with some cold moist distemper: or are extended over much, that they lose their tone or note; so that afterwards they cannot be contracted, which comes to pass when the Urine is too long retained, or the Muscles which help and assist the Bladder to expel Urine, are affected so that they cannot be contracted. But the expulsive faculty is hindered whilst the Neck of the Bladder and Urinary Passages are not open, and is either stopt by a little Flesh or Callous Substance in the passages, or is obstructed by Gravel, clotted Blood, Quitture, or thick humours; or it is compressed by a Tumour in compassing the Neck of the Muscle of the Bladder, or of the neighbouring parts, or it is shut by contracting of the Muscle of the Neck, or it is pressed and wreathed by the falling of the Bladder out of its place. Urine also is not made when too great plenty thereof is long retained, too much dilating the fibres of the Bladder, so that afterwards they cannot contract themselves, nor cannot squeeze out, nor expel Urine, which comes to pass either when the Urine (mens business being urgent) of its own accord is retained long; or when the pricking of the Urine, as is said before, is not perceived. Lastly, Urine is not cast out through its accustomed passage, if by some Wound, Ulcer, Fistula of the Bladder and Urinary passages, the Urine which ought to pass through them, goes out by a way opened elsewhere.

There is another Ictury lesse properly so called, or suppression of Urine, when little or no Urine is sent, and comes into the Bladder, which happens when the attractive faculty of the Reins is hurt through distemper, especially cold, or is hindered by obstruction and straitness of the emulgent vessels, or when the Urine is carried to another place, and is cast out of the Panch, or by Sweats, or is collected in the Panch, and stays in the first passages, as in a Dropsie,

But a Dufury properly so called, or difficulty of making U-*Difficulty*
rine, is when the time of making water, and the quantity, of making
is a little altered, yet in the very making water, the Urine doth *Urine.*
not passe out freely, but is made with great striving, pain, and
burning, which comes to passe by some fault of the Urinary pas-
sage; namely, whilst it is affected with some Ulcer, and is ero-
ded, or the Vrine it self being sharp doth it, or the passage was
formerly ulcerated.

The cause of a Strangury is either some sharp thing which
stimulates nature continually to expel, but because nature is *Of a*
sensible of pain, it hinders free emission, the Urine is made *Strangury.*
drop by drop, and dribling, which is caused by crude Urine
unconcocted, or having a sharp humour mixt with it, by Gra-
vel sticking in the neck of the Bladder, or some fault of the Uri-
nary passage: whereunto belongs Intemperature of the Bladder,
and inflammations of the same, and of the parts neer thereunto:
hot humours, also exulceration of the neck of the Bladder and
Urinary passage.

Involuntary pissing, which happens both to those that are slee- *Of Invo-*
ping and waking, is caused for the most part when the contra- *luntary*
ctive power of the Muscle *Sphincter* of the bladder is taken away, *pissing.*
which is occasioned by a Palsie, proceeding either from a cold
and moist distemper of the same, or by hurting of the Nerves
which come to this Muscle, by compression in loosening the
turning joynts of the back neer the Hucklebone by a stroak, a fall,
or some tumor, or obstruction, or by hurting of the same
Muscle, or certain fibres, in cutting the stone of the bladder;
yet sometimes Urine is made against our wills, when the Muscles
of the Panch are exceedingly drawn together, so that the Urine
by reason of their constriction and compression of the belly is, as
it were forced out of the bladder, as also sometimes it happens to
those that are great with Child in their last months. For the
same reason they cannot contain their Urine.

But if a man contain his Urine waking, and in his sleep let *Of pissing*
it go from him. That happens by a certain imbecility of the *in ones*
Sphincter of the Bladder. Yet there concurs a more deep sleep, *sleep.*
and a certain negligence of the superiour faculty, as also cu-
stome.

It is not easie to explain from what cause a Diabetes doth *Diabetes.*
proceed; To this obscure matter I say, It seems probable that
the immediate cause is the hurting of the retentive faculty of the
Reines, by too great plenty of Urine; which when the Reines
cannot endure, they suffer it to flow into the bladder, This
plenty

plenty of Urine seems to be occasioned by the heat of the bowels, liver, and spleen, and the veins, drawing drink very powerfully, and melting of the humours in the veins, to which for the most part there happens imbecility and relaxation of those parts which carry the watry humour from the Stomack to the Liver, and Spleen; by reason whereof the drink is suddenly carried to the Reins.

*The cause
of defect
of milk.*

The causes of those Symptoms which are deservedly joynd to these, and belong to the generation of milk, seed, and courses of women; milk either is wanting, or corrupt, it is wanting either when it is generated in too small quantity, or through some distemper of the Paps, or some disease or straitness of passages, by reason whereof they cannot draw and elaborate sufficient quantity of blood.

Vitious.

Vitious and corrupt milk is generated either through the privy of the matter, and fault of the blood, or by some distemper of the breasts.

Coagulated.

Lastly, Milk grows thick, and coagulates whilest either it is burnt by too much heat, or if it abound in quantity, and is retained too long in the breasts, or if any vitious humour be mingled therewith, which hath a power to coagulate.

Gonorrhæa.

A Gonorrhæa, or emission of Sperm against ones will, happens without erection of the Yard, and desire of Venery; 'tis occasioned either by the hurring of the retentive faculty, or some external error; the faculty is weakened through distemper, principally moist, rendring the spermatick vessels more loose: whether it proceed from too great a flux of flegmatick humours, or too much coition, or other causes. But from external hurt, or fault of the seed, whether it be too cold, watry, thin, or crude, sometimes also a Gonorrhæa happens by convulsion, as in such as have the falling sicknesse.

*Of nocturnal
pollution.*

The cause of Nocturnal pollution is too great plenty of seed, heat and sharpness, stimulating the expulsive faculty; and therefore this infirmity principally happens to those whose Reins and parts adjacent are very hot, and to those who have sharp humour flowing to the spermatick vessels, and then especially, when nature in venereal dreams is irritated to ejaculate seed, or their loyns are become hot, by lying on their backs.

*A Venereal
Gonorrhæa.*

But the cause of a Venereal Gonorrhæa is poysonous seed, corrupt, sharp and foul stirring up, and stimulating the expulsive faculty:

The

The cause of suppression of Courses, is the narrowness of the veins belonging to the Womb, and the foulness of the Blood, as for the straitness of the veins, they are most frequently the cause of suppression of Menstrues, by reason of thick blood, and dull humours; sometimes they grow together with the vessels after abortion, or compression of the same, by some Tumours of the parts near thereunto, or from condensation, contraction, and dryness of the substance of the Womb, but by default of the blood, the Courses are suppress'd whilst that is thick, viscid and unapt to move.

The same cause, but more gently occasioneth small evacuation of Courses, *viz.* They either flow in less quantity, or else more slowly.

The coming down of Courses when they come out drop by drop, and with pain is occasioned through default of the blood when there is too much, and is thick, viscid, biting, and sharp, and flowing down to the Womb with too great violence, some way obstructs the passages, and extends them, and stirs up pain, or else through default of the passages, or veins about the Womb, and in the Womb when they are become narrower then they ought.

Too much flowing of the monthly Terms, ariseth when the vessels are opened, either by an *Anastomasis*, when the mouths of the veins are opened, or a *Diairesis*, when they are divided, or when the blood being hotter, thinner, more moveable, sharp, and troublesome to nature, stimulates the expulsive faculty to expel.

Now for the Causes of encreasing vitiated Terms; 'tis manifest what things shew the causes of diminution thereof, from what is spoken of want of nourishment. But the cause of too much encrease is too great plenty of blood, from too plentiful use of meat and drink, full of nourishment, an idle life, much sleep, too frequent use of baths, of fair water, and manly strength, which converts the blood into the substance of the parts.

And these are the causes of the Symptomes of the natural faculty so far, as they belong to the preservation of individuals. Now follows the causes of Generation hurt, and that either taken away, or depraved, there is no generation made; and barrenness happens either in respect of the Man, or of the Woman.

In regard of the Man, it is hurt either through default of the seed, or by vitious ejaculation of the same: unfruitful seed, or not sufficient, is generated, or the faculty is hurt through some

distemper of the Stones, especially cold and moist; whence un-ripened, thin, and lesse spirituous is generated, or else some hot, whence too sharp seed proceeds; or through default of matter, whilst the blood and spirits necessary for the generation of seed, or by old age, or some disease drying the body, or its principal parts, or by fasting are defective, or when the vessels which are necessary for generating, and carrying of the seed be wanting, or when the nutriment turns into fat, or when the blood is vitious. The emission of the seed into the Womans Womb is vitiated by the Yard, either shorter, whether by nature or by a disease, or crowded through the shortness of the ligament.

*In respect
of the Wo-
man.*

The action is hurt by default of the Woman, either when no seed, or unfruitful seed, is generated and emitted for the reasons lately mentioned, Secondly, if she do not draw and receive the mans seed, by reason of her cold and moist distemper of the Womb; or by reason of a Tumor, Ulcer, or Straitness of the neck of the Womb. Thirdly, if she cannot retain the seed received, because of the moist distemper of the Womb; an Ulcer, opening of the mouth of the Womb, a flux of Courses, and other humours. Fourthly, if the Seed be not well tempered by the womb, or being some other way affected, is not rightly cherished. Fifthly, if the blood necessary for the forming of the young be deficient, or very little.

Generation is depraved when the young are very weak, or when monsters are generated, which comes to passe through the foul Seed of the Father, or the imagination of the Mother.

Abortion.

Lastly, the causes of abortion, are either too great bignesse of fruit, or defect of necessary nourishment; or humours which are contained in the Membranes; which when they are broken, are poured into the Womb, putrified, and become sharp, and stimulate the expultrix, or by a breaking and loosening of the vessels by which the Child adheres to the Womb.

CHAP. II.

Of the Causes of the Symptoms of the vital faculty, and of the hindrance of respiration.

THe Symptoms which happen about the vital faculty, or as hath been said Palpitation of heart, swooning and sudden deprivation of the senses; the causes of the Palpitation of the heart are, first, things troublesome to the heart, meeting with it which it desires to remove from it; namely, vapours, either in plenty, or quality, either manifest, or occult, or both; troubling the heart: putrid humours, sharp, hot, abundantly rushing into the heart, or pressing it, also tumours, and fleshy excrescencies and callous flesh bred about the heart, or Worms molesting it in the Chest thereof; moreover some moderate defect of the vital Spirits, through want, too great evacuations, passions of the mind, vehement griefe, too much exercise, which the heart strives by more vehement pulsation, to restore and strengthen. Thirdly, preternatural heat increased, not only consumes and scatters the Spirits, but also enflames them, which that nature may restore temperate and cool; it appointeth this motion of the heart.

Causes of the Palpitation of the heart.

The causes of Sybothymy, are defect and want of vital Spirits, which either are not generated, whether by defect of matter, namely, of air and blood, or the debility of the generative faculty, and from disease of the heart, or being generated, or taken away and destroyed, whilst either they are suffocated, or dispersed, or corrupted by some occult, or malignant qualities.

Of Sybothymy.

These causes if they are very grievous, produce swooning. The changes of Pulses shall be spoken of in their due place.

Respiration is hurt, first when the moving faculty is hurt, and that either of the Lungs, or Breasts; the faculty of the Lungs is hurt either by its selfe, when its temperament is destroyed, and the innate heat is deficient, as in such as are dying, or it is hindered, and hurt by accident, when the breast by what means sever becomes straiter, and the Lungs have not space wherein to dilate themselves. The faculty of the Breast is said to be hindered by its self, or by accident; by its selfe when the animal spirits necessary to motion is wanting, or because it decays, as in such as are dying, or its influx is not made, as in an Apoplexy; or it is not received through default of the Nerves carrying the animal Spirits to the Muscles of the Breast and Midriff; but 'tis hurt

The cause of Respiration hurt. Faculty of Lu gs hurt. Of the Breast.

hurt by accident, when by reason of the pain of the side, or parts adjacent, or matter and blood contained in the Brest, or Wind, or Tumours, or something in the Panch, the Brefts, and Midriff cannot freely be moved; or when the Bowels in the Panch hanging about the Midriff are obstructed exceedingly, and swell so that by their weight between breathing, the Midriff suffers not them to move freely.

Of Instru-
ments.

Secondly, Respiration is hindered by reason of the Organs, when there is any Organick Disease, or solution of continuity in the Lungs, Midriff, Muscles of the Brest and Panch, the Wind-pipe.

In regard
of use.

Thirdly, when the custome of breathing is changed; namely, when it is too violent through the fiery heat kindled in the Lungs and Heart.

Of Air.

Lastly, Respiration is hindered, by reason of the sharpness which we draw in in breathing, if it be not fit for cooling, and fanning of the heat.

The causes
of an Ast-
ma, and
shortnesse
of breath.

The difference of an *Astma* and an *Orthopna*, which are peculiar diseases of shortness of breath, is this, when a man constantly breaths with great difficulty, without a Fever, such as do, those who after a violent race and exercise stop. The immediate cause is straitness of the mouths of the Lungs, or the use increased, by reason of the narrowness of the Pipe of the Lungs; but that straitness is caused by stoppages, or pressure of the Lungs, or of the Wind-pipe of the Lungs; and both obstruction and compression are caused first by thick and viscid humours; but sometimes by thin and serous humours, but in great plenty: Moreover a Crude Tumour, or by some swelling, or gravel sticking in the Lungs, which cause obstructions when they stick in the Pipe of the Lungs, but compression when they are in the substance of the Lungs, or its Veins, and Arteries. This matter sometimes is gathered by little and little through its weakness, sometimes it flows from elsewhere, and most commonly it is thought to flow from the head by the vulgar; but to me it seems more probable to flow through the Arterious Veins, from the Liver into the Lungs, whilest crude humours are generated therein, or abound in a venemous kind, which even that shews that in an *Astma* the cough is not alwayes present, which nevertheless perpetually accompanies a *Catarrh*, and because these that are troubled with an *Astma*, have always an ill habit of body, and the signs of debility of the Liver.

A Crude Tumor may consist not only in the Wind-pipes, but without it; which when it happens, and consisteth about
the

the smooth Arteries, yet it presses the rough Arteries, and respiration is thereby hurt, and the Heart is drawn into consent, and an uneven pulse is produced.

CHAP. III.

Of the causes of the Symptoms of the external senses.

Since order requires that we speak of the causes of the Symptoms of the Animal faculty; first of all the sight is hurt divers ways by reason of diseases of parts constituting the eyes, and the default of the optique and spirits.

The Tunicle called *Cornea*, which comes in the first place, since it is transparent, and void of colour, that it may permit the passing through of visible species, if it lose its transparency, or be affected with a strange colour it hinders the sight: it loseth its diaphanity if it be thickened, and become more dense, or be moistned, or pustules, or little skins cover it. It grows thicker, and more dense by drying, and that either the whole, which disease is called *Caligo*, or else some part, is become white, which is called an *Albugo*, which spot if it be perfectly white, and darkning, so that it permit no passage for visible species, and cover the whole Pupil; it causeth blindness; but if it be not perfectly white, nor hinders all the passage for visible species; it causeth onely debility of sight, or brings forth some deprivation, and deception: If it doth not cover the whole Pupil, so that things seem as if they were divided; the same comes to pass by reason of cicatrizing left after wounds, and ulcers. By its moisture it loseth its transparency in an inflammation of the eye: Moreover by pustules bred therein; and the nail of the eye which the Greeks call *Pterugion*, or a Tunicle. But if the *Cornea* be affected with any strange colour which very seldome happens, the sight is depraved, and represents visible species in other colours, not their own.

Secondly the Aqueous humour offendeth either in quantity, or manner of substance, or colour.

It offends in quantity if it be wanting, or lessened by a wound or ulcer, when the *Cornea* being cut, or eroded by a sharp humour it flies out, or by quotidian diseases, or extreme old age, and as it is wanting more, or less: it causeth blindness, or diminution, or deprivation of sight. Sometimes it offends in substance, when it is

become thick or impure, or any thing is mingled with it of a different substance; if it onely become thick, the sight is made duller; and those things which are obvious to the sight are seen, as it were, through a cloud; and if they are remote, they could not be discerned; but if they are near, they are not exactly seen.

But if the mucous and thick matter be mingled therewith, and be so thickened, that it loseth all transparency, and fills up the hollowness of the Pupil, it causeth blindness, and that disease is called vulgarly a Suffusion, or a Cataract; but if the whole aqueous humor be not obscure and dark, but onely some part thereof obscure and dark, if through that part which is dark, visible species are not received, but onely through that which is perspicuous at once not more, but fewer things are discerned; but if in the center and middle of the Pupil onely a partick of such a thick and dark humour be present, and all the parts round about of the aqueous humour be transparent, whatsoever is beheld seems not to be whole, but perforated and hollow in the middle; but if the little dark bodies are not continuous, but divided and many of them stick in the aqueous humor, Gnats, Flies, Cobwebs; and such like, seem to appear in the air; but if the extremities are obscured with such a humour, the object is not discerned whole: when you look fore-right. The same also may happen in a disease which is called *Hypopon*, when there is purulent matter collected under the Cornea.

A perfect Cataract. There is also another Suffusion, which is called *Notha*, or a bastard Cataract, which is when vapours are carried to the eyes from the rest of the body, through the Arteries and Veins, the aqueous humor being safe, which happens to those which are drunk, and in burning Fevers. Lastly, if the aqueous humour be affected with some strange colour, there ariseth the same deprivation of sight, as when the Cornea is discoloured, and all those things which are brought before the eyes, represent that colour, wherewith that humour is dyed.

A spurious Cataract. The Pupil which is as it were the window of the eye, four ways recedes from its natural state. 1. Whilest either it is dilated, or contracted, or closed, or is removed into another part, or broken, or obstructed. The Pupil is dilated by the extending of the *Unea*, when it is stretched,

stretched, or through dry distempers, or by a Tumor, or by wind included; or some spirit or humor, for those which have a broad Pupil; in the night time, and in an obscure place see best; but in the day time, and a light place see worst; but it is become narrower, when by its moisture it is loosned, and falls as it were into its scke; moreover when the aqueous humor is wanting. 3: When some thick matter sticks in the aqueous humor, for those who have a narrow Pupil discern more clearly in the day, not so well in the night: the Pupil is dislocated and broken, which when it happens, and changes its place, those things are seen better, which are set on the sides of the eye; then those that are set opposite to it, and those which are opposite seem not to be so, until the sight shall be moved thither where it may be opposed to the visible things, which affect is called a *Strabismus*, in English squint-eyed.

Contracted

Dislocated and broken

A strabismus.

The Chrystal humor recedes from its natural state, either according to the manner of its substance, and quality, or according to its situation. As for the manner and quality of the substance; If it be somewhat more solid, thicker, more obscure, so that it wants greater illumination night-blindness arises; but if in some part, or altogether, it loses its cleanness, there follows debility of sight, or blindness. If it contracts a grey colour, it is called *Glaucoma*, with which disease those that are affected seem to see through a cloud, as it were, and through smoak, but if the same humour change its place and decline downward, or ascend upward, all things seem double, if towards the sides, things seem more to the right hand, or the left, then they are; If it recedes towards the middle or center, things nigh are rightly, far off are not distinctly seen: if it would go back beyond the middle and center towards the Nerve Optique, things remote would seem lesler, and those which would discern them truly, must needs put them close to their eyes; which disease is called Mouse-sight and Fur-blind; but if the contrary happen towards the fore part of the Pupil those who have the Chrystaline so placed, things nigh seem les, and things a far off bigger, which happens to old men, and especially to those who were employed all their life times in reading, and other businesses where their eyes were continually busied.

Diseases of the

Chrystal humor.

Nyctalopia.

Glaucoma.

Myopia. Lusciositas

Diseases of the vitreous humor. If the vitreous humour either change its place by some contusion, and some part of it is carried before the Chrystal humour, and puts the Chrystal besides its place, or changes its clearness and perspicuity, or is become thicker, divers diseases of the eye do happen.

Diseases of the whole eye. But if the whole eye, or most of its parts are not rightly placed, the sight is diversly hurt, and is either plainly abolished, and blindness follows, or it is weakned, or depraved; namely, when the whole eye wants nourishment, or changes its situation in coming out too forward, by what means soever occasioned, as also in a *Strabismus*, or Convulsion of the Muscles of the Eye, or it is not moved as in a Palsie, or more humors are fallen out of the eye, by reason of its wide wounds, inflammations, and ulcers.

Diseases of the vitreous spirit and of the Optique Nerve. The sight is hurt by default of the Optique Spirits (where we also conclude the errors of the Optique Nerves) if they are deficient in the brain, being hurt through cold distemper, compression, obstruction, and then for the most part, the other senses both internal and external are affected, or at least that part of the brain is affected from whence the Optique Nerves have their original, and then the sight only is taken away, or by default of the Nerve Optique itself, which is its narrowness, or by rupture which proceeds from obstruction of the Optique Nerves, compression, percussion, a stroke by chance, contorsion, or by any violent motion whatsoever.

Causes of glittering eyes. Lastly the cause of Splendor and Glittering of the Eyes is reflection of the Rayes of the internal light, by reason of the Object, a more thick body or vapours, or thick humours, if they are mingled with the Chrystaline, or vitreous, humours, or cover them.

Causes of deafness. The hearing is hindered through default of the Organ of hearing, or of the spirits; and first of all if the external eares are wanting, sounds, and articulate voices seem like the warbling, or purling of Waters, or singing of Grasshoppers. Secondly, if the auditory passage either wholly, or in part be hindered, either from an external cause, as a little Stone, a Kernel, Water; or an internal cause, as a Tubercle, an Ulcer, and such like; and so either deafness is occasioned, or hearing diminished, or depraved. Thirdly, if the Membrane which they call

call the Drum is too thick, or moistened too much, or is loosened, whether it be from the first birth, or afterwards from internal, or external causes the hearing is hurt. Also if it be too much dried by any grievous diseases, or old age, deafness doth arise; But if it be broken either by internal force, as by the violent putting in of an ear-picker, or by an extream shrill sound, or is eroded by an Ulcer, deafness is occasioned. Fourthly, if the other parts of the ear be not rightly constituted, and the air implanted be impure, or deficient, or the Nerve being dilated is cooled, or is made thicker, or affected with a Tumor, or those three little bones either are not well framed by nature, or are moved by some violence out of their places, or the internal passages are filled with vapors and humors flowing contrary to Nature, or the Arteries passing under the ears are filled with too much spirit, and heat, and too much agitated; or lastly, the auditory Nerve either is not rightly framed from our first beginning, or is obstructed and compressed by a humor, according to the diversity of the disease, the hearing is sometimes abolished, sometimes diminished, or depraved. Lastly, the hearing is hurt through default of the Spirits either through the straitness of the passages of the brain, as in an Apoplexy, or through its perturbation, as in an Epilepsy, or through cold distemper, by reason whereof difficulty of hearing is occasioned.

The smelling is hurt through default of the Organs, *Causes of* or Spirits, or some external error; the faults of the Or-*smelling* gans are the narrowness of the Adequate senses, and ex-*hurt.* ternal Nostrils, whether from compression, or constipation, or obstruction of the Scive-like bone, and its Membrane, as happens in such as are great, or by the distemper of the chief Organ of smelling, the mammillary process; but especially moist distemper, or obstruction of the same, from matter flowing, which happens in Catarrhs, and according to the variety of these diseases, the smelling is sometimes abolished, sometimes diminished; the smelling is offended by reason of the animal spirits, if either they are deficient, which are in those which are ready to dye, or are hindered from flowing, as in an Apoplexy, an Epilepsy, and such like diseases of the brain. Lastly, the smelling is depraved through some external errors, whilst a vapour, or some filthy and stinking matter

matter sticks in the wayes through which the smell passes, for here it is infected by the foul smell thereof, so that things having no ill smell, seem to the sense of smelling to stink.

Cause of taste hurt. The taste also is hurt through default of spirits, or by some disease of the Organs, or some external error. The taste is hurt by reason of spirits when they are deficient, which useth to happen to such as are dying; or the taste cannot flow to the Organ, either through the narrowness of that part of the brain, from whence the Nerves appointed for the taste arise, or from obstruction, compression, or wounds of the said Nerves. The taste is hurt through default of the tongue, as of an instrument, whilst it is troubled with cold and moist distemper, or cold and moist matter is poured on it, or whilst it is dried, or is troubled with Pustuls, or an Ulcer, and according to the magnitude of diseases, the taste is either wholly abolished, or diminished. Lastly, the taste is depraved by external error, or from external causes; as from something taken into the mouth, whose savour is not easily taken away, or from an internal cause, as a humour, or a vapour wherewith the tongue is imbued, being communicated from the stomach, the Lungs, the Brain, and other parts to the tongue.

Cause of feeling hurt.

Lastly, for what belongs to the causes of hindering the touch, insensibility and quiness happens through defect and diminution of the animal spirits of the Organ touching; this come to pass either because the animal spirits are not generated through imbecility of the native heat, which happen to them in yeas, or defect of matter, by reason of great evacuation, or whilst they are resolved, or scattered, or cooled, or stupified by a Narcotique Medicine, or when they cannot flow to it, through the narrowness of the Nerves, obstruction, constipation, compression, solution of continuity of the same.

Cause of pain.

The proximate cause of pain is solution of Unity in a membranous part, whether it be occasioned by some primary quality, or secondary, whereof this stirreth up solution of continuity not so manifest, but rather contemptible, by reason; but that is manifest, which therefore is properly called solution of Unity.

Itching.

Lastly, itching is stirred up from thin, salt, and sharp Excrements, collected in the skin, moving man to scratch.

CHAP. IV.

Of the causes of the Symptomes of the internal senses.

Over much watching is occasioned by too much effusion of the animal spirits, to the Organs of the senses: through defect of restraint of the first sense, and too much irritation of the common sense, the bond of the first sense; or sweet exhalations are defective, either because they are not generated in the body, which comes to pass by long fasting, or the use of meats, which do not produce such exhalations, or because they are consumed, scattered, and called away from the brain, which comes to pass in a hot and dry distemper, either of the whole body, or of the brain, and when hot humors and vapors are elevated in the brain, which often happens in Fevers and Deliriums.

Causes of too much watching.

The same causes also, for the most part have a power of stirring up the common sense, and besides those, principally griefs, which in what part of the body soever it is, when it violently affects the sense of touching; it also stirs up the common sense, which once moved irritates also the rest of the senses, and so it is necessary that over much watchfulness must ensue.

The causes of too much sleep, and first the causes of non-natural, are all those things that hinder the spirits from being sent forth to the external parts, in due manner and season; such are those which dissipate and consume the heat of the spirits beyond measure, or they are called back too much into the internal parts, or hinder the spirits that they cannot go out to the remote parts, as too much exercise, pains taking, too much watching, baths, and such like, which fill the brain with halitious vapours.

Cause of too much sleep.

Non-natural.

Moreover the causes of a preter-natural and diseased sleep so called, are also against nature; namely, those things which detain the spirits against nature, so that they cannot freely pass to the Organs of the senses.

The cause of a Coma, or a dead sleep is a plentiful vapor, whether cold and moist, or hot and moist, either generated

Coma and Catapora generated

generated in the brain, or sent thither out of the whole body, or part of it; but principally stupifactive, rendering the animal spirits heavy and drowsie.

*Coma
vigil.*

When there is too greedy desire of sleep, the same stupifactive vapor is the cause, but because hot and sharp vapours are mingled with it, and many various and absurd imaginations are brought to the fancy, the sleep is troubled and interrupted.

*Of immoderate
dreams.*

The causes of immoderate dreams are impure vapours, black and melancholy, arising from food and humors, causing exhalations of the same nature, and stirring up the animal spirits, or a distemper of the brain, stirring the vapors ascending from the interior parts and spirits in the brain.

Of an extasie.

A natural extasie hath for the most part the same causes, for those which are troubled therewith, have in their deep sleep various shapes and images represented to their fantasie, about which, the imagination being too much busied and fixed, the rest of the senses ceasing: when they awake they account those dreams by reason of the too much inentiveness of the fantasie for truths; and think and say to themselves that those things did really happen.

*Sleep
walkers.*

The cause of such as walk in their sleep, is a stronger imagination from an internal object, represented by a dream, the fantasie being violently affected, stimulates the desire, and thence the motive faculty, to perform something; the senses for the most part being bound, and the rational faculty obscured, but the imagination doth depend either on some vehement diurnal disease, which hath gone before, or on the disposition of the spirits, which the vapours thicken, which are not only mingled with the spirits, but also have force of binding all the spirits, and set before you many clear dreames.

*Abolishing and
diminishing
of the
memory &
fantasie.*

The memory, as the imagination, is either abolished, or diminished, principally through the fault of the instrument, which is the brain: through its too cool a distemper thereof, whereunto belongs, not only innate heat, but default of spirits: the default of innate heat is either native, and contracted from our birth, or happening afterwards from our birth. Heat is deficient to those who have too great heads, or a brain weak, and cold by

nature, and mixt with too much moisture, or a head too little, and therefore little brains, or a figure, too concise, the figure also it self of the head, may hinder these actions. After a mans birth the native heat is deficient through old age, and what other causes soever, which may destroy and debilitate the innate heat, and may cause foul spirits, whether they be internal, and diseases and vitious humors, or external, as cold meat, moist, thick, corrupt and impure air, over-much watching, stroaks and wounds of the head. Besides the defect and cold distemper of the native heat, the memory also is weakned, yea and taken away, sometimes by too much moisture of the brain; the same also is hurt sometimes by external error, namely through the fault of objects, whilest in certain diseases it is confounded, and distracted, by almost innumerable objects, which may likewise happen to such as are well; who whilest they are busied in telling any story, by reason of some object happening by chance, they are so called aside, that they cannot make an end of their story.

But the reasonable faculty is not diminished nor abolished of its self, nor by reason of its instrument, but because the fantasie is hurt, and sometimes the memory, and sometimes both.

The depravation of the imagination and ratiocination happens in divers kinds of Deliriums, and all have their rise from some default of the animal spirits, which being ill disposed, represent objects so disposed to the fantasie, and whereas for the most part, the imagination, and ratiocination are both affected in a Delirium; and the imagination useth a corporeal Organ with its Spirits, but the ratiocination useth none, but onely beholdeth fantasms. In every Delirium, the next cause of the hurt of the imagination, is the vitiousness of the animal spirits, but the depravation of the rational faculty is caused by the fantasms.

The imagination and understanding hurt, called *Paraphrosune* hath its beginning from hot vapours, which in burning Fevers and inflammations of the interiour parts are elevated to the brain, and disturb the animal spirits, yet moderately, which thing also may happen if any one should take in his meat or drink that which may trouble the spirits. On this manner commeth sottishness, and
such

such as is caused by Wine, the weed Darnel, Hops, and such like.

A Frenzy. A Frenzy is caused by a hot Tumor of the Brain and its Membranes from whence the hot vapours being advanced continually trouble and stir the spirits in the brain.

Of Melancholy.

The cause of offending the imagination in Melancholy, is dark animal spirits, but the causes of depraving of the rational faculty, are dusky fantasms, but the animal spirits are become dark and black two ways; first when the spirits themselves are pure in their own nature; but some it ange foul and blackish matter is mingled with them. Secondly, when the spirits themselves are darkish in their own nature, and generate such; the former is caused three ways; the first is when the matter dark and impure clouding the spirits is contained in the vessels in the head. Secondly, when the matter is communicated to the brain from the whole body, and principally from the greater veins. Thirdly, when it is transmitted principally from the *Hypocondries*, which is thence named *Hypocondriacal Melancholy*: the latter is occasioned two ways, either when the vital spirits are generated vitious and impure in the heart, which when the matter of the animal spirit is such in the braine, 'tis necessary that there be generated in such black animal spirits in the braine, or because although the vital spirit be good and pure; nevertheless the constitution of the brain is vitious, which changeth the pure vital spirit into a black animal spirit.

Of mad Love.

The cause of mad Love is sorrow and continual solitation, to which anger is often joined, arising through the desire of a fair thing whether it be really so, or seem so to be; for although the amorous herb Philtra may stir up desire to lust, yet that desire is not terminated in any definite person, nor can the mind of a man be compelled to love that which he is unwilling to love, and that Philtra doth not cause love, but madnesse also, as experience often teacheth.

Madness.

The cause of madnesse is a hot and fiery disposition of the animal spirits; such hot and fiery spirits proceed from a hot distemper of the braine, or hot vapours mingled therewith, which black Choller will fer forward, sometimes in the veins of the head only, other times in the whole

whole body, especially in those that are great with child, and when it slides about the womb, whether they are generated of fervent blood, or adust colour, or dried Melancholy.

The disease which causeth men to think that they are turned into Wolves, is called *Lycanthropie*, if it proceed from a natural cause; and not from the Devil; It ariseth from the depravation of the imagination and ratiocination; and the blood of living creatures being drunk, may be very powerful to cause the same, yet for the most part it becomes from poyson communicated to us by the biting of any mad living creature, or by the smothering of their mouths thrown upon us, by spiritle, by receiving their breath without mouths, by eating the flesh of ravenous animals, whence Wolf-madness, also Dog-madness, and Badge-madness do arise, as *Hydrophobie*, which is when one is distractedly timorous of waters, which nevertheless may be occasioned without the biting of any mad animal by poyson in mans body, but principally is occasioned by terror of the observations of Physicians do witness, and then the disease is not to be referred to madness, because those Symptoms which are proper to those that are bitten with mad creatures, do not appear in these, but only the diseases are aversive to all liquid things, and neither can swallow liquid things, but also at the sight and noise of them, they fall in danger of swooning and death, which nature is peculiar to this poyson, nor can any other cause be rendered from manifest qualities.

But the disease of Tarantators, occasioned by the venomous biting of a Tarantula, and the Chorea of *S. Viti*, also called, both its rise from a venomous and malignant humour somewhat like to the venom of a Tarantula, gotten in mans body, and indeed is the cause of the Symptoms of the rest of the poysons in general, but because they dance in this manner, that is proper to this poyson only, neither can there be rendered any manifest cause thereof, but here it is necessary to fly to that sanctuary of ignorance; and to say that this poyson is destroyed in an occult manner by the force of musick, and this little creature is harmonious, and delights in musick.

CHAP. V.

Of the causes of the Symptoms of the moving faculty.

Cause of
the Palsie.

IN the first place the cause of a Palsie, or deprivation of motion in one part, or more, is the defect of animal spirits in the Organs appointed for motion; the spirits are deficient when they are not sent out by the Nerves from the braine, as happens in an Apoplexy, sometimes also this disease is called a Palsie; for although they are emitted yet through the ill disposition of the part they cannot exercise motion, and sense therein; they are not admitted through default of the Nerves, and spinal Marrow; namely, when they endure some cold distemper and moist, especially; yet sometimes hot and dry, or are dull, or are cut, or knockt, or beaten, or are made narrower, or by obstruction, or compression, by reason of some humor, or tumor, or tubercle, whether they are in the Nerves themselves, as after wounds of the Nerves, and contusions of the same, scars do arise, or in the parts neer thereunto by some contusion, by a stroak or a fall, by a sudden relaxation made of the Vertabres, or being bound.

Cause of
taking a
way moti-
on.

Besides a Palsie there are other impotencies of motion, the cause whereof, besides that of the Nerves, even now explained in a Palsie is the fault of the part instituted for motion, a vitious disposition and disease, namely, if the bones in the joynts which are framed for them cannot move, or cannot rightly be removed out of their place, through ill conformation, fracture, relaxation, if the ligaments which come about the joints, and continue in motion in a natural state are broken, cut asunder, eroded, attenuated, or become softer, or on the contrary are dried, hardned, and filled with a hard and knoty substance, if the Muscles and their Tendones are cooled too much, and their native heat be, as it were, dulled, or moistned by some humour contrary to nature; or on the other side if they are dried and hardned, if any tumor, knot, bunch, hard flesh ariseth in them, if they are wounded, if the Tendones are so stretched out by violent motion, that they become longer then they were, or wont to be, or as

it were broken with bonds, or if a painful tumor be in a Muscle.

The cause of Laziness is the reception of trouble in the Muscles, and parts appointed for animal motion, but since this slowness is two-fold, voluntary, and against our wills, the one comes without much exercise, and labour from vitious humours, burning the parts appointed for motion; the other which is also called Excitative, comes after too much labour and motion, the parts serving for motion, being dried and the spirits consumed.

The cause of trembling is the imbecility of the motive faculty, which cannot keep the member in that part wherein it is placed. The faculty is become weak through the faintness of the strength, and some defect of animal spirits, whether they are not generated, by reason of some distemper of the brain, or defect of the vital spirits, either scattered, or consumed, both which may be occasioned by too large evacuations, long fasting, watchings, long and tedious sickness, too much Venery, or through diseases of the Nerves, as distemper, especially cold contracted by what means soever, or want, or loss of sense is occasioned by stupifactives, or by straitness, but less then in a Palsie.

The cause of Convulsion is the irritation of the expulsive faculty, of the Fibres and nervous parts in the Muscles, by reason of something troubleome, which draws the part joined to it into consent, and stirs it up to this motion, whereby the Fibres being contracted, the Muscle is drawn back to its original. *Emprosithotonos*, is made in the Muscles, which bends the body of such as are affected, forwards. *Opisthotonos* by the Muscles affected, bends the body backward. *Tetanos* is from an equal contraction of the Muscles. The *Spasmus Cynichus*, or troublesome Cramp ariseth from a convulsion of the Muscles of the Mouth; *Trismus* from contraction of the Muscles of the Jaws.

Also the cause of convulsive motions is a humor, or a vapor, an enemy to the whole generation of Nerves, irritating the expulsive faculty in them, and stimulating them to expulsion, yet is not fixed, but hath various motions through all nervous parts, and so the member is agitated in various motions, and for the most part it happens

Of Laziness.

Of Trembling.

Of Convulsion.

Emprosithotonos.
Opisthotonos.
Tetanos.
Spasmus Cynicus.Of grinding Teeth.
Of convulsive motions.

happens that the brain is affected, and matter is sent from thence into all the Nerves.

*Of the
complicati-
tion of the
Cramp and
Palsie.*

*Privation
of speech.*

When the Cramp and Palsie are complicate, the humour is of a mixt nature, which hath force partly of loosening Nerves, partly of vesicating and twitching them.

Privation of speech happens through default either of the Spirits and Nerves which carry them, or of the parts which are necessary for the bringing forth of a word. The spirits are deficient in an Apoplexy, Epileptic, and Dumnesse, properly so called. Men are become dumb through the fault of the Nerves when either the Nerves of third pair are affected, from whence the tongue also receives its Nerve; which defect if it be native, for the most part the hearing is abolished, by reason of the communion of the Nerves of the tongue and the ear, that fellowship is hurt, or when the Nerves of the sixth and seventh conjunctions, and those going back, and vocal Nerves are either cut, or stretched, or cooled, or intercepted, or hurt by what means soever. The voice is hurt through organick diseases thereof, if either the Membranes of the Larynx, or top of the Wind-pipe are filled with some humour, and grow soft, or some chink thereof be shut, by what means soever, or if the tongue be cut about, or maimed, or the Muscles which move the Larynx, Tongue, or Throat are hurt, or relaxed, or knocked, or wounded, or any other way affected contrary to nature: or lastly through default of the wind-pipe; if that be cut, exulcerated, or closed.

*Of the
voice and
speech di-
minished.*

The same causes are if they are lesse, diminution of voice and speech is occasioned, yet more frequently the cause remains in the tongue, namely, if the ligament be too long from one birth, so that it extends to the extremity of the tongue, or if after a child's birth it be wounded, exulcerated, swollen, or be affected with a Palsie on the other side.

*Of stam-
mering.*

The cause of depravation of voice and speech, and first of stuttering; and stammering is principally a moist distemper of the instruments of voice and speaking, and sometimes a dry; also an ill framing of the Tongue and its Muscles, a Tumor borne under it, as also the fault of a swelling at the entrance into the Throat, and want of the fore teeth.

Hoarseness ariseth from over much humidity of the *Of hoarseness.*
 outside of the instruments for speech; whether that matter flow from the head; or be cast out of the breast, from looseness and inflammation of the Columella; or a fleshy substance in the entrance into the throat, as also from external and evident causes, first from air violently staining the voice daily, which causeth inequality of the Wind-pipe.

All the causes of the Cough are those which hinder *Of a cough.*
 the instruments of breathing, whether they be internal, or external causes, either by Idiopathy, or by Symptochy stir up the Cough by Idiopathy, an unequal distemper, principally cold causeth the Cough, which is the greatest enemy to the breast, sometimes also distempers hot and dry; moreover the roughness of the Wind-pipe which happens either through distemper, or through biting humors flowing from the head, or by Medicines, or sharp drinks, or obstruction by a humour, thick, or thin, a pimple, gravel, worms, a little hard swelling, clod of blood. By Sympathy the Cough is raised, if the other parts which can draw the Organs of respiration into consent be affected, namely the Midriff, Liver, Spleen, Stomach, which by reason of the common Tunicle, they have vellicate the instruments of breathing, or send vapors to them, or presse the Midriff, by reason of some Tumor, or obstruction. But the external causes are cold air, dry, cold water, too much desire of drink, cold medicines applied to the breast, dust, smoak, sharp vapors, soure aliment, sharp things, and whatsoever contrary to the order of nature slide into the wind-pipe, straying, or wandering in the gullet, if it intercept the way, or stop it, or exasperate the Artery, or any way molest the Wind-pipe.

Those things cause sneezing whatsoever doth stimulate the Nostrils, and the fore part of the Brain to excretion, whether generated in the body, as humours flowing from the Brain, or those things which affect the Nostrils by communion with the interior skins by Sympathy, which comes to passe when worms stick in the Guts, or whether they happen from without, as whatsoever sharp things are drawn by the nose, smells also and sharp vapours, the splendor of the Sun, and over much light. *Of sneezing.*

Of yawning.

Gaping, or Yawning is when halitious vapours stick in the Muscles appointed for chewing, and moving the lower chop, which nature endeavours by this motion to cast off, but some times imagination is the cause thereof.

Of stretching.

Stretching ariseth from such vapors as may be emitted through the Pores, which nevertheless are not sharp, but being store of them they cause trouble, in the spaces of the Muscles of the whole body stirring up the expulsive faculty to expel, which the nature may discusse, it useth such a motion of the Muscles by constriction of them.

Shaking fits and trembling.

Lastly, Horror and Trembling, which are Symptoms near alike, as also are vehemency, and greatncie of motion; and so is the difference of the cause, they are stirred up by something that offend in the circumference of the body suddenly vellicates the sensitive parts, and stimulates them to expulsion, which it strives to perform by a natural concussion. But the causes which bring forth that twitching, are either external and evident, as whatsoever befalls the body, or vellicates the sensitive parts, or cause the sharp humours contained in the circumference of the body to be stirred and moved as a spark of fire cast on, scalding water thrown upon, a biting medicine applyed to an Ulcer; piercing cold, and such like for internal, as humours, or sharp vapors, either generated in the parts themselves, or drawn, or sent from elsewhere.

CHAP. VI.

Of the causes of Symptomes wherein all or most animal
affions are hurt.

THe cause of a Vertigo is inordinate and circular motion of the animal spirits in the brain; but the causes which perform this circular motion in the brain are internal, or external; internal is an inordinate motion of a flatulent spirit, moving the animal spirits circularly, and exhibiting a false representation of the moving of external things, and of its own body; but this flatulent spirit takes the occasion of its motion, either from its felicity, seeing that every spirit by nature is moveable and fluid, especially if it be hotter, and more fervent than ordinary, or moved by somewhat else; whereas hereafter shall be shewen, which the straitness of the vessels; or of the Pores of the brain occasioneth; for if both the flatulent spirits, and animal spirits are moved in passages that are obstructed, they return back and move circularly, they are generated either in the brain, whence a Vertigo by Idicpathy ariseth, or are sent from elsewhere upward, either from the whole body, as in some Fevers, or from some part, as the Stomach, Spleen, Womb, whence it is called a Vertigo by Sympathy, the external and manifest causes are whatsoever humors can suddenly turn into and dissolve into vapours, or stir up an inordinate and circular motion; with winds, and spirits; such as when the constitution of the air is suddenly altered, immoderate and untimely exercise, empiness, baths, anger, turning round of the body, the beholding of bodies swiftly turning round, or otherwise moving with violence; looking down from a high place, shaking of the head; a fall and such like.

Of a Vertigo.

The cause of an Incubus, or riding of the Mare, is a thick vapour ascending from the lower parts of the body and obstructing the hinder parts neer the Spinal marrow; and hindering the passages of the spirits to the muscles of the breast, whence respiration is hindered, which when a man perceives in his sleep, considering various causes, he fainteth and adviseth with himselfe; and even from this

Of an Incubus.

or that, he imagineth himselfe to be oppressed and suffocated in his dream. This vapor is elevated from thick flegm, or a Melancholy humor residing in the Hypochondries, or proceeds from surfering, or swelling by lying supine, or flat on the back: in children also a vapour of the same nature is occasioned by worms.

Of a Lethargy.

A Lethargy commonly proceeds from a flegmatick humor thickning in the brain; and so the matter of its selfe is cold, yet by accident it happens to be hot, but it is impossible that out of flegm only putrified, both a fever and a deep sleep should arise; for this humor is neither apt of its selfe to admit of putrefaction, especially in the head, neither if it should admit of it, can it utter so much as will diffuse the heat over the whole body, and kindle a Fever, and heat the Heart especially if it putrifie without the substance of the Brain, or its vessels in its bowes and turnings; but it is more agreeable to reason that this drowsinesse either is not a primary disease of the brain, but occasioned from stupifactive and pituitous vapors rendring the animal spirits dull, and are the Symptoms of a Fever, which are called companions; namely, of a continued Quotidian of a bastard Tertian, and Semitertian, or if it be a primary disease of the Brain, it doth not seem to have its beginning only from putrined flegm, but rather from a pituitous inflammation of the Brain, or from an inflammation arising from the blood mixt with flegm. In both these Lethargies there is present great heavinesse, and hurt of memory, by reason of stupifactive, and pituitous vapors, but a delirium, by reason of vapors risen out of the putrid humors troubling the animal spirits.

Of a Carus.

The cause of a Carus is either the straitnesse of the Brain by compression, or obstruction neer the bottom thereof from cold humors, or a moistning, cooling, and repletion of the Brain from a cold and pituitous humor, and an alteration of the spirits by the same, or a stupefactive power, rendring the animal spirits unfit for the actions of the senses and motions; wherewith not only stupefactive medicines are endued, but also some poysons, humors in certain Fevers, Smoaks, and Vapors of Coals, new Wine, and new strong Beer, &c.

A Catoche.

A Catoche hath its beginning from a cold and dry vapour, endued with a peculiar force of fixing the animal spirits

spirits rushing into the brain, and in some sort stopping the spirits, rendering them immovable, and, as it were, congealing them, which for the most part is stir'd up by a Melancholy humor; such also is the force in a Thunder-bolt, and it is sometimes taken from the vapors ascending out of the earth in an Earthquake, and breaking out of their cells, but the spirits serving for imagination, and ratiocination are rather fixed and stopt then those which lately were dispers'd into the members of the body, which is apparent from hence, that although those that are Cataleptick move no member, yet if they are moved by another the power of moving exerciseth its selfe, and being struck they fall down, and moreover spreading their eyelids they keep their eyes open.

The immediate cause of an Apoplexy is a flowing of the animal spirits into the organs of the body, hindering sense and motion; but the influx of the animal spirits is hindered either by the passages through which they should flow into the organs of sense and motion, or the narrowness of the beginning of the Nerves, or through the unaptness of the animal spirits themselves, or by too great a quantity, or perturbation of the same. The straitness of the passages of the animal spirits is made when the beginning of the Nerves in the bottom of the brain is so shut, that the passage and way for the animal spirits and motion into the organs of all the external senses are intercepted; a few only resisting, which flow from the Cerebellum, which scarce suffice for the motion of the breast which striveth exceedingly for respiration. The beginning of the Nerves cause this straitness, first the flegmatick humor poured into these places performs it by obstruction, or compression, which the Antients took for the principal, nay some for the only cause of an Apoplexy. Secondly, blood poured out of its vessels by a stroke, or any other cause whatsoever into the basis of the Brain, and pressing the beginning of the Nerves. Thirdly, placing of flegm when the vessels of the Braine, their being plenty of blood, are filled and stretched that the substance of the Brain is compressed, and the Pores and passages being made narrower, a free ingress for the animal spirits into the Nerve is hindered. Fourthly, a blow, or fall violently pressing the Brain it self, and so the beginning of the Nerves, rendering the animal spirits slow,

Of an Apoplexy.

as it were degenerated from their nature, and are made altogether unfit to perform animal actions, bring forth vapors which contain in them a stupefactive power; more-over the effusion of animal spirits by deep wounds, and troubling of them by a stroak, and by a great fall and commotion of the Brain may take away all sense and motion from a man, but that Apoplexy which ariseth from a pituitous and stupefactive power is the chief, and is understood for the most part when mention is made of a perfect Apoplexy, to wit, which is occasioned by its self, when the other Apoplexies by reason of the differences of causes, either are occasioned by some external and violent cause, as by a stroak, by a fall, or they follow other diseases.

Of an Epilepsie. An Epilepsie is occasioned from a vaporous and thin matter, whether by its acrimony, or venomous and malignant quality vellicating and molesting the Brain and all the Nerves, and together afflicting the animal spirits, darkning and troubling of them: and there are to help this matter forward not onely certain humours corrupted in a peculiar manner, and fit for an Epileptical disposition, but also parts of the body corrupted in like manner, as Worms, After-birth, and such-like.

An imperfect Epilepsie hath the same cause with the perfect Epilepsie, but mote gentle and les store of humours, which otherwise could not vellicate all the Nerves, yet may trouble them all, but cannot trouble and darken the animal spirits in the Brain.

CHAP. VII.

Of the causes of Symptomes which happen to qualities changed.

Causes of colour changed.

AND these are the causes of the actions hurt, or of the first kind of Symptomes which consist in the actions hurt: the second kind, or colour of the whole body, or of its parts changed, contrary to nature are humors of the body, such are the colours of the whole body, or its parts, as are the humors in them, so in the yellow Jaundice, by reason of yellow choller effused into the body, the whole body is coloured with the yellow choller in a Dropsie by slegm it waxeth pale.

The

The teeth grow black either through default of aliment, or when any slimy matter flowing from the Stomach, Brain, or elsewhere, or also from meat left behind sticks to the teeth; and putrifying corrupts and make them black.

The Nails change their colour through peccant matter nourishing them. *Of Nails.*

Fifthly, smells and exhalations are breathed out of the whole body, when hot and moist bodies produce plenty of crude humours, which when they cannot be overcome by heat, become putrid, and send forth a stink from the whole body. *Of stinking smells.*

A stink is sent out of the mouth, when either many crudities are heaped together in the Stomack, which are corrupted, and send forth putrid and stinking exhalations by the Pallate, or when filthy vapours exhale, from the putrification in the Lungs, or when such matter cleaves to the Teeth, Gums, or Pallate, and infects the air which is breathed out with its stink. *Of stinking breath.*

The smell of the Arm-pits which they call Goats smell, proceeds from excrementitious humors, which are sent from the heart, and internal parts in such abundance to these places and emunctories, that all of them cannot easily be dissolved, but corrupt, and send forth filthy smells. *Stink of the Arm-pits.*

The fetid smell of the Groin comes from the same cause, namely, too great plenty of excrements which are sent out from the Liver and Veins to those emunctories. *Of the Groin.*

The foul smell of the Nostrils is caused by excrementitious humours there collected and putrifying by a Polypus, a Canker, or an Ulcer in the Nostrils. *Of the Nostrils.*

The ears stink by an Imposthume and Ulcer in the internal Ear, or by vitious humours sent out of the Brain. *Of the Ears.*

Lastly, the Feet send forth an ill smell, when the moist excrements in them, which are of a hot and moist constitution; and given to surfeit, are collected and putrified in the Feet, being drawn thither by their motion, especially when they are covered with such garments, that they cannot freely expire vapours. *Of the Feet.*

The causes of tactil qualities changed, appears by those things which are spoken of the Causes of Diseases when sometimes they are referred to the rank of Diseases, sometimes to the number of Symptoms; namely, as sometimes

times the actions are hindered by them, sometimes they hinder not the actions, but onely cause trouble to the touch.

CHAP. VIII.

Of the causes of Symptoms in those things that are sent forth and retained.

Causes of excrements contrary to nature. **A**S for what belongs to excretion, and those things which in their whole kind are contrary to nature, and may be generated in the body, as stones, worms, since the same belongs to the causes of Diseases they are spoken of before in the second Part, and the ninth Chapter; but artificial things, as instruments of Iron, Knives, and such like cannot be generated in mans body, but by the enchantments of the Devil are insinuated into the body, or are fitted to parts without; through which they cannot come back; and are there shewen; as it were, going back.

Excreffions through unaccustomed passages. If those things which are wont to be cast forth naturally are cast out another way, which comes to passe because the accustomed ways either are grown together, or obstructed, or some way or other shut, for then nature by reason of plenty of matter, which it was wont to evacuate through the usual ways, they being shut, it wearied seeks new ways, either more open, or otherwise, to which some pricking humor leads it, or which it chuseth of its own accord.

Of bleeding contrary to nature. Thirdly, the effusion of blood contrary to nature through what place soever happens because the Veins and Arteries are opened contrary to nature, for those reasons which before in the Second part and thirteenth Chapter are explained; and particularly sweating of Blood happens through the thinness of the Blood, rarity and laxity of the skin, and debility of the retentive faculty. Small parcels are cast out of the body, when from any internal part which was wont to be evacuated that way, or in that way by an Ulcer, Putrifaction, and eroded by a sharp humour, and separated from the body.

As for the causes of excretions offending in quality hot ordure is cast out, if choller and hot humours are mingled.

bled. If the Liver and Guts are too hot, if hot meats are used. The siege is cold by the extinguishing of the native heat, the use of cold meats and the mixture of cold humours.

Moist Excrements are cast out either through crudity, when the meat is not concocted, or by obstruction of the Meseraik Veins, by reason whereof the Chyle cannot passe to the Liver; and therefore being mingled with the ordure sends it out moist, or by taking of meats that loosen the belly, or by defluxions from the Head to the Guts, or by the effusion of Choller, and other thin humours to the Guts.

But the ordure is become hard by too much heat which consumes almost all the humidity, whether it be that internal heat of the Liver, or of other parts near thereunto; or of the whole body, either natural, or preternatural; moreover from the driness of the Guts, or of the whole body. Thirdly, if there be too much Urine, or if there be a continued sweat. Fourthly, by thickning and astringent meats. Fifthly, by long stay in the Guts, by reason whereof the moisture is sucked out. Sixthly, through want of aliment in the parts, and too much attraction of the members. The dung is sharp through the mixture of sharp humours, & use of lower meats; It becomes fatid through the use of stinking meats, and ill concoction, especially by the mixture of divers sorts of meats, as also by the humidity and heat of the body, which disposeth it to putrifaction. Ordure is cast forth with a noise through the mixture of much wind violently breaking forth. It becomes white, when choller is not mingled therewith, as in the yellow Jaundice; through the use of meats that are whitening, being mixt with plenty of flegm also. It becomes yellow through much mixture of yellow Choller. It becomes green through æruginous choller. It grows black by reason of a black humor, by the use of Cassia, and such like. It becomes red by the mixture of blood, or adust yellow choller. It becomes frothy by reason of slimy flegm and a defluxion of windy matter from the head, and mixture of wind.

The causes of the the changed qualities of Urine shall be explained in the following book.

Hot sweats proceed from hot humors either whilst the humours wax hot, or especially when the matter is sweat provoked.

Causes of excretions peccant in quality.

Hot.

Cold.

Moist.

Hard.

Of sharp, fatid, & sharp.

White.

Yellow.

Red.

Black.

Frothy.

overcome, is attenuated and concocted, cold are caused through plenty of cold matter, which cannot be so easily overcome as heat, or by the resolution of spirits and extinction of the native heat, or through the malignancy of the matter. The sweat smells by reason of too great plenty of stinking filth, they are yellow in the yellow Jaundice by the mixture of yellow choller. Green by mixture of leek-coloured choller, red and bloody by the watriness and thinness of the blood, looseness of the skin, and weakness of the retentive faculty, yet there are administered Wines, which being drunk in some discolour their sweat. They are salt for the most part, which consist of a salt and serous excrement. Bitter by the mixture of Choller, sharp by the mixture of sharp humours.

Of vitious Courses

The menstruous blood offendeth in quality whilst it is white, yellow, black, or has any ill colour; moreover whilst it smells foul, and is too watry, which comes to passe whilst the like humors are gathered together in the body, or about the womb, and goes out through it with the menstruous blood.

Of the spittle changed.

The spittle is too thick if it be contained too long in the Mouth, and its thinner parts consumed; or if thick matter distil from the head, or be mingled with it, or if it be thickned by heat, which happens in Fevers. It becomes frothy through the mixture of spirit, and much air. Spittle borrows its tastes from salt, bitter, sower, humours, especially cleaving to the Stomach. It receives its colour from humours in the bowels, and the vapours going out of them. 'Tis become white from Hlegm; Yellow from Choller; Red from Blood; Black from Melancholy, or thick dried Blood; Green from æruginous Choller; it acquires a foul smell from inward putrification, especially from an Ulcer of the Lungs.

Causes of excrements changed.

At length the excreptions erre in quantity, the excrements of the belly are cast forth in greater quantity then is convenient; First by reason of moist food, especially if after the use thereof store of drink be taken. Secondly, by reason of meats containing little alimentary juice, but much excrementitious. Thirdly, through the ill distribution of Chyle. Fourthly, by conflux of Excrements from the other parts to the Guts. But fewer then is convenient are ejected for contrary reasons; namely, if the meat be hard, and principally if little drink be taken after

it, if the meat be of good juice and nourishment, and be taken in small quantity; if the Chyle be greedily snatched from the Meferaik Veines; and if Choller, (which is, as it were, the Goad to stimulate and expel dregs) come not much into the Guts.

The quantity of Urine ought to answer likewise to the quantity of drink, but that also is sometimes made in greater or lesse quantity, the causes whereof shall be shewed in the following Book.

The causes of plenty of sweat are rarity of body, *Cause of* strength of the expulsive faculty, aboundancy, and tenu- *store of* ity of Excrements; and therefore in the Crysis of a dis- *sweat.* ease great sweats arise, whilst all the excrementitious matter together, and at once is put forth. Little sweat is occasioned by contrary causes; namely, by the smallness, or thicknesse of Excrements, straitnesse of passages, weaknesse of expulsion, by the vehemency of the matter which destroyes heat.

Lastly why Courfes sometimes flow more plentifully, sometimes more sparingly then is convenient; above in the Third Part, Second Section, and First Chapter, where we have spoken of suppression, diminution, and flowing of Months.

Of Courfes

The end of all the Second Book.

BOOK

Book. III.

PART. I.

SECT. I.

OF

SIGNS

In General.

Of the Difference and Heads of Signs.

CHAP. I.

Of the necessity and benefit of the Method of Signs.

*Necessity
of the Se-
miotick
Method.*

SINCE we have hitherto explained what health is, and wherein it consists, and what is the difference of things contrary to nature; we now rightly come to the Method of healing and preserving health, and are to teach by what means health may be

be preserved, and diseases taken away, but nevertheless since arts are conversant about individuals, and a Physician doth not cure in general man, but *Peter and Paul*, &c. The Method and way is first to be explained whereby the present constitution of every man, both sick and well may be known, which now lies hid in individuals; they may be found out by the signs of a disease, and what may be known and hoped for, of the event and end of diseases, and the Method of signs are to go before. Moreover there is that benefit of this Method, that whilst the sick, see those things that may happen to them, being known to the Physician, they may trust the more to him, and obey him; for the Physician when he foresees those things which shall happen to the sick may have time to prevent them, and avoid the reproaches of the vulgar, whilst he foretells those things which shall come to pass, and that they may not rail against the best Medicines, being given to those that are desperately sick

The benefit of it.

A Sign what 'tis.

By the name of Signs we do understand all those things which signify any thing, or all evident things which lay open a hidden matter, or as the Author of Physical definitions speaks. A sign is a manifestation of somewhat hidden, or every thing that shews any of those things which are in the Method of healing, and can demonstrate them, and make them manifest.

CHAP. II.

Of the differences of Signs.

OF Signs of this kind there are certain differences; first according to varieties of Bodies, some Signs are counted wholesome, which shew soundness and health; others unwholesome, which shew unsoundness, others are neutral, which shew a disposition to neither.

Differences of signs wholesome and unwholesome.

Secondly, certain Signs are called *Diagnosticks* and *Deloticks* demonstrating, and demonstrative, which demonstrate those things which shew the present constitution of the body, whether it be according to nature, or contrary to nature; certain are *Prognosticks*, which

Diagnostick, Prognostick.

Anamnestic.

foreshew what shall come to passe; certain are Anamnestic which call to memory the state of the body which is newly past.

Proper.
Common.

Thirdly, some signs are proper, others common, proper are such as agree to one disease onely, Common are such as are found in many diseases. *Galen*, in the first of the differences of Fevers appoints three kinds of proper Signs, and the one he calls unseparable; another proper in its kind, a third proper and inseparable; also he calls those unseparable, which cannot be separated from the effect which they shew, and agrees to every such effect, but not onely proper, are such as agree to those alone, but not to all. Proper and inseparable are such as agree to such an effect alone, and to all.

Out of this division there ariseth other differences of Signs, they are called by the Greeks *Pathognomonick*, *Synedruons*, *Epiginomens*, *Epephanomens*; in English unseparable, sociable, concomitant, subservient, and such as appear afterwards.

Pathognomonicks.

Pathognomonicks are such as follow the disease also and necessary inhere in it, and therefore presently in the beginning of a disease is present and cannot be separated from it, and agrees to every such disease, and always where they are, they shew the disease that must necessarily be there present, yet it seldom happens that there is one *Pathognomonick* sign, but for the most part the *Pathognomonick* signs are constituted of more joynd together, which if they are taken severally are not *Pathognomonicks*.

Synedruons.

Synedruons, that is sociable ones, are such as are not inseparable from a disease, nor do they necessarily cohere to the essence of a disease, nor are always present, but besides the *Pathognomonicks*, sometimes they appear presently at the beginning, sometimes they follow afterwards, and sometimes they are not present at any time of the disease; and therefore they do not shew the disease it self, or its kind, but signifie some condition thereof.

Epiphanomena and *Epiginomena.*

Epiphanomena and *Epiginomena* are such as neither shew the kind of a disease, nor the condition thereof, but shew onely its mutation, and they are threefold; some signs are of concoction, and crudity, others signifie health and death, others are Critick,

or decretory which foretell the termination of a disease.

CHAP III.

Of the heads of Signs.

OF the heads of Signes, although there are many, *Fountains* yet they seem to be reduced to three; the first of signs. are taken from the nature and essence its selfe of ¹ the thing, or as *Galen* speaks from things essentially *Essentially* inhering in the substance; whether it be a disease, *inhering*. or a cause of a disease, or a Symptome; namely, when a thing in its own nature is so manifest to the senses that there needs no other signes.

Secondly, signes are sought from diseases, that is, from all things which follow health; a disease and ^{2.} *From the* the causes of diseases, accidents and Symptomes, *effects*. whether they be actions, or excrements, and retentions, or qualities of the body.

Thirdly, from causes whether they be external, or internal, by themselves, or by accident, or what ^{3.} *From the* other soever. *cause*.

Whereunto belongs ability and disposition of body, and from hence tis easie, or difficult to fall into this, or that disease, for this shewes alike temper, that a contrary, such as helpe also, and such as hinder; as those which encrease a disease are an argument that the disease hath an agreement with the thing, which increases it, but that which delights, and profits is a token that there is in nature something contrary to the disease.

To these heads of signes some adde such as are alike and disalike, understanding by those things, *Things 4-* either a body which is compared to another body, *like and* or a part, which is compared with another part, or *unlike* with it selfe, yet others think that similitude and dissimilitude is not a peculiar head of signes, but rather a reason of fitly comparing other signes among themselves, but the comparison may be right
the

the manners properly, and nature of the sick should be known, wandering diseases commonly belong to these; when if many happen to be sick of one common infirmity, and he which is sick begins to be so as the rest were, it is to be suspected that he hath the same disease.

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SECT.

Sect. 2.

Of knowing the Tempera- ture of Mans Body, and of his Principal Parts.

CHAP. I.

Of the Signs of a wholesome Body.

AFTER we have spoken of the Signs in general, we come now to handle the several kinds; and because bodies are two-fold, Sound, and Sick, and there is a certain difference and latitude of a sound body, which embraces neither of these; first we are to speak in what manner the various constitutions of a sound Body, and of its parts are to be known; and going back from thence, even from a natural state may be understood how a diseased, and 'tis not difficult to discern a sound from a sick: and all those that are to be accounted for sound, who can perform all those actions
which

which belong to a man. Yet how such counterfeit diseases are to be found out. *Galen* teaches in a peculiar Book; but since there is a great latitude of health, first of all the signs are to be proposed of the best constitution of body, which is, as it were, a rule for the rest, and to which, as to the statue of *Polycletus*, the natures of men of all of Ages, Sexes, Countries, and Conditions are to be compared. The signs of such a Constitution, as also of others differing from it, *Galen* in his art of Healing, and fifth Chapter draws from two heads; first from those which essentially inhere, and which according to the nature of the essence are in them. Secondly, from those which necessarily follow those in their operations and accidents.

Signs of a sound body. First, therefore it is necessary that a sound body may obtain the most convenient temperature and constitution of the simular parts, fittest for all actions. Secondly, a convenient number it ought to have of organick parts, and likewise magnitude, figure, scituation, connexion with others, and all things in all respects, which are required to the constitution of a part, as it is organick. Thirdly, all the parts in order ought to be united and joined, but in respect of actions, a man that is very sound doth very well perform all the actions convenient for a man, natural, vital, and animal; So that there is no defect in them, and observes moderation in them all, and is very little subject to diseases, and withstands all the causes of diseases, violent excepted: the excrements observe their natural substance, quality, quantity, time, and convenient part on't; which to be ejected, the qualities which follow the best constitution of a Body, are a rosie colour of the face, nay and of the whole body, calidity, frigidity, softness and hardness, smoothness and roughness; a sound body well constituted observes mediocrity, the body is neither bald, nor too rough, but the hairs themselves keep mediocrity, and in youthfull age tend to yellowness, in manly to blackness; the habit of the body is the middle betwixt too corpulent, and too slender, good flesh, and good stature, out of all which the handsomenesse of the body proceeds; yet all these most evidently appear in the middle and flourishing age.

CHAP. II.

Of the Signs of Bodies differing from the best constitution.

BUT Bodies which differ from the best constitutions, either are sick, which are discerned from sound Bodies, by the hurting of the actions; and the sign which distinguishes betwixt a sound and sick body, is sensible hurt of the actions; Or they are hitherto sound, which have not their actions hitherto sensibly hurt, whereof there is a great latitude, and some in the temperature of the simular parts, some in the composition of the organick parts,, some of them both deviating from the best constitution.

And first those bodies which are too hot, yet moderate in driness and humidity, such discover themselves to the touch, hair abounds in the whole body, and is yellow and thick. They are thinner, as to matter of fat: they are swift and strong for motion, prone to anger, the colour of the face is redder then of a temperate body, they are easily hurt by hot causes. *Signs of a hot body.*

If dryness be joined to the heat, which they call choleric, the body shall be hot, hard, thin, and lean, hairy, and the hairs are black, curled, the Pulse of the Arteries are great, and the Veins great, they are angry persons, which are endued with such a temperature, obstinate lovers of brawlings, they desire few things, they are fit for the generation of Males. *Of a hot and dry.*

If moisture be joynd to the heat, which temperament they call Sanguine, the bodies shall be hot, and soft, abounding with much blood, fleshy, endued with large Veins, and those which are so in their youth, often have the Hemorrhoides of the Nose; and if the humidity somewhat abound, they are apt from their youth to diseases of putrifaction. *Of hot and moist.*

If the body be too cold, such a body is perceived by the touch, 'tis white, fat, slow, soft and bald, 'tis easily hurt by cold things, it hath a narrow breast, and without hair, and narrow veins scarcely appearing, the hairs are thin and *Of a cold.*

and of small increase for the most part, they are fearfull that are of that temperament.

Of a cold
and moist.

If moisture be joined to the cold, not much, nor that coldness great, the body shall be white in colour, fat, thick, soft, red hair, inclining to paleness; but if the frigidty with the humidity be more intense, the body shall be thick, coloured yellow, exceeding bald, the hair smooth, the veins lying hid, such temperaments are dull and slow of apprehension, and for the most part altogether idle, no wayes ready, simple, and not prone to anger.

Of a cold
dry.

If frigidty is joined to driness, such a body is discerned by the touch, those shall be lean, bald, pale, which are of such a constitution they are slow in going on, dejected in countenance with their eyes fixed.

Of Melan-
cholians.

And for what belongs to Melancholians in particular, not only whom the vulgar, but whom *Aristotle* in the thirtieth Section, and first Problemic accounts ingenious; wherein the said *Aristotle* writes that much and cold choller is black; these are foolish, and idle, wherein there is much and hot choller, those are quick-sighted, and ingenious, apt to love, propense to anger and lust, and some greater bablers: but those whose heat is more remis, more temperate, and as it were reduced to mediocrity, those are much more prudent, and although they less exceed in some matters; yet in others they are far better then the others, some in the study of Literature, others in Arts, others in Common-wealths; namely, those Melancholians are ingenious, who by nature abound with good and plenty of blood, wherewith some part thicker and dryer is mingled, which adds, as it were, strength to the blood, and when attenuated, and, as it were, poured, it is spiritual.

Saturnines

And whereas the differences of bodies are constituted according to Astrologers; and according to the number of Planets. Those that are born under *Saturn* have a dry skin, black hair, and are delighted with those black things; they have little eyes, small pulse, a slow and dull gate, they are fearful, sad, love solitude, they are busie-bodies, coverous, slow of endeavouring, silent, laborious, they have terrible and obscure dreams.

Jovials.

Those under *Jupiter* are fair, and have rosie countenances; with a pleasant and venerable aspect; they have black

black eyes, are of a fit stature, and handsome composure of all the parts, their habit of body is good, flesh, blood and spirits, pure and in great plenty; hence they are milde, joyful, ingenious, bountiful, moderate lovers of friends, just, and all their manners compos'd with comeliness, and their gate is moderate.

Those under *Mars* abound with choller, have a lean *Martial.* body, rather than a fat, have red faces and shadowed, burning and threatening eyes, a broad breast, an upright neck, they are propense to anger, contentious, bold, and often precipitate, contemners of danger, seditious,

Those under *Sol* are of a yellowish, or a Saffron colour tending to red, they have yellow hair, golden, and curled, black eyes, swelling, full faces, moderate garbs, and have hotter blood and spirits; hence they are courteous, wise, open hearted, honest, strong, magnificent, and aspiring to high things, and sometimes proud. *Solares.*

Those under *Venus* are faire, coming nigh to the feminine beauty, and softness, delicate colour is red, or of white, inclining to red, their eyes shining, sparkling, and casting lascivious looks, the brows and lips thin, they are quiet, joyful, pleasant in conversation, delighted with jests, company, singing, delighted with Musick, lascivious and principally love neatness, and ornaments of the body, *Venerens.*

Those under *Mercury* are rather little in body than *Mercuri-* great, in face somewhat pale, they have little eyes, and *ans.* those buried within their orbs, thin lips and nose, and youthful face in manly years, very thin beard, quick voice, light spirits, whence they are wise, subtil, studious of sects, and subtil things; prevalent in memory, eloquent, but unconstant, and sometimes also crafty, deceitful, witty liars.

Those under the *Moon* are great in body, fat, thick, *Lunar.* white, unstable, and sometimes delighted with one thing, and sometimes with another.

CHAP. III.

Of the signs of the constitution of the brain.

NOW follows that which belongs to the constitution of parts, and first of the Brain; although a just constitution of the Brain be necessary to perform animal actions, proper to the Brain, yet to perform them, a right composition and conformation of the head, and of the brain depending thereon, do much avail; wherefore following *Galen* in the art of Physick, we will propound in the first place certain signs of the constitution of the brain, drawn from the figure and magnitude of the head.

A little head.

A little head if the body be great is an ill sign, for the brain also in such a head is little, because it will generate but few animal spirits, or if it doth generate animal spirits enough, yet they cannot be moved well enough in so narrow a room, but either being pen'd in they stick, or being stir'd up they move too violent, whence the animal actions are the weaker; and those that have such a body are unstable, and do many things inconsiderately; the brain also in a little head for the most part is intemperate and dry, and it argues unaptness, and debility of heat, and of matter in their formation, and especially a little head is naught, if it also have an ill shape.

A great head.

A great head if it be well shaped, and have the joining parts, as, to wit, the neck, the spine of the back, and all the Nerves correspondent, it signifies the brain is well constituted, and is a token that the formative virtue is powerful, which can rightly inform and elaborate plentiful matter; but if that be wanting, it signifies only plenty of matter: but weak power, which is unfit for such matter, and therefore is no token of a good constitution of the head, and such for the most part are dull and unapt.

The best figure of the head.

The natural and best figure of the head is most like to a spher, gently prest on each side, so that that compression may be lengthned from the ears towards the forepart, and those which have that excell in wit, judgment, and

and memory, are strong in body, but those which differ from that best figure are generally accounted *Phoxa*, that is, vitious; figure, namely, to wit, wherein the anterior part, or posterior, or both of them are deficient in their excellency, so that either behind, or before, or upward, such heads seem ugly; but if some excellency be deficient, and the rest well raised up, or grows narrow at top, *Galen* calls it a vitious formation of growing sharp, and those which have this figure of the head, are the most unwise, impudent, fraudulent, and most basely corrupted with other vices, that there be a rising up of the hinder part of the head, and the other bones answer to it, is a good sign, for much good matter is present, if it have a handsome figure also, not else: but if in a thin, too long, and a weak neck, the hinder part onely riseth up in greatness, or is deformed; 'tis an ill sign, and signifies onely plenty of unprofitable matter, and weaknesse of the formative faculty. The former part of the head, the hinder part not being altogether deficient in rising up, if it be more lifted up is a good figure, and all the senses are well; and therefore 'tis no ill sign, but on the contrary, if that magnitude be joyned with a deformed figure, and the senses are weak, it signifies imbecility of the formative faculty; those whose fore-heads are low, have weak senses, and are stupid, yet they often have good memories, and strength of body; on the other side, those whose hinder parts of the head are not raised enough up, have all their senses whole, but are destitute of memory and strength of body; but those that lack raising up before and behind, and the head riseth much in the middle, are called *Oxucephaloi*, sharp pointed, those are unfit for all animal actions, and weak through the narrowness of the brain; if the head grow great near the ears on each side, it is a token of unfit matter, and of a weak motive faculty.

But for what belongs to the constitution of the brain, *Signs of a* they manifestly shew themselves by their animal actions, *temperata* and those things that follow them; namely, a temperate brain, doth perform all animal actions well; unless there be any fault in the organs of the external senses, it easily resists external hurts, and injuries. Its excrements are moderate in all, and are cast out at convenient places, espe-

especially the Palate, their sleep is moderate, their hairs in Infants are yellowish, in Boyes mote yellow, in young Men yellow; in figure indifferent betwixt curled and strait, not doth it soon fall off, nor they become bald.

Of a hot.

Those which have a hot brain are changeable in their opinions, swift in motion, ripe in their wits, they use little sleep, and not very sound, the excrements of their heads are few and concocted, so that no error be committed in their dyet, they are easily offended by hot things, their face is redder, and veins apparent in their eyes, their hair soone grows, and soon falls away, 'tis strong, thick, and curled, and for the most part tends to blackness.

Of a cold.

Those which have a cold brain, their senses are slower and weaker, and their apprehension, memory, and wit dull, and the motion of their body, not so lively and quick; They are moderately inclined to sleep, they abound with excrements of the brain, although they are not full of braines; from without they are easily offended by cold things, which easily occur, especially by the north wind: those parts which are neer their heads are neither so warm to those that touch them, nor so red to those that behold them, and the veins which are in their eyes are not so discernable, their hair is strait and reddish at middle age, bred more slowly, yet they are lasting; first they are thin, but age coming on they are more burley.

Of a dry.

Those which have a dry brain have sharp senses, piercing and subtile, they are very watchful, and have very few excrements, strong hair, and often curled, which do so soon grow, and soon fall away, and are hurt by drying things.

Of a moist.

Those which have moist braines their senses are duller and more turbulent, they are accustomed to much and profound sleep, they have store of excrements, thin hair, soft, whitish, and durable; and they are seldome or never bald, they are comforted by dry things, and offended by moist.

*Of a hot
and dry.*

Those who have a hot and dry-braine, are ingenious, and industrious in taking in hand, and performing of business, the force of apprehension is most exquisite in them.

them, and they are fit for motion, yet more active for the most part, then behooves them to be, they are also most vigilant and sleep very little, and have few excrements of the brain; to those that touch them, their head appears hot, their face until they come to full ripeness of years is red, afterwards the heat decaying more pale, they are offended with air, and other hot and dry things.

Those which have a hot and moist brain, if either quality a little exceed, the excrements of their heads are many, the colour of the head is white, mingled with red, the veins in the eyes gear, the hair strait and yellowish, and do not easily fall away; they are easily hurt by heating things, and are pained in the head, and many excrements are collected to the other especially, if they are moist, but if both qualities abound, the senses are not so sharp, they cannot watch long, yet their sleep is not pleasing and continued, they have divers dreams, and strange ones, their heads are obnoxious to many diseases; since it collects more excrements than it can discusse, they are easily hurt by heating, and moistning things, and principally by the South Wind; but if one quality overcome the other, there shall be more evident signs of the one, and more obscure of the other, which is to be taken notice of in the other temperaments also.

Those which have a cold and dry brain are too ripe witted, but in process of time, sharpness of the wit and senses abate, and they grow old and dye before their time; especially if a distemper of the Heart and Liver concur with that of the Brain; the same are unhealthy, and are easily offended by external causes, by cold aire, and error in their dyet; the head to the touch is cold, nor have they good complexions, unless they have the better colour, from the hot distemper of the Heart and Liver, the Veins of the Eyes do not appear, their hair grows slow, and is thin and reddish, and if the dryness overcome the cold they are well,

Lastly, whosoever have cold and moist brains, are slow and dull of apprehension, and their senses not so sharp; they collect many excrements, they sleep much and sound, they are easily offended with the coldness and moisture of the air, and are apt to cold distillations; they have long and soft hair, and whitish from their childhood, they are never bald.

*Of a hot
moist.*

*Of a cold
and dry.*

*Of a cold
and moist.*

CHAP. I V.

Of the signs of the constitution of the heart.

Signs of a temperate heart.

IF the heart be temperate, mediocrity is observed in its motion, the Pulse of the Arteries and respiration, and these who have such a heart, they are endued with good manners, not effeminate, nor mad headed, or angry, but humane, not covetous, nor prodigal, but liberal, not dissemblers, nor proud, but candid, without haughtiness of mind, benigne, temperate, not precipitate, nor medlers, nor busie-bodies, but mature in counsels, not envious, but desirous of others good.

Of a hot.

Those who have a hot heart, their whole body is hot, the motion of the heart, the pulse, respiration, through urgent use, exceeds all mediocrity in magnitude, celerity, and frequency, they are couragious, and swift, and unwearied of undertaking enterprises, and bold in undergoing dangers: they are rough, and full of bristley hairs in their brest, and the brest in comparison of the head is great.

Of a cold.

The signs of a cold heart, are contrary to those which are of a hot, the whole body is less hot, unless the liver be hotter, the motion of the heart, pulse, and respiration when custome doth not so require it, is not so great, and sometimes small and slow, if there be a greater recess to frigidty; and such a heart argues slowness to anger, fear, distrust, slothfulness, and lingering; whence such are effeminate, contempters of glory and honour, their brests are without hairs, and in comparison of their heads little.

Of a dry.

Whose heart soever is dry, their pulse is hard, they are not prompt to anger, but being stir'd up to anger are implacable and mad, and they can dissemble their anger, they are obstinate, and covetous, the whole body for the most part is too dry, unless the moisture of the liver correct it.

Of a moist.

Moreover he whose heart is too moist, his pulse is soft, they are apt to anger, but easily pleased, the habit of the body is dryer, except the dryness of the liver resist it.

The

The signs of a hot and dry heart are a hard pulse, great swift, frequent, great respiration, swift and frequent, those who have such a heart are fit to take in hand and perform actions, couragious and bold, apt to anger, and unplaceable, envious, proud, and if there be excess of heat, and drouth, are mad, cruel, unmerciful, and sparing none; the same are hairy, especially in the Brests and *Hypochondrics*, the whole body is hot and dry, unless the constitution of the Liver hinder it, the Brest broad and wide.

Of a hot and dry.

The signs of a hot and moist heart, are soft pulses, great, swift, and frequent, and the respiration answers to the pulse, so that the brest answers to the heat of the heart, and those who have such a constitution of the heart, are industrious, and prompt to actions, and not wild, they are apt to be angry, yet it is not sharp and durable, but placable, and this temperature, so that humidity do not too much exceed, moist fit to prolong life, but if the humidity doth much overcome the heat, putrifaction is easily caused, and putred fevers are generated.

Of a hot and moist.

Those who are cold and moist in the heart, bring forth a soft pulse, little, slow, thin, those which have such a temperament, are not bold, but fearfull, and distrustfull, effeminate, slow, and not apt to anger, and if they are stirred up to anger, it is not violent, but easily appeas'd, they are also gentle, shame-faced, desperate in adversity, and altogether endued with a soft and effeminate mind, their breasts are bare, and the whole body, and the brest answers to simple constitutions in amplitude.

Of a cold and moist.

Moreover in those who have a cold and dry heart, there is found in the pulse hardness, smallness, thinness, and slowness, and such is their breathing, if their breasts be ample, they are no ways propense to anger, but being stirr'd up, and as it were forced to anger, retaine it very long, they are also covetous, and of all others most naked in the brest.

Of a cold and dry.

Yet here you are to be admonish'd, that those things which are spoken of signes, of the moral actions by Physicians, are not of acquired manners, and such as are accomplished by education, discipline, and custome, but are to be understood of the native and congenite manners, which *Galen* calls *Hermas*; and when Physicians tell us that manners follow the constitution of the body, that

Whether mens manners are according to their temperature.

is to be taken of the native and ingenite manners, not such as are acquired.

CHAP. V.

Of the signs of the constitution of the Liver.

Signs of a temperate Liver.

IF the Liver be temperate, the habit of the whole body is in the middle, betwixt being too fat, and too lean, the colour of the body is rosie, and for the most part, the rest of the signs appear, which are found in a temperate body, the Urine is excellent.

Of a hot.

If the Liver be too hot, yellow Choller abounds, and in middle age black, or chollerick, and adust blood, the Veins are broad, and ample, the whole body more hot, the Belly and Hypochondries rough and hairy; and those which have such a constitution of Liver, are carried away by pleasures, especially by meat and drink, they are offended with hot meats and drinks, and hot air; but cold air and cold meat and drink help them; their Panch is dry, they are thirsty, unless the coldness and moisture of the stomach hinder it, and they are very obnoxious to hot diseases.

Of a cold.

In a cold Liver all things are contrary, the veins are strait, the blood colder; and hence the whole body colder, except the heat of the Heart hinder it, the belly smooth.

Of a dry.

The signs of a dry Liver, are little blood, and thick hard veins, and the habit of the whole body thin or lean.

Of a moist.

The signs of a moist Liver, are abundance of blood, and that thin and watrilly, and the whole body more moist.

Of a hot and dry.

The signs of a hot and dry are amplitude and hardness of veins, and hotter blood, thicker, and dryer; the Hypochondris are exceeding rough, and the whole body hotter and dryer.

Hot and moist.

But if the Liver be hot and moist, more store of blood is generated, and that of an indifferent consistence, the veins are great and broad, and soft, and the habit of the whole body moister and softer, the Hypochondries hairy enough,

enough, and if either quality do much exceed, those who have such a constitution fall into many diseases, which proceed from putrefaction.

If the Liver be more cold and moist, crude and pituitous blood is generated, the veins are narrow, and the whole body, if the heart hinder it not, is colder and moister, and the Hypochondries are void of hair.

Moreover the signs of a cold and dry Liver are little blood, and so the nutrition not so happy, less store of hair, and the whole body is colder and dryer, unless perchance the heart do correct the frigidity of the Liver.

CHAP. VI.

Of the signs of the temperature of the Testicles.

Those whose Testicles are in good temper are fruitful; those whose Stones are too hot, are lecherous, and apt for *Venus* betimes, and fruitful also, and beget boyes, and they also have hair in their privy parts betimes, and have beards also very young.

Signs of
temperate
Testicles.
Hot.

Those who have cold Stones are not apt for *Venus*, nor fruitful; and if they do generate, they rather procreate Females then Males, and their genital parts are more bald, and have less hair, and they slowly, or never put forth a beard.

Cold.

Those who have moist abound with much seed, but watry, and have broad beards.

Moist.

Those who have dry ones, generate little seed, and that indifferent thick, and are apt to have little beards.

Dry.

Those who have hot and dry Testicles generate thick seed, and are fruitful, and are timely stir'd up to *Venus*, and yet are easily hurt by *Venus*, they beget Males, unless the sluggish nature of the woman hinder it; hair comes betimes in the genitalls, and plentifully, and in all the parts neer, upwards in the parts nigh the Navel, downwards to the middle of the Thighs.

Hot and
dry.

Those who have heat and moisture, do more abound with seed, they affect *Venus* moderately, and can easily brook it, if the constitution of the rest of the body agree, nay sometimes they are offended by retaining of the seed, they generate as well Males as Females; and are no so rough about the Genitals.

Hot and
moist.

Those

*Of the signs of the constitution of the stomach.**Cold and moist.*

Those whose Testicles are cold and moist begin to use *Venus* late, neither are they prone to *Venus*, and they are also unfruitful, or if they generate fruitful seed, 'tis more fit to procreate Females than Males, and the seed is thin and watry.

Cold and dry.

Lastly, those that have cold and dry Stones, Generate thick seed, and but little, and are more hurt after Coition then cold and moist ones.

CHAP. VII.

*Of the signs of the constitution of the stomach.**Signs of a temperate Stomach.*

A Temperate Stomach shews it self moderate in all things, it desires so much as it can concoct, and concoct it well, and neither corrupts soft meats, which are easie to be digested, nor leaves hard meats unconcocted, and crude, nor is it easly hurt by meat that overwhelms it.

Of a hot.

But a hot Stomach concocts better then it desires, it digesteth meat hard and difficult to be concocted, happily, bur on the other side, it corrupts soft meats, and such as are easie to be digested, and brings forth a nitrous crudity; 'tis delighted with hot meats and drink, and that so powerfully, that it is not hurt by the moderate use of cold things, but is preserved from the farthest decay, which will be preserved by heat; Thirst is greater then the desire of meat.

Cold.

A colder Stomach more greedily desires then it can concoct, and principally cold meats, and such as are hard to be digested, are not easly well concocted by it, but easly grow sower in it, and a little after eating plentifully, a sense of heaviness is perceived about the Stomach, and floating, and loathing, and sometimes vomit.

Moist.

A moist Stomach doth not easly thirst, it is not easly hurt by much drinking, 'tis delighted with moist food, and easly brooks hunger.

Dry

A dryer Stomach is more thirsty, yet unless the thirst arise from some part neer thereunto; it is hurt by too much drink, it desires dry meat.

From these signs of the simple constitutions of the Stomach

mach, may easily be collected, the signs of the mixt constitutions.

CHAP. VIII.

Of the signs of the constitution of the Lungs.

Those who have hot Lungs do much dilate their breasts in breathing, they are thirsty, and the thirst is not allayed unless it be in long time, and with cold things. *Signs of hot Lungs.*

Cold Lungs are much hurt by breathing in of cold air, the respiration in those who have cold Lungs is little hot, that is less cold, and is a friend to breathing; also in cold Lungs many excrements are gathered together, which are sometimes cast out by coughing, sometimes by spitting only. *Of cold.*

Dry Lungs collect not many excrements, and therefore hath no need to cast up any by cough or spittle. *Dry.*

Moist Lungs on the contrary gather many excrements and therefore between whiles in speaking, 'tis necessary to spit often. *Moist.*

The voice also is shewen by the constitution of the Lungs and Wind-pipe, a great voice and vehemency of efflation shews a wide Wind-pipe, and heat of the Lungs; a small voice shews the contrary; the Wind-pipe rightly constituted, causeth a smooth even voice; a sharp voice but joined with clearness, signifies driness of the Wind-pipe, a sharp voice with hoarseness, and obscurity proceeds from a plentiful humor moistning the Arteries, and rather belongs to a preter-natural constitution than a natural; a sharp voice shewes narrowness of the throat, and consequently coldness of the Wind pipe; on the contrary a great voice shewes wideness of the top of the Wind-pipe, and therefore signifies heat strong from their infancy. *Signs by the voice.*

Book. III.

CHAP. III.

PART. I.

SECT. I.

OF

URINES.

CHAP. I.

Of the abuse of inspection of Urines.

*The vulgar
opinion of
Inspection
of Urine.*

After we have spoken of those things which are to be known about the constitution of a sound body, now we are to speak of the knowledge of things contrary to nature; but because amongst signes Urine, and Pulse do arise from the fountain, we will speak of them in the first place: and first for what belongs to Urine, although a false opinion is deeply seated in the minds of many, that by the inspection of Urine alone, and wholly, the state and condition of the sick, and what ill he suffers, either within or without, from what cause loever may be known, and whether the sick be a man, or woman, whether a woman be great with child or not: Yet such like are beyond the power of the Art of Physick, by the Urine to divine. In the mean time the Inspection of Urine is profitable, but as *Hypocrates* also 1. *Aphor.* 12. teacheth that Urine may teach many things

things of the condition of a disease; but that there may be a right judgement of Urine, the differences and causes of the differences are to be known.

CHAP. I I.

Of the differences of Urine, and first of the substance of Urine.

First in Urine two things are to be considered, in regard of the substance thereof, the liquor, and that which is contained in the liquor. In the liquor again two things, the Consistence and the Choller.

First for the Consistence, some are thick, some are thin, others indifferent.

That Urine is thin, which for the most part consists of watry and potulent matter, but of serous and salt matter, that which is separated, in the Veins and Livers; or of another humor, which hath little or no mixture with it.

On the contrary, a thick Urine is that which contains much mixture of serous and salt humidity, or also of other humors. The middle is that which hath so much of that serous excrement, and aqueous humidity mixt with it, as for the most part is wont to be in a natural constitution of the body.

Moreover some Urines are clear, others troubled, or foul; those are troubled, through which the sight cannot passe; but 'tis not the lame thing for Urine to be thick and troubled, when as other liquors; so Urines also are accounted thick, which neverthelesse are cleare, and perspicuous; but a clear Urine is either made clear and so remains, or else 'tis made clear, and afterwards is troubled, which is properly called troubled Urine; but troubled Urine, properly so called, is that which is made so, and either remains such, which Urine commonly is called subjugal, which is like the contents of the Urine, or is made foul, or troubled, and afterwards become cleare, and becomes so afterwards, as is spoken. Moreover in respect of the colour, there are accounted several differences, but the principal colours, according to which the Urines differ are six.

First,

First white; secondly, pale; thirdly, flame colour; fourthly, yellow; fifthly red; sixthly, black.

White Urine.

First to the white Urines belong the aqueous, which bare the colour of pure water, then those which represent thin wine, or fair water, into which is cast a little Oker, or Choller, as also snowy Urine, which represents the whiteness of snow, as also milkey and light gray, or such as represents the colour of clear horn.

Pale.

The second is pale like the colour of Oker, or subpallid, which is seen in water tinckted with Oker, but some call these Urines spicious, or the colour of ears of corn, and subspicious, and compare this colour to the colour which is seen in chaff that is old, or in straw.

Straw colour.

Flame colour.

The third colour is flame colour, such as is that of a Citron, and in fire burning clear, which if it be more remis, 'tis called subfulgent; *Actuarius* calls these golden Urines, and subaureous, because they are like gold.

Yellow.

Brighter yellow.

Fourthly, the next and neerest to this fulgent is yellow, yet so differing from it, that this inclines more to white, that is more shining and splendid, or neer to the colour and splendor of the Stars; that which is not so deep but clearer, then yellow is called subflavous; *Actuarius* calls these colours croceous, or saffron colours, or subcroceous, such as are in waters wherein saffron, or wilde saffron flowers are mixed.

Red.

The fifth colour, or red, whereof *Galen* makes three sorts, and places red in the middle, extream red, the highest, and reddish the lowest, and those he places in Bole-Almonack, and Vermilion, and red, in Cherries and Apples; others make four differences, and first they place the colour that is a mixt red, such as is the hair of those who are said to be red hair'd, which again is distinguished into red, and reddish; the second is Rasse; the third purpurious; the fourth sanguineous.

Vine colour.

Blackish.

To these *Actuarius* joints a vine coloured Urine; which represents the colour of a red Urine inclinable to black, to this he adds the colour of dry grapes, like new Wine (out of doubt of red Wine) boiled to the third part, or which is prest out of dried Grapes, or of Cherries, inclining to a black colour.

Black Urine.

Moreover there is a black Urine, under which some Physicians

Physicians comprehend more colours, green, yellow, black, and such like; although there be innumerable differences of green plants, yet two here are the chiefe, Leek-colour, which is seen in the blades of Leeks; and *Eruginous* Eruginous which is like Verdy-grease, and yellow, which represents the colour of red Lead, and therefore called plumbeous.

To these differences they refer Oleagenous Urine, which represents the colour and consistence of Oyl. *Oily Urine*

Now these differences which are taken from the substance and colour are complicate, and constitute, compound differences, amongst which the chief are seaven, *The smell of Urines.* Urine thin and white, thin, pale, thin flame colour, or fulgent, thick white, thick red, thick black

Moreover besides these there are other differences less principal, which are taken from other qualities and circumstances; first from the smell, for some Urines smell little, others very little, and have that odour which is natural to Urine, others stink exceedingly, and others smell pleasant.

From the sound, for some Urines whilest they are poured out make no noise, others make a noise.

From the quantity, for some Urines are made in an indifferent quantity, others more sparingly, others more plentifully.

From the manner, for some are made without difficulty and pain, others with pain, some drop by drop, and others altogether.

CHAP. III.

Of the Contents in Urine.

A Content in a Urine is every corpulent and visible thing which is mingled with the liquor of the Urine; some Contents are essential, others accidental; the essential are those which appear for the most part in all the Urines of sound persons, and most of sick, but the accidental are those which neither always nor most frequently are discerned in Urines. *Contents what, how many fold.*

Essential in respect of scite or place, in which they abide there are three; the sediment, the suspension, and

the clouds, the altitude of the whole Urine is to be divided, as it were, into three parts, into the bottome of the Urinal, and the highest region of the Urine, and the medium betwixt these two extreame.

The sediment of Urine.

The subsidence or sediment of Urine, is that in Urine which descends towards the bottome, and settles in the bottome.

The suspension of Urine.

Suspension, or subliment is that which is contained in the middle, and is, as it were, suspended.

The nebula.

The clouds and little clouds is that which hangs in the higher part of the Urine like a cloud, yet suspension in Urine is sometimes taken by *Hypocrates* by the names of a cloud, as in the second of his Prognosticks, in the 29. Title is manifest.

Yet these Contents do not alwayes exactly keep their natural place, for the sediment sometimes plainly sticks in the bottom, and sometimes ascends higher, and tends to suspension, and sometimes suspension also ascends a little higher from the middle sometimes descends lower; so also Clouds plainly overspread the extremities, sometimes incline towards the middle.

The difference of Contents.

In these three Contents, other differences moreover are to be considered from the substance; a Content is said to be thick, or thin, equal, or unequal, plain and smooth, or rugged; equal is when all the parts of the Content are of the same thinness or thickness; unequal is when one part is thick and another thin; plain and smooth is that which observes continuity of parts divulged, or rugged, is when there is no continuity for the colour, A Content is either white, red, or black, or tintured with a colour neer to one of these. In respect of quantity 'tis either little, much, or indifferent, out of which complicated divers other differences again do arise.

Accidental differences.

Concerning the accidental differences which are contained in the Urine contrary to nature, some settle in the bottome, others in the middle, others in the superficies, some stick to the sides of the Urinal, others are confusedly mixt with the Urine.

Farenacious sediment like leaves, like Pulse.

Of the first kind are farenacious sediments, which represent thick bran, little flakes which are like leaves, grainem, which represent a kind of pulse, or corn, besides these sometimes in a Urine, there are clots of blood, small sands, stones, little rags of flesh, quittance, worms.

In the middle of the Urine there sometimes swims little Hairs in bodies like Artonies, threads, or rags, and haire, and sometimes Urine. small sands, cleave to the sides of the Urinal, representing the substance of Tartar.

But in the superficies there appears principally four things *Bubbles.* præter-natural, bubbles and those various, froth, a crown according to the common opinion; when notwithstanding 'tis nothing else then a shadow, or light, passing through the circumference of the Urinal, received within the compass of the Urine, and so is not properly called a Content, and Fat, yet besides these sometimes fine Sand swimming in the superficies of the Urine

CHAP. IV.

Of the causes of the various consistence of Urines.

After we have mentioned the differences of Urine, next we must find the causes of all those differences; and first the cause of a Urine of an indifferent consistence is a serous excrement of blood, mingled with an indifferent quantity of water which happens when the faculty concocting is well. *Causes of Urine of an indifferent consistence.*

The cause of a thin Urine which hath little of that serous excrement mixt with it, is debility of concoction, especially in the Liver and Veins, which coldness of the Stomach may occasion, but principally store of drink, also a cold distemper of the Reins. Thirdly, obstruction, and straitness of the vessels through which thick humors cannot flow with the Urine. Fourthly, the changing and converting of the matter in another part.

Thick Urine is made by the mixture of any thick matter which happens when crude humors, which are cumulated in the Veins, are expelled by nature this way, or when any obstruction is opened out of the Spleen, Liver, Reins, and other parts, or an imposthumation is broken, or ulcer, the thick matter is mingled with the Urine, or if there be store of serous and salt humors. *Thick.*

If the Urine be made clear and remain so, and be of good consistence, it is a token that such clearness proceeds from the natural heat rightly elaborating the matter, for nature elaborates not only aliment, but excrements also, as much as it can, and impresses convenient qualities in them; but if Urine be thin and clear, also 'tis a token of crudity; neither hath nature then begun concoction of humors, and if Urines have any other colour, then such waterish, they obtain it from collectick humors mixt therewith. *Clear.* *Thin and clear.*

Troubled.

But if the Urine be made clear, and afterwards be troubled, and that be in a sound body, it is a sign that he declines from his best health, and is prone to some disease, especially a Fever, and it signifies the humors in the Veins to be indigested, which nature now hath endeavoured, yet hitherto hath not perfectly concocted: but if the same happen to those that are sick, it signifies that some concoction is now to be made, and something of the peccant matter to be mingled with the watry substance; but that mixture not to be so exact, and happening by some occasion from the external air, or the heat vanishing of its own accord; the vitious matter is separated from the other humors.

Troubled,
which
grows
clear.

But if Urine be made thick, and afterwards become thin; that happens because the natural heat begins to perform and concoct the matter, and to stir it, and mingle it, which notwithstanding since it is not exactly mingled, the heat afterwards ceasing, the Heterogeneous parts are separated of their own accord, and the thicker reside in the bottome. The same comes to pass if the Urine be thin, but some matter may be mingled therewith in its passage; but since it is not exactly mingled with it, but only confused afterward of its own accord, it settles in the bottom.

Troubled
which re-
mains so.

Lastly, if the Urine be made thick and remain so, it signifies great confusion of humors is made in the Veins by the heat stirring the humors, but not rightly concocting them, nor is there good concoction made, which the excrements elaborate to make after their manner, and indeed if such a Urine appear in the beginning of such a disease, wherein no concoction seems hitherto to be made by the natural heat; it is a token that 'tis caused by the fiery heat contrary to nature agitating and troubling the humors in the veins; but if the Urine in the beginning is not made thick, but clear, and afterwards becomes turbulent, it is a sign that the disease grows worse, and that the heat acting upon the matter contrary to nature is increased, yet always this and also other signs must have regard to the rest of the conditions of the Urine, and hence it is to be collected, whether such signs be made by the strength of nature working upon the vitious humors, or by the increase of the preter-natural heat, and putrefaction, or debility of strength.

CHAP. V.

Of the causes of colours in Urines.

The causes
of a golden
colour in
urine.

Concerning the causes of colours in Urine, a golden colour, which agrees to the Urines of sound men proceeds according to the vulgar opinion from some portion of yellow choller, or rather

rather from a serous and salt excrement, yet that also something tinged with choller, which is mixt with the Urine.

A white Water is made, either because nothing is mingled with it which may colour it, which is properly called aqueous, or because some white body is mixed therewith. *Of a white*

The first cause of aqueous Urine is Crudity and weakness of the native heat, by reason whereof this excrement is left, as it were imperfect. Secondly, obstructions of the passages through which the matter useth to flow to the Urine. Thirdly, if choller, and therewith that salt humor be carried to another place, as happens for the most part in acute Fevers, and Phrenesies with them. Fourthly, much drink. Fifthly, heat of the Reins and Liver, which plentifully draw drink to them, but do not concoct it. Sixthly, Gravel in the Reins, or Bladder, too much of that which is salt, and thick adheres, but the aqueous flows out. *Of an aqueous.*

Urines of another kind are made by the mixture of some white substance, whether it be slegm, or quittance, or seed, and these Urines we call milky, yet for the most part they are made thick, and afterwards become clear, and the matter settling in the bottome of what kind it is, may be easily discerned. *Of milky*

A Urine is somewhat pale, when pale choller in a sufficient quantity, or a little of yellow is mingled with the Urine, but if much pale choller, or yellow in an indifferent quantity be mingled with the Urine a pale colour ariseth. *Of palish. Of pale.*

If yellow be mixed in greater quantity, the Urine becomes yellow, yet some times other causes besides internal, external may give a tincture to the Urine, as Rhubarb, Saffron, the leaves of Senna; and such like. *Of yellow.*

A ruddy colour in Urine is caused by choller and blood, and indeed if the Urine be coloured with blood it doth not look clear, and is properly called Urine dyed with blood, and has a colour like water, wherein the flesh of animals newly slain have been washed, and is made either in some open vessel for what cause soever, or by the weakness of the Liver and Reins, by reason whereof they cannot contain blood and assimilate it to themselves, or because nature at set times evacuates the blood abounding in the whole body with Urine; but the blood which is mingled with the Urine, is either thin, and the Urine is made red or reddish, or thick, which if much be mingled, the Urine is made exceeding red, but if little either simply red, or of a pale red, but that Urine which is coloured by store of choller, the choller colouring it and making it redder, it shineth *Of blood red.*

shineth, and is as it were like flame, sometimes also it is made red and thick by plentiful mixture of adust choller, like wine of a blackish, or deep red.

Of Vine colour.

Of grape colour.

Of green.

Of yellow and black.

Wine like Urine is made by the mixture of ceruleous choller, or representing the colour of Wood, as also by the mixture of plenty of red choller: Grapy by the mixture of yellow choller exceedingly dryed, and as it were changed into a Violet colour and degenerating towards black.

A green Urine is caused by plenty of Æruginous, and Leek-like colour.

Yellow and black Urine are sometimes caused by the mixture of external things; as for what belongs to the internal causes, the Urine is made black when either the melancholy humour is evacuated with it, which happens in those which cumulate melancholy humours in the Spleen, or black choller is mixed with the Urine, or when the heat and spirits are extinguished in the veins, the blood is corrupted and becomes black.

CHAP. VI.

Of the causes of an oily Urine, and of other differences.

Of oily Urines.

Oleaginous Urines either have only fat swimming in the superficies, or represent Oyl in substance and colour: the first difference proceeds from a melting of the fat, and is rather to be referred to the differences in the Contents; but that Urine which seems like Oyl in substance and colour, and yet is not truly fat, hath its beginning from the mixture of excrementitious humours, especially of pale and black Choller, as also of Flegm, from whence proceeds a crudity with a certain greenness like oyl; but when the difference in substance and colour are joined, a black Urine cannot be thin, but if the black humor makes it black, it is necessary that there is so great plenty thereof mixt with the Urine, that the Urine must become thick.

Black Urine always thick.

A light, red, thin.

A light red Urine is thin from the small portion of blood mingled therewith, but if it be made of a pale red, 'tis by choller which cannot happen unless there be so great plenty thereof, as may render the Urine thick.

A pale and thin.

A pale, red, thick.

A pale and thin Urine is made when a small portion of choller is mingled with an aqueous Urine, but a pale red and thick, when choller is mixt in greater plenty, but if any choller be mingled with a thick white Urine, the Urine is dyed pale.

CHAP. VII.

Of the causes of smell, quantity, and such like accidents.

THE Urine which obtains the natural and usual smell, signifies that the natural heat is right, and concoction is well performed; but if the Urine smell not, or less than

the Urines of those that are well use to do, it is a token that the native heat is weak, and almost no concoction performed, nor is the serous and excrementitious humour mingled therewith.

Sweet Urine, or that which smells well doth not proceed from any internal natural causes, but if any such be found it hath acquired that smell from meats, or medicines taken inwardly.

Stinking Urines are caused first from meat and drink, and certain medicines taken, also from crudity and corruption of meats, erosion, and especially from putrification, Fourthly, from daily retention of Urine in the Bladder.

Urine naturally ought to answer to the drink, but it is made more plentiful than is fit: First, if meats are administered which are full of aqueous humidity. Secondly, if the aqueous and serous excrements, which use to be dissolved by motion, or evacuated other ways be retained in the body. Thirdly, if nature from the other parts, or the whole body expels the vitious humours through the passages of Urine, which useth to happen in Critick, and Symptomack evacuations, as in a Diabetes, or incontinence of Urine, Fourthly, if Dyuretick medicine be taken.

On the contrary, little Urine is caused by contrary causes, namely, not only by reason of small quantity of drink taken, but of dry meats, moreover if the aqueous matter be consumed which useth to be in burning fevers, as also by motion and too much exercise. Thirdly, if the Urine be converted to other parts. Fourthly, by reason of the straitness of the passages, by which the Urine ought to be expelled.

CHAP. VIII.

Of the causes of Contents in Urines of those that are sound.

THE matter of a Content, or Sediment in the Urines of such as are sound (for in Urines of those that are exactly well, there is scarce any Content save onely a sediment) is some part of aliment which escaped concoction; for since it neither

Cause of the smell of Urine.

Of no smell.

Of smelling well.

Of Fatid.

Of store of Urine.

Of little Urine.

The matter of a sediment in part of aliment which escaped concoction; for since it neither
can

can be changed into perfect blood, nor into the nutriment of any part, after the third concoction it is sent to the Reins and cast out through the Bladder, and there is scarce found a Urine of a sound man, wherein the natural sediment doth not appear; because scarce any body is so exactly sound which doth not generate some such excrement; and no nourishment is to be found which cannot afford matter for such an excrement. Whence according to the diversity of meats, and natures thereof there ariseth diversity of Contents: For although the Contents settle in the bottome, and in those that are exactly sound; yet in those which do not enjoy most perfect health, or do not eat the best meats, it doth not enjoy its natural place; but in some; and those which eat grosser food more then is convenient, it doth settle in the bottome; in others it ascends higher then is fit, by reason of the heat which cannot subdue it.

The cause of the quality of the sediment.

A Sediment is naturally white and takes this colour from the veins and parts which are wont to impress a white colour on those things which they change: Equal and continued is not divided by reason of heat rightly concocting and rendring this excrement equal, and obtains the figure of a Pyramid, which although all parts seem to the senses to be equally thick; yet in truth some are thicker, which settle underneath, others thinner which consist in the superiour part.

Quantity.

A great sediment is through plenty of crude juice which affords matter for a sediment; whence boyes through much eating, and those that live in idleness, and those whose accustomed evacuations are suppressed, and females also have a more plentiful sediment; but men because they are hotter, and have not so many crude humors, have less sediment: the same happens in Summer through fasting, too great evacuations, and other causes consuming the humors, also obstructions, and much and thin drinks, which are distributed and cast forth before it can receive any mixture, or digestion with meat.

CHAP. IX.

Of the causes of Contents in Urines of those that are sick:

The cause of a sediment in the Urines of the sick.

Again in sick people the sediment consists of the more crude part of the aliment which cannot turn into nourishment of the parts; with which notwithstanding other vitious humors also are mingled, nay sometimes vitious humors onely may afford matter for a sediment, but by how much the more the Contents of those that are sick are like to those that are well

well, by so much they are the better, and shew great concoction, but by how much the more they recede from those either in colour, or other qualities, by so much they are the worse, and indeed the differences of colours of Contents are borrowed from the humour whereof they consist; but as for what belongs to the diversity of substance, that proceeds from the variety of burning heat and various disposition of matter: a farenacious sediment, as *Galen* teacheth, is made from thick dried blood, or flesh unequally consumed by a fiery heat, but rough or scaly, when the solid parts are unequally consumed, and scaly particles are cast forth with the Urine, and bran-like sediment proceeds from a flamy and consuming heat of a Fever, and a sore in the bladder or veins: a sediment that represents pulse proceeds from melting, as *Actuarius* teacheth, when a Fever comes to the flesh and melts it; but it is not thought credible by the late Physicians, that by the melting of flesh any thing so thick can be mixed with the Urine; and moreover those sediments they account do proceed from a scabby, and exulcerated bladder, or from a crude and melancholy humor.

Causes of a farenacious sediment. Frothy. Bran-like. Pulse-like

Small Sand and Gravel proceed from thick and feculent matter which sometimes contains in it selfe a principle of coagulation, and a light occasion being offered, it concretes of its own accord.

Of sand and gravel.

Clods of blood are discerned when either from an ulcer, or otherwise from a hurt, broken or open vessel in a part through which the Veine passeth, blood is cast out.

Of Clods of blood.

Quitture appears in the Urine when an imposthume, or ulcer lyeth hid in the Reins, Bladder, or otherwise through which the Urine passeth; or when from the superiour parts, as the Breasts, or Lungs, nature evacuates matter through the Urinary passages.

Of quitture in Urine.

Small pustles of flesh called Caruncles in the Urine of exulcerated Reins, are parts of the substance.

Of Caruncles.

Slimy, thick, and tough flegm like the snot of the nose, if it be made with the Urine, and be voided with pain, for the most part it is a token of the Stone in the Bladder, but that which is made without pain *Fernelius* saith doth proceed from a crude ulcer of the Reins, or parts thereabout, or from an imposthume; and truly for the most part, such matter being present in the bladder as it is the beginning, so it is a sign of the Stone of the Bladder; and moreover being sent out it coagulates into a lapidious hardness; but sometimes flegm which is cast forth in great plenty, is the off-spring of crude matter, and ill digestion in the parts beyond the Reins.

Of slimy Excrements.

Worms

Of worms. Worms if they appear in the Urine proceed from corrupt and
 sordid matter, as in other parts.

Of fibres and hairs. Small strings and little bodies like hairs, and cobwebs, if they
 are put forth with the Urine have their original from a thick
 humour, either in the veins, or in the reins, or dryed in the
 ureters, and reduced into this form by the longitude of the ves-
 sel.

Of bubbles and froth. Bubbles and froth are generated from wind included in vis-
 cous matter, which when it cannot exhale extends the matter
 into a tumor, and those bubbles may be of divers colours ac-
 cording to the nature of the humour in which the inclosed wind
 stirs them up.

Of a crown A Crown shews what kind of humors are contained in the
 greater vessels, and according to the diversity of humors hath
 divers colours, and is seated in the upper part of the Urine,
 and in that circle many things are obvious to our eyes, which
 cannot be discerned in the rest of the humors, because the light
 in the superficies of the liquor is otherwise divided and received
 then in the middle.

Of fat. Lastly, if fat swim upon the top of the Urine it proceeds from
 melting of the grease, but this proceeds from heat, therefore if
 the fat continually swim in Urine like cobwebs, it shews con-
 sumption and melting of the body; yet *Fernelius* writes that
 he would advise you of Oyl taken inwardly, least any small bo-
 dies of Oyl swim in the Urine by that means.

CHAP. X.

Of the causes of changes in Urines.

Causes of changing of Urines.

BUt Urines vary also in those that are found, in regard of
 temperaments, sex, age, time of the year, sleep, watching,
 exercises, passions of the mind, and such like, which are
 called the causes of variations of Urines.

Urine of those that are hot and cold.

As for the temperaments, hot temperaments have higer co-
 loured Urines, and thinner and less sediment, or in stead of a
 sediment a cloud, or Nubecula; but colder have Urines paler
 coloured, and few Contents also, unless raw juice, which pro-
 ceeds from weaker concoction be mingled with the Urine.

Of Boyes, Youths, Old men, Of middle age.

In respect of age, Boyes have white Urines, thicker, with a
 plentiful sediment; youths thinner with few Contents, but
 higher coloured; old men have white Urines, but thin and
 without Contents, unless many excrements meet together,
 which if they are mingled with the Urines, it happens that the
 Urine is made thick, and full of Contents; those that are of a
 middle age have indifferent Urines,

In regard of the Sex, the Urines of men are far higher, or deeper coloured than the Urines of women, thinner, and have fewer Contents, but the Urines of women are paler, and by reason of crude humors, thicker with more plentiful sediment; yet nevertheless the Urines of men and women do not so vary, that they can be known by certain signs, whether it be a mans or womans water, for reasons may be given also in men which produce such Urines, as otherwise are familiar to women; for although as in such as are great with child there may be some change of Urine, when the Menstruous blood is retained in them, and from thence no small change is made in the body; yet that change doth not afford a certain sign whether a woman be great, when the same causes of change may be shewen in other women which are not great, but in some which are more lively, there is little change of Urine.

*Of women
great.*

As for the time of the year, the Urines of every kind in the middle of the spring are moderate, as also in the middle of autumn, but by how much the more the year goes on towards Summer, by so much the more the colour of Urine is increased, and the thickness, and Contents are diminished: in the Summer also the Urines are higher coloured, thinner, and have less sediments; in autumn the colour of Urines and tenuity are lessened: the Urines in the Winter come neerest the best state.

*Change of
Urine ac-
cording to
the time of
the year.*

In hot Regions, and under the hotter degrees of Heaven Urines are made deeper coloured; thinner, and of little sediment. In colder Climates they are neerer to the best state.

*According
to the Re-
gion, and
degrees of
Heaven.*

Those which exercise and labour moderately make well concocted Urines, and in colour, substance, and contents moderate, but those that exercise and labour immoderately, in those first the colour is increased, and the thickness and contents diminished; but if the exercise continue long, the colour and tenuity is lessened, when the strength is weakened, but those that live idly make Urines not much coloured, and moreover thick and with many sediments.

*To exercise
and rest.*

In immoderate watchings, first the colour is increased, but if they continue long 'tis abated: sleep if it be moderate causeth Urine to be good in all, but if it be immoderate, it increaseth the colour of the Urine, but abateth the contents and substance, but if it be protracted longer, it becomes crude.

*According
to sleeping
and wak-
ing.*

The passions of the mind, since some increase the heat, some diminish it, according to the calidity and frigidiry which they bring upon the body, they alter the Urines.

*Passions of
the mind.*

Lastly,

Meat, Lastly, Meats, Drinks, and Medicines change the Urine, and
Drink, and Meat taken moderately causeth a moderate sediment; more plen-
Medicines. tifully, a more plentiful; thin causeth none; Meats, also Drinks
 and Medicines have a power of changing colour and smell of Urines.

CHAP. XI.

What is to be observed in the Inspection of Urines.

Since all these things are spoken of Urines for that end that from thence diseases & the causes of diseases may be known, and the events foretold, that this may be rightly done, we are to admonish you what things are to be observed in the Inspection of Urine.

When Urine is to be received.

First the time in making water is to be observed, those Urines which are made presently after eating and drinking, signify nothing certainly, especially if much drink be taken, since the decoction is not performed, Urine is rather to be lookt upon after a perfect concoction, and about the morning. In Fevers regard is to be had of the fits, because in time of the Paroxysm the morbifique matter is expelled another way.

Secondly, it is to be weigh'd whether any meat, drink, or medicine, be taken which may change the Urine.

The whole Urine to be taken.

Thirdly, the whole Urine made at once is to be taken, not to be mingled with waters made at several times.

It should first settle.

Fourthly, judgment is not to be given of Urine before it hath settled, and the Contents enjoy their proper place.

In what place should be kept.

Fifthly, you must beware least the Urine by cold air, or winds especially in an open vessel, being expos'd thereunto, should be changed, or corrupted, yet it may be changed no less by too much heat than by too much cold.

Inspection of troubled Urines.

Sixthly if the Urines are troubled they are to be seled by the heat of fire, or rather warm water, that they may return to their former state; yet it is convenient to look upon troubled Urines before they become clear again, since often times in troubled Urines the substance of the Urine is more manifest then in clear, and often times Urines which be not troubled seem to be alike, when troubled they differ exceedingly; and in troubled Urines oftentimes that matter of the Urine shews it self, which scarce any one could believe had been contained in it when 'twas clear.

Seventhly the Urinal in Inspection ought to be quiet, and not to be stirr'd, only after Inspection it may be lawful to stir the contents.

Eighthly, the Glass wherein the Urine is to be view'd ought to be clear, perspicuous and void of all colour.

Nintely,

Ninthly, the Urine is to be cast neither in a place too shady nor too light, yet the colours in a small shade, so not too dark, may be discerned best, but the Contents in a lighter place.

CHAP. XII.

What may be discerned and foretold by a Urine.

ALL diseases and affects cannot be discerned by Urine only, since there are diseases of many parts which alter not the Urine, and of whose causes nothing is mingled with the Urine, but without dispute the Urine may shew that disposition which is in the Liver and Vvines; since the Urine is an Excrement of the Veins, of the Reins also and passages through which the Urine flows, and the diseases of the Bladder and Yard without controversie the Urine may shew; for if any thing be contained in the ways through which the Urine passeth contrary to nature; 'tis easily mingled with the Urine: moreover the diseases of those parts which send matter to the Veins, may be discerned by the Urine. Whence if any peculiar part be affected, and the Urine changed also; if in the part affected there be also made any peculiar change, it is a token that such matter is transmitted from that part to the Reins and Bladder. On the contrary, also when the matter which is contained in the Veins is carried sometimes to other parts, and causeth various Symptomes; the diseases of those parts may also be known by the Vvines, especially if other Symptomes agree with those of the Urine. Lastly, when Fevers and venemous diseases may be joined with the diseases of many parts, although the Vvines then do not first indicate that very disease of the private part; yet 'tis not unprofitable then to consider the Vvines, and to observe the signs from thence of life and death.

What can be known by Urine.

And thus what may be known, and foretold of every Urine is manifest, from those things which are spoken of the causes of all the differences which happen unto Urine.

PART. I. SECT. IV.

O F

P U L S E S.

CHAP. I.

*What a Pulse is.**A Pulse
what.*

A Pulse which the Greeks call *Sphugmos* and *Sphuxis*, is a motion of the Heart and Arteries proceeding from the vital faculty, consisting of dilatation and contraction, and is appointed for the preservation of the Harmony

*Instru-
ments of a
Pulse.*

of the native heat. Instruments of the Pulse, are the Heart and Arteries, and the Heart is the Fountain, Chimney, and E-laboratory of heat and vital Spirits; but the Arteries are the Channels through which this vivifying heat is derived from the heart, as from a Fountain, and disperse through the whole body, which work that they may rightly perform, power is given to them by nature whereby they can dilate and contract themselves by perpetual motion, by which means Arteries Blood with the vital Spirits, is diffused through the whole body, the vapors are expelled, and cold air is drawn in; neither is the motion of the Heart and Arteries made only by the fervent heat of the Blood and Spirits; nor is this motion to be accounted accidental, and, as it were, violent, but the heart by a peculiar faculty which it hath in its self, which they call Vital and Pul-sifique is moved; neither are the Heart and Arteries dilated, because they are filled, but they are filled because dilated. Nei-ther is this faculty denied to the Arteries, although in its own manner, it depends on the heart,

*Efficient
cause.**Vital fa-
culty.**The use of
the motion
of the heart
and arte-
ries.*

The use of the Heart and Arteries, and the end of their mo-tion is the preservation of the native heat, the generation of vital spirits, and the distribution of them through the whole bo-dy; but the native heat is preserved (as being hotter) whilest 'tis cooled and fanned, and the matter fit for the generating of spirits is drawn, but the fuligenous vapors are expelled. The motion of the Heart and Pulse performs these duties by that double motion, out of the which as of parts it is composed, namely by *Sistole* and *Dyastole*, or dilatation and contraction.

But

But because these two motions are opposite, and a thing cannot be moved against its opposite unless first it be quiet. It is necessary that these two motions admit of two cessations between; the one is that which follows the *Systole*, the other the *Dyastole*. And indeed attraction is made by dilatation; for the cooling and fanning of the heat, and the generation of spirits. But contraction is made for expulsion; for the heart when it is dilated attracts blood, the matter of vital spirits and arterious blood, and air from the Lungs through the arterious veins; But the Arteries draw some of the thinner blood from the Veins, especially they draw aire through their small orifices, opening to the Pores of the Skin: by contraction the Heart expels fuliginous vapors, and together emits arterious Blood and Spirits into the Arteries, but the Arteries expel fuligenous excrements, and together communicate some Spirits and arterial blood to all the parts.

CHAP. 2.

Of the simple differences of Pulses.

THe differences of Pulses are either absolute, or relative; absolute differences are when a Pulse hath any difference absolute, and in its own nature, when we consider it without comparing it with any other. Respective are those which arise from comparing of the Pulses amongst themselves. Absolute again are twofold, simple and compound.

The differences of Pulses. Absolute. Respective.

But seeing to the Pulse, as also to every local motion, five things are required. 1. The thing moving. 2. The space through which the motion is made. 3. Time. 4. The rest between the two opposite motions. 5. The instrument: according to these also the simple differences of Pulses are constituted, and every simple difference regards one of these, and so there are ten simple Pulses, a great and small in respect of space, swift and slow in respect of time, thick and thin in respect of rest between, vehement and weak in respect of moving, hard and soft in respect of the instrument. And if amongst the opposit motions we account a mediocrity, or moderate in every kind, there will arise 15 simple Pulses. And if there may be added to these other differences, either they are not comprehensible by the touch, or they are unprofitable.

Simple.

A great Pulse is that which exceeds the space, which by nature is granted for the motion of the Artery. A little Pulse is that which doth not wholly keep that space. A moderate Pulse is that which doth observe its definite space for its motion; but whereas in space; longitude, latitude, profunditude may be considered; some divide a great and small Pulse into other differences, to

wit, long and short, high and deep, narrow and broad, to which if a moderate Pulse be added, then there will be made five kinds, all which kinds if they are joined together, amongst themselves make twenty seven differences, which comprehend eighty one Pulses; of which *Galen* in the first of the differences of Pulses, Cap. 5.

A swift and slow.

A swift Pulse is when an Artery runs through his space in a short time, a slow when in a long time moderate, when in an indifferent time.

Frequent and thin.

A thick, or frequent Pulse is performed, little rest interposing between. A thin when long; an indifferent is performed in the middle of those extremes; but that a frequent and thin Pulse may be rightly perceived, The Pulses are to be divided into the stroak, and the intervall; the stroak is the motion of the Artery resisting the touch; but the interval is the time interposed betwixt two stroaks, whereby the Artery is contracted and dilated, which by how much the shorter or longer it is by so much the Pulse is said to be more frequent or thin.

Veherent weak.

A vehement pulse is that which strikes the hand of him that feels it, and resists it: and as it were reverberates. Weak is that which gently strikes the hand. Moderate is the middle betwixt these two.

Hard. Soft.

A hard Pulse is when the Artery is hard, and resisteth the touch. A soft is when the Artery is soft and fainty, and gives way to the touch.

CHAP. III.

Of the compound differences of Pulses.

Out of these differences of simple Pulses, compound differences are easily to be found, which although they are very many, yet these are the chief.

<i>Great.</i>	<i>Swift.</i>	<i>Frequent.</i>	<i>Veherent.</i>	<i>Soft.</i>
<i>Great.</i>	<i>Swift.</i>	<i>Moderate.</i>	<i>Moderate.</i>	<i>Moderate.</i>
<i>Great.</i>	<i>Moderate.</i>	<i>Moderate.</i>	<i>Moderate.</i>	<i>Moderate.</i>
<i>Moderate.</i>	<i>Swift.</i>	<i>Frequent.</i>	<i>Veherent.</i>	<i>Hard.</i>
<i>Moderate.</i>	<i>Swift.</i>	<i>Thin.</i>	<i>Weak.</i>	<i>Soft.</i>
<i>Moderate.</i>	<i>Moderate.</i>	<i>Frequent.</i>	<i>Veherent.</i>	<i>Soft.</i>
<i>Moderate.</i>	<i>Moderate.</i>	<i>Moderate.</i>	<i>Veherent.</i>	<i>Hard.</i>
<i>Moderate.</i>	<i>Moderate.</i>	<i>Moderate.</i>	<i>Moderate.</i>	<i>Moderate.</i>
<i>Moderate.</i>	<i>Moderate.</i>	<i>Moderate.</i>	<i>Weak.</i>	<i>Soft.</i>
<i>Moderate.</i>	<i>Moderate.</i>	<i>Thin.</i>	<i>Weak.</i>	<i>Soft.</i>
<i>Moderate.</i>	<i>Slow.</i>	<i>Thin.</i>	<i>Weak.</i>	<i>Soft.</i>
<i>Little.</i>	<i>Swift.</i>	<i>Frequent.</i>	<i>Veherent.</i>	<i>Hard.</i>
<i>Little.</i>	<i>Moderate.</i>	<i>Moderate.</i>	<i>Moderate.</i>	<i>Moderate.</i>
<i>Little.</i>	<i>Slow.</i>	<i>Moderate.</i>	<i>Moderate.</i>	<i>Moderate.</i>
<i>Little.</i>	<i>Slow.</i>	<i>Thin.</i>	<i>Weak.</i>	<i>Hard.</i>

C H A P. IV.

Of an equall and unequall Pulse.

Respectively or Relatively, the differences of Pulses are three: for either respect is had to the equality and inequality, or to order, or to proportion or number; equality and inequality of the Pulse is nothing else but a congruity or difference of one thing in pulses when compared with another.

Equality and inequality is either simply and absolutely such; or *Secundum quid*; and which is at least in a certaine kinde such.

Absolutely and simply, a Pulse is said to be equall which neither changed in magnitude nor in swiftness, nor in frequency nor in vehemency, nor in swiftness, and if equality be observed in neither of these, it is called a Pulse absolutely and simply unequall; but if a Pulse keeps not equality in all these, neither is made unequall in all these; it is said according to something, and in some respect to be unequall, the denomination is to be taken from that wherein it observes not equality.

Moreover these unequalities againe are divided into systematicall or collective, which is observed in more stroaks; and singular, which is in one stroake; collective, againe is double, inequality equally, and inequality unequally; unequall Pulses are equally when the first is so to the second, as the second is to the third, the third to the fourth, and so forward, unequall; unequall unequally are those which are not alike in their change, neither is the first so to the second as the second is to the third.

We call an unequal Pulse equally *Myouron*, from the similitude of the tayle of a Mouse, which as the taile of a Mouse from some thicknes by little and little and equally tends to sharpness, so these Pulses in magnitude are lessened by degrees and equally, and the following stroake is alwayes less then the former, which some call maimed Pulses.

These againe are either deficient *Myourn* which perpetually are lessened till at length they plainly cease to strike any more; or such as at length cease to be lessened, and do not plainly give off and rest; and both of them againe are various; for some keepe that pravity to which they are come

Respective differences of pulses, equality and inequality.

How manifold equality.

Absolutely equal.

Absolutely unequal.

Systematicque inequality.

An unequal pulse equally unequal.

Myouron.

Deficient Myourn.

*Maimed
reciprocally.*

others do not persevere therein; but returne againe to magnitude, which the Greekes call maimed Pulses running againe, reciprocally shortned, or running Pulses, and these againe either return to their former magnitude, or to lesser, or to a greater.

Intermitting.

Unequally, unequall Pulses also are various according to all the simple differences of Pulses, but the chief, and those which the Ancients gave names unto, are the intermitting, deficient, the intercedent, or intercurrent.

Intercurrent.

The name of intermitting is attributed to that inequality which is in pravity and rarity, or only rarity, namely when the arterie is so hindered in cessation, that one pulsation seems to have two or three, between two which seeme to be deficient, and after one or more stroakes, the intermitting begins to beat againe.

Intercurrent, or such as go between, are opposite to intermitting, and amongst them after certain stroakes, one or more stroakes intervene, which causeth inequality of frequency.

Deficient.

A deficient Pulse is when an artery after it hath made unequall stroakes, plainly seemes to be defective in motion and to cease; which if it returne to its former motion, it is called

*Reciprocally
deficient.*

a reciprocally deficiency, and this is the difference between an intermitting and deficient Pulse, that a deficient reciprocally after a long space between, whereby the man seemes to be destitute of a Pulse, returnes, but an intermitting at the highest returns after intermission of five Pulses.

*A singular
inequality.*

A singular inequality is either in one part of an artery, or under one finger, or more, or all; inequality under one finger is, when in dilatation and contraction a certaine diversity in celerity is observed, so that one part of one motion is swifter, another part is found slower, and this inequality Authors divide into three parts, namely an intermitting Pulse, an uneven Pulse, and a hasty Pulse, or striking double.

*Intermitting in one
Pulse.*

Intermitting in one Pulse is when the dilatation of the artery before it can come to its terme and externall rest, is interrupted in the middle of its motion, and is refreshed in its rest, yet so that it cannot remaine in rest but performs motion, and comes to its accustomed terme and Externall rest.

Of this kind some Authors make many differences, amongst which the cheife is an uneven Pulse, when in the Diastole as it were in the middle of its rest tis interrupted, yet so that after rest the faculty ariseth higher and perfects motion, whence in an uneven Pulse in one dilatation there is as were a double stroke, and indeed the latter swifter then the former.

Caprisons.

An even hasty Pulse is when the motion is continuall and interrupted by no rest, but the part of the distending one is slower, another swifter, as if the motion of distention begins slowly and afterwards ends swiftly, or the contrary.

Uneven.

stirred up.

Dicrotus or a double striking Pulse is when the Artery begins to be moved, but before it perfects its motion it goes back and a small contraction being made it riseth againe to perfect its motion, and strikes the second time, so that a double Pulsation seemes to be made, which neverthelesse consists of one distention or dilatation.

Dicrotus.

In equality in one Pulse, but under more parts of the Artery happens, when in one dilatation the Pulse strikes two, three, or foure fingers, but those unequally, so that in one finger the Pulse is otherwise perceived then in another, and that in a twofold manner, for either the motion is interrupted, so that some fingers perceive motion, others not, or it is a continued motion, when the Artery is otherwise moved under other fingers; and indeed those which are made unequal in magnitude in one Pulse are called Myourus, namely when the Pulse under the fore finger is greater, lesse under the second, lesse then that under the third; but if the Pulse under the middle fingers be greater, under both extreame fingers lesse, they are called prominent Pulses or Myouroy, changing about unto every part.

Myourus on Pulse.

Out of these simple differences of inequality other compound do arise, for either a Systematicall inequality is complicat with a simple, or a Systematicall with a Systematicall, or a singular with a singular; out of which compound differences the cheife are first, a rugged or uneven, second full of surges, third when it beats as if a worme did creep under ones finger, foure that feeles as if it were a Pismire, five a serrate Pulse, six a hestick, seaven a trembling.

Prominence.

In an uneven Pulse whereof we have spoken before in equality is twofold in swiftnesse and violence, for one part of the motion is swifter the other, more vehement then the former.

Caprisons.

A surging pulse.

In a Pulse full of waves there are two inequalities, in magnitude and frequency, namely when the Artery is moved, the motion not interrupted, but unequal, so that magnitude may appear first under the fore finger, after under the second, then under the third, hence under the fourth; according to the manner of the waves.

Vermicall,

The Pulses like the moving of a Worme or Pismire, differ from a surging Pulse only in magnitude, for there is the same inequality in that Vermicular as in the waving, but the Artery is lesse and slower lifted up, and it renders the Artery as it were into the forme of a creeping worme.

Formicant.

This Vermicular Pulse being lesse and slower, but very frequent is a Formicant motion, so called from the creeping of a Pismire, which indeed makes quick steps, but goes lesse way in longer time.

A serrate.

A Serrat Pulse is when one part of the Artery is more lifted up and strikes the fingers more, the other is lesse lifted up, and strikes the fingers lesse.

A hectick

A Hectick Pulse is so called from the similitude of a Hectick Fever, it alwayes persists in the same in equality what ever the inequality be.

*A trem-
bling.*

Lastly a trembling or fainting Pulse hath inequality in many Pulses, in magnitude, frequency, and vehemency, in the same manner, as you may observe in the panting of the heart,

C H A P V.

*Of the order and Harmony amongst Pulses.**ordi-
nate pulse.*

THe second difference of relative Pulses is constituted in respect of order, and it agrees at least to unequal Pulses, for equal Pulses are alwayes ordinate, but that is an ordinate Pulse, which although it be unequal, yet it keeps some order in striking, but an Inordinate is that, which is unequal and keeps no order in striking; as if it should happen that an Artery should make foure equal Pulses, and the fifth differs from equality; and againe an Artery makes foure equal Pulses, but the fifth differs againe from equality, it is called an Ordinate Pulse, but if the first and second be equal, but the third lesse, the fourth fifth and sixth againe equal, the seventh unequal, it is an Inordinate Pulse.

Inordinate.

Inordinate

Inordinate Pulses againe either are absolutely so or not, absolute inordinate are, if whilst more circuits are considered, those that follow no way answer to the first, not absolute Inordinate are, if the latter circuits, although amongst themselves they are not alike, answer to the first.

The last differences of relative Pulses is constituted in respect of proportion or harmony, now concord, is nothing else but a proportion of the time of dilatation to the time of contraction. Harmony is either equall or unequall; equall according to the opinion of Ancient Physicians is when the time of contraction is equall to the time of distention; unequall is when the time of Diastole is greater or less than the time of Sistolē, and a Pulse according to the opinion of the Ancients is harmonious, which observes a proper meeter, to the age, temperament, and sex: Incongruous is that which differs from the proper Harmony of age, temperament and sex; but since a dilatation can scarcely be fully known, Galen doth not constitute a Harmony by comparing of the time of contraction with the time of dilatation, but rather by comparing of the quality of motion, as of swiftnesse and slownesse, so that to him a meeter or Harmony is nothing else but proportion of dilations amongst themselves, and a congruous Pulse is that, wherein the Sistolē and Diastole are equally swift; but an irregular is that, wherein the celerity of dilatation and contraction is unequall, the inequality of which irregularities or discords may againe be divided into nine differences, according to the variety of dilatation and contraction in celerity and tardity.

Rybmus.
in pulses.

Good order.
no order.

CHAP VI.

Of certaine things necessarily requisite to distinguish Pulses by.

BUT that a Pulse may be rightly perceived certaine things are required in the Physitian, certaine in the sick; in the Physitian first there is required that he have an exquisite sense of feeling, and a soft hand, especially in the Pulse of the outmost joynt of the fingers, not very hot, nor too cold, but temperate; secondly that presently after his comming in he may not touch the Artery, least perhaps the sick being troubled by the comming of the Physitian, the Pulse be changed, but let him wait a little while, untill he understands

Those things that are requisite in a Physitian that he may know pulses.

that the sick is quiet, thirdly let him touch the Artery of the wrist of either Arme.

For the fingers rightly are to be applyed to the Artery, namely the first foure or three fingers, are to be put to the Artery that the more differences of Pulses may be apprehended; moreover since there is a threefold application of the hand to the Artery, compression, when the fingers do as it were presse the Artery, softly when the hand is gently applyed to the Artery, the medium when in an indifferent manner or with some small pressure it is put to the Artery; pressing is most convenient for the knowledge of contraction, if it may be, and for vehement pulses, but in languishing pulses it takes away the greatest part of the Pulse: by handling fearfully and softly, the vehement Pulses are not enough perceived; thirdly the medium is betwixt these two, and neither lightnesse of feeling is observed in vehement, nor compression in languishing.

In the sick

In the sick is required first what time the Physitian touch the Pulse, that he be free from all passions and preturbations of the mind, lest those mutations, which happen through the passion of the mind to the Pulses should hinder the Physitian. Also neither is the Pulse to be tryed presently after motion of the body; lastly the hand of the sick ought to be placed right and free from all voluntary motion, and the sick may not bend his fingers much or distend them, but keep them in their middle and naturall forme, and the sick also may not lift up his hand with his strength, least he tremble and causeth the Pulse to vary.

CHAP. VII

How to know the differences of simple Pulses.

The knowledge of a great and small Pulse.

FOrasmuch as what belongs to the knowledge of Pulses, if we observe the Artery to be dilated and extended more then naturally it ought, and by reason of its great extending doth as it were resist the fingers or make them pit in, we account it a great Pulse, but if they resist but a little we account it but a small Pulse.

Of a swift and slow.

If it be considered that the Artery is moved by violence from terme to terme, nimbler and swifter then in a temperate or sound man, that is called a swift pulse, but if the space

is.

is compleated by the Artery by a slower stroake, tis called a slow Pulse.

If the intervall between each stroake be longer then in a *Of a fre-*
temperate or sound man, that is a thin Pulse, if shorter, a fre- *quent thin.*
quent Pulse.

If the Pulse strive against, and as it were opposes it selfe to *Of a vehe-*
the application of the hand that presses it, tis a vehement *ment and*
Pulse, and if not, tis a weake Pulse. *weak.*

A hard Pulse, if the Artery be gently touched, doth not resist *Of a hard*
the finger, as a vehement one; but if it be pressed harder, *and soft.*
it doth not so strongly resist as a vehement Pulse, hardnesse
also is never joynd with magnitude, nor vehemency with
smallnesse.

CHAP. VIII.

How to know the Respective differences of Pulses.

When we know the simple differences of Pulses, by
that means we may know the compound, therefore
the Physitian should first of all diligently exercise himselfe
about the knowledge of simple differences: it is very difficult
and almost impossible to find out the inequality of Pulses
in one Pulsation and under one finger, but yet if it may be
known, it is known onely in the greatest and most vehe-
ment Pulses, which resist compression; afterwards slack-
ing, and sometimes the middle betwixt both is to be used,
sometimes one, sometimes two, now three, then foure
fingers are to be applyed, so that if happily that inequality
be not perceived under one or more fingers, yet it may be
found under some or other.

But if the inequality of one stroke be to be tryed under
severall fingers, you ought to apply foure fingers to the
Arteries,

To know the order and preturbation of order, tis neces-
sary dayly to apply the hand; but if in a long Series of *Order how*
Pulses there be some diversity observed but keeping *it may be*
order it, is called an orderly Pulse; but if no order *known.*
be observed amongst divers Pulses, it is an Inordinate Pulse.

The knowledge of Harmony, since the whole depends *Rhythmu.*
upon the knowledge of contraction and dilatation, and
the comparing of these motions amongst themselves:

but to know the Systole in all pulses, if it be not impossible, yet it is very difficult; hence it appears that the knowledge of meter is not easie; and for the knowledge thereof nothing is more necessary then those things which are required of, or the knowledge of swift pulses.

C H A P. IX.

Of the causes of Pulses in generall.

Causes of pulses of generation. **T**He causes of pulses are divided by Physitians, into causes of generation, or immediate and proximate; and causes of mutation or remote; or into primary or secondary; those they call primary which make the pulse, and which being put there is a pulse, and being taken away there is none; those which do not make a pulse but alter and change it are three, the faculty, or use or end; these are many, whereof some belong to naturall things, as temperaments, sex, age, habite of body; others to things not naturall, as aire, meate and drinke, exercise, rest, sleeping, weaking, excretions, retentions, passions of the minde; others to preter-naturall namely, diseases, causes of diseases, and symptomes.

*Of common-
tation.*

*Proper and
unsepara-
ble pul-
ses.*

The causes of pulses containing, each of them have two differences, for the faculty is either strong or weake, the use is increased or diminished, the instruments are soft or hard, hence some pulses do perpetually arise of one cause onely, which *Gallen* calls the necessary consequent, others call proper, and unseparable; and such like pulses only follow the faculty and instruments, but not the use, and of necessitie a strong pulse necessary followes a strong faculty, a weake pulse, a weak faculty; hard arteries, make a hard pulse, soft arteries make a soft pulse, some although they are made more from one cause containing then another, yet they do not arise from that only, but tis necessary that others concur also, which they call familiar; the familiar pulses of a strong facultie, are great, swift, thin, weake small, slow, frequent; the use increased, great, swift, frequent; diminished, little, slow, thin; a soft artery, great, swift, thin; hard artery, little, slow, thick.

Familiar.

Compound causes make compound differences, and sometimes

times two, sometimes three causes, are complicate; first, *The faculty* a strong faculty, and the use increased; the instruments *ty with the* obtaining a naturall constitution make pulses, great, *use chan-* swift, frequent, and moreover vehement, a strong faculty *ged; what* and the use lessened brings forth pulses, moderate in mag- *pulses it* nitude, slower, thinness, yet vehement; from an infirme *makes.* faculty and the use moderately increased comes a pulse moderate in magnitude and celerity, frequent, languishing; but if the force be very weake, the pulse is little, slow, very frequent, weake; from a faculty weakned and use diminished ariseth small pulses, slow, thick, fainty; and if there be very great debility, the very least intermitten and deficient pulses arise.

Secondly, if the use and instrument be joyned together, *The use* the use increased with a soft instrument, makes great *changed* pulses, swift, moderate in frequency; or if there shall be *and instru-* great excess, frequent, and soft; the use increased, and in- *ment.* struments hard, bring forth lesser pulses, swifter, more frequent; if hardness abound; but if use, greater; if indifferent, there is excess of them both; if moderate in magnitude, they are swift, frequent; the use diminished with a soft instrument, causeth moderate pulses, in magnitude, slow, thin, soft; the use diminished with a hard instrument renders the pulses less, slow, hard: and the instrument exceeding in hardness inclines the pulse to smalness, rather then to slowness, contrariwise it happens when refrigeration exceeds.

Thirdly, if the faculty and instrument be complicate, *Faculty* and the faculty be strong, the instrument soft, the pulses *and instru-* are manifestly made greater, somewhat duller, thinner, *ment.* and softer; a strong faculty, and hard instruments bring forth small pulses, frequent, and for the most part swifter, namely if hardness abound, but in an equall recess of them both, the pulses are moderate in all, yet harder; a weake faculty with soft instruments makes for the most part pulses in magnitude, and swiftness moderate and soft, but in an immoderate recess, they shall be little, slow, frequent. And if the faculty be very infirme, the pulses be come small, dull, and frequent; Lastly, if the faculty be infirme with the instrument hard, pulses that are little, slow, thicke, and hard do arise.

*Faculties,
instruments
and use.*

But sometimes all these three are complicate, and indeed, first the faculty strong, the use increased, the instruments soft make great Pulses; swift, moderate, in frequency, vehement, soft.

Secondly, if these should be complicate, a strong faculty, the use increased, and the instruments hard; and that hardness be little, but the use very much increased, the pulses are made greater then is fit, swifter, and more frequent; but if the hardness be not great nor the use much increased, the pulses are moderate in magnitude, and become more swift and frequent.

Thirdly, if the faculty be more strong, the use diminished and the instrument soft, the pulses are moderate in magnitude, slower, thinner, vehement and soft, and if the use be much diminished, are plainly less, slow and thin.

Fourthly, If the faculty be strong, the use diminished, and instruments hard, the pulses are lesser, In celerity and frequency moderate, or also if the use be great, and that there be a recess of the instrument from mediocrity, the pulses are slower and thinner, but the hardness of the instrument abounding, there is a great recess of the use from Nature, and the pulses are small, slow, and more frequent.

Fifthly, If the faculty be weak, the use increased, and instruments soft, the pulses are become moderate in magnitude and celerity, yet more frequent, but if the power be exceedingly weakened, it makes a small pulse, slow and most frequent.

Sixthly, If the faculty be weak, the use increased, and the instruments hard, the pulses are made little, slow, and frequent.

Seventhly, If the faculty be weak, the use diminished, and the instrument soft, the pulses are lesser, moderate in frequency, or rather thin.

Lastly, if the faculty be weak, the use diminished, and the instruments hard, pulses are made small, slow, frequent, but yet not always of the same smallness, slowness and frequency, but according to the excess of the causes are, lesser, slower, or more frequent.

But here it is to be noted, first, that the force and power of causes are more to be valued then number, since one more potent cause can do more in changing pulses then many weaker; secondly, the hardness of the Artery always

doth resist the magnitude of the pulse, but not the celerity and frequency; thirdly, there is no more efficacious cause of small pulses then weakness of strength and vertue.

C H A P. X.

Of the causes of the simple differences of Pulses.

Although it may be easily collected from these things what the causes are of every pulse, yet because certaine familiar causes concur, which may afford some benefit to the generation of pulses, namely grossness of body, leanness, an empty place about the artery, weight of the body lying next above the artery, and propriety of formation of parts, let us joyne those to the rest, and let us here adde some to these.

Concomitant causes of pulses.

The causes of a great pulse containing, are strong force, the use increased, the artery soft; a little pulse is made especially by the weakness of power, as also diminution of use and hardness of the artery.

The causes of a great pulse, of a little.

The causes of a high pulse are, strong force, the use increased, and when an indifferent grossness of body happens, and the place is straight and narrow about the artery; a low pulse proceeds from a languishing faculty, to which happens grossness of body, as being the concomitant cause; sometimes also, the arterie is buried deeper by the naturall framing of the body, whence the pulse is lower.

Of a high. Of a low.

A broad Pulse is made from a power not altogether so weake, Accidents as being complicate causes are joynd therewith, the place wide, and the bodies next over it are heavy; the cause of a thin pulse is a weake faculty and a hard artery, the concomitant causes are leanness of body, and thinness and driness of the skin.

Of a broad.

Of a thin.

The cause of a swift pulse is the use increased, the vertue indifferently strong, and the instrument soft; the cause of a slow pulse is weake power, or the use diminished, or the joyning of both these together.

Of a swift.

Of a slow.

The cause of a frequent pulse is the use increased with debility of vertue, or hardness of the arterie; of a thin pulse, strength of vertue with use diminished, is the cause.

Of a frequent. Of a thin.

Of a vehement, weak. Of a vehement pulse, strength of vertue is the cause, of a weake pulse languishing strength, proceeding from what cause soever.

Soft, hard. A soft pulse proceeds from the softness of the Artery, a hard from the hardness of the same, from what cause soever it come.

C H A P, XI.

Of the causes of the respective differences of Pulses.

The causes of inequality of pulses. **N**OW followes what belongs to the respective differences of pulses, and first for inequality, the cause thereof is a weake faculty, and an Artery either obruded, or pressed or too hard, or too soft.

Of a singular inequality and of an intermitting pulse. The reason of an intermitting pulse is because the use requires dilatation, and the faculty is ready and prepared that it may satisfie the use, but either tis loaden with plenty of humours, or it is hindred by obstructions or compresse of instruments; the same causes of inequality in motion, of swiftnesse and slownesse are rendred, but they are lighter.

Of a Dicrotus. The cause of Dicrotus or double striking pulse is an unequal distemper of the heart and Arteries, or the faculty varied by reason of an unequal distemper which striving by a contrary cause in the middle of its Journy, is compelled as it were to begin a contrary motion.

Unequall pulses under many fingers do proceed either from weaknesse of the faculty, or plenty of humours, or softnesse of Arteries.

Of Myouroy. Declining pulses which are called Myouroi, proceed from weaknesse of the faculty, whose action by how much the more remote it is from the heart, by so much it is the weaker, or from the placing of the artery, part whereof is more remote from the heart, and is placed more in the outside.

A Systematicall inequality. The cause of a congregation of many in equalities together are weaknesse of the faculty whither is oppressed, or distracted, or irritated, and the fault of the instrument, when the artery is either compressed or obstructed, or filled; pulses are made unequally unequal, from the faculty not weake by its selfe

selfe, but rather burthened, and oppressed, and moreover from the ill disposition of the artery, and tis either pressed by some body that lyeth on it, or some humour, or tumour, but unequal equally are made by an infirme faculty; and indeed reciprocal Myouroi do proceed from a faculty not so weake as those which are deficient.

Intermitting and intercurrent pulses proceed from the same weakness of the faculty, and the instruments compressed and obstructed, yet the faculty labours more in an intermitting, then an intercurrent, and in it doth almost lye still.

Concerning the causes of unequal compound pulses, the cause of an uneven pulses is when the faculty, otherwise strong enough, but now is oppressed by too great plenty of humours, or is hindered by obstruction.

The causes of surging pulses are weaknesse of the faculty or plenty of humours, or exceeding softnesse of instruments, and the faculty is so burthened, and oppressed with its load that it staggers and becomes unconstant.

From the same causes proceeds a vermicular pulse, only that in a vermicular the faculty is not oppressed, but is weak of its selfe but in a formicant, tis very faint, and the use striving and softnesse of the instrument being joyned therewith.

The causes of a serrine or serrate pulse is a strong faculty and the use increased, together with hardnesse of the artery; and this pulse is familiar in inflammations of the internal membrances.

A trembling pulse is made, whilst either the pulse is not perceived by reason of the trembling of the part, or it goeth out trembling, or when the heart trembles, and communicates that affect to the artery.

The cause of a hectick pulse is somewhat that is fixed and stable, and sticks to the solid parts, also weaknesse of strength.

The harmony is not changed, unless the magnitude and celerity of the dilatation and contraction, be altered, but these are not changed except the use be changed, so all the causes of Harmony depend upon the use, for if the Diastole be swifter then the systole, there is a great heate present then, and a great necessity of refrigeration or expulsion of fuliginous excrements, but if the systole be swifter and greater then the Diastole, there is more necessity of protrusion of fuliginous vapours then of cooling.

C H A P. XIII

Of the causes of varying of Pulses.

*Of the
Tempe-
rants of a
Pulse.*

ANd in like manner divers differences of Pulses proceed from causes containing, which are secondary causes, and first naturall things, those which are hot by nature have a hotter Pulse, and that comes from the use increased; those which are cold, the contrary; the Pulses of such as are dry and leane are greater and thinner by much, and somewhat more vehement, but in grosser bodies when the Artery is covered with much flesh, and cannot be freely distended, the Pulse is made somewhat smaller and more frequent.

Sex.

Men have a greater Pulse for the most part then women, a little duller, and thinner; women on the contrary have lesse Pulses, swifter and more frequent, but if a woman be hotter then a man, she will have a greater and more vehement Pulse.

Of age.

The Pulses of boyes are great, very swift, frequent, in vehemency moderate; of youth they are very great, and vehement, in celerity and frequency moderate; Pulses of old men are the least, slowest, thinnest, and weakest.

*Time of
the yeare.*

As for the times of the yeare, in the Spring Pulses are greater, more vehement in celerity and frequency, moderate; in the Summer they are fainter, small, swift, frequent; in Autumne weake, in magnitude unequall in celerity and frequency; in Winter, small and moderate, slow, thin, and weake.

*Meat and
drink how
to change
the pulse.*

Meate and drink immoderately taken cause great, swift, frequent, too vehement, unequall, and Inordinate Pulses; moderate lesser and weaker, and in the beginnings swifter and more frequent, afterwards slow and thin, the use of wine especially makes great Pulses, swift, frequent, and vehement, and mutations which proceed from wines suddenly comes, and suddenly goes.

Sleep.

Naturall rest in the beginning make the pulses lesser, weaker, slower, and thinner, afterwards greater, and more vehement, and the slownesse and thinnesse, by little and little is increased; moreover if the sleep be too long, they returne againe to pravity and debility, and retainne their sloath and thinnesse; when a man is stirred, up or awakned, the pulse

Pulses begin to be greater, more vehement, swifter, more frequent; equally indeed if a man be awakned by degrees, but unequally and troubled if he be suddenly awakned, yet a little afterwards the pulse againe becomes moderate: long watchings cause little and weake pulses, yet swift, and frequent, at length the faculty being weakned, they become dull and thin.

Exercise and motion moderate, cause great pulses, vehement, swift, frequent, but overmuch exercise cause little, faint, swift, frequent, when the use may be increased, and the faculty debilitated, at length they are little, slow and thin. *Exercise.*

Moderate use of baths make great pulses, swift, frequent, and vehement, but if they exceed measure, little, faint, swift-er, and more frequent. *Baths.*

As for the passions of the mind, anger causeth great pulses, swift, frequent, vehement; joy makes great pulses, thin, and slow, moderately vehement, but if it be overmuch it renders them unequall and inordinate; In sadnesse they are little, languishing, slow, thin; feare soone makes the swift, pulse vehement, Inordinate, unequall, but they are of as long continuance as those are in sadnesse. *Passions of the mind.*

Immoderate evacuations, because they debilltate the faculty bring forth pulses like to those caused by a weake faculty. *Evacuations.*

But as for those things which happen contrary to nature, although they are various, yet they change the pulse, because either they change the use, or affect the instruments, or faculty; in the first place when the faculty is affected, many changes are made of the pulses, for whether the faculty be dissolved, and weakned by those things which dissolve the Spirits and sollid parts, such as are soule diseases, great distempers, vehement and diurnall greifs, fastings, too great Evacuations, or whether they are burthened, or oppressed by plenty of humours, or by diseases of instruments, inflamations, or other tumours, the pulses are made lesse in the first place, and swift, frequent, feeble, afterwards the least, most slow, most frequent, most faint, and at length the faculty being almost prostrated, intermitten, deficient, declining, vermiculant, formicant, all which running through the various kind of affects contrary to nature, and principally out of the doctrine of scavers are made more manifest. *Preternatural things how they alter the pulse.*

C H A P. XIII.

*What the simple differences of Pulses
signifie and presage.**Great
pulses
what they
signify.*

Although from the causes of pulses, it easily appears what every pulse signifies, and portends: yet that we may add something of each in particular, a great pulse although principally its familiar use be in increasing, a strong faculty, and a soft instrument; in those which are sick it signifies a hot disease, and a great pulse, unlesse it be hindered, follows all feavers, and it cannot be much dilated with the Artery, unlesse the power be strong, or at least not weake; a great pulse in all feavers is good signe.

A small pulse argues either debility of the faculty, or remission of the use, or hardnesse of the instruments; and indeed if a small pulse shall be also faint tis a token that its weakness proceeds from a weake faculty; if small and hard, from the Artery; if neither debility; nor hardnesse be perceived in the pulse; it is an argument that it comes from the diminution of the use: whence little pulses with a weake faculty foretell death; the rest of pulses that are small for the most part presage long and difficult diseases.

A swift.

A swift pulse signifies that the use is increased and the vigour stronge, or certainly not very weake, when ce in those that are sound, a swife pulse signifies heate, stirred up by motion, exercises, baths and such like causes, which if it be also great, the strength is not yet debilitated, but in those which are sick, a swift pulse signifies a hot disease, and is proper to those which are feaverish, and if magnitude be joynd therewith it shews that the use is increased, with strength of nature, but if frequency be adjoynd without magnitude, it shews that the powers are weakned; if hardnesse of the instrument, the use being increased, hinders dilatation, that hardnesse is to be perceived by the touch.

Slow.

A slow pulse shews, the contrary, to wit, little heate and the use diminished, and then it is onely thin, and the vigour not firme enough, and withall it is feeble.

Frequent.

A frequent pulse signifies the use to be increased or the faculty

A frequent pulse signifies the use to be increased, or the faculty weakened, or the instrument hard; if it proceed only from the use increased, it is not faint, nor hard, and magnitude; frequently goes before, and then extraordinary great heat is discovered in those that are sick; if it proceed from debility, or hardness of the artery, that is discerned by the pulse. *Frequent*

Thin pulses are made, either through a strong faculty, and a soft instrument, or from the use diminished; in sound bodies it signifies a cold constitution; but in sick a cold disease, and coldness of the heart, and that which is contained therein, and therefore 'tis accounted an ill signe. *Thin.*

A strong and vehement pulse, shews a strong faculty, and if its vehemency exceed the bounds of nature, it signifies also great irritation. *Vehement.*

A faint pulse on the contrary, signifies powers to be dejected, and that either by dissipation of spirits and resolution, and then it is also small, and if use hinder not, slow, or by oppression, occasioned by plenty of humours, and then the pulse also is inordinate, and unequal. *Faint.*

A soft pulse shews softness of the arterie, and moreover in a sound body, signifies immoderate drinking, or dyet over moistning, or a bath, or idleness, but in a sick a moist habit of the body. *Soft.*

On the contrary hard pulses, shew the hardness of the arterie, and indeed either by extending in convulsions, Tumours, or by repletion of vessels, with humours and wind, or by drying as in burning Feavers, Hecticks, consuming Feavers, Quartans, and other drying causes. *Hard.*

CHAP. IV.

What the other differences of Pulses signifie & presage

Now for the other differences of pulses; and first, of that of equality, and inequality, equality although it shew a fixed disposition of matter, yet it signifies firmness of nature, and therefore affords the better hope, but all inequalities are worse, and either signifie obstructions of vessels or compressions, or abundance of humours, hindring the force; and indeed a single inequality, is more dangerous then systematick, or mixed; whence intermitting
N pul-

pulses in one pulse, are more dangerous, than intermitting in many, if both of them proceed from debility of the faculty.

Unalike stirred up Myouri Di-crofi. Uneven pulses, therefore being stirred up, and Myouri, and such, as striking double, are very evil, yet in an uneven pulse, that is quickned is less evil, than an intermitting; because although it signifie the faculty declining, yet it shews not it to be extremely weak.

Systematical inequality. A Systematick inequality, or complication of inequalities unequally made is less dangerous than an equality equally made, because that for the most part is caused by, default of the instrument, but this happens by the imbecility of the faculty.

Intermitting. Intermitting pulses with imbecility, since they proceed from the debility of the faculty, are altogether dangerous, and indeed the longer they are quiet, and the more stroaks they intermit, by so much they are the more dangerous, yet old men and boyes are in lesse danger in this pulse, than young men in whom the faculty is weak, and offended by a smal occasion, but where the faculty is strong, not without a great cause.

Deficient. A deficient Pulse is yet more dangerous, because it shews great imbecility.

Intercurrent. An intercurrent pulse is the most secure of all unequal pulses, which indeed signifies the strength to be loaden, yet hitherto strong and whole, and promisseth victory.

Reciprocal, deficient. Deficient reciprocal pulses shew great imbecillity of the faculty, yet with striving against the preter-natural causes.

Mixtum vermicular for-micant. A descending or a declining pulse, & a vermicular, shew the faculty to be much weakned, but the formicant pulse is a token that the faculty is yet more dejected, and if it be perceived in Feavers, and quotidian diseases, it is a certain token of death.

Surgig. A surging pulse signifies that the faculty is burthened, and weakned, and tis an ill signe if it be changed into a vermicular, yet sometimes it signifies, that the strength is great, and the arteries moistned with the humour, and moreover with decretory sweat

Ser ale. A serrate pulse is ill token, and signifies an internal great, and dangerous inflammation.

Order of pulse what it shews. But as for Order since it signifies a fixed, a perpetual cause, the perturbation of order being troubled; if the pulse

What Pulses presage health, or death.

pulse be otherwise profitable, order signifies firmness of power, but inordinate shew that the faculty is oppressed by fuliginous excrements, but if the order of the pulse be together unprofitable with the inequality, it signifies the highest weakness, and is a very ill signe.

Lastly, change of harmony signifies variation of the use. *Rhythmes*

CHAP. XV.

What Pulses presage health, or death.

ALthough it easily appears from hence what pulses signify safety, or death, yet that we may handle them singly; great pulses, swift, vehement, double, striking, surging, signify that the faculty is strong, and indeed amongst those the vehement is in the first place, afterwards the great; hence the swift, and surging. Lastly the double striking. But small pulses, languishing, intermitting, declining, vermicular, formicant, and all pulses which descend from mediocrity; to the extreame (in defect) except the most vehement; signify that the strength is failing, and weak: and these pulses of themselves do shew that the faculty is weak, if they are equal, but if they proceed from the faculty burthened they are unequal; hence the vermicular, formicant, intermitting, and declining, are deficient evils, by how much the pulse is fainter and lesser, by so much it argues the greater debility of strength.

What pulses shew a strong faculty.

Languishing.

Hence it plainly appears that the pulses which promise health, are those which little decline from the pulses of sound men, and are equal, ordinate, great, vehement; but amongst the fainting ones, little, unequal, & inordinate, those which are least, these (so that malignity be absent) are least dangerous. *Health,*

On the contrary feeble pulses, little, slow, and such like, indicating the faculty weak, portend danger or death; if together other ill signes also do appear; also all those pulses are evil, which come to extremity, except the most vehement, and amongst those the least, most faint, most slow, and most thin, are the worst of all, but of the unequal, those are less dangerous, wherein are many great, and vehement *Death,*

strokes, the dangerous are the declining, intermitting, intercurrent, vermicular, and formicant as is said before.

Manner of event.

Lastly, pulses conduce to the knowledge of the manner of the event, for pulses which are weaker, duller, and thinner to the Judgement, signifie, that the disease will not give off, but rather by solution wear away by little and little; but unequal pulses, vehement, great, swift, and frequent informe the Judgement, that the disease will soon be at an end, and in a critical day (or day when there is a conflict of nature, and a disease, and a change expected) the pulses are inordinate, and unequal, and if they become strong from weak, and become great from little, it shews the next Crisis, or judgement, and they preface good; if in unequal pulses there are more great then little, swift, then slow, moderate, then frequent, vehement, then faint.

CHAP. XVI.

Of signes to be observed from the Tongue.

The tongue a signe of diseases.

But besides the uines, and pulses, the Physician also shall consider sweats, excrements of the paunch, spittle, the Tongue, other things, but since we have spoken before of the former, and hereafter I shall speak again, here we will only add something of the tongue, which shew certain signes, especially in Feavers, and as often as any change happens of its own accord, either of colour or taste in the tongue, it is certain that so often there is some change made in the body.

Causes of the changing the tongue,

But why the tongue should change its natural constitution, there are two principal causes, humors, exhaling out of the veins and arteries of the tongue, and principally affecting the coat of the tongue; moreover, vapours and humors ascending from the inferior parts, to which notwithstanding sometimes humours flowing from the head are added.

The colour of the tongue changed.

The colour of the tongue is changed, and is become white with the spittle wherewith it is moistned, and it is dried by heat, which often comes to pass in Feavers, a white colour is often changed into a yellow, mud colour, or black, whilst other humors are communicated to the tongue, and that external skin is changed by the fuliginous feaverish vapours. Whence the colour of the tongue may shew both

Of Signs to be observed from the Tongue.

the nature, and the time of the Feaver, for as *Hippocrates* saith, in the beginning the tongue is white or yellow (in his Third Book of diseases) in progress of time it grows black, and if it grow black in the beginning of a disease, the disease wil the sooner be over; but if in the latter end, 'twil endure the longer, nay oftentimes the tunicle of the tongue, is so polluted with fuliginous vapours ascending, that sometimes it rots away; but when the Feaver declines the colour of the tongue returns to its natural condition; and the humour which is spread about the Tongue, is taken away, and that which was corrupted is separated, and that change first appears in the top of the tongue: hence that other part towards the chops also by little and little becomes pure. Lastly, the root, and if any one daily do diligently observe the tongue of the sick, the declination of these may be known no less from thence then by the urine.

¶ The taste of the Tongue being changed, signifies abundance *Savour.* of humours; from choler the taste is bitter; from sweet flegme sweete; from a salt, salt; from an acid humor, sour or sharp.

The tongue is made rough and dry by defect of the humidity, which was consumed by the feaverish heat, yet in roughness there is a greater defect of humidity then in driness only.



THE THIRD BOOK.

THE SECOND PART.

Of the Diagnostick Signes.

CHAP. I.

Of the Signes of Causes in generall.

*Antecedent
Signes.*



Ut now that we may come to the Kinds, and that we may explaine the Anamnestick, Diagnostick, and Prognostick signes: concerning the Anamnestick signes we only admonish you of this; that the causes which have gone before are known either by the effects which are left, or they are known by some profitable, or hurtful thing, which they occasioned.

*Diagnostick
signes of a
disease at
band.*

As for the Diagnosticks, they are either of a disease neer at hand, or present: Of the signes of diseases neer at hand this is a general rule, that every mutation in actions, accidents, and excrements, after what manner soever hapning contrary to custome, and without any externall cause, threatens a disease; for when all these things are right according to the natural constitution, they are signes of health; as soon as any thing in them begins to change from its natural state, it signifies a falling from health into a disease, and the same signes, if they are gathered together, and increased, indicate a disease to be now present.

(f a present.

But since it doth not satisfie a man to know that a disease is imminent, or that it is present, but it is necessary to know what the disease is, the signes are to be propounded severally, both of Morbifique causes, and places affected of diseases, as also of symptoms: and that we may begin from the signes of causes, which lead us unto the knowledg of disea-

diseases; concerning the necessary signes of causes, and by which any thing may be known certainly; some are proper, others common, but collected together by a race or current, and are limited within their proper subject. The proper signes are savour, colour, and motion of humors, as to taste, blood is sweet, flegme, warrish and unsavoury, choler, bitter, salt flegme, causeth a salt taste, flegme and melancholy an acid, a sharp adust melancholy causeth a brackish taste.

*Proper signes
of humours
from the taste*

The blood is red, as also choler is red; flegme that is white hath a white colour, pale choler, a pale; yellow a yellow; Leek colour a greene, an *Æruginous*, is like Verdegrease; melancholy hath a black hew, troubled; black choler black, splendid, and when one savour, or colour agrees with two humors, we may know the humour from the taste and colour joyned together, so that when acid flegme and melancholy are joyned, 'tis acid by the white colour, acid flegme is known, by the black melancholy.

From the colour

Moreover the humors have their determinate motions severall daies; the flegme is moved, the day between each, choler; Melancholy is moved the fourth day, if such a motion be wanting the blood offends, choler also for the most part is moved about noon-day, melancholy in the evening, flegme in the night, the swiftnesse also, and slowness of motion, indicate the humors of a disease, for a swift disease depends on a thin humor, hot and cholerick; a slow, on a dull and thick.

From the motion

But because those signes lie hid in the innermost parts of the body, so that the humors cannot be known, a current of common signes then ought to suffice: the causes and affects, or the antecedents and consequences supply us with such signes; antecedents are supplied by two fountains, namely external, and evident causes, or things not natural, and the disposition of the body; but the consequences are all symptomes, and whatsoever help, or hurt.

*Of the common signes.
Current.*

Non-natural things dispose the body and bowels to the generation of this or that humour, according as they either heat the body, or cool it, or make other changes in it, of which is spoken before, *Lib: 1, Part 2. Chap: 2.*

Antecedents

Moreover, the dispositions of the body have great power in generating humors, without which those evident causes can do little in producing them. Now these dispositions may be reduced to four heads. First, there is an hereditary

dispo

disposition of the body. 2ly. age: 3ly. Constitution of the body. 4ly. Intermission of some accustomed evacuations fit to generate this or that humour.

Consequence.

The consequences are symptomes, namely actions hurt, excretions, and retentions, and the qualities of the body changed; also diseases arising from humours. Lastly, all things helping, and hurting.

CHAP. II.

Of the Signes of Causes, and of Humours in particular.

Signes of Plethory.

AS for what belongs to the signes of every humour in particular gone before, signifies that blood doth abound, and a plethory as to the vessels is present, as is expressed before in the *Lib: 2. Part 2. chap: 3.* The habit of the body is fleshy and firm, overspread with an habituous vapour, the veins are fuller, and especially after exercise and heat swell; the muscles are extended; the strength of Nature is increased, with a certain proportion of blood, and if the blood fill the veins so full that they cannot be cooled, or fanned enough, it grows thick, and seeks to weigh down the inferior parts, hence the muscles of the leggs being filled with blood are moved with pain, and wearisomness ariseth. Respiration is more difficult after labour, in their behaviour they are merry and pleasant, and their discourse and memory duller, their sleep is profound, and more durable and pleasing, with flattering dreams, and of red things, and blood; the pulse is great and strong, all natural actions are excellently performed; the urine is more plentiful, and moderate in substance, and colour, and the contents therein are plentiful, the colour of the whole body, and especially of the face is red, and rosie, the veins of the eyes are red, the skin being touched is hot, yet that heat is gentle, they easily tolerate evacuations of blood, by what means soever made, sparing diet takes away the wearisomness, and quenbeth thirst, but they are offended by hot and moist things, and all things which increase heat; idleness and food, increasing blood hurts them, but a plethorick constitution is known as to its strength, by gravity of body, an unequal pulse, signes of crudity, and oftentimes by signes of putrifaction; begin

Sweet flegme abounding is known from the causes which Flegme. conduce to the generation of flegme, if they have preceded, of which above *Lib: 2. part 2. ch: 4.* Moreover, those which abound with flegme are dul, slow, lazy, and unapt for motion, more stupid in their senses, duller of apprehension, propense to sleep, and sleep more soundly, they dream of waters, and raine, snow, haile, ice, and of drowning, their manners are unbeseeming, they are not easily angry, the pulse is little, dul, thin, and soft; they are not troubled with thirst, their desire is weaker, they are affected with cold diseases, moist, and durable; they send forth many flegmatick excrements, and abound with spittle, their urine is white, pale, sometimes thin, sometimes thick and troubled; their dejected ordure is crude, & pituitous; the whole body is thick, white, soft, and more cold to the touch; heating and drying things, cutting and atenuating, and evacuating flegme advantage them, they easily indure fasting. On the other side all cooling, and moistning things, and thickning, and those which retaine and increase Flegme, offend them; if the Flegme be sour, all those signes are the more vehement, but salt Flegme is known from the preceding causes, of which is spoken before, thirst is present, a salt taste, those things which are cast out are crude, but withall biting. Moderate salt things delight them; too much drying and heating things hurt them.

Choler is known to abound if the causes, and dispositions of the body have gone before, which conduce to the generation of Choler, proposed before, *lib: 2. part 2. chap: 9.* as if a man be not drowsie, but watchful; if he dreame of fire, thunder, and lightning, and contentions, and is full of activity in motion, and rash or precipitate in consultation, is easily angry, the pulse vehement, swift, frequent, hard; if his concoction be depraved, and turned into a nitrous crudity, if the appetite of meat be less then the appetite of drink, hot and dry diseases afflict him, and those which have a swift motion, and symptoms arising from choler; if the urine be yellow, and splendid; the excrements coloured with cholour, the habit of the body is dry and leane, and carries with it lively heat, the colour of the body is yellow; cold and moist things, and such as purge choler, as also acid things delight them; hot and dry things, as also fasting hurts them.

Of Choller. 7

Melancholy.

Melancholy is known to abound from the causes and dispositions going before, propounded above *lib: 2. part 2. chap: 6.* For what belongs to the consequences, those which abound with a melancholy humour are silent, full of thoughts, stable, and pertinacious, and slow to anger, who nevertheless are not easily pacified; their sleep is turbulent, perplexed with horrid and terrible dreams, they are sad and fearful without any manifest cause, they have a little pulse, dull, thin, and indifferent hard, their colour is yellow, dun or duskie, almost black, they desire meat and Venery moderately, they are void of thirst, and abound with spittle, they make much Urine, and if none of the melancholy be evacuated therewith, it is thin and white, or if some of it flow with it, it is thick and black, and they sweat plentifully in their sleep, the Hemorrhoids either flow, or are suppressed, much wind is in the body, and they are apt to four belchings, the habit of the body is lean, sharp, and hard, the colour yellow, the spleen sometimes swells, and grows hard within them; tubercles appear in the veins, and they are affected with other melancholy diseases.

Black
Choler.

Black choler is a signe of yellow choler and melancholy mixed together, and the indications of melancholy appear, but joyned with manifest signes of heat, whence madness, a canker, a Leaprofic, and such like diseases arise.

Of the se-
rours humor

Abundance of serous Humours are collected, not only from the antecedent causes, whereof we have spoken before, but also from a somewhat moist and pale body, and the Urine is crude and aqueous.

Winds.

Moreover, winds discover themselves by those signes which are reckned above in the *lib: 2. part 2. chap: 7.* moreover fluctuations, & rumblings & rumblings in the guts, and Hypochondrias are perceived, and switching pains without gravity, & wandring, & such as suddenly arise, & suddenly vanish; also a humming and buzzing in the ears, pantings of some parts of the body, belching, breaking wind backward, or in the paunch are discovered, and the Urines are frothy.

Poysons.

Malignant and pestilent humors, how they may be known is spoken amongst fevers, but the signes that poison is drank are, if any biting happen in the stomach, or guts, to any sound man, after eating and drinking; and if the belly or stomach be moved to expel; and their colour within six hours turn yellow, and spottie; if the extreame parts of the body grow cold, and swoounding, palpitation of the heart, and

swel-

swelling happens, but if one be hurt by the biting of any living creature, or with a prick, or sting, or froth, and the offended part should mortifie, become putred, should be inflamed and swel, and the paine be great, and those symptoms before mentioned appear, it is a token that the living creature was venomous.

C H A P. III.

Of the Signes of Diseases.

Some signes of diseases indicate the kind of diseases; others the magnitude, others the manner, and they are taken from those three fountains, the causes, those things which necessarily inhere, and the effects of the causes, and what force each hath is spoken of in *lib: 2. part 2.* and therefore if any causes are present; or hath gone before, it is a signe of a disease which that cause is apt to produce; but amongst the causes, the dispositions, or inclinations of the body are to be weighed, which are apt to produce this, or that kinde of disease; for every body either falls into a disease like its own constitution, sooner then contrary to it; and that disposition depends on the age, sex, course of life, and manner of dyet.

*Causes,
what diseases they
shew.*

*Disposition
of the body.*

Neither are those things to be past over, which help and hinder, for if hot things are advantagious, cold things are mischeivous; and a cold disease is understood; the contrary comes to pass if the disease be hot: the same reason is of other tempers also.

Out of those things essentially inhering, or in the proper essence, diseases are easily known in the external parts, and are obvious to the senses, but diseases of the internal parts, although they may be known by those things which essentially inhere, yet not immediatly; but others coming between; so a tumour of the bowels is known by the skin mediating, which is lifted up, by the subjacent parts, and it self is become swolne.

*Essentially
inhering.*

As for what belongs to the effects and symptoms, an action that is hurt, if it be not by some external error, it signifies that a disease is present in that part whence the action is hindred, and indeed an action abolished, and diminished, signifies a cold distemper, that a greater, this a lesser;

*Effects and
symptomes.*

less; but depraved actions signifie for the most part a hot distemper, and since an alteration cannot be made suddenly, nor doth the distemper suddenly cease when the alteration is introduced, if the action be suddenly taken away, and suddenly restored, it doth not indicate a disease of intemperature, but an organick: but if the actions are presently taken away, and remain absent long, either obstructions occasioned by thick matter, or a cold intemperature is signified; the excrements too much coloured, signifies a hot disease, as also doth dry ordure, but clammy, thick and w hite dreggs shew a cold distemper, qualities also changed indicate diseases; softness signifies a moist distemper, a pale colour of the body signifies a cold distemper; but a red colour a hot.

Excretions
and retentions.

Qualities
changed.

Signes of a
great disease.

As for the magnitude of a disease, if a great cause, and that which hath great force of acting hath gone before in what kind of disease soever, without doubt 'twil generate a great disease, the proper nature of a disease wil easily betray it self, for by how much the more the pathognomick signes (or the signes that discovers a disease) shal be greater, or lesser, by so much it shews a greater or lesser disease; hitherto belongs also the worthiness of the part affected, for by how much the part affected is more noble, or can draw more noble parts into consent, by so much the disease is counted the greater: moreover the symptomes by how much the more and greater they shal be, to which this happens, that if the disease do not give way to exquisite, and great remedies, by so much the greater the disease shal be, it is deservedly accounted great.

Of a Malignant,

A malignant disease is likewise known by malignant venemous causes preceding. Moreover, 'tis the nature of certain diseases, that in the same manner as they are known, they indicate malignity, such are the *Morbus Gallicus*, Leprosie, and such like. Thirdly, malignity discovers it self by the effects, for when no dangerous, or vehement symptome is present which might trouble, the sick nevertheless is unquiet and weak, and the disease after smal remission is swiftly, and vehemently exasperated by sweats, and other excrements, and the sick perceives no manner of ease, especially if frigidty of the extream parts, or watchings should happen, if in the beginning of sleep, sleep seeme troublesome; if the sick without a cause be afraid, waxeth exceeding hot, drops blood, and the other ill signes be present, which are spoken of amongst malignant feavers, it argues a malignant disease.

Acute

Acute diseases are known from hence, that they are suddenly moved, and immediately after the beginning afford grievous symptoms.

C H A P. III.

How to know the parts affected.

THe fountains of the signes whereby the parts affected are known, Galen in his first Book of the places affected, Chap: the 5th: accounts five, the actions hurt, exertions, scituation, proper accidents, and propriety of paine; which notwithstanding are comprehended under those foundations before proposed.

Amongst the causes the first are those things which are taken in, whereof some have power of hurting this, others of offending that part; moreover to those things which are carried about us, belong arts, and course of life, from whence it happens, that sometimes this, sometimes that part is more hurt, as sleeping, and watchings, which principally offend the braine; anger which principally hurts the heart; as also other passions of the mind.

Thirdly, those things which are retained, they more offend that part wherein they are detained. 4ly. Those things which happen and befall us externally, they also shew the part affected: if any one use mercuriallunctions, it is probable that the nervous parts are hurt, that evil which commonly overspreads signifies that part to be hurt, which is manifest, doth labour in other sick persons. By things essentially in hearing here are understood both the proprieties of the parts, and the diseases themselves in hearing, for although diseases are not of the essence of a part as it is a part; yet as it is an effect contrary to nature: diseases themselves seem to be in a part essentially; inherent diseases therefore indicate parts affected, a tumour appearing any where signifies either that part is affected, or the part which is placed above it; and the scituation and figure of the Tumour, and the motions hurt will shew it in its kinde; a falling of the guts into the coeds signifies

signifies a rupture of the *peritoneum*, or rim of the belly; gibbosity signifies hurt of the spine, or marrow; the propriety of parts shews places affected as they are proper to those parts, so if we see stones come forth with Urine, without doubt we conjecture the veins or bladder to be affected.

*Effects,
actions
hurt.*

As for the effect, first an action hurt shews that member by which it is offended, unless it be hurt by some external error; so ratiocination being hurt, imagination, memory, they signify the brain to be affected; as likewise by sleep, watchfulness, exercise of the whole body; The visive faculty is hurt by an affect of the eye; the hearing, of the ear; the smelling of the nose; the taste spoiled is a token of a disease of the tongue; if the urine be suppressed, the cause is to be sought in the reins, urters, bladder, or urinary passages, if yellow choller be not purged from the blood, blood, it is a token that the bladder of the gall is distempered.

Paine,

Hitherto belongs paines, which shews that some sensible part is affected, yet a differing paine may be a signe of divers parts; a pricking paine is proper to inflammations of membranés; a striking paine, is caused by parts sensible which are inflamed, containing arteries; a burthensome paine agrees to the whole substance of the bowels, lungs, liver, spleen, reins; inward, deep and profound paines, as it were breaking the part, signifies the membranés of the bones to be affected; a broad paine, & spreading it self every way about, is a token that the membranés are affected; streightness shews somewhat belonging to the extending of the nerves.

The vital actions being hurt shews that the heart labours. Lastly, natural actions hurt in what part soever, shew a signe of that part which is affected, but more manifestly in publick parts, more obscurely in private parts.

Excretions

Secondly, in excrements which also afford signes, more things are to be considered, namely the kinds, qualities, manner of casting them out, quantity, order; the kinds of excrements are two-fold, for either something is cast out of the substance of some part, & signifies that part to be affected, as if a little skin or flake, or little peece of flesh should be cast out of the mouth, it shews the lungs, the wind-pipe, the

the Epiglottis, the gullet or ventricle, to be corroded; and if it be cast out by a cough, it is a signe that it comes from the brest, but if it be cast out by vomit, it is a signe it comes from the stomach; or that it is not the substance it self, but that which it contained in it, and is familiar to it, that is so ejected, so meat, drink, or chile cast out by reason of a wound, shews that the stomach is perforated, or that the guts are too thin, and if the stomach be hurt, the sick will belch much; if the guts, the wind goes out by the seat; urine flowing out through an Ulcer or wound, shews that the bladder, urters, or reins are hurt; but which of these parts are affected, the scituation of the wound discovers. The dreggs of the belly ejected through a wound, or the smel of the dung perceived in the wound, shews that the guts, especially the thick, are hurt. So also of other parts.

But seeing that the same things may often come forth from many parts; the quality of the excrement, and manner of its coming out, shews which is the part affected: if the blood be thinner, hotter, more florid, and comes out leaping, it shews that the arterie is cut; but if it be thicker, and comes out without leaping, or dauncing, it shews that the veins are hurt; blood that comes from the paunch, shewing like that wherein meat hath been washed, shews that the liver is affected; if any come forth only by spitting it shews that the mouth, or parts next to it are affected, unless perhaps it flow from the head into the mouth; if by spittle, the chaps or larynx are affected; if by cough the wind-pipe, or lungs, so that it doth not raise a cough by defluxion from the head; if by vomit, the throat and stomach, so that it come not into the stomach from the liver, or spleene, or other parts adjacent.

The quantity also of excrements afford signes; if much blood is cast out, it is a Token of an affect of the lungs; if little, of the wind pipe.

That blood which flows from the reins is more; from the bladder less.

Moreover, order in excrements is a token of the place affected; if first blood, and afterwards dreggs are cast out, it signifies that the fundament, or some gut is affected within; if first dreggs come forth, afterwards blood, it shews the guts are thin, or the parts above them are affected; so if quittance which is brought forth in the Urine come before, it shews
ther

there is an ulcer in the gut colon, if it follow it shews that the superior parts are ulcerated.

*Qualities
changed.*

Thirdly, qualities changed also affords signes of places affected, red colour of the cheeks signifies inflammation of the lungs, the colour of the body; but principally of the face, pale or yellow shews that the bladder of the gall is not right, the flesh and skin being yellow, indicate the bones that are under them to be corrupted, a filthy smel exhaling from the nostrils, shews that the parts within the nostrils are affected; if from the mouth, it shews that the teeth, chops, lungs, or stomach are affected; if from a wound of the paunch, it signifies that the guts are wounded; hardness of the right Hypochondrie is a signe that the liver is affected, of the left that the spleen is affected.

Lastly, certain diseases pertain to effects following, other diseases of the place affected; which are therefore called symptomatick, or familiar, and are discoverers of the primary disease.

*Signes of
parts affected
by consent.*

But least that we should erre in knowing the place affected, by the actions hurt, and should take the part which is hurt by consent, for the primary affects; First the anatomy and functions of mans body, and the use and consent of all the parts ought to be known whence a part receives its nerves, arteries, and veins, and from what parts it can send any thing to them, and receive any thing through them, therefore if in a member sense, or motion be hindred, and the part suffer no ill, we must observe what nerves are inserted therein, what muscles move it, and whence those muscles take the nerves, and tis to be enquired, whether those parts have suffered any evil; so a nerve being hurt, tis easily communicated to the braine, the evils of the arteries to the heart, the hurts of the veins to the liver; and again, the braine being affected, sense and motion is hurt; the heart, the vital actions are hurt, nutrition is weakned through default of the liver,

Moreover it is to be enquired whether a part be primarily hurt, or by consent of other parts; that is known first from the precedent causes. Namely if a part which is affected be hurt by no evident cause, but a part with which it hath consent, hath suffered some evil, tis probable that that part is affected by consent. Secondly, if any hurt coheres with the hurt of another member, that by increasing of the one the other increased, and by the decrease thereof it be diminished.

diminished, and that easing it easeth; it is a token that such an affect is stir'd up by consent: but from that part where the disease first declined, it shews that to be the part affected by consent; but by essence that wherein the disease remained longest; thirdly an affect by consent doth not presently infect, but for the most part by intervals; fourthly if two parts are together affected, and by applying things that are helpfull to the one, or hurtfull, the other be helpt or hurt; tis an argument that tis an affect by consent.

But although any one from these Fountaines of signes may come to the knowledge of all parts affected, yet that for example sake we may add some in particular, first Animall actions hurt, afford signes of diseases of the head and braine, whither they are diminished or depraved, yet this is to be noted of the externall senses, and motion hurt; since that the braine is not the immediate Organ of those actions, but only supplies animall Spirits, tis to be inquired whether the cause of these actions hindred be in the brain, or in the proper Organ; the excrements also of the braine sent forth through the Emunctories indicate the braine to be affected.

*Signe that
the braine
is affected.*

The signes of diseases of the heart, for the most part are taken from vitall actions, and the qualities changed of the body: Actions hurt are respiration which the preternaturall heat of the heart changeth, palpitation of the heart, the pulses much changed; for according as the heart is, so is the heate and colour in the whole body.

*Of the
heart.*

The signes of the liver affected, are first when its action is hurt, which is Sanguification, a token whereof the urine and dregs of the paunch afford; moreover when the habit of the body is changed, and ther is an ill colour of the the whole body, and penury of blood is in the veins; sometimes also by default of the spleen, or by reason of excrements regurgitating from elsewhere into the veins, the colour of the whole body is changed; thirdly distribution of blood is hindred, which is known by the leanness of the body and flux of the belly; fourthly a perception of gravity in the right Hypochondrie, as also a tumour encompassing the liver.

*Of the li-
ver.*

When the stomach is ill disposed tis known by its

*Of the
actions stomach.*

actions hindred, such are the appetite hurt, the concoction vitiated, which is perceived, because those that are sick either are sensible of paine after meate, or the stomach is blown up with wind, or are troubled with belching, loathing, vomiting; also if the dejection be slower or swifter, without any fault of the liver, then is fit, the stomach is to be suspected.

Of the brest The first signe that the brest is affected, is difficulty of breathing; the second, a cough; the third, paine; lastly those things which come out by coughing, as blood, quirture.

Of the windpipe. Lastly, the signes of the affects of the Windpipe are the same, but principally they are taken from the change of the voice, somtimes also a cough is joynd, more may be read of these things in the practical part.

CHAP V.

How to know Symptomes.

Signes of Symptomes. Of the naturall faculty lying hid. **A**lthough Symptomes for the most part are obvious to the senses, yet somtimes they lye hid, and had need have signes, which are taken from causes, and effects: nutrition, if it be not rightly performed, the body is extenuated and growes leane: if augmentation be not rightly perfected, the body is lesse nourished; if the generative faculty be hurt, either none, or weake Children are generated; attraction and retention being hurt, are known from their effects, especially digestion is known by the excrements of its concoction; so that which is in the stomach, by the dregs of the belly; that which is in the liver and veines, by the urine; those excrements which are in the brest, by the spittle; lastly the expulsive faculty is known to be hurt, if those things are retained which ought to be expelled.

Of the vitall. The vitall faculty is known to be hurt by the changed pulse of the heart and Arteries.

Of the animall. As for the animall faculty, the Physitian knows the depravation of the principall faculties from the words and deeds which are different from comlinessse and congruity. In the same manner also other animall actions may be known to be hurt from their effects.



T H E

THIRD BOOK,

PART THE THIRD:

Of the Prognostick SIGNS.

C H A P. I.

Of the severall kinds of Prognostick Signes.

YET there remains the Prognostick Signs by which we *Of what*
 may know those things which are to come, which may *things are*
 happen to the sick: For the Physitian ought especially to know *to be fore-*
 before hand three things concerning the Patient. *known in*
 First, what the event or the end of the disease will be. *the sick.*
 Secondly, at, or about what time the disease will have an
 end.

Thirdly, how, or by what means. *Of Prog-*
 Of each of these before we *noſtick*
 speak in particular, we must speak in generall of the Prog-
 nostick Signs: and we will premise some things of knowing *ſigns.*
 the times of diseases; Namely, some signs are of crudity and
 concoction, others of life and death, others criticall, or judi-
 catory.

The signs of concoction and crudity, are Urines, Excre- *Of conco-*
 ments of the Paunch, spittings, and spaulings, and cathar- *tion of*
 rous matter; The signs of life and death are those which *crudity, of*
 are sent forth with Urine and Excrements of the Paunch; *life and*
 also sweats, easie and difficult respiration, easie or difficult *death.*
 induring of the disease, the pulse, the face, and comly lying *Criticall.*
 down, like unto what they were wont, and the contrary to
 these: Moreover, criticall signs are such as shew sudden mu-
 tation and perturbation, and some of these are both signs
 and

and causes as Vomit, Excrements of the Paunch, much Urine, blood flowing from the Nose, the Parotides, or swelling of the Gums, or about the Chops, settling of humours in one place, and then in another, which are called dissolving by Hippocrates, because they put away the disease; some are only signes of a Delirium, watching, stupidity, paine of the head, difficulty of perception, out of quiet, difficulty of breathing, and darkness arising, and appearing before the eyes, a noise of the eares, shinings before the eyes, unvoluntary teares, a troublesome night, without any reason, agitation of the lower lip, great stiffness, the face and eyes looking red, a retraction of the Hypochondries, a loathing, but there is not the same force and reason of all these signes; the signes of concoction are never ill at what time soever they appeare, nay the sooner they appear the better: but judicatory Signes are not accounted good, unless in the height or state of a Disease; so neither are those good which are wont to indicate those in the beginning of a Disease.

Signes of concoction, some are proper to one sort of diseases, as spittle to the diseases of the breast, others are common to many kind of diseases, such as Hippocrates, 1. Aphor. 12. reckons, the Urine, excrements of the Paunch, sweats. The excrements of the belly are signes of that concoction which is perfected in the belly, but the Urine of the concoction which is made in the Liver and arterious vein.

For when the Urines afford proper signes of the parts through which they pass, as of the Reines, Arteries, Bladder, Yard, we must have a care least we are deceived in universall and acute diseases, by those particular and proper signes of those parts; and what is spoken of Urines may also be said of excrements of the Paunch.

CHAP. II.

Of those kinds of Signes by which the times of Diseases may be known.

Signs of the times of diseases.

IT is exceeding profitable to know the times of diseases, but especially the state, but the signes of times are taken first from the form, and Idea, secondly from the time of the year, and other such like things: Thirdly from the comings (or fits)

fits) and circuits, increasing and decreasing. Fourthly, from the Symptomes of diseases, or from the Essence, and Idea, the causes, and those things that precede the disease, and by the Symptomes, and those things that accompany a Disease.

As to the form of a Disease, by how much the motion of a Disease is swifter, by so much it is nigher to its height, and is a token that the Disease will be shorter, but by how much the slower the Disease is moved, by so much the more remote it is from the state. *From the Idea of a disease.*

Secondly, that Disease which happens in the Summer is neerer to its height, that which happens in the Winter is more remote: In hot Regions, Diseases are more acute and short, but in cold, longer; those that are hotter by nature, are subject to hotter Diseases, and so shorter, those that are colder, to more cold, and consequently more lasting; hotter, and dryer Victuals, generate hot humours, and thereby shorter Diseases; colder, and moister dyet generates pituitous humours, and so more lasting Diseases; great strength of nature in a Disease that is not mortall, shewes that the Disease is short; but weaknesse shewes it will continue longer; but strength in a disease that is mortall, shewes that it will continue longer, but weaknesse signifies that it will be shorter. *Time of the year. Region. Temperant of bodies. In respect of dyet. Strength of nature.*

Thirdly, in the fits the houre is to be considered in which the Paroxysme returnes, the time of duration, and the vehemency of Symptomes, for if the fits returne sooner, and the latter be longer then the former, and more vehement, it is a token the disease is increased: on the contrary, if the latter fits return slower, and endure a shorter time, and are not so violent, it is a signe the disease abates; but sometimes Paroxysmes, enveigh equally and all of them return at the same houre, which most commonly is a sign of a long disease, but sometimes they come not equally, but at severall houres, which shewes that the disease will be shorter, and is neerer to the state. *From the course of fits.*

Moreover, if the fits come sooner, and that equally, the signs of concoction not appearing, it is the beginning, but if they anticipate more hours then before, it is in the increase; when they observe equality again a good while, it is the state; when lastly the omitting or abating of the fits happens to be various, it is the declination: If the order of

Of the signs of the times of diseases in particular.

the fits, so that sometimes they come too soon, sometimes too late, and sometimes equally, and at certain times. When the fits do equally invade without the signes of concoction, tis the beginning, but when they anticipate not, tis the augmentation; when they observe equality, it is the estate: And lastly when the coming late happens again, tis the declination; but if the order of fits be various, so that sometimes the Paroxysmes invade equally, sometimes anticipate, and sometimes come later; when the fits equally invade without signes of concoction, the beginning is; when they come too soon no more, the state is; but when they come too late, the declination is.

In longitude.

As for the longitude and magnitude of fits, if the time of intermission or declination be short, and they are neither plainly intollerable, nor altogether free from Symptomes, it is a signe of the increase. On the other side, if the abating or the intermission be long, easie to be indured, and free from all Symptomes absent, declination is shewn.

But the most certain signes of the times of diseases, are digestion and crudity, for whensoever a sign of concoction appears suddenly, it shews the disease will be short and terminate in health, but a signe of crudity shews the disease will continue long, or even prove deadly; and if grievous Symptomes grow upon the sick, so that they come with signes of concoction; they need to trouble no man; but if they happen without signes of concoction and with crudity, they portend danger.

CHAP. III

Of the signes of times of Diseases in particular.

AND that we may speak something peculiarly of knowing of the times of Diseases, the beginning of a disease is as long as the disease is crude; An evident and manifest concoction is a most certain signe that the beginning is finished: And in the beginning the Symptomes are hitherto more mild, but in the augmentation all of them increase, and in the state, when the greatest contention is betwixt the matter and the disease, all of them are most vehement: but this comes to passe sometimes soon, sometimes late; for in very acute diseases immediatly they have extream pains, 1. Apho. 7. but in Chronick the times are extended longer.

Signes of the beginning of a disease, of augmentation, of the height.

C H A P IV.

Of the signes by which we may foretell
the event of a disease.

And these things are spoken of Prognosticks in general, now we are to speak of those three, which use to be presaged, namely the event of a disease, the time of the end, and the manner: but the event of a disease is fourfold, for some diseases kill the diseased, others plainly leave them off, so that the sick returne to their perfect health; others neither kill the sick, nor leave them off, but accompany them even to deaths doore; others are changed into other diseases, and somtimes into worse, somtimes into milder.

The event of a disease is known by comparing the strength of nature with the disease, and by the longitude of a disease, or the state with the time to come; for if the sick passe over the state, there is no need, that he should any more feare the danger of death by that disease; because after the state no man dyeth in the declination by the power of that disease.

The signes of strength and weaknesse of nature are sought principally from causes, and effects: the proximate cause of the strength of nature is a natural constitution of the parts. And this, by how much the neerer it is to the naturall temperature, constitution and naturall unity, by so much it signifies the firmer strength; by how much the more remote, by so much the weaker. For strength of nature principally depends upon a naturall temperament, whereunto belongs age also and sex; for in men and youths the strength is firmer, in women, old men and boyes, weaker. Remote causes are all those things, which by whole intervening the strength of a naturall constitution is increased, or preserved, or diminished, such are those things, that are taken in, which are carried about, which happen externally, and that are evacuated, and retained; for if all these things have been moderate heretofore, and are moderate, it shewes strength of nature; if immoderate, imbecility. Amongst the effects are first, actions, which, by how much the more they are observed according to nature, by so much the more they signifie health: on the contrary, by how much the more or more noble they are, or by how much the more they are hurt, by so much the more

The event
of a dis-
ease four-
fold.

When it
may be
known.

Signes of
strength
and debi-
lity of na-
ture.

they shew the strength to be weakned: Secondly, Excrements signifie nature to be powerfull, when in their substance, quantity, and quality they are most like to naturall, but they signifie the contrary, if they are contrary. Lastly, qualities changed, by how much the neerer they shall be to the qualities of sound men, by so much they shew the greater strength in the diseased; by how much they differ from them, by so much the more imbecillity.

Signs of a strong disease.

The strength of a Disease is known from things essentiall, inhering causes, and effects, or consequent Symptoms.

As for what belongs to a constitution contrary to nature, the difference which follows the form of a Disease, or the causes, or the subject, afford signes of the event; if the Disease be great it indicates danger and death, if little health, and by how much the fewer and more gentle those Symptoms are that shew what the disease is, by so much the lesse the strength of the disease is shewn; but by how much the more or greater they are, by so much the more vehement is the Disease: but principally malignity ought to be suspected alwaies; a disease also, by how much the more it resides in a noble part, or may draw in a noble part by consent, by so much the more dangerous; but that which is in an ignoble part is out of danger.

The causes are such, as either bring forth a disease, or dispositions which have gone before it, or such as are helpers and supporters of a Disease.

The efficientes are either Internall or Externall, internall are either solid bodies, or fluid; Diseases therefore which proceed from solid matter, as from stones, gravell, especially such as is great, for the most part are incurable; Diseases which arise from humours are dangerous, if they offend in the whole substance, and are malignant, if they are very putred, if plentifull, endued with mischievous qualities, and inhere in a noble part, and are crude; those which are contrary indicate the Disease to be less dangerous: Diseases which arise from blood for the most part are wholesome, from yellow and pale choller not very dangerous, from leek coloured choller, and the colour of the Yolk of an Egg, for the most part deadly.

The *Æruginous* for the most part all are mortall, as those from black. A Disease also from an humour perversly thin, is more dangerous then if it be mingled with some other more mild.

Diseases also which proceed from many vitious humours mixed together, are more dangerous then those that arise from a single humour, regard neverthelesse being had to the nature of the peccant humour.

Diseases also are more dangerous which proceed from a humour causing a tumour, then from a quiet, so that it doth not adhere quietly to a noble part. As for the externall and evident causes, this is to be noted of them in generall, if they trouble the body long and violently, and are withall malignant, and continue long in the body, they signifie a dangerous Disease; those which are contrary tend more to health, and are lesse dangerous. Of the dispositions of bodies, *Hippocrates 2. Apho. 34.* writes thus.

Those are lesse dangerously sick, whose disease is suitable to nature, or age, or custome, or time of the year, then they whose diseases are agreeable to none of these.

Moreover, if Adjuvants, whether they are externall or internall, or from nature, or from art, help, they signifie a healthy Disease, and not a dangerous; but hurtfull things, if they hurt not, shew that nature is well: On the contrary, if those things which ought to help, do not help, they shew that the Disease is dangerous and deadly.

Effects and Symptomes.

Thirdly, for what belongs to effects and Symptomes, by how much the Symptomes are lighter, by so much the Disease is more gentle, by how much they are greater, by so much the Disease is more violent.

The plurality of Signes are not only to be handled here, but the gravity and dignity of good and evill signes are to be considered and compared amongst themselves, and with the strength of the Sick; for the dignity of signes is principally to be valued in respect of life, and alwaies those are counted most worthy which indicate the force or imbecility of the vitall faculty.

Dignity of signes.

CHAP. V.

How to presage of life and death from the error and faults of actions.

After that we have spoken those things in generall of knowing the event, we will speak something in particular of what may be foretold by Symptomēs, whereof this is the summe: Those things which are most like or agreeable to nature are healthy, those which are most unlike, or different, are deadly,

The third
Book, and
part of the
fourth.
Animall a-
ctions hurt
what they
presage.

Delirium.

And first for actions hurt, and what belongs to the animal faculty, in what disease whatsoever, to have the right use of ones reason, and to be well in respect of those things which are taken in, is a good signe, but the contrary is an ill signe, *Hypocrates 2. Apho. 33.* and to do any thing contrary to custome, and to will something formerly not accustomed, or the contrary, that is, either to speak little or much, or madly, or absurdly, or obscenely, to move the hands untowardly, to read wanton things, to uncover the body, and denude the privy parts, not to be sensible of pain, untowardly, and next to being frantick, *2. Coac. Sect. 1. Apho. 10.* But principally to continue well in understanding, is good in those diseases wherein the brain is affected, or is drawn into consent: But although to be well in mind, in diseases of other parts, be a good signe, yet it is not sufficient to signifie health, for many dye that are perfect in their understandings.

Although no ravening be safe, yet that which is with laughter, and good signes, and is light, and not continuall, is more safe; but that which is with violence, continuall and vehement, is more dangerous, but that which is with boldness and rashness, is the worst of all; yet other things which are joynd therewith are to be considered; first, the Pulse, respiration, and appetite, which if they remain safe, it is a good signe, as also if sleep follow; but on the contrary, if ill signes are joynd with ravening or madness, they threaten death, for deadly signes denote certaine destruction.

Ignorance with shaking fit is evill, tis hurtfull also with oblivion, 1. *Prorrh. Com. 2. Apho. 30.* yet that oblivion which comes with a *Delirium* is less dangerous, so that the *Delirium* wherwith it appears be not dangerous.

Sleeping and waking if they are customary, and from a naturall course, tis good, but sleep and watchings if they are excessive evill, 2, *Apho. 3.* but yet if watching happen before a Crisis, the matter being concocted, it denotes no hurt; a Coma or Disease that causes long sleep, in the beginning of a Disease, signifies the Disease to be dangerous, as also that which happens in the height of a Disease, and by so much the more dangerous is the Coma, by how much the more grievous Symptomes are joyned with it.

Sleeping and waking.

As for the mischiefs of the externall Senses, if the sight, the time of judicature being instant, be hurt with the signes of concoction, it indicates no evill, but that sight which is hurt without the signes of concoction, and after an ill Crisis, wants no danger, *Cat. 4. Aphorisme 49.*

Hurting of the externall senses. Of sight.

The hinderance of hearing also, if it happen during a good Crisis, is not evill, but if without a Crisis, it is evill; and in acute Diseases for the most part it denotes the braine to be affected: And in the first place, that is mortall which is made by reason of decaying of the strength and extinguishing the faculty; those evils also which proceed from evill evacuations, 3 *Prorrh. 37.* The sound also and continuall humming of the eares; if it happen with signes of crudity, and in a day that is not judicatory, and the strength languished, it signifies a mortall or deadly Phrensie; when it happens otherwise in the vigour of a disease, and decretory daies, it indicates the Hemerodes of the Nose.

The smell and tast being offended, is a certain signe rather of the peccant humour, then of the event of a disease, but yet if the sick, the faculty being extinct; should be deprived of tast, it is a deadly signe.

Of hearing

The sudden want of the sence of feeling, which happens in diseases, is an ill signe, since it is a token, either of the dilating of the viticus humors so far as to the brain, or of the extinguishing of the native heat.

Of Touching.

Paine.

If inflaming paines which presently appeare in the beginning, and are not too vehement, nor continuall, and are taken away in a short time, or are abated, especially, after a plentifull evacuation, occasioned by nature, or art, and no dangerous signe be joynd, tis good; but those which continue long, presage an impostumation, but those which happen, the disease increasing, are not evill, because they denounce a Crisis. It is good also if when a concoction appears, the paines invade the remote parts from the bowels; and that principally on the criticall day, but all those diseases are evill which afflict the principall parts, especially if they are joynd with a continued feaver, and other ill Symptomes; but diseases of the noble parts are good, if they happen after concoction, and doe not vanish in a short time, and the sick are other wayes the better by that means; but if they happen in the beginning, the matter being hither to crude, and the disease not abated thereby; or if shortly they vanish without any manifest cause, or beginning from a more ignoble part, and ascend to a more noble tis an ill token: also it is evill not to be sensible of paine in any part.

Lassnesse.

The same reason for the most part is from wearisomnesse, for that lassitude which is promoted by the humours, flowing from the noble parts to the externall, with signes of concoction, is a good signe, and especially if it vanish after some evacuation, but if it happen without the signes of concoction, and with other perverse Symptomes, and is not abated by evacuation, it pretends evill.

Motion.

As to the Symptomes of motion; if bodies are moved aright and easily, tis good, but not aright, or with difficulty, tis ill 2. *prog. text. 6. 7.*

Lying downe.

Hitherto we may refer the decubiture, for it is good for the sick to lye on either side with his hands, neck, and legs, a little bent, his body streight, not bending towards his feet 1. *prog. text. 13.* for it is evill to lye supine, with the hands, and feet stretched and dejected, but it is worst of all to slide downe the body to the feet, to observe no order of lying in one's bed, nor to be quiet in one place, raving and striving to fly out of the bed, to uncover his hands, feet, and nakednesse, *ib. textu. 14.* and *seq.* but if a
criticall

criticall anxiety or trouble, tis not so hurtfull, all the rest are evill 2. *prog.* 27.

That convulsion is most dangerous wherein it appears *Convulsion*, that the motion is most depraved, and the contraction more vehement, and lasting, and which occupyeth more parts, and neerer to the braine, which renders respiration difficult, interrupted, and sighing, or from a flux of blood, or which happens from much purging, which happens in acute feavers, which succeeds a Phrensie, as also in the iliack, passion and watchings, but the convulsion which happens to Children is lesse dangerous, *Galen* 1. *Epid. comm.* 4. 24. and that which is caused by too much motion of matter to the head or stock of nerves, or that which is occasioned through the mordication of the ventricule by the sharpnesse of the humour, or a medicine, or by straining in vomiting, and doth not last long.

A Hiccock is like to a convulsion which if it come without a feaver or any disease; and be occasioned by meate or drinke it portends nothing of eminent danger, but after too much purging, and with inflamations and feavers, hiccocks are allwayes dangerous, especially if they happen to old men; unlesse a Crisis of vomiting afterwards be present, especially if other dangers and deadly signes joyned therewith. *Hiccock*

Trembling is evill if it happen in the beginning of diseases without an evident cause, and indicates the diseases to be dangerous, especially if it shall be longer and more greivous, and other weighty Symptomes are joyned therewith, as those which happen in an Apoplexy and Lethargie, but that trembling which happens afterwards, and is occasioned by the crick expulsion of humours, from the interior to the externall parts, is a token of no evill, nor is that trembling evill which succeeds a palfie, since it is a token that nature overcomes the disease. *Trembling.*

A shaking fit which incontinued feavers happens in that hour wherein the paine useth to gripe, when the signes of concoction go before, tis a token of a future Crisis, and therefore accounted good, if some good evacuation follow; otherwise if it happen in the beginning of a disease, or with an ill and difficult crisis tis adjudged evill. *A paroxisme.*

Cold fit.

Of the causes of the respective differences of Pulses.

Cold fits which happen at certain times in intermitting feavers, signifies no evill; nor are they ill signes in continued feavers, which happen after signes of concoction, and are tokens of criticall evacuations; and after which the body growes hot again, and some criticall evacuation followeth. But those which are occasioned whilst the matter is crude, by reason whereof the body cannot grow hot with evill, evacuations or when no evacuation followeth, and which happens with ill signes, are all evill.

Torpor.

Sloath of apprehension, specially of the body caused by cold, is perpetually evill, and without a feaver or Apoplexy, it pretends manifest danger in feavers, by reason of the extinguishing of the native heat.

Hurting
the voice.

Moreover the signes of defaults of speech are to be observed; a shrill voice threatens danger, since it denotes exceeding driness of the instruments of the voice; dumbnesse, although it be never good, nor without danger, yet it is not alwayes deadly, namely when the judicatory evacuation follows, and when it doth not continue long; the rest that are dumbe, are all for the most part mortall; and so much the worse, how many the more perilous signes are ioyned.

The
strength of
the vitall
faculty.

Secondly, the strength and weaknesse of the vitall faculty, which are of greatest force in foreshewing safty, or death, we observed principally from the pulse and respiration. Of the pulse tis spoken already, onely we repeate this, that the most languishing, most dull, and most thin, are the worst of all, after these the least and softest, and hardest, next the most frequent, but not swift, nor great, only amongst extreames the most vehement is the best, yet we must diligently observe alwayes, whither the change of the pulse arise from the disease, or come from externall causes.

Hereunto belongs the Palpitation of the heart, swoounding and falling downe, as it were dead, which indicate dejection of the vitall faculty, and great danger, if they happen through some disease of the heart it selfe.

Respira-
tion.

Respiration, of it be naturall, signifies neither the brest, nor heart, nor midriffe to be any way affected with paine, nor any adjacent parts *Galen i. prog. Apho. 25.* and moreover it hath great force in signifying tokens of health, when one is sick in a feaver, especially if other good signes are present *Hip. ib.* on the contrary preternaturall respiration, although it be not alwayes mortall, yet tis alwayes evill, but worst of all if it be joyned with other ill signes; great and swift breathing

thing signific great store of fuliginous vapours, yet the organs apt, and the faculty hitherto strong, a great and slow pulse happens only to those that are disturbed in mind; a great and frequent pulse shew pain or inflammation of the part serving for breathing; little and swift respiration shews plenty of fuliginous excrements, but with paine, or inflammation of some of the organs appointed for breathing; a little, and slow pulse shews not many vapours, with paine or inflammation of some instrument of respiration, and with other ill signes portends not a little danger; little and obscure respiration is perpetually evill, and signifies dissolution of strength; but little and thin is the worst of all, because it indicates the greatest debility of the faculty, and if a cold breath proceed from the mouth and nostrills, it is very destructive; but the worst of all, and the nearest to death, is when it extends & is obscure, and sublime, wherein the brest is much dilated, and sometimes the Shoulders, and grisly part of the nostrills, but that which is inspired is very thick, and most frequent; but the worst respiration of all, is that which is made with ordure.

Moreover for what belongs to the Symptomes of the naturall faculty, their perfection is known by their operations, of which it shall be spoken hereafter, but that we may speak here something of the desire of meate and drink; to have a good appetite to meate, and that proceeding from a naturall cause, and as Hippo. 2. Apho. 33. writes, in every disease to take easily whatsoever is offered, is a good signe; on the contrary an ill appetite of meate is bad. 7. Apho 6. not to thirst also in hot and burning feavers, wherein the tongue is filthy and black, perpetually signifies miicheif, and a delirium, or dissolution of the desiring faculty, or of them both; but as it is an ill signe not to thirst, so is a good signe to thirst in hot diseases, also to thirst immoderately and over much, is not good,

Symptomes of the naturall faculty what they presage.

CHAP. VII.

Of the signes of life and death which are taken from excretions and retentions.

AMongst excrements, urines principally use to be observed *Prognostick from urine.* but although it is spoken of already, what they shew, above, part the first *Sec. 2. cap. 21.* yet here we may briefly comprehend those things which portend to death or life, namely, that urine is best which is most like that of a sound person,

person from this the rest differ in substance, colour, quantity, and contents. As to the substance, the goodnesse of the substance with a good colour, promifeth health; thin urines with a good colour promise health, yet they shew a disease which requires longer time for concoction. Thin and red urins signify a crude disease 2. *prog.* 30. but thick, which are made so after the beginning of a disease are also good, if they were thin before, much urine if it be made on a criticall day is good, which somtimes is profitably made with sharpnesse, and paine.

Troubled urine, not settling in the bottome, because the strength of the diseased persists, argues for the most part the disease to continue long; if imbecility of the sick be present, it denotes their death, but those which grow cleare are better. As for the colours of waters, a pale red, a light safron colour, and a kind of cleer clay colour are good, neither is a reddish colour with a reddish and light sediment to be found fault with, but on the other side bright shining urines, and white are evill; and especially if they appeare such, in Phrensies, 4. *Arbo.* 72. principally, if they are so in the beginning of a disease, and continue so long; thin, and red, signify the disease is crude, and moreover tis dangerous if they continue so long; black urine in acute diseases, unlesse they are emitted on a criticall day, allwayes denote great danger; after black, the oyle are the worst, yellow, and green also are nought, and green urines if they appeare so suddenly in men that are in other respects sound, with biting of the heart, tis a signe they have drank poison, and they are in danger of death, but in feavers they are mortall signes; especially if they appeare in the beginning of the disease.

As for the quantity *Hippo.* 3. *Epid. com.* 3. *tom* 4. condemnes thin urins made in great quantity; as also much urine, thick, not residing and no way helping; and all urines are made in great quantity in the beginning, are disliked; small quantities of urines in acute feavers are also nought.

As to the contents, those urins are evill which have no sediment, and nothing that swimmeth in the urinall in the middle of the urine, nor a little loud; unlesse the sick hath fasted long, or watched, or laboured; or because the body is exceeding full of choler; thick waters also without a sediment are dangerous, and a sediment representing, the forme of thick brain, is evill, but worst of all, if it reside in a manner like scales of

Fifth, but if it be thin and white tis vicious; but that which is furruraceous or like Bran is worst of all, *Hippo. 2. prog. 28.* a nubecula, or little cloud, which is carried in the Urine, if it be white tis good; if black tis nought; tis evill also for the sick to make water and not know of it.

Secondly, the dejections of the belly afford us signes *Of dejection* two-manner of waies; first, as they shew the concoction of *on of the* the stomach and guts; also as they manifest the humours *belly.* flowing from other parts to the guts; As for the first kind, that ejection is best if it be gentle and constant, and sent forth at that time when it is wont to be in the best health, if quantity be according to what hath been eaten, *2. Apho. 13.* The latter is good if it be criticall, and with signes of concoction in the state of a disease, and happen on a criticall day, and ease the sick, *1. Apho 2.* On the other side ill dejections, and those which portend destruction, derogate from the good in substance, colour, smell, time wherein they appear, nor are they voided with ease.

As to their substance and quantity, dry excrement and rolled up in clods are signes of fiery heat, and if besides they shall be black, they declare a burning disease to be in the middle of the body, and for that reason are evill; On the contrary liquid excretion is not evill, if it have other good notes; but the watry ordure is worse, and proceeds from greater crudity; and moreover in cholerick diseases, with ill Urines tis deadly, but in more milde it signifies the disease will continue long. A glutinous, white, light, fat, and foetid ordure, and little, are condemned, *2. Prog. 21, 22.* Cleare dejections also in acute diseases are condemned, *2. Provb. 15.* and froathy, and cholerick ejections in acute cholerick diseases are accounted evill, *ibid. Apho. 18.*

As to the colour, excrements which differ from the naturall colour, are white, red, bloody, watry, green, yellow, black, full of mixt colours, unless they are emitted critically they portend danger: Yet in all these ejections in judging of them, regard is to be had of the meat, and to take heed you observe whether that quality hath its rise from dyet that hath been taken; for they become white either by the obstructing of the passages through which choler descends to the guts, or through the motion of the choler to some superiour and more noble part,

Red are also of themselves dangerous, yet if they are extruded after the victory of nature, they rather shew hope of present health, then portend any thing of evill.

Black Excrements since they proceed either from blood or melancholy humours, or from black choler, that blacknesse which comes from concrete blood, or a melancholy humour, is not alwaies evill: but pure black choler can never be sent out of the body without destruction of the sick.

Green and æruginous ordure which proceeds from æruginous choler tending to black, is an argument of a pernicious disease, if it be cast out from any principall part, and the bowels be affected with an Erysipelous; if the Excrements are yellow, they signifie vehement cold in the internall parts, and as it were a certain mortification: Ejections also of divers colours are evill, 2. *Prog.* 23.

Fætid Excrements are evill also, and the worst of all, and few are preserved whose excrements in acute feavers are fætid, yellow, fat, black, and blew, or lead colour.

Of vomitings.

Those vomitings are good which truly purge the causes of diseases, or which are made critically, and when concocted matter appears on the criticall daies, and are suitable to the nature of the disease, and take away or abate the same; but on the contrary, all those are evill which happen in the beginning, when the matter is not yet concocted, and which take not away the morbifique matter, and the disease; and they are so much the worse if other pernicious signes be present, such as are sincere Vomits, leek coloured, lead coloured, black, stinking, and fætid, from the guts, ileon, and very little.

Of sweats.

Sweats are good which happen after decoction is made, and on a criticall day, and coldnesse, and stiffness, proceeding & flowes out hot and plentifully from the whole body, and lessen and abate the disease: on the other side, those are evill which happen whilest the matter is crude, which are too much, or too little, and those which are cold, or flow not from the whole body, and neither diminish nor take away the disease.

From the Hemerodes of the nose.

The Hemerodes of the nose are good which happen in the state of a disease, with signes of concoction, nor is that alwaies to be condemned which happens in the augmentation, and also in the beginning, seeing the blood wants no other preparation, neither do the other humours. Good Hemerodes ought to be large, but yet not over much, but to be made with
ease,

ease, and the symptomes of the Feaver to be abated, and to happen in a criticall day, and in those diseases, wherein bleeding is proper to their nature and condition; and moreover the blood ought to flow from a part opposite to the part affected: on the contrary, those are ill Hemerodes which happen in the beginning, unless other good signes are present, and if they appear with dangerous signes, and those which are too large, or too little.

Dropping of blood from the Nose is evill, if it be caused by perversesse of matter, multitude, imbecility of force, or all these, especially in the beginning, or on the fourth day, if the blood be black, sincere, and without mixture: But it be a token of a future Crisis, tis no ill signe, which happens when the signes of concoction have been before, and the disease is not dangerous.

Spittle is of great use in shewing of diseases of the breast, and that is good which is concocted, white and equall, and is spit out conveniently, and easily in a short space of time, without great pain, and a great cough: on the contrary, tis evill if it be crude, yellow; worse, if it be green, worst of all if black, especially if it be without mixture, if it appears more dull, and is spit out with great difficulty, tis also evill, when the spittle is bloody, for it proceedeth from erosion, or from breaking of Vessels. *From spittle.*

Lastly, decretory Imposthumations are good, if they happen with signes of concoction; and other good signes, and break on a judicatory day; they are good by nature which are removed from the bowels and more noble parts, which persevere, are suppurated, and help the sick: On the contrary, those are evill which break forth without signes of concoction, the matter as yet being crude, and on a day that is not criticall, if they are too great, or too little, or happen to be in the fingers, or toes, if they are lead colour, or too red, inclining to black, and those which decrease and vanish, without any reason, and without any precedent evacuation, those which are not well suppurated, which are corrupted, and they bring either that part where they are, or the whole body into danger. *Ulcers.*

C H A P. II.

Of the signes of health and of death which are taken from the mutations of the qualities of the body.

what may be fore-told by the habit of the body. **M**oreover to the mutation of the qualities of the body, and first concerning the whole body, tis a good signe, if it be rendred not much unlike to a sound body in habit and colour.

Tis no good signe for the most part in a great Disease, when nothing is changed, 2. *Apbo.* 28. Tis also an ill signe when bodies are extenuated in the declination of a Disease, and although they take food are not thereby refreshed. For in acute Diseases, tis an ill signe when the body is puft up and swelled, unlesse criticall humours are then remitted.

From the colour. The colour of the body when changed contrary to nature, and especially in the yellow Jaundice, is a good signe. In Feavers if it come to passe by natures driving the cholerick humours critically to the out side of the body, and the skin; but that which is contrary is to be adjudged evill.

From the face. Those signes which are in the face are of great force, but that face is best which is like to theirs which are in health, but if it be contrary tis vitious, *Hip.* 1. *Prog.* 5. but a face may be unlike to their faces that are well many waies, and by how much the more it recedeth from the face of sound people, by so much the greater evill it denotes.

Hippo. face. All which signes *Hippocrates* in his description of a face, which differs from a face of a sound person produceth, which therefore is called an *Hippocraticall* face, 2. *Prog.* 6, & 7. sharp Nose, hollow Eyes, the Temples streightned, or narrow, the Eares cold and contracted, and their fibres inverted, the skin also about the Forehead hard, fixed, and dry, and the colour of the whole countenance green, or black, which change of the countenance is very deadly, especially in the beginning of a disease, unlesse it so happen to be from some evident cause, and mends night and day

day, but that face which is of a purple colour, mixt with blew, unlesse the Hemerodes of the Nose, or an Imposthumation behind the Eares be to follow after, is an ill signe, and denotes a very hot disease of the brain.

As the eyes are affected, so the body, and principally the head, *6. Edip. Comm. 4. tom. 28.* for if the eyes are like to theirs that are well, have a naturall colour, are full, splendid, and indure the light without trouble, if they open their eye-lids well, and shut them without teares, and without excrements, they are good signes. By the eyes

But there are divers mutations in the eyes, and as *Hippo. 1. Prog. 10.* writes, if the eyes avoid the light, or shed tears against the will of the sick, or are perverted, or one shall be lesse then the other, and the white become reddish, or of the colour of lead, or black Veines, or phlegme appears about the sight, or look divinely upward, or are hollow, or the colour of the whole countenance varies, all these are to be accounted evill and destructive, but worst of all if the sick see not, hear not, and if this happen in a weak body, death is nigh at hand.

A sharp Nose, and a Nose that is turned, or wreathed, after what manner soever, is an ill signe; if the Nose itch contrary to custome, unlesse it indicare a flux of blood imminent, it shewes that a Delirium will follow. By the Nose
Brill.

The Eares if they are of a wan colour, black contracted and cold, tis a signe of death. By the ears.

The grinding of the teeth is an ill signe, tis an ill signe also when any glutinous humours sticks to the teeth. By the teeth

When the Tongue is like theirs who are in health, tis a very good signe, but tis very evill if it be green, black and exceeding dry, cleaved, or chopped, rough, and as it were burnt: But principally dry, hard, and black Tongues indicate danger, if they appeare with other ill signs, & most of all if when the Tongue is rough and dry, the sick be not thirsty. By the
Tongue.

The Chops ulcerated with a Feaver is hard to be cured, *3. Prog. 15.* and if in acute diseases of the Chops, if paines, and abjectnesse, and stoppings, without a tumour happen, they are pernicious, *1. Prorrh. 11.* and if the Feaver being detained, he suddenly turn his neck awry, and can scarce swallow, no tumour being present, tis mortiferous, *4. Apho. 35.* By the
Chops.

By the Hypocondries

Tis a good signe if the Hypocondries are without paine, if they are soft and equall, on either part if they are not extenuated; yet sometimes when the Hypocondries are stretched it shewes a crisis to come, but then also other criticall signes are present; on the contrary tis an ill signe, if the Hypocondries are troubled with inflammation, or paine, or are stretched, or unequally affected, on the right, or left part; also when extenuated, and beating unlesse a Crisis be present.

By the extremities of the body.

Lastly as to the extremities of the body, if in intermitting feavers, the extreame parts grow cold, and the internall burne, and they thirst, tis mortall 7. Apho. 1. but tis very good if all the body be equally hot, and soft; it is evill also, and for the most part deadly if all the body be heavy, and especially if the nailes and fingers are black and blue, or black, if the genitalls, and stones are drawn up together, also filthy smells indicate great putrifaction and danger.

CHAP. VIII.

Of knowing the time, longitude, brevity and event of a disease,

Which diseases are ended in the first quartary.

THE length, brevity, time, and event, of a disease are known principally by the signes of concoction and crudity, and the vehemency of a disease, by the celerity, and tardity; for if in the first day in an acute feaver, the signes of concoction are present in the urine, and no danger be perceived, it argues the disease will end about the first quartary, third, fourth, or fifth day, if the disease be contrary to this, and presently after the beginning have the worst Symptomes, the fifth day, or before, he will dye.

Which are extended to the second.

But if signes of concoction appeare the first and second dayes, and the disease be neither benigne nor vehement, the disease may be extended, to the second quartary, but as long as such feavers can continue the first day, it can scarce be known, but afterwards each quartary are to be considered, and the signes of concoction in them are to be wiewed & compared with the vehemency of the disease, towit, if in the fourth day signes of concoction appear in the urine, tis a signe that the matter is apt to be concocted, and that the disease will terminate on the seventh day; on the contrary, if in such a feaver, on the fourth day there appeare no signes of concoction but ill signes are also increased, tis an argument that the

the sick growes worse, and may dye about the seventh day; unlesse some error be committed, or some other cause of change be present.

But if the signes of crudity, remaine till the fourth or fifth day, the disease shall indure beyond the third quartary, but if on the fourteenth day, it shall have an end, the eleventh, which is the index of the fourteenth will shew it, for if then signes of concoction appeare, either before the fourteenth day judgment may be given, or on the seventeenth day; but if on the eleventh day there appeare not as yet sufficient signes of concoction, there is no hopes that the disease will be judicatory on the fourteenth, and therefore the signes of concoction are to be sought in the following quartaries, for if the signes of concoction appear about the twentieth day, there is hopes on the first quartary, after the twentieth day, that the disease may be judged of, but if no mutation hitherto appeares it may be extended to the fourth week, and those diseases which retain all the signes of crudity to the foure and twentieth day, cannot be decreed, before the fortieth day, and those which are extended beyond the fortieth are not ended with a Crisis, but with slow concoctions.

se- which to the third.

Sometimes not only the day but also the houre of the end of a disease may be foretold, namely if we consider particular fits, for if we think any one will dye on any day, tis probable he will dye in the worst time of his fit, or in a particular declination, when the strength, in the height of a disease is dejected, by the cruelty and vehemency of Syniptomes.

The houre of the prevent of a disease how to be known.

CHAP. IX.

How many mutations there are of diseases, and the manners, and what a crisis is.

THE third thing which ought to be known by Physicians is the manner of event, and end of diseases: they are terminated six severall wayes, as well to health, as to death, for either the disease is suddenly fully dissolved, and the sick recovers immediatly his firme health, or there is a sudden change to better, and the sick is transferred from a worse state into a better, after which, at length also he recovers to be well, or there is a conversion of the disease by

changes of diseases how many.

little and little to health, or contrary the sick suddenly dies, or the disease is suddenly become more dangerous, which change at length ends him.

Crisis.

That mutation which is made by degrees, tending to death, is called a Marasme, or Wasting; that mutation of a disease which is made by little and little, and tends to health, is called a loosing, but that sudden and hasty change which is made in Feavers, especially acute and tend to health, or death, is called a Crisis; but that change cannot be made unlesse vitious humours which oppresse nature are moved, which indeed cannot happen without great perturbations of the body, and vehement symptoms; a Catalogue whereof *Galen* recites in his 1. of criticall daies, Cap. 1.

CHAP. X.

Of the causes, differences, manner, and time of Judgment.

The cause of a crisis. Since that in Judgments many things happen, conturbation, evacuation, and sudden mutation, tending to safety or death, that conturbation which is a heap of those judicatory symptoms, which proceed from agitation and molestation of humours which the body affords; and this comes to passe either from an externall cause, as influence of Stars, or an internall, irritating and provoking as well nature as the matter.

Evacuation. The cause of evacuation is the expulsive faculty, which either is stird up by the plenty or the quality of matter, yet critically expels that which doth molest.

Differences of Crises. There are four differences of Crises, according as nature is sometimes stronger, sometimes weaker, and sometimes oppressed more by vitious matter, sometimes lesse, for either the sick forthwith recover their former health, or suddenly dye, or undergo some change, tending to safety or death, yet immediatly they neither recover, nor dye: From whence afterwards other differences will arise, for some Crises are good, some evill; those are good which tend to the recovery of the sick, those are evill which discover the death of the sick.

*Good.
Evill.*

Again some are perfect and very good, which free the sick perfectly and wholly from the disease, and leave none of the morbidique matter, but the imperfect leave some of the morbidique matter behind.

*Perfect.
Imperfect.*

Again,

Again, some are faithfull and secure, which so take away the disease, that there is no feare of a relapse; unfaithfull is that which leaves a doubt of falling into it again.

Moreover tis called a safe Crisis which happens without danger of Symptomes; but a dangerous which is joyned with perilous Symptomes.

Some Crises are with good signes, and have their indications from the daies going before them, and are called good signes; but that which happens without signes, and is as it were, unseperated, is said to be an ill signe.

But all these differences depend on three things, the strength of nature, the nature of a disease, and the condition of the matter which ought to be expelled; and that a good and perfect Crisis be made, tis requisite that nature be strong, and Heaven favourable, the disease not dangerous, and the matter benigne and facill; in all other Crises one, or more of these are wanting.

All Crises are made two waies, either by excretion, or emitting, or else by removing the matter: By excretion a Crisis is made when peccant humours are expelled by vomit, Seidges, sweat, plenty of Urine, Hemerodes of the Nose, flowing of the months, and Hemerodes: A Crisis is made by translation, when the matter is not expelled out of the body, but is removed into another place, and that either into internall parts, or externall, the former Crisis is the berter, because the matter for the most part is throughly cast out from the center of the body; by so much also a Crisis is the better, that is made by translation, by how much the matter is transferred to a more ignoble and remote place; so much the worse, by how much the place is more noble and nigher to the seat of the former disease: An Imposthumation also, or Ulcer ought to be out of the region of the part affected, and to have the other notes of a good Imposthumation; an abscesse also ought not to vanish suddenly, but to remain untill either it be turned into quitture, or till it be dissipated by degrees.

But the best Crisis never happens unlesse it be towards the end of the height, when the concoction is perfected, for that which happens in the augmentation before the state, is imperfect, and is so much the worse, by how much tis longer distant from the end of the state; sometimes also evacuation which is made in the beginning of diseases, and is symptomaticall, is not to be accounted evill, especially if those hu-

Eisemos.

Asemos.

The differences of Crisis whereon they depend

Crisis, how many waies made.

By excretion, by translation.

A good crisis, when it happens.

mours are evacuated, from whence the disease had its originall, and the strength of nature can endure it.

C H A P. XI.

Of Criticall daies.

Criticall daies.

WHercas the Crises are made more frequently and better on certain determinate daies then other daies, those daies therefore are called criticall; but other daies wherein a Crisis seldome happens, or such a one as is not good does happen, are called not criticall.

Criticall daies are of three kinds, some are those which are simply, and according to prehemincy called criticall, wherein Judgments are made better and more frequently, all which are bounded within the circuit of a septinary number, and are these, the 7.14.20.27.34.40. for daies are not taken whole, but shorter.

Moreover, there are some which are called indicant and contemplable, from whence the Crisis to come is shewn, and they are the middles, or quarternaires of every seventh morning, as 4.11.17.24.

*Interven-
ning.*

Others are such as come between, which the Greeks call *Paremptotes*, others call them provocatory, wherein from some accident contrary to nature, or by the violence of a fit, or by reason of some externall cause, nature is provoked to hasten to untimely expulsion, such are the 3.5.9.13.19. and according to some 15.18.

Vacant.

Vacant or not criticall daies are those wherein no crisis happens, or very seldome, and unperfect, and evill, such are the 6.8.10.12.16.18. to which some add 22.23.25.29.30.32. 33.35.38.39. which daies are also called medicinall, because the Physitian on those daies may safely administer purging Medicines.

After the 40. day diseases languish, and by a slow concoction, and by Imposthumations, rather then Crisis are terminated; after these some diseases are judged by months, others by years, and especially in climactericall years, when changes are made even of diseases which have been contracted from their Mothers Womb.

From this doctrine nevertheless of Hippocrates, and Galen, which Galen reduceth, as it were, in brief, in the 1. of decretory diseases, cap. 5. the ancients now long since have departed; *Asclepiades*, *Archigenes*, *Celsus*, and others, which accounted the third criticall year not the twentieth, but the

the one and twentieth, the fourth, not the twenty seventh, but the twenty eighth.

The Astrologers also do not simply observe daies and numbers, but referring all the reason of criticall daies to the motion of the Moon, note those daies wherein the Moon comes to every quadrangle, or fourth corner, and comes to the diameter in respect of place wherein she was found when the disease began, as now in the causes of criticall daies shall be shewn.

The opinion of Astrologers.

CH A P. XII.

Of the causes of Criticall daies.

THAT we may omit the opinions of others, of the causes of criticall daies, no offence to any other judgments, we appoint criticall daies to depend on the Moon, and the condition and disposition of peccant humours, and the expulsive faculty, for what mutations soever the Moon in her conjunctions, oppositions, and quadrangles makes in these inferior bodies is very well known, and therefore that power which is attributed to quaternaries, and septinaries do all depend on the motion of the Moon, yet nevertheless that this, or that Crisis may be made betwixt those, the motion of the Moon alone is not sufficient, since not alwaies the seventh or fourteenth day is not alwaies criticall, and sometimes a good and an ill Crisis is made on the same day, and therefore the condition and disposition of peccant humours are to be joyned: and lastly, the expulsive faculty is to be added, which being stimulated by the motion of the Moon and disposition of humours, is the next and immediate cause of a Crisis.

The cause of criticall daies.

First seeing the order of criticall daies cannot proceed only from the faculty of the body, nor from morbifique matter, but a cœlestiall cause is to be joyned therewith, and the Moon in every quaternary, and septinary, and according as it takes up one and another place of the Zodiack in its motions, and by reason of the light from the Sun varying, shews to us various lights or representations, it may make great alterations in sublunary things, tis not therefore without a cause determined, that great mutations arise in diseases in those places which have regard to the place wherein the Moon was in the beginning of the disease, with a quadrangle or opposite ray; and when she is come so far as that she hath a new shape, and manifest mutation of light; for the motion of the Moon and her progresse to the quadrangle, and opposite signes, and the changings

The Moon.

changings of the shape of the Moon are to be joynd whatsoever they are; yet the crises are stronger when the Septinaries exactly fall into the quadrates of the Moone.

A periodical month in criticall dayes to be observed.

But in the computing of the criticall dayes, the month of wandering or travelling is to be observed as being naturall and according to which many changes are made in this inferior orbe, which for the most part is made in twenty seven dayes and eight hours, which if they are divided into foure weekes, the first will be ended, in six dayes and twenty hours, the second in thirteene dayes, and sixteen hours, the third in twenty dayes and twelve hours.

Therefore on what day soever any one fall sick at the first onset of the disease, a conjunction as it were is made of the Moone and the disease, hence when the Moone hath measured three signes, or past over ninety degrees, and comes to the first quadrate, the first criticall day is made; when she hath past through six signes, or an 180. degrees she comes to the opposite signe, and the second criticall day begins; when from the opposite signe she passeth to the second quadrate, the third crisis begins, if the disease be prolonged till then, lastly when she returns again to the place where she was at the beginning of the disease the fourth crisis begins, and she shews as she did at first.

Prognosticall diseases.

The same reason is of indicatory dayes, for when the Moone hath passed over two signes or 60. degrees from the signe wherein she was when any one began to fall sick, and is laid to come to a sextile, the first indicatory is begun; when she hath past over foure signes, or a 120 degrees, and becomes triangular, the second indicatory is made; and when from the opposite signe againe she comes to be triangular, then is the third indicatory; lastly when she hath gone from the second quadrate to the second sextile, the fourth indicatory is.

Which motion of the Moone is to be observed in criticall dayes.

But here the dayes are not to be numbered according to the diurnall indifferent motion of the Moone, which is thirteene degrees, ten minutes, 35 *sec.* but according to the true motion of the Moone, for the Moone is sometimes swift, sometimes slow in motion, nor doth she passe through alike number of degrees each day, whence it comes to passe that she arrives sometimes sooner, sometimes later, to the quadrate and opposite signe, and hence without all doubt it comes to passe, that most admirable Physitians vary in defining of criticall dayes, and Hippocrates as also Galen account the twentieth, and seven and twentieth: Archigenes, as also Diacles count the

the one and twentieth and eight and twentieth for criticall dayes; neither are allwayes distinct aspects, to be observed, but often times, plarick are sufficient.

Secondly besides the motion of the Moon, the disposition and motion of humours are to be considered and which is the cause that the crisis happens sometimes sooner, sometimes later.

Lastly the nature of the body is to be adjoynd, which being assisted by the motion of the Moone, and stirred up by the humours, begins a combate with the morbifique matter, and expels the same, and makes a crisis.

The disposition and motion of humours.
The nature of a body.

CHAP XIII.

Of the signes of crisis in generall.

But crises are made as it is also said before, only in acute, and violent diseases, arising from hot, thin, and acrid matter which may tire out nature; but if sometimes in durable or chronick diseases also, criticall evacuations as it were, are made, it is necessary, that ther be certain periods of time before the disease become vehement and become of the same nature with acutes: Moreover that the crisis may be made, tis requisite that there be strength of nature, according as ought to be: thirdly, to the foreknowledge of a crisis certain perturbations in the body conduce, which use to arise before a crisis, and signes which *Galen* in the third of crisis *Cap. second* at large describes, and, he breifly comprehends in the same book *Cap. the tenth* when he writes, that when a crisis is to come there is some new alteration, either about respiration, or concerning the mind, or the sight, or hearing, or about some of those which we call breifly, by one name, criticall accidents or signes.

In what diseases crisis are made.

Signes of crisis.

C H A P. XIII.

Of the signes of differences in Crisis.

*The best
signe of cri-
sis.*

A Good crisis is thus known. First because critick signes have precedes. Second, because the signes of concoction have gon before especially in urins and other excrements. Third, because it is shewn on the judicatory day. Fourth, because it happens on the judicatory day. Fifth, because convenient excretion is made according to the nature of the disease. Sixth, because the sick after the Crisis is almost freed from the feaver, the Symptomes abate, and the face is of a better colour.

*Of the de-
clining
from the
best.*

But these Crises that differ from the best are known thus; because the signes of exquisite concoction have not gone before, nor have they happened in the state, nor a little before, but in the augmentation, they are not made on a criticall day, the evacuation doth not plainly answer to the nature of the disease, the sick doth not well endure that evacuation, the Pulses are not better, the sick is not eased of his disease, and in the night which followeth the crisis he is not more lightsome, yet amongst the other evacuations which are wont to happen before an absolute concoction, the best of them is the Hemerhodes.

Evil.

An evill crisis is known by the signes which are contrary to the best crisis, namely because such a crisis first doth not expect the time of concoction; secondly in the judicatory day it was indicated by ill signes, or it suddenly grew upon him without preceding signes; thirdly it is not made on a decreorie day, but for the most part on the sixth or eighth day; fourthly the evacuation doth not answer to the nature of the disease and the excretion of it selfe is evill, fifthly the sick is not eased, the pulse is become worse, the strength decayes, and the sick doth totally fall into a worse condition.

C H A P. XV.

The signes of a crisis to come by excretion and Imposthumation.

*Signes of a
crisis to
come by
excretion.*

But whether a crisis be to be made by emission of morbi-
fique matter, or by transposition of it into another place, or
by imposthumation, the Kindes of diseases, and the motion;
time

time of the yeare, nature and age of the sick do shew; for if the disease be very acute arising from thin and acrid matter, and the crisis be to come after the first periods, if nature be strong, the pulse high, the passages open, and nature accustomed to sweate or some other evacuation, if it be Summer time, tis a signe that there will be a crisis by excrements.

But on the contrary if the disease be not so acute and the matter be thick, nature weaker, especially if the urines come forth thin and crude for a long space, if their be debility of the externall parts, and propensity of nature to thrust out humours, to these places; if the time of the year be cold, tis a token that there will be a crisis occasioned by imposthumation.

*By an ulcer
or imposthumation.*

And indeed excretions are good when they are evacuated as they ought, and such as ought, and in such manner as they ought, and when, and as much as is expedient; namely when the humour which offendeth is evacuated, and concocted in due quantity, in a criticall day, in a right manner, together, and through places sending them out together; cvill evacuations are contrary.

*Signes of
good or
evill ex-
cretions.*

Good imposthumations are those which are made when the matter is concocted, have laudable substance, namely a figure swelling externally, and sharpned, do equally ripen, and are not hard round about, and are of a good colour, red, yellow, or white, indifferent bignesse, when they continue and go not away untill they are suppured, and are soon ripened; on the contrary, ill imposthumations swell not enough without, and are not pointed, they suppurate not all alike, they are hard about, and cloven into two, their colour inclining to red, yellow, or black; they are greater then is convenient, and they vanish before they are suppured, or are ripened very slowly.

*Imposthumations
good or
evill.*

CHAP XVI.

Through what places there will be excretion and where there will be imposthumation.

THrough what place there will be excretion the inclination of the humour teacheth, and about those parts to which the humour to be expelled is moved, or through which it is moved, a certain change is perceived.

When

Signes of Hemerodes of the nose.

When a Crisis is to come by the Hemerodes of the Nose, the Hypochondries are wont first to be extended without pain, then when the blood finds the way to the superior parts, it causeth difficulty of respiration, but not long continuing; afterwards follows the paine of the head and neck, and the pulse becomes more vehement, and at times the Arteries are discerned to beat and pant, and the face and eyes become redder, and the eyes shed involuntary teares, and shinings, or glistrings are observed in them, or dimnesse ariseth; the imagination is also hurt, and a Delirium happens, and certain red apparitions seem to be before the eyes; and moreover the Hemerodes being now nigh, the sick begin to scratch their Nose with their fingers: and these signes are the more certain, if the age of the sick, and nature, and the time of the year, and the present constitution of the aire consent.

Of a crick sweat.

If by reason of sweat which happens very often, a Crisis be to come, there happens suppression of Urine for the most part, and a cold fit hinders it: but the signes of Hemerods are absent, as also the signes of Vomits, and monthly courses, and when the sweat comes forth the pulse is soft, waving and flowing, the exterior parts grow hot, and red, the skin is soft, and a certain hot vapour breaks out through the skin.

Vomit.

That there will be a Crisis by vomit, the motion of the humours to the stomach shew, from whence ariseth biting of the stomach with paine of the head, a giddinesse and dark cloudy shadowes or mists before the eyes, agitation of the lower lip, much and thin spittle flowing out of the mouth, loathing and disdainig, a cold chill fit, or trembling, and frigidty of the Hypochondries, a hard and unequal pulse, and difficulty of breathing.

Excretion of the Belly.

If a Crisis be to follow by reason of excrements from the Paunch, there is no proper and exact rule to know it, but only thus, because signes of a Crisis are present, but signes of a Vomit, or flux of blood, or sweat, or of courses are wanting; therefore we may conjecture there will be a Crisis of the belly; and especially if belching wind, rumbling, or breaking wind in the belly be present; also paine of the loynes, heavinesse of the knees use to happen, and the Urine is sometimes suppressed, or made more sparingly.

By Urine.

That there will be a Crisis in the same manner, is knowne by the absence of signes, which use to shew the manners of other Crises, and the sick are not much tossed up and down, nor are they much out of quiet, but there is present a certain

tain gravity of the Hypochondries, and a perception of windiness about the bladder, and afterwards the Urines begin to be increased, the dregs of the belly to be retained, and the sick when he makes water is sensible of certain paine.

'Tis a signe that there will be a Crisis by the courses if *By courses* signes of other evacuations be absent, but when the time when the tearmes are wont to flow, is present; and moreover the heat and gravity of the loynes concur, when there is paine and stretching out of the Hypochondries, and other Symptomes, which familiarly happen when the courses are present.

By the Hemerodes that there will be a Crisis is collected, *By Hemerodes.* If this flux be not otherwise familiar to the sick, and the signes of other criticall evacuations be absent, and the sick perceive some heat about the marrow of the back, or paine or extending of the loynes, or some paine in the belly.

If criticall excretions are to come through more places, the signes of more excretions will give you notice thereof. *By more parts.*

Lastly, if it be conjectured that nature will remove the morbigique matter into another place, that place where the Impostumation will be, is known by the inclination of the matter to those parts whether inferior or superior, although the matter be thin, it shall rather be moved to the superior then the inferior parts, and if nature be strong, it rather drives the matter towards the inferior, then the superior parts. *In what place an Impostume will happen.*

CHAP XVII.

Of the time of the Crisis.

Lastly, it is to be known at what time the Crisis will be, *Signes of the time of Crisis.* but that fore-knowledge depends upon the fore-knowledge of the State, of which we have spoken before, but the chief signes are those of concoction and crudity. If therefore on the first day a manifest signe of concoction appear, and all the rest portend nothing of evill, the Crisis of the disease is to be hoped for on the fourth day; but if on the first day there doth not appeare a manifest signe of concoction, other daies are to be consulted on; and if a signe appeare, in any of the decretory daies, or the next quarrternary the Crisis is to be expected.

Moreover those things are to be joynd with the signes of concoction

concoction; which the Ideas, magnitude, motion, and manner of a disease affordeth; for of acute diseases, some at the most are judged in foure daies, some are extended to the seventh, some to the fourteenth, others longer: The alteration of a disease also shewes the Crisis, since it shewes whether the Crisis will be on an even day, or an odd: Also the times of diseases are to be considered, for in noisome diseases the crisis appeareth not perfectly before the state, only an imperfect crisis in the augmentation; but destructive are made either in the beginning, especially if the disease be vehement and the strength weak: To these signes also is to be adjoined the consideration of the time of the yeare, region, age, temperature of the sick, and such like, of which *Galen* speaketh in the third of *Crisis*, cap. 4.

Signe that
of a present
Crisis.

But that a Crisis is now present, the criticall signes spoken of and enumerated before, do shew, namely, the night wherein the Crisis is to come, which precedes the fit, useth to be more grievous, 3. *Aphor.* 13. but various perturbations precede in the body, according as nature is to expell matter through this or that part: Of which before cap. 13. and *Galen* 3. of *Crisis*, c. 2.

But oftentimes not only the day but houre of Crises may be fore-told, for if we know the day of the Crisis which is to come, we ought to consider in what houre of the day the fit useth to come, and what time of the Paroxysme the sick is most grieved, and that is principally to be observed.

Instead of a conclusion also, it is to be observed what certain, perfect, and best crises may be known, and the rest to know no otherwise then by the most probable conjectures, wherefore unlesse we can presage somewhat certainly before hand, it is more safe to hold our peace, then rashly pronouncing to be deceived.

Signes of
stable and
unstable
change of
diseases.

Lastly, concerning the Crisis, the stability and instability of the event is to be weighed, but stability of the event and certain health is to be hoped for, if nature be strong, and no Symptome remaine over and above; if all the rules of a good Crisis be present, if the humours are thin and hot, which are easily evacuated, but if nature be weak, and some Symptomes abound, as loathing, and such like: all the good rules of a Crisis are not present, and the humour be colder and thicker, tis lawfull to presage unconstant health, and such may fall into relapse.



T H E
F O U R T H B O O K,
P A R T the I.

Of things necessary for the pre-
 servation of Health.

C H A P. I.

*What things appertaine to the Doctrine of the pre-
 servation of Health, and how many kinds there
 are of necessary causes for the preservation and
 defence thereof.*

Hitherto we have explained three parts of Physick,
 which, as it were, prepare the way to those things
 which are proper to Medicine: Now the next
 is, that we explaine those principall parts of
 Physick; the Hygeinall and Therapeutick, or the preser-
 vative and restorative; yet first of all we will place before
 hand certaine common Axioms and Maximes to be observed
 in the method of them both.

1. Nature doth nothing rashly.
2. Too much of any thing is an enemy to Nature, 2. *A-Common
 Maxime.*
3. Nature is the Physitian of Diseases, but the Physitian
 the Servant of Nature, and ought to imitate her, she acting
 aright;
4. Custome is a second Nature, and those things which

are accustomed along time, although they are worse, they are wont to be lesse troublesome, then those things which are not accustomed, or which men are not used unto.

*The Do-
ctrine of
the defence
of health.*

Now concerning the Doctrine of the preservation of Health, it may conveniently be comprehended in two parts; the first is the knowledge of those things which are, as it were, the materialls of health, or the knowledge which is required of wholsome causes, and of things called Non-naturall. Secondly, a method necessary for preservation of health, which teacheth how, or in what manner those non-naturall things are to be used to preserve health.

First, for the causes which are necessary for the maintaining of health, they are comprehended under the notion of things called non-naturall, and are conveniently reduced into foure ranks, into those things which are taken, those things which are carried, those which befall the body without, and those things which are emitted and retained: First therefore we are to speak here of Aire, Meat and Drink, Passions of the mind, motion, and exercise of body, and rest, sleep, and watchings, Venery, Bathes, Excretions, and retentions;

CHAP. II.

Of Aire.

Aire.

THE Aire affects our bodies two waies; either as it incompasseth us extrinsically, and insinuates it self through the pores of the skin, or as it is attracted by inspiration, both waies it alters our bodies, and impresseth its force on them, but that Aire is the best which is temperate, as to the primary qualities, and is pure, and infected with no pollutions, but is serene, moved or stird with the winds, breathing sweetly with pleasant gales, and which is sometimes moistned with wholsome showres: On the contrary, that Aire is vitious which is infected with exhalations and vitious vapours, breaking forth on every side, or is incompassed with Marish grounds, where are standing waters, or after what manner soever it be impure, and such as cannot be purified by the blowing of winds; that which is troubled, or too hot, too cold, too dry, or too moist.

*The best
Aire.*

Corrupt.

*Situation
of places.
change the
constituti-
on of aire.*

But the constitution of the Aire may be polluted through divers causes; first, the constitution of the Aire depends on the

the scituation and nature of places; for some Regions are hotter then others, others colder, for by how much the more any Regions receives the direct beames of the Sun, and by how much the longer the Sun remains above their Horizon, by so much the Country is the more hot; for the contrary reasons tis so much the colder.

Yet this cause only doth not suffice, neither is the same constitution of aire in all the inhabitants under the same paralell; secondly, the mould and proper nature of the earth conduceth to the constitution of the temperature of the aire, wherein is to be observed what the nature of the ground is, fat, dirty, filthy, gravelly, stony, sandy, whither the place be high or low, what scituation there is of mountains, and vallies, what winds it often admits, and from what climates, whether the the sea, or any lakes be neere it, whether it brings forth mettalls from whence malignant aire may be exhaled.

The mountains also change the constitution of aire, according as the blowings of certain windes drive away, and admit it, and if the mountains drive away the North-wind, but admit the South, it comes to passe that the places are hotter and moister, but on the contrary if by scituation of the Mountains, the blowing of the South be hindred, and the North admitted the place is colder and dryer.

The winds bring forth great mutations, also the Orientall winds are more temperate, as also the Occidentall, but these are moister, the Notherne are cold and dry, and have power to bind and dry our bodyes, the Southerne are hot and moist, therefore as the Region or scituation is more or lesse disposed to this or that wind, so it obtains this or that constitution of Aire: Regions, and Countryes exposed to the Orientall Sun, are more wholesome then those which are exposed to the Septentrionall, and hot winds; as also then those which are exposed to the West.

The vicinity of the Sea also and lakes conduce much to the peculiar nature of Aire, unlesse interjected Mountains prohibit, for from moist places of this nature many exhalations are drawn up, which mingles themselves with Aire and moisten it, and indeed the humidity will be increased if the Sea or a lake be scituated on the South, but if towards North, the frigidty increase; if a lake of the Sea be Orientall, and the rising Sun not far off, it drawes abundance of moist exhalations to those places, but if the Sun be more remote, the

Vapours with the beams of the Sun wax hot and bring dryness to that place, but lesse moisture comes from lakes, and waters scituated to the West.

*Metallick
Mines.*

Metallick pits for the most part sends forth filthy malignant Vapours, and communicates them to the neighbouring places; Dens do the same and Caves, exhaling venomous Aire; Woods that are too thick, take away the light of the Sun and Moone, and hinder the motion and agitation of the Aire.

*Times of
the year.*

Thirdly the seasons of the yeare change the Aire which indeed Astronomers constitute equall according to the motion of the Sun, and Zodiack being divided into foure parts, but Physitians principally regard these times, according to the temper of the Aire, and call that the Spring when the constitution of the Aire is more temperate, when we neither grow stiffe with cold, nor sweat with heat; but the Summer when the same is hot and dry; Winter when it is cold and moist, neither do they appoint these seasons to be equall in all Regions.

The Spring.

Hence the Spring as being the most temperate, or as Hippocrates calls it, hot and moist, that is, when calidity moderately overcomes frigidity, and humidity moderately exceeds dryness, it is the most wholesome time of the yeare, and although diseases are generated in the Spring time, yet the Spring of its selfe doth not produce them, but the vitious humours which are gathered together in the Winter time are driven out by the heat of the Spring.

Summer.

The Summer, because tis hot and dry makes bodies hotter and dryer, rarifies, dissolves, and renders them weaker, it attenuates humours, and kindles them, from whence choleric and sharpe humours are collected.

Autumne.

Autumne, because that in the same, Morning and Evening, the cold prevailes, about mid day heate, its constitution is mixed with cold and heat, and by reason of this inequality of Aire, it is very obnoxious to diseases, and the blood at this time of the year is diminished, and mellancholly abounds, bodies are thickned, and pores shut.

Winter.

In Winter as being cold and moist, phlegme is chiefly increased, and bodies are rendred obnoxious to distillations.

All which neverthelesse are so to be received if you compare one houre with another, or the times of the yeare observe their naturall constitution 3. *Apho.* 8. but if the seasons of the yeare are unstable, divers diseases according to the various

various constitutions of the year, arise, of which in the selfe same *Apho. 6. 11. 12. 13.*

Out of all which it is manifest that these scituations of places are more wholesome wherein the constitution of the Aire is temperate, the Spring temperate, the heat of Summer sufficient to ripen fruits, and graines, Autumne colder, Winter cold, yet not offending our bodies with too much frigidit, where ther is also a fruitfull soile, men indued with a comely habit of body, well coloured in the face, laudable in their manners, ingenious, and rejoycing in their prosperous health.

CHAP. III.

Of meate.

AS for what belongs to meate and drink, wherewith the substance of our bodies is renewed and increased, it is aliment, which can increase the substance of our body, and it is either properly so called, because it nourisheth our bodies only, or Medicinall, because it also doth alter our bodies.

But aliments are taken from two kinds of things, either from plants growing out of the earth, or from living creatures, and those things which are taken from living creatures, are either the parts of animalls, or those things which proceed from them, as eggs, milke, and those which are made from these, as butter, cheesc, hony, and such like.

The difference of food is great, for some meats are of a good, others of an ill nourishment and juice; some are easily, others with difficulty concocted, some are easily corrupted in the stomach, others not.

That is the best food which is easily concocted, nourisheth much, affords much aliment, is not easily corrupted, nor indued with any ill quality, and leaves few excrements, but that food is unwholesome, out of which an ill juice is generated, and which easily putrifies.

That food is accounted firme which brings forth much nourishment, but wants great strength of heate for concoction, but that is infirm which is easily concocted; and nourisheth, but affords but little nourishment, and such as is soone dispersed.

Meates from plants.

Fruits or
Graines.

The most ancient, and most familiar kind of aliment are plants, and those things which grow out of the earth, amongst which in the first place are all sorts of Corne and grain, which the Greeks call by the name of *fiton*, and in the first place truly Corne is hot and moist, and beyond all the rest affords much nourishment and that firme and most wholesome, out of which although divers kinds of food are made, yet the best amongst them is bread, but that leavened, which agrees to every age, and is conveniently taken with all meats.

Spelt.

A sort of Barly which they commonly call spelt, is the next in nature to Corne, and is the middle as it were betwixt wheate and Barly, and it nourisheth more then Barly, but tis weaker then Wheate, out of this spelt is made a kind of frumenty, or Barly broath, of which Pliny 18. Booke 11. Chap.

Frument.
Rye.

Rye, of which bread is made for the most part in Germany, and other parts, is hotter then Barly, yet not so hot as Wheate, and the bread which is made of it hath more aliment then Barly bread, and that stronger, yet it is something more hard of concoction, then Wheaten bread.

Barley.
Patisan
of Barley.

The bread which is made of Barly is colder, and yeelds not so firme nourishment, of Barly also is made ptisan, which being taken after what manner soever, affords good nourishment both to those that are sick, and those that are well, and is no way or clammy, or viscide, but easily passeth through and cleanseth the passages, yet the aliment which it affords is a little thinner,

Rice.

Rice is hot and dry, or rather temperate, it nourisheth much, especially being boiled with milke it increaseth seed, it doth not easily putrify, stops the Loosenesse, it is hardly concocted, and yeelds nourishment somewhat thicker, and the frequent use of it may easily occasion obstructions.

Millet.

Millet and the graine like it, called in Latine *Panicum* i. e. Indian Oates, are almost of the same nature, and are cold, and dry, and stop fluxes of the belly, neither do they afford much nourishment, nor very profitable, yet millet is the better: Oates are hot and afford nourishment of a better
account

account; Pottages and Broathes are made of them, which may be given to those that are sick or well, which stops Loosenesse of the belly.

The Corne called *Saracenicum*, of which Pottages are wont to be made, yeelds nourishment profitable for men that are given to dayly labour, and it is hard of concoction, it begets wind, and offends the eyes. *Saracenicum.*

Beanes are cold and dry, and flatulent, hard of concoction and crude, and yeeld excrementitious nourishment, yet not visced, but have some cleansing power, they make the senses dul, and noises seeme troublesome. *Beanes.*

Pease are cold, and dry, and flatulent, especially the greene, yet they yeeld better nourishment then Beanes, but not so plentifull. *Pease.*

Parfenips are hot, and dry, and have greater force of cleansing then Beanes, and therefore more usefull in Physick then dyer. *Parfenips.*

Lastly Lentils are the worst food, cold, and dry, thick, of evill and vitious juice, and hard of concoction, they fill the head with thick Vapours, they hurt the eyes, they ingender thick blood, and are chiefly hurtfull to melancholy persons. *Lentills.*

After graines, instead of food, Pot-herbes are given, and the leaves of the Herbes, Branches, Roots, and the fruits of them, as also of Trees, which neverthelesse, yeeld not so good and profitable aliment as Corne, but many of them are too Medicinall; yet all of them are better boyled then raw. *Pot-herbs.*

Lettice that is sown is esteemed the best of all Pot-herbs, and affords more nourishment then other Pot-herbs, yet tis cold, and moist, and Medicinall, and moreover, in a hot constitution of Aire, tis conveniently given to young men, and those which abound with choler, and those which have hot stomaches, it provokes sleep, allayes the heat of the reines, yet too much use thereof diminisheth the naturall heate. *Lettice.*

Cabbage is accounted by most to be cold, and dry, yet in the juice thereof a certain bitternesse and acrimony is perceived, which hath a force to stir the paunch, tis hard of concoction, affords little nourishment, and that thick and Melancholy; from whence fuliginous Vapours fly into the head, and produce turbulent sleep, and weaken the sight, its malignity is corrected if it be boyled with fat meates, the stalkes *Cabbage*

stalks are worse then the broad leaves, and are to be eaten only by those which are used to much labour.

Spinage.

Spinage cools and moistens, affords little nourishment, yet not so evill as Orach, or Blitum, which is a kind of Beer, it generates cold and serous humours in the stomach, unlesse it be corrected with pepper and, oyle, or butter, it is not laudable, and it begets wind.

Beets.

Beets, Blitum, Orach, and Mallows can scarcely be used with profit, or benefit for aliment only, but are more beneficially taken, when there is need to loosen, refrigerate, and moisten the belly; and Beet indeed is hot, and dry, and takes away obstructions of the Liver and Spleen, and hath a different substance, the juice is detergent, wherefore it looseth the belly, but the substance stops the same.

Blitum, Orach, Mallows.

Blitum, Orach, and Mallows loosen the belly only by humectation, they nourish little, they yeeld a watry juice, and have of themselves no pleasing savour unlesse they are dressed, with Butter or Oyle, and other Sawces.

Asparagus.

Asparagus, to which the young branches or tender sprigs of Hops are next like unto, neither heat, nor manifestly cool, they are gratefull to the tast, and cause appetite, yet afford little nourishment, and therefore do afford not so good nourishment; they have a detergent faculty, and provoke Urine, they cleanse the Reines, and open obstructions of the Liver, and of the other Intralls.

Young Hops.**Cresses. Mustard-seed.**

Garden, or Water Cresses, and Mustard-seed may be used instead of Sawces, but not as nourishment, they are hot and dry, and of a biting tast, they attenuate crude meats, as also crude and thick humours.

Onions.

Onions afford little nourishment, they are acrid and have a heating, cutting, and extenuating faculty, and inflame the blood, and together with the discussed thinner parts they leave behind them a thick juice, they irritate Venus, they are all hurtfull to the head, eyes, teeth, and gums, they cause turbulent Dreams.

Garlick.

In raw Garlick there is almost no nourishment, in boyled very little, and that bad, but there is manifest heat and driness in it, and a power of extenuating thick and viscid humours, and of cutting them, and taking away cold, and tis the best remedy to convert the pravity of waters, as also against the Plague, and venomous aire: Leeks have almost the same power.

Leeks.**Raddish.**

The Roots called Raddishes which we use being dipped in Salt

Salt affords little nourishment, but are rather instead of medicinall knacks, they heat beyond the second degree, and have a tart tast, they cut phlegme, attenuate, provoke Urine, and expell sand from the Veines.

Wild Raddishes have the same force, but are more powerfull, which are fit for sawce, but not of aliment. *Wild Raddish.*

Turnips, Rape-roots round are slowly concocted, and fill the belly with wind, especially when they are raw, but boyled they are easier digested, and afford aliment enough, and therefore not so hurtfull, but are hot and moist. *Rape.*

Long Turnips are almost of the same nature, but of a better tast, and yeeld lesse thick and flatulent juice, and afford strong nourishment, they stimulate Venus. *Turnips.*

Parsley is hot and dry, provokes Urine and courses; opens obstructions, purges the Reines, and bowels, yet it afford little nourishment. *Parsley.*

Garden Parsnips yeild little, hot and dry; and not very good nourishment, they cause lust, provoke Urine, and bring down courses. *Parsnips.*

Red Beets which are pickled with Vinegar, the seed of Carawayes, and the roots of wild Raddishes are used rather instead of Sawces, then as food, since they nourish very little. *Red Beets.*

The fruit of Plants are various; Melons are pleasant to the tast, and send forth an Aromatick smell, but they are of a watry moist substance, not without coldnesse, whereby they quench thirst, and causes Urine, they cleanse the Reines, but they are easily corrupted, and being corrupted, become as it were of a venemous nature, and stir up choler, or generate Feavers, whereby many great men are killed, and therefore they ought to be eaten at the first course, that they may the easier descend through the Paunch, and after the eating of them, some food of good juice is to be taken, and good Wine is to be drank, that the corruption of them may be hindered. *Melons.*

Cucumbers, are also cold, but not so moist, and the juice not so hurtfull, nor are they so easily corrupted in the stomach, they are most conveniently taken, before they are ripe being pickled in Vinegar, or Brine, and Pepper, and they are least offensive to those which have hot stomachs. *Cucumbers.*

Artechocks heat and dry, to the second degree, they are hard of concoction, and afford not very good nourishment, they are windy, and stimulate Venus, unless this be rather to be attributed to the seasoning, or dressing of them. *Artechocks.*

Strawburies

Strawberries.

Strawberries, are cold, and moist; they are profitable to those that are troubled with choler in the stomach, they coole the liver, they restrain the heate of the blood and cholerick humours, they allay thirst, and therefore are beneficiall in hot constitutions of bodyes, they have thin juice, purge the reins, cause urine, but are easily corrupted in the stomach, and therefore ought to be eate, the first.

Pears.

Now follows the fruits of Trees, and frutices, first of peares

there are divers kinds, nor are they all of the same faculty, the austere, and sharpe are astringent, and cooling, and hurtfull to the stomach, and Guts; sweete are more temperate, yet almost all are of a cold, and moist nature, only some are hot and moist.

and moreover, more apt to corruption, they are not unpleasing to the stomach, in the first place being taken they stop a loosenesse, but being taken after other meate, they loosen the belly, and shut the mouth of the stomach, they are better boyled, then raw.

Apples.

There are divers sorts of Apples which discover themselves by their taste, the sower are colder then the sweete, and of a thinner, and lesse flatulent substance; the austere and sharpe are yet colder, and of a thick substance, and descend more slowly through the paunch, and stay it, yet their violence is corrected by boyling; and sower, austere, and sharpe Apples are to be used rather instead of medicines then aliment, they all afford ill juice, but those are most hurtfull which are watry, and for the most part have no taste; the best are sweete ones, with an aromattick taste and smell, and such as afford an indifferent quantity of aliment, and that not evill, they strengthen the heart, exhilarate the minde, and are very beneficiall to those which are troubled with Melancholy.

Quinces.

Quinces are cold and dry, and have an astringent faculty, they are harder of concoction, afford little nourishment, and that thick, they strengthen the stomach, and stop vomiting, and if they are taken after meate, they hinder Vapours so that they cannot easily ascend to the head, and they loosen the belly, but being taken before meales, they stop a loosenesse; being taken raw they hurt the nerves, and often cause fits of the cholick.

Peaches

Peaches are cold, and moist, and are easily corrupted, and afford little nourishment, and therefore are to be eaten sparingly, and warily, and indeed before meales, not after other meates, neither is water, nor any cold drink, to be drunk after them; but wine; being dried they are lesse hurtfull, and especially being boyled in Wine, their pravity, if they had any, is taken away. Peaches.

Apricocks which are well known to the Persians, in goodness are beyond Peaches, and more pleasing to the stomach, and are not so easily corrupted. Apricocks.

Medlers are cold and dry, and are not eaten till they are rotten, they afford little nourishment and are slowly concocted, they stop the belly and all fluxes, they stay vomiting, and agree well with a cholerick stomach. Medlers.

Sowre Sherryes have a cooling faculty, are easily concocted, and descend through the belly, they coole the stomach, and liver, they quench thirst, and raise an appetite, and are not so easily corrupted, nor are they of so hurtfull a juice, but the sweet ones are far inferior to the sharpe ones in goodnesse, by reason of the moisture abounding, and are easily corrupted, and generated utred humours, and Wormes, in putred feavers. Cherryes.

There are divers kindsof Plumbs, all of them cold, and moist, the sweet ones are not so cold by nature, yet they mitigate the acrimony of choler, and therefore agree most with colerick persons, they are easily concocted, and passe through the belly, those that are fresh, alter most powerfully, they mollify the paunch, being taken before meate, but with their moisture they scatter abroad many excrements, and that crude, neither do they generate so good juice, yet some are softer then others, those which abound most with a crude and moist iuce, they are the worst, the white, and waxen colour, or yellow, are the worst, and afford ill juice, but the best are Damask Prunes, and those which are neerest to these are green, but the dry are more fit for nourishment, and afford better aliment for those which are weaker in stomach, Plumbs are not convenient; for they loosen irstone. Plumbs.

Mulburies moisten, coole, quench thirst, mitigate the heate of choler, they nourish little, they easily passe through the belly, but if they are retained, they easily are corrupted, and become putred, and acquire an ill nature, wherefore they are to be eaten when the stomach is empty only, and not overspread Mulburies.

overspred with peccant humours; that they may on a sudden descend and passe through the paunch.

Figs.

Figs are hot and moist, by nature they nourish more then other fruits, they easily descend and go through the belly; they have a penetrating, and abstergent faculty, yet too much use of them begets wind; dry Figs are hotter, and dryer, yet acquire a power of cleanseing, opening, and attenuating, yet they also loosen the belly, drive humours to the externall parts, being often taken and plentifully, they cause sweates, and generate blood, not very good, but such as is apt to putrify.

Grapes.

Sweete grapes are hotter, and for that reason cause thirst; sharpe, and austere are colder; those that are fit to make Wine, are betwixt these extreames; those that are fresh gathered, afford little nourishment, and are flatulent, and if they are detained long in the stomach they are corrupted and dilate the belly, and stir up cholick fits; they cause the spleen to swell, and fill the stomach and liver with crude humours, and allwayes the fresh gathered serve rather for pleasure, then for health; the austere and sower Grapes, are colder, and strengthen and bind the belly; the sweete ones are hotter and afford more nourishment; those which have a mixed taste, obtaine mixt faculties, but the sweet, which participate something of sharpnesse, are commended before the rest, they are pleasing to the stomach, gratefull to the liver, as also they are said, by a certain propriety, to be advantagious to the whole substance, they are helpfull to the breasts, and strengthen all the naturall members; those which are without stones are called Corinthian, they loosen the belly more, but those which have seed strengthen the stomach.

Almonds.

Amongst Nuts, the best are sweet Almonds, they are temperately hot and moist, and yeelds store of nourishment, and of good juice and moderate, they attenuate and cleanse, for which reason they are the best food, for immaciated bodies, and they replenish the intrails, and the whole body with convenient nourishment, and such as is not apt to corruption, they purge the brest, open the passages of urin, and cause sleep, but they are not so convenient for a choleric stomach, nor to be given in choleric Feavers:

Walnuts

Walnuts are hot and dry, especially dryed, for your green ones are moister, and are not so hot, and therefore are eaten safer, but the dry generate choler, and offend the Orifice of the stomach, and hurt the Gullet and Wind-pipe, and cause a cough, and generate pain in the head, commonly the use of them is commended after Fish, because with their heat and drinesse they prevent the corruption of Fish. Walnuts.

Hassel-nuts afford more nourishment, then Walnuts, but they are colder, yet they are hot and dry, they are hardly digested, and afford a thick juice, more earthly then Walnuts. Hasselnuts.

Chestnuts are hot and dry, and Galen conceives they have no ill juice, as all the rest of the fruits of Trees, if they are well concocted in the stomach, yet they are harder of digestion, and are distributed more slowly, yet they afford more durable nourishment, they bind the belly, and if they are eaten in too great plenty, they cause wind. Chestnuts.

Toadstools and Muskeronis for the most part are cold, they yeild a watry and thick nourishment; Toadstools are preferred before Musheroms: yet all of these are not to be taken without danger, because they do not only generate ill juice, but oftentimes there is poyson in them. Musheroms.

Lastly, Oyle drawn out of ripe Olives affords nourishment temperate, and for the most part agreeable to our nature, and can correct the pravity of other aliments, and amend the crudity of Herbes, it also mollifies and loosens the belly, it takes away all sharpnesse; it helps Ruptures, and such as are bursten, and mitigates pain. Oyle.

Meates from living Creatures.

IN the second place many living Creatures supplies us with convenient nourishment agreeable to our nature, as being neerer and more familiar to our nature, and lesse exceed in the qualities, and afford better juice. Aliments of living Creatures.

Either the parts of living Creatures are taken as food, or those things which are taken from them, yet are not the parts of living Creatures, and amongst the latter the first is Milk, which is of a cold and moist, or rather of a temperate and moist nature, and yeilds nourishment, the best by much if it be rightly concocted in the stomach, and be good in its self. There

Parts
milk.

of There are three parts of milk, the butirous, the serous, and the caseous; the butirous is of an oylely and hot substance, the serous is watry, yet having some mixture with saltnesse; but the caseous is cold and try, and indeed Cowes milk is the fattest and thickest, and contains more butter then the milk of other Animals, and therefore nourisheth more, and is most agreeable to us, and hath more of the caseous part then Ewes milk. Gotes milk is in the middest betwixt these. Sound Animals only generates good milk, but sick generate vitious: Dry Herbs also cause the milk to be thick, but green, and such as are full of juice makes better, wherefore the milk at the latter end of the Spring is best, for by how much the thinner it be; and more serous, by so much it is the easier concocted, and sooner passeth through the belly, and obstructs lesse, but it nourisheth least; the best milk therefore is that which is of a good smell, and sweet to the tast, of a middle consistence, neither too thick, nor too thin, nor serous, nor caseous overmuch, of a white colour, which yeilds good aliment, and that plentifully and constantly enough, especially for lean bodies, as being that which is elaborated by so many concoctions, and is become familiar to our nature, that tis easily, truly concocted, as in unwholsome bodies tis easily corrupted, in a cold stomach it easily growes sowre, in a hot, it is turned into an adust smell, and choler, and causeth pain in the head, wherefore it is hurtfull to those that are sick of putred Feavers, and to such as have paines in the head, as also to those which are troubled with diseases of the eyes, or are obnoxious to breed gravell, those that are obstructed in the Liver, and inflamed in the Hypochondries, *5. Apbo. 64.* but the worst corruption thereof is, when it is coagulated, which may be prevented, if any Salt, Sugar, or Honey be added to it: It is most conveniently taken on an empty stomach, nor are other meats to be eaten presently after, especially the use of Wine after milk is unwholsome.

Best milk.
Antter.

As for the parts of milk, Butter is used in our Countries instead of food, and sawce, tis hot and moist, and almost of the same nature with Oyle, yet it nourisheth more, and is a sawce for many things, tis used more advantageously then Oyle, tis pleasant to the tast, tis easily concocted, and nourisheth much, yet it agreeth not with those that have a moist and slippery stomach, yet tis far better to be taken before other meats, then after; nor is it so agreeable to hot natures, tis most conveniently eaten with bread.

Sowre milk is colder, and agreeth not with colder stomachs, *Sowre Milk.* but with hotter, especially in the Summer, and in very hot weather.

Cheese is hardly concocted, and yeilds thick nourishment, *Cheese.* and therefore stops the belly, opens the Pores, and affords matter fit for the generation of stones; but that which is old affords ill nourishment, the new yeilds better: the new and salt is as yet cold and moist, and of a flatulent nature, the worst is the oldest, that which is of a middle age, which is neither hard nor soft, and is moderately sweat and fat, is the best, but whatsoever it be, tis alwaies to be eaten after other meats, and sparingly; but since there is great differences of Cheeses, according to the nature of living Creatures, and of places and pasture: That of the Ewe is the best, tis easier concocted then others, and affords better nourishment: Cowes milk is next to this in goodnesse, the Goates is worst of all; yet that Cheese is better, when the buterous and caseous parts are not separated, but are made altogether into Cheese, but those Cheeses are worse which are made of the caseous part only of the milk.

The serous part of the milk nourisheth least, and is instead *Whey.* of Medicine rather then aliment, yet tis most fitly used for the evacuation of serous and adust humours; it consisteth of two parts, the one salt and participating of acrimony, and is altogether hot, which is the lesser part, the other is watry, and is the greater part, for which it is called cold and moist whey

Eggs, but especially of Hens, are food with us; an Egg *Eggs.* consists of two parts, the Yolk, and the White, those are moderately hot, and moist, and of the best nourishment; these cold and dry which afford also much nourishment, and that lasting enough, but hard of concoction: The newest Eggs are the best, and nourish most, and soonest, and yeild good aliment; but the stalest are the worst, and the corruption of Eggs the worst: And they do not so well agree with those whose Liver or stomachs are filled with vitious humours, and in Cholerick and hot stomachs they are easily corrupted, and turned into choler; As for the dressing of them, they are best when they are soft, and to be supt, being boyled in seething water, but those which are roasted in ashes are not so good; those that are boyled till they are hard, although they afford more solid nourishment, yet they are worse, but the worst of all are those which are fryed in a Frying-pan; especially in Oyle.

Honey.

Honey is of a hot and dry nature, in the second degree yet that which is whitest is not so hot, and is more common for those that are sound, but all honey is medicinall aliment, convenient for old men and those of cold natures, but because it easily turnes into choler, tis not fit for hot natures, nor for the Liver, but tis good for the Lungs, otherwise it hath a cleansing faculty, and resists putrifaction.

Sugar.

Sugar, although it be not taken from living Creatures, but is made out of Reeds, hath a great agreement with honey, yet tis lesse hot and dry then honey, and therefore tis profitably mingled both with hot and cold things, yet in those that are very hot, it easily turnes into choler, otherwise it hath an absterfive faculty without sharpnesse.

**Food from
the parts of
Animals.****Feet:**

Aliments which are taken from the parts of Animals are many, which both according to the kinds of living Creatures, and according to their parts do vary. The feet of Animals, of what kind soever, are cold and dry, they have little flesh, and scarce any blood, they yeild a cold juice, dull and glutinous, by reason whereof the broath of boyled feet is congealed.

Heart.

The Heart is of a hard and dry nature, and fibrous, neither is it easily concocted, but if it be well concocted it yeilds neither ill juice, nor a little, and that stable and firme.

Liver.

The Liver it self is hard to be concocted, and yeilds thick nourishment, which is slowly distributed, it is of good juice and firm, but there is great variety in this part, not only according to the kinds and ages of living Creatures, but also by reason of their food and full nourishment; for Animals which are not grown to their full state, and which use better and fuller feeding, have also a greater Liver, more delicate and fuller of juice.

Spleen.

The Spleen affords little nourishment, and that melancholy, tis hardly concocted, and slowly distributed.

Lungs.

The substance of the Lungs is light and thin, and nourisheth lesse, yet it is easier concocted, nor doth it afford ill nutriment.

Reines.

The Reines afford not very good but thick aliment, and the Reines of younger Quadrupeds, or Calves are of better juice, and are easier concocted.

Tongue.

The Tongue excels the other parts in pleasantnesse of tast and goodnesse of aliment, it is also easily concocted.

Brain.

The brain yeilds pituitous and thick juice, and is not easily concocted, nor distributed, and causeth loathing.

The Stomach and Guts of Animals are of a harder substance, and of a colder and dryer nature, they are harder of concoction, and not to be concocted except it be by a strong stomach, and that they be well boyled, they yeild little blood, and that cold, and not very good. *Stomach.*

Flesh that is full of Muscles, which is frequently taken instead of food, differs principally according to the kinds of living Creatures. *Musculous flesh.*

Swines flesh nourisheth very plentifully, and yeilds firme nutriment, and therefore is most profitable, for those that are in their flourishing age, sound, strong, and which are exercised with much labour, yet because too much humidity abounds in it, it yeilds a thick and slow juice, and many excrements, it agrees not with all men, especially with those that are sick, wherefore many other sorts of meat are preferred before it. *Swines flesh.*

Brawn, or the flesh of tame Bores, so that it be of younger Bores, is the best, because it hath not so much excrementitious moisture. *Brawn.*

A Lamb before tis a year old hath moist flesh, slimy and viscid, but when tis a yeare old, tis very good nourishment, consisting of good and plentifull juice, and indifferent lasting, and easie of concoction, but in those which are exercised with hard working, tis easie discussed, and aliment that is not solid is made thereof. *Lamb.*

But because Lambs that are of a longer growth, become Sheep, and the flesh is then become ungratefull, and not of so good juice, their stones are cut out, and they are made Weathers, the younger whereof are the best meat, and tis easily concocted, and generates good blood, and therefore agrees both with those that are well, and those that are sick. *weather Mutton.*

But Mutton of Ewes is evill, both by default of the temperance and by frequenting of copulation, and of bringing forth young, tis hardly concocted, evill, and dull, and viscid juice is bred thereof. *Ewe Mutton.*

Veale is temperate, tender, and affords good juice, of a pleasant tast, yet it yeilds somewhat a thicker juice then Lamb or Mutton. *Veale.*

Beef is thick flesh, hard of concoction, and doth not easily passe through the Veines, it doth not participate of visciditv and sliminesse, the frequent use thereof causeth dry and melancholly humours in the body, especially Cow-beef, or that of an Oxe, which with age and much working hath contracted

contracted drinesse and hardnesse of flesh, or is hardned with salt and smoak.

Goates-flesh Goates flesh affords good nourishment, and may easily be preferred before the rest of Sylvestrous Animalls, in goodnesse of aliment, facility of concoction, pleasantnesse of tast, and paucity of excrements, yet they are something drier.

Venison. Venison is hard of concoction; and generates melancholy juice, especially if the Venison be grown to ripenesse of years, and doth obstruct the bowels.

Hares-flesh, Hares flesh is accounted a great dainty, yet by Physitians tis numbred amongst those aliments which yeild a melancholy juice, and therefore are not so good for those who have dry bodies, yet if they are well concocted, they are thought to occasion a good colour in the face, if they are well boyled, the juice is not evill.

Hens. There are many kinds of Birds, amongst the which nevertheless, nay, amongst flesh, the Hens are accounted the chief, for they are temperate, easie of concoction, of good juice, and contain few excrements, and thence they procreate good blood, and yeild most profitable food for those which are not much exercised with labour, yet there is a certain difference amongst this kind of Fowl, the best is the flesh of a Capon; the next, is that of Chickins, yet their flesh is moister, Hens are dryer, the flesh of Cocks is harder and dryer, the Hens flesh affords nourishment not firme enough for those who are day-labourers.

Turkie-cocks. A Turkey-cock also yeilds much and laudable nourishment, nor is it inferiour to Capons, neither in tast, or goodnesse of juice, it is profitable food for those which are in health

Partridges The flesh of Partridge is temperate, something inclining to drinesse, tis easie of concoction, it affords excellent juice and much nourishment, and few excrements, and is very good food for those that are in health, and those that are troubled with the French Pox.

Pheasants. A Pheasant and a Quail, which are the best nourishment and most excellent food for such as are in health.

Quails. There is no small variety of Doves, the better sort are those that are of the Mountains and Woods, yet the flesh of all of them affords a thick Melancholy and excrementious juice, and is not easily concocted; and tis hurtfull in putred Fevers.

Pigeons.

The flesh of tame Geese doth abound more with excrements, then that of wild, yet the flesh of them both is hard of concoction, and yeild no good juice, but vitious, and excrementitious, and such as is easily putrified, but if one have a strong stomach, and it be well concocted, it affords plenty of nourishment, but the liver of Geese that are well fatted, are temperate meate, most pleasant, easy of concoction, of good juice, and much nourishment.

A Thrush is easily concocted, yeilds good juice not excrementitious, and affords nourishment firme enough. *A Thrush.*

A Lark also, generates excellent juice, and is easily concocted, and by a peculiar faculty, it is reported not only to preserve one from the cholick, but also to cure it. *A Lark.*

The flesh of Black-birds both for pleasantnesse and facility of concoction, and goodnesse of juice is somewhat inferior to that of the Thrush. *Black-birds.*

A Quaille is hot and moist, hard of concoction, of ill nourishment and full of excrements, and affords matter fit for the generation of feavers. *A Quaille.*

Fishes are colder and moister food, then the flesh of terrestrial Animalls, and scarce afford so good juice as Corn, and fruits, and other vegetables, they easily putrify also, and if they are corrupted, they acquire a quality most averse to our natures. *Fish.*

But there is a great variety of fishes, a Salmon in the first place, hath tender flesh, gratefull to the palate, tis easily concocted, affords good juice, and is the best amongst fishes; when they are pickled with salt, and hardned with smoake, they are much worse. *Salmon.*

Troutes amongst fishes which are bred in fresh waters are the best, and are next in goodnesse to a Salmon, easy of concoction, full of much good, and thin juice, but the greater of them, have flesh not a little excrementitious, fat, and full of viscosity; those are commended before others, which have red flesh, and many red spots, and that have hard flesh and participate not of viscosity, and fat, those are easier concocted, descend sooner, and have lesse excrementitious juice. *Trout.*

Amongst Sea fishes, the sole is highly commended, which hath delicate flesh, and is easy of concoction. *Soles.*

Gudgeons properly so called are the best of taste amongst the smaller *Gudgeons.*

fishes, and very wholesome aliment, easie to be concocted, and such, as remaine not long in the stomach, and are profitable, both for pleasure, and health, and may safely be given to those that are sick, to which other little fish are alike, as dace and minners, and such like.

A Pike.

A pick, especially of the smaller growth, hath hard flesh, it is concocted easily, and easily distributed; and hath not many excrements, and may also be given to those that are sick.

A Perch.

A Perch also hath tender flesh, and such as will easily part asunder, and no fat, and glutinosity, tis easy to be digested, the juice is not evill, yet it affords weaker aliment, and such as is easily discussed.

A Breame.

A Breame hath soft and moist flesh, and yeelds a juice very excrementitious, and is to be eaten as for the most part, all other fish are, not; tis not to be mixed with divers kinds of meates.

A Barbell.

A Barbell, whose eggs perchance gave an occasion to some to suppose; that he hears very bad, it causeth not onely paines of the belly, but also vomiting, and disturbes the paunch, and stirs up choler, from the use whereof we ought to abstaine, but the flesh thereof is very white, easy of concoction, and distribution; and affords aliment of good juice.

Eeles.

The flesh of Eeles is sweete but glutinous with fat, and abounding with much moisture, it generates ill juice, and the use thereof is not safely granted to those that are sick, nor to those that are well, especially if they be taken plentifully.

A Lampry.

A Lampry is meate of a gratefull and delicate taste, if it be rightly prepared, and sauced, yet it puts not away quite its slimynesse, and glutinosity by this meanes, and for that reason they are not numbred by Physitians, amongst fishes of the best sort.

A Tench.

A Tench is neither of a pleasing taste, nor easy to be concocted, nor good aliment; but yeelds a filthy slimy juice, and such as is easily corrupted, neither is it easily distributed, and it brings forth obstructions.

A Herring.

A Herring hath white flesh, apt to cleave into small peices, and hath a good taste, not hard of concoction, it affords good juice not thick, and glutinous, tis pickled with salt, and hardened with the smoake, but then tis harder of digestion, and yeelds not so good juice.

Amia.

Amia a fish which hath no English name, but is like a Thunny, hath soft flesh, yeelds good juice, but not much aliment.

A Sturgeon

A Sturgeon hath hard fat, and glutinous flesh, which yeelds *A Sturgeon* thick juice, yet not hurtfull, and tis not easily concocted, yet the younger are more plesant to the taste, and easier concocted, and yeeld much nourishment.

A Sole, Plaice, and Turbet, are white fish, yeeld good *A Sole* juice, and plentifull nourishment, and such as is not easily *Plaice* corrupted, but being dryed, they become harder, and are *Turbet* harder of concoction.

Cod-fish, (or rather stock fish) although whilst it is fresh *Stock-fish* tis said to have friable flesh, and tender, of good juice, and easy of concoction, yet being dryed, it becomes so hard, that it is to be knocked with Hammers, and Clubs, and to be pulled into peeces in water before it be boyled, whence it affords thick nourishment, and hard of concoction, and is to be eaten without dammage only by those who have very healthy stomachs, and are given to dayly labour.

Oysters have a soft juice, and therefore irritate the belly to dejection, and stimulate Venus, they nourish lesse, and are hard of concoction, and easily generate obstructions. *Oysters.*

Terrestiall Cockles, or Snails, are accounted for dainties by many, yet the flesh of them is hard of concoction, and requires a healthy stomach and the addition of many sawces, yet they remaine hard, and generate thick, and black blood, but that part which is said to be given in broath for Hecticks is only in the hinder part of the snail, which *Aristotle* in the fourth of the History of Animals Cap. the fourth, calls *Micena*, that is poppey, as he pleased to call it, which hath in it a certaine glutinous, and caseous substance, easily dissolved, yeelding to the teeth, tender, the which is not hard of concoction, and nourisheth much. *Snails.*

Crab fish; which have no tailes, and Lobsters, and crawfish which have tailes, and are frequent in our Countries, seeme to have no great difference in their nature, all of them are hard of concoction, and are not well concocted, unlesse by a strong stomach, yet if they are well concocted they nourish much and beget good juice. *Lobsters.*

CHAP. IV.

Of drinke.

DRinke whereby the moist substance is restored which *The benefis* is dayly consumed, and the naturall thirst allayed, the *of drinke*

fat, and thick moisture, carried through the narrow passages, and the meat in the stomach is mingled, concocted, and powdered forth, and an inflammation of that fat, which is destined by nature to nourish our bodies, is prohibited; there are divers kinds, Water, Wine, strong Beere, and water mingled with Hony, and certaine liquors made with Apples, Pears, and such like.

The kinds.

Waters.

Differences of waters.

There is great variety of Waters, all which are cold, and moist, but the best is that which is found to be pure and sincere, by the sight, taste, and smell, and offers the savour of nothing to the taste, neither odour to the smell, which soone growes hot, and suddenly grows cold, which is light, and wherein flesh, and fruit are soon boyled: some is Fountaine water other is River, some is Raine water, other lake, or Pond water, some Marish, other Snow water.

Fountain.

The Fountaine is the best which hath these notes of good water, that which spreads towards the East, and runs towards the rising of the Sun, and thrickles through sand, and gravel, that carries no mud with it, that is hotter in Winter, and colder in Summer.

River.

River water for the most part is Fountaine water, and ariseth from many Fountains flowing together, and therefore is of a mixt nature, and receives also a mixt nature from the earth through which it flowes, and somtimes also, they are mingled with Snow melted in the Mountaines, and great Showres of water collected together, yet its crudity is corrected by the beames of the Sun, whilst it runs through many parts of the Earth; before the use of it, it should stand, and settle, in water-tubs, that whatsoever it carries with it that is impure may settle in the bottome.

Raine.

Rain water which falls in the Summer time with thunder is the thinnest, and lightest, but since many Vapours are lift up by the heate, and mingled with the Showres, these waters are not very pure, whence they are obnoxious to putrefaction.

well waters.

Well waters, since they are not raised above the Earth, and are lifted up on high, only by the benefit of Art, they are thick and heavy, whence they continue long in the bowels and offend them.

Lake waters.

Lakes and marish waters are the worst, they easily become purred, they are thick, and crude, and often times, malignant, and Pestilent, from whence the stomach is offended by them, the bowels obstructed, and humours corrupted and often

often times putred, and malignant feavers and Pestilentiall do thence arise,

Waters of Snow, and Ice, are condemned, for they are Of Snow thick and hurt the stomach, and stir up greivous diseases of and Ice. the joynts, nerves, and bowels.

But the malignancy of waters are corrected, by boyling, *Boyling of* whereby not only the crudity, and frigidity is amended, but *waters.* also, the terrene, and vitious parts are separated, which afterwards when the heate vanisheth, settles in the bottom.

Wine hath a heating, and drying power which even the *Wine.* Spirit which is drawn out of it teacheth, yet because it easily nourisheth, and increaseth moisture, and blood, fit to nourish the body, tis said to be moist, namely Wine is a medicinall aliment, hot, and dry, some in the first, some in the second, and some in the third degree; for this reason, the use of it is forbidden boyes, and by reason of this drying faculty many use to mixe water therewith, yet there is not a little difference in heating, and drying, not only according to age, but also according to the nature of the Wine it selfe, for some is very little suffering, because in mixture it will indure but little water, but other Wine is called winy Wine, because it may indure more water to be mixt with it.

But Wines differ according to taste, smell, colour, and *Differences* manner of subsistence; as for what belongs to the taste, *sweet of Wines* Wines properly so called, nourish best, and are not only most *Savour.* gratefull to the palate, but to the bowels, but because they are thicker, they easily produce obstructions in the Liver, and Spleen, inflame the Hypochondries, and are easily turned into choler, they are profitable for the Lungs, Chops, and Throate; nor do they so hurt the head, nor offend the nerves.

Austere or harsh wines have the weaker heat, tarry longer in the belly, nor doe they easily passe through the veines, and penetrate through the passages of the urine, whence they are good for a loosnesse of the belly; but hurtfull in diseases of the brest and Lungs, for they detaine spittle; the best wines are the middle sort which are neither very sweet, nor fowre.

A fragrant smell is a token of the best Wine, because it *Smell.* can increase Spirits, restore decayed strength, and recreate, and suddenly refresh those that are languishing, even by its smell, and can exhilarate the mind, and strengthen the whole

whole body and all its faculties, and principally tis good for old men, only that it fills the head, and hurts the nerves, but Wines that have no smell are base, and neither received so greedily by the stomach, nor are they so easily concocted, nor do they afford matter, nor so fit aliment to engender Spirits, nor do they add so much strength to the heart, nor do they so much refresh the body, but those which have a strange smell, whencesoever contracted, are all nought.

Colours.

White or pale Wines heate lesse, then full and yellow Wines, and are weaker, especially if besides their whitenesse they are of a thin substance, all black wines are of thicker substance, and for the most part sweete and nourish very much, yet they beget thick blood, and not so laudable, they cause obstructions, and continue long in the bowels, and fill the head with many Vapours; between the white, and red, there are middle colours, yellow, reddish yellow, a pale red, and perfect red; a pale red are neerest to the white, and if the substance be thin, are the best, such as are Rhenish Wines, the most apt to strengthen the heart, and to renew strength; Greek Wines also strengthen the heart, and are beneficiall to those that are troubled with cholick paines, and with the flatulency of the stomach; red Wines for the most part have not so great a force of heating, they generate good blood, and do not load the head, but if they are of a thicker substance, they are not so good for the Liver, and Splen, by reason of the obstructions, which they occasion; between the white, and red, is a Wine of a mixt colour, which also doth not heat so much, nor offend the head.

The manner of substance.

As for the manner of subsistence, tenuiry is in the first place in that which is watry, hence that which is of a pale red, and yellow; crassitude is in that which is black, red, sweet and sowre, and thin wines easily penetrate, and soon refresh the strength, they open passages, move sweates and urine, yet they nourish more sparingly, but the thick nourish more, and are longer detained in the parts, and heat and dry them more, and often times bring forth obstructions.

Differences of wines according to age.

Wines also differ according to age, new Wine is thick and flatulency, begets the cholick, impeads excretion of urine, yet it loosens the belly, and unlesse it doth so, tis the more hurtfull, new Wine, and that which is as sweet, as Wine new prest, is not easily distributed into the body, but old Wine does work too much upon the nerves, and offend the head.

That

That which is middle aged is more commodious for all uses, in which thing nevertheless there is a great difference according to the nature of the Wine, for some will indure age, others sooner loose their strength, and consume away, and loose all their Spirits.

In places towards the Septentrionall, wherein there is not so great store of Wine, strong Beere, or Ale, is the familiar drinke, and indeed profitable enough, as experience shewes. *Strong drinke.*

But the strong drinke is prepared, some of Wheate, some of Barly, others of them both, in Polonia it is made of Oates, and preserved with Hops, the manner of preparing is very different every where, the waters also differ, wherewith they are boyled, they are kept also in some places in pitched Vessels, in others not pitched. *Its differences.*

Strong drinke made of Wheate nourisheth more than that of Barley, and also heats and moistens more, especially seeing the strong drink made of Wheate hath lesse Hops, than that which is made of Barly, but it generates more viscus juice, it causeth obstructions, it provokes urine, but it loosens the belly. *Drinks made with wheate. With Barly.*

Barly Beere, because of the Barly, heateh lesse, but because more Hops for the most part are put into it, acquires no small force of heating, it nourisheth lesse, and yeelds a thinner juice, but is more diuretick; that which is mixt of Wheate and Barly is of a middle nature. *Mixt.*

That drink which is made of Corne, no way dried but by the heate of the Sun, hath more excrementitious humours, and often times brings forth obstructions.

All new drink is more unwholesome, especially, if it be troubled, for it obstructs the passages, and breeds the stone, but that which is more cleaned is wholesomer, but principally, strong drinkes have their faculties, from various waters of severall natures.

Hony and water mingled, for the most part heate and dry more than Wine, especially if Aromatick things are added, but it easily turnes into choler, by reason of the Hony and therefore is not so good a drink for cholerick persons. *Hydromell.*

C H A P. V.

Of the passions of the mind, and of the exercise and rest of the body.

Tranquility of mind.

THE perturbations of the mind, have great power in the preservation of health, for an Euthumie, or well settled mind, and such as is at quiet doth much conduce to the preservation of health.

Joy.

Next to that moderate joy is fittest to preserve the health of body, and a naturall constitution, because it recreates the heart, spirits, and the whole body, but if it be overmuch, it dissipates, and diffuseth the Spirits.

Exercise of body.

Motion of the body, and exercise, first brings a certain solidity, and hardnesse to the parts, then it increaseth health, thirdly it moves and agitates the spirits from whence the heart is made strong, and can easily resist externall injuries, and is fit to undergoc all actions, happy nourishment is made, and the excrementitious Vapours are discossed; on the contrary, those bodies which live idly, are soft and tender, and unfit to performe labours; under the name of motion, are comprehended labours of every kind, dancing, running, playing at ball, gesture, carrying, ryding, swimming, walking, a stirrer up of the people, rubbing and such like, but divers exercises have different force, and some exercise some parts more then others; in running and walking, the legs are most exercised in handling of weapons; and laying them down, the armes; in singing, speaking with a loud voice and cleare reading, the face and brest; the whole body in playing with a little ball, which exercise therefore is most convenient, whercof a peculiar book of *Galen* is extant; there is also a certain diversity according to violence, and magnitude in motion, swift attenuates, and thickens; slow, rarifies and increaseth flesh; vehement extenuates the body, and makes it leane, yet together hard, flourishing, and firme; too much motion exhausteth and dissipates the substance of the spirits, and solid parts, and cooles the whole body, it dissolves the strength of the nerves, and ligaments, it sometimes looseneeth, and distendeth the membranes, and breaks the lesser veines.

Kinds of motion.

CHAP. VI.

Of Sleeping, and waking.

Moderate watchings stirs up the Spirits, and senses, and *watchings.* render them more flowrishing, distribute the Spirits, and heate into all the parts of the body, they helpe distribution of aliment, and promote the protrusion of excrements, yet if watchings are immoderate, first they consume and dissipate the Animall Spirits, and dry the whole body, especially the braine, they increase choler, they whet and inflame; and lastly the heate being dissipated, they stir up cold diseases.

The strength being decayed is againe kindled a fresh with *Sleep.* moderate sleep, the spirits, that are dissipated with diurnall labours, are restored, the heate is called back into the inner parts, from whence a concoction of Aliments, and crude humours is happily performed in the whole body, the whole body and especially the bowells are sweetly moistned, the heate increased, and the whole body becomes stronger, cares are taken away, anger is allayed, and the mind enjoys more tranquility, immoderate evacuations besides sweate, are hindred, and sleep is especially beneficiall to old men; on the contrary immoderate sleep obscures the spirits, and renders them dull, and causeth an amazednesse in the understanding, and memory, it sends out the heate, being hindred with crude, and superfluous humours accumulated, sleep also, which seizeth on our bodyes after what manner soever, when they are empty, dries and extenuates the body.

CHAP VII.

Of Bathes.

Every Bath of fresh water, moistneth, but in heating and cooling, there is not the same faculty every where, a *A Temperate Bath.* temperate Bath of sweet water opens the pores of the skin, and softens, and rarifies the part, and discusseth the excrements into the extreame parts, and corrects the drynesse of parts, and so takes away lassitude, but if it should continue long 'twould discuss that which is dissolved, and weaken the strength.

Luke
warme.

Luke-warne Bathes, if they incline to cold, something refrigerate the body, nor have they power of rarifying the parts and discussing excrements.

Cold.

Cold water of it selfe cooles, yet by accident the pores being shut, and the heate penned in heateth, whence if through dissipation the native heat should be in danger, cold things being timely applyed, have power to recollect and preserve it.

Bathes oftentimes do hurt, and especially to those that are not accustomed to them, and to Plethorick persons, and such as are filled with crude humours, as also to those which are obnoxious to Catarrhes, and inflammations, or an Erysipelas. The Romans often frequented Bathes, and they often bathed twice a day, the preparation whereof you may see *Galen* 10. of the method of healing Chap. the tenth; they used unctions also before and after bathing, whereof *Galen* the second of simple faculties of healing Chap. the twenty fourth; and the seventh.

C H A P. VIII.

*Of Excretions and Retentions, and of Venery.*Excre-
ments of
the paunch.

THE body may be easily kept in its naturall State, if those things which are profitable for its nourishment, be retained, and those things which are unprofitable, and ought to be cast out, are omitted, but if those things which ought to be retained, in the body, are cast out, and those things which ought to be protruded, are retained, the health is in danger.

The severall concoctions have their severall excrements; the excrements of the paunch, if they are not evacuated in due season, hinder concoction whilst putred Vapours exhale from thence to the stomach, and neighbouring parts, for the same reason they offend the head, stir up cholick paines, and other evils, but too sudden cleansing of the paunch oftentimes hurt nothing, whilst those things which are offensive nature doth expell from the paunch of its owne accord, yet if any such thing happen too often or too lasting, it necessarily defrauds the body of nourishment, and the strength is weakned, and the guts are debilitated, and offended.

Wine.

Urine if it be made in due season, is commodious and profitable

fitable for the body, but if it be made sooner then it ought, and especially, if it have bin retained longer then it ought, it brings no small dammage, for it oppresseth the bladder, and often times so fills it, that afterwards urine cannot be expelled, and sometimes an inflammation of the bladder, nay sudden death, followes; but if the reyns have not drawn whey as it were, it remains mixt with blood, and stirs up greivous Symptomes in the whole body.

Seed untimely retained causeth heavinesse, and dulnesse, of the body, and if it be corrupted stirs up greivous accidents, all which may be avoided by Venery, but let it be timely, and lawfull, neither is there any need to try any thing for the preservation of health, which is contrary to divine lawes, and the Creator of man is so much indulgent to him in this thing, as tis necessary for him to shun all things which may hinder his health; but too much Venery dissipates the naturall heate, cooles and debilitates the whole body, accumulates crudities, hurts the nerves, generates the running Gout, and brings the Palsie, and debility of the senses and understanding.

Venus.

THE



T H E
FOURTH BOOK,
PART II.

Of the Method of the preservation
of Health.

C H A P. I.

*Of those things which are to be observed by all for
the preservation of health.*

After we have explain'd those things which are necessary for the Preservation of health, now we must shew a Method how all those things are to be used for the safety thereof; but there are some certain common precepts which are to be observed by all; some peculiar precepts to be observed according to ages, sex, and other Circumstances. The most common Precept here is this, that what ever is according to nature is to be kept, but since that in some health exactly such, in others difference from hence, which is called a newtrall constitution; the former is to be exactly preserved with its likes, and nothing contrary to be admitted, whereby the body may be put out of that naturall state; but a Newtrall constitution requires some change, yet that ought to be small, and by degrees, if the course of life will admit thereof.

*The most
generall
rule to de-
send
health.*

Yet that most generall rule is to be observed by all, namely that mediocrity is to be ever accompted safest according to that of Hippo. 2. *Apho.* 52. to much of every thing is good for nothing, or all excessse is hurtfull to nature. As also that 2. *Apho.* 50, those things that we are long accustomed unto although they are worse, yet are they less troublesome to us, then those things that we are not accustomed to. Moreover

Moreover, we are to endeavour, that the naturall constitution of our bodies, consisting in a good moderation of cold and heate, occult qualities, due conformation of the Organick parts, and unity may be preserved by those things which are fitly borne to preserve it, namely by their likes, in case the body bee throughly well constituted, or somewhat with contraries, if the body decline from the best state. But all things are to be avoided which may destroy it.

Likewise causes of health sometimes require things plainly alike, sometimes a little contrary, and therefore the Physitian shall appoint the right use of those things which necessarily happen to the body, namely aire that is temperate is the best for those that are temperate, and hurtfull to no constitution of body. Moreover let the purest bee chosen, cold aire when the fire is kindled is changed, hot aire is tempered by water that is cold, being poured out of one vessell into another, or sprinkled on the floare, or by cloaths moistened in water and hung in the bed-chamber, or Roses strowed in the house, or the leaves of Vines, Willowes, Water Lillies and other cooling Herbes; moysture in excesse may be corrected by the kindling of fires, and burning of suffumigations of hot things; driness is corrected with the moystnings of waters & sprinklings or strowings of moistning Herbes.

As for Meat, meats of little juice are offensive to all, and profitable to none, nay even the dayly use of thick, viscid, tenacious, cold, hard, flat, and acrid meats are to bee avoided by all, since they cannot bee well concocted, nor afford good nourishment: yet some regard is here to bee had of the appetite according to that of Hippocrates, 2. Apho. 38. a littler worse meate and drinke that is more pleasant, is to be preferd before that which is better and ungratefull, as also of custome according to that 2. Aphor. 50 those things that we are long accustomed unto, although they are evill, are wont to trouble us lesse then those things which we are not used unto. Moreover meates are to be taken onely in that quantity whereby our strength may bee refreshed not oppressed, that which hath beene spoken of meat is also to be understood of drinke.

Passions of the mind. Of the passions of the mind, this in generall may be spoken, that overmuch of all them are to be avoyded, and quietnesse of mind and moderate joy is to be cherished.

Excrements. The excrements of the belly twice a day or at least once ought to be ejected, urine likewise ought to be expelled as often as their is need.

We are to take heed likewise of that of *Celsus*, least in our best health we take things adverse thereunto, and therefore we ought not rashly to trouble or molest our bodies with purges or other medicines, but tis better to exercise our bodies moderately every day, least excrements should be gathered together, and if any disease seeme to be comming upon us, to follow this counsell, that is by quietnesse and abstinence many great diseases are cured.

CHAP II.

Of the cure of little ones not yet borne, and of the dyet of women With child,

THESE things being premised in generall, what course of dyet may best agree to every degree of health (of which before, in the first Book and third Chap.) we will now expaine distinctly, and therefore we will handle good habit or the preserver of the best State, called under the generall name of the Hygeinall, which governs sufficient health in all our actions. The Prophylactick is that part which guides the neutrality of those that are falling away. The Analyptick is that which brings neuters to be healthy; And first a method of preserving of the health of such as are very well is to be explained; wherein notwithstanding some things may be delivered, which may be accommodated to the other degrees of health.

Seed the cause of future health.

But in the first place it is to be noted that the foundation of our future health fully depends on the conception and seed of our parents, and therefore as *Fernelius* in his first Book of Pathology Chap. 1. writeth, If Husbandmen being to sow Corne choose the small and young seed, having found by experience, that ill fruite comes from that which is rotten, how much more diligently ought we to observe the seed in the procreation of our Children.

Dyet of such as are great.

Moreover when the Mother hath conceiyed a Child in the wombe, she ought to beware of all things which might bring any

any detriment to the young; or rather, she ought to be careful, that she may strengthen, and preserve it safe; namely that she avoid foggy Aire, that she beware of the smell of candles newly put out, of brimstone, castor and such like, and of the smell of herbs that are too fragrant, she should shun meates of ill juice; and sharpe, and such as cause urine, or cause loathing, or provoake sneezing, she should not use many Aromatick things; if those that are great desire, any ill meates, they are not altogether to be denyed them, but if the food, which the woman desires cannot be obtained by her, least any inconveniencies should happen to the young, they use to give her some hony with nutmeg; or water distilled from the tender leaves of a Vine in the month of *May*; or of the barks of Citron, or the pills of Oranges, or of the Roote of Piony, being bruised and prepared in Spanish Wine, or Malmesly.

For the strengthening are exhibited, the precious Stones, *Strength-* called Pearles, Coralls, the shavings of Ivory, the barks *ning the* of Citron, Cinamon, Saffron, the wood of Aloes, Cloves, *young-* Quinces, Sugar of Roses, sweete Almonds, corrected with high Country Wine, Water, called the Balsome of Children, the confection of Gems, *Diamargariti calidi*, Malmesly Wine applied with Bread to the belly.

The same things may hinder an abortion which is nigh at hand, and moreover *Unguentum Comitissæ*, externally applyed, also those that are great should principally avoid hard labours and passions of the mind, yet to be altogether idle is not so convenient. *Hindring abortion.*

The opening of a vein easter the fifth month for the most *Whether a* part is prohibited, but before the fifth moneth you may open a *veine be to* veine, in Plethorick bodies, nay some unlesse they are let *be opened* blood, before the fifth month miscarry, of purgation Hippo- *of the wo-* crates writeth in the fifth *Apho.* 39. thou shalt purge those *man with* that are with child, any time within foure months, and some- *child.* times untill the seventh month, but sparingly, and you are to use only lenitive medicines.

CHAP III.

Of the Diet of Infants, and thence forward untill 21.
yeares of Age.

When a Child is brought forth into the World, before the teats are given him, we ought to give him some pure honey, or Corall with Sugar, or the Sugar of pennidice, with Oile of sweet Almonds, whereby the Dregs may be drawne through the Paunch, and an Epilepsie be prevented.

The Infant is nourished with the mothers Milk. Afterwards let the Infant be nourished with Milke, and that from his Mothers Breast, as having most agreement with the Infant, and it is generated of the same blood, by which before the little one was formed, and nourished in the Wombe, unlesse perhaps the Mother be sick or ill disposed; the Infant is to bee nourished with Milke, untill it be two years old, or certainly till the eighteenth Month, & tis to be accustomed in the meane time to other meats by little & little, yet such as may be easily concocted, commonly their is prepared for them Papp made of Bread, and water or Milke, yet by reason of its clamminesse, it seemes not to so good to many, and therefore more wholesome may bee made with cruins of Bread, or certainly with bread first dried in an Oven.

Diet the first three yeares. Afterwards the Infant by degrees is to be accustomed to more solid meats, but the first three years, his food is to bee moister, and the Infant is to be nourished with good meats, and should use Bathes often, but not presently after eating and drinking; neare the end of seven years Age, the use of Bathes ought to be more seldome, Infants and Boyes should not drink Wine.

By how much the more a boy growes in yeares, by so much the more both the mind and body are to be employed, yet the exercises ought not to bee immoderate, least that any member should be turned awry, or least the body should bee dried too soone with too much motion, and the growth of the body should be hindred; of sleep, by how much the more Age increaseth, so by little and little we ought to abate it.

Diet in 2. and 3. Septinaries. In the second and third Septinaries more solid meats are to be afforded, yet not over much drying: Exercise also ought to be somewhat lesse then the strength might tolerate, and in the third Septinary order of Diet convenient for every course of life is to be begun, for those which are given to a laborious kind of life ought to feed more plentifully in the third Septinary

Septinary, and with those meates, which being taken in no great quantity, nourish much, and strengthen them for greater labours.

But those wich apply their mindes to learning at this age ought to be carefull of the animall spirits, and diligently to endeavour that they may be plentifully generated being pure, and cleare, which may be if they live in a subtile Aire, pure thin, by dyet and meates that are not thick, but which may afford matter for pure and laudable blood, and endeavour to evacuate all excrements in due time, not to accumulate crudities, nor weaken their bodies with untimely studies, nor is the use of Venery to be granted till the end of this Age.

Diet of Schollers.

CHAP. IV.

Of the Diet of middle Age,

That Age which followes the third seaventh Yeare or from the twenty first to the fiftieth, is accounted the middle Age, and for the most part there is the same reason of Diet, unlesse that the former halfe part or the fourth septinary, and the latter halfe or the seaventh doth more agree with the diet of the Age, which he hath attained, then of that Age which is truly the middle.

Diet for middle age.

First for what belongs to meate, in meate is to be observed quality, quantity, time of taking, manner, and such like circumstances; as to the quality of meats, those are to be chosen, which are most temperate, and most familiar to our nature, amongst which, Bread well baked obtaines the first place, hence the flesh of Animals, and those things which are taken from Animals, and alwaies they are to be chosen which are of good juice, and to be avoided, which have ill juice, yet something is here to be graunted to custome, 2. *apho.* 56. and to the various constitutions of bodies, and *Celsus* admonisheth a sound man, and one which is in health to avoide no kind of meate which the people use, which is principally to be observed by those, which necessarily must live a different course of life; variety of meats please, and divers sorts of meat are eaten with greater pleasure, yet we are to beware lest meates are eaten together of different substances; and various faculties, whercof some are thick, others thin, some easie, others hard of concoction, since from such variety corruption of

The rule of diet. variety. quantity.

meats, may easily follow, but those which have a certaine similitude are rather to be chosen, that the same heate may be required, for the concoction of the same.

Quantity.

Secondly that quantity of food is to be taken which may increase the strength, and not hinder it, but you cannot measure that, neither by weight, nor number, but tis to be found in this, in that you have regard to three things; first, to the nature of aliment, secondly, to the nature of the body, and the course of life and labours, and thirdly, to the time of the year, and constitution of the airc.

For first, meats hard to be concocted being taken in greater plenty, hurt more, then those of easier concoction next meate brings lesse inconveniency if it offend onely in quantity, then if it also hath an ill quality joyned therewith, regard is also to be had of pleasantnesse as is said before.

Moreover, one stomack desires more, another concocts more, in which matter the counsell of *Hippocrates* is more safe, the 6 *Epid. Comm. 4. Text 22.* The study of health is not to be glurtd with meate, nor to be slow to labour: and *Avicenne* admonisheth us to rise from the Table, with those that are hungry; lastly those which live idely, and live a life not so labourious concoct less, those which ate exercised in labour digest more.

Of the time of the year, *Hippocrates* writeth, *I. Apbo. 15.* Their Bellies which are born in the Winter or Spring are very hot, and their sleep tedious; therefore at those seasons of the yeare they ought to eate more, forasmuch as they have more heat, whence it comes to passe, that they want more plentifull nourishment. And in the third of Diet he teacheth, that wee ought to eate more in Winter, but drink more sparingly, but in Summer, the contrary. But neverthelesse if any one either through ill custome, or the allurements of meats hath any way offended herein, that afterwards is to be corrected by fasting, or more sparing diet, sleep, quiet, or vomiting, and therefore tis good to omit supping once a week, or else to eate very little supper.

Time.

As to the time, to eate often and much is neither commodious for the body nor mind, yet tis better to eate a little often, then much at once, but it is most wholesome that a man of middle age, well tempered, and that hath government of himselfe, doe eate twice aday; so that he takes onely so much meate, as may not oppresse the stomack; in other things some thing is to be granted to Age tempera-
ment,

temperament, kind of life, custome and such, like but the time betwixt dinner and supper ought to be shorter then that which is betwixt supper and dinner againe.

But whether supper or dinner ought to be larger, is severally understood amongst Physitians: that we may briefly conclude the matter, if any dine more sparingly, and frugally, which the Ancients for the most part did; the supper ought to be the larger, but if we observe our custome and manners, since men about noon day dine more plentifully, and cannot sufficiently concoct their meat in that short time, which is betwixt dinner and supper; tis altogether necessary, that they should sup more sparingly, since tis not convenient to be twice filled with meat the same day, for then they shall have a troublesome night, and in the morning perceive crudities, and principally this to be observed by old men, because experience testifieth, that all old men are offended with large suppers.

As for the order of meats, tis of some concernment, whether wee take this or that meat in the first or second place; namely, those are to be taken in the first place, which mollifie the Paunch, and make it slippery, and those which are not of so good juicc, are easily concocted, and descend out of the Stomack, and are easily corrupted; to these are to be added those things which may stop the belly, they are not so easily concocted, and which descend slower, and are of better juicc.

As for drink, of the qualities and differences thereof we have spoken before; as to the quantity, as a little of Wine, strong Beere, and if their be any other kinds of drinckes like to these, the use of them moistens the body, cherisheth the spirits, corroborates the strength, helps concoction and distribution of meats, provokes Urine, heares the habit of the body, and is a remedy against the coldnesse, and drynesse of old age, it causeth sleep, corrects the acrimony of cholere, exhilarates the mind, and makes mens manners pleasing; so the immoderate use thereof, and drunkennesse is the Plague it selfe of health, and of a man, for by immoderate drinking, the native heat is consumed, crude and perverse humors are accumulated, the mind is troubled, and a kind of madnesse is begotten.

The most convenient time of drinking is betwixt meales *Time fit to*

for so it conduceth much to the concoction of meate, and the right distribution of the same, but if you drink upon an empty stomach, the head and the Nerves are extended; if after meate, the concoction is thereby hindered; if the meate doe not easily descend, the concoction being perfected, tis profitable to drinke something; drinke also is to be avoided going to rest, but especially after exercises and Bathes; sudden drinke of cold drink is unwholesome; tis more commodious also to divide the drinke then to drinke it together, least it cause a floating in the stomach.

Passions of the mind. The passions of the mind, all of them that are vehement are to be avoided, and on the contrary, moderate joy is to be cherished.

Exercise of body. Motions of the body all of them, doe not agree with all, yet for all sound men, deambulation may suffice, and frication and such like exercises; otherwise to thinner bodies more moderate, to stronger greater exercises are more convenient, yet regard is here to be had of custome, according to that of *Hippocrates*, 2. *Apho.* 49. those which were accustomed to dayly labours, although they are weake and old, easier endure exercises then those that are unaccustomed thereunto, although they are strong and yong; regard also is to be had of the time of the year, for in summer, lesser and shorter exercises, in Winter greater and stronger are to be appointed; so long also onely the body is to be exercised, untill a fresh colour appeare in the body, and the body begin in some measure to swell, and sweate to flow out: exercise and motion is to be used when the concoction is performed in the stomach and liver, and as *Hippocrates*, 6. *Epid. Sect.* 4. *Apho.* the last labour ought to goe before meate, wherefore the most convenient time for exercise is the morning, when the Stomack is empty, and the excrements of the Paunch and Bladder are first sent out, the same time is most fit for study; regard is also to be had of the place where exercises are, for exercise under the Sun heates the body very much, powers out humors, and are very obnoxious to those whose heads are weake or full of humors, but all exercises that are in the shade are safer.

Rest

Rest is no lesse necessary then motion, for this is the remedy of wearinesse, and repaires decayed strength, and therefore exercise and rest take their interchangeable turnes.

The time also is to be appointed for sleeping and waking, the most fit time for sleep is the night, appointed for man by God himselfe, but we ought not to sleep presently after meat, but an houre or two after supper, otherwise the head will be filled with many vapours; diurnall sleep likewise fills the head with vapours, but if any one hath contracted a sence of wearisomenesse, or hath past an unquiet night without sleep, tis lawfull to cherish sleep so long in the day time, and especially for old men, who seldome sleep the whole night, but wee are to sleep so long untill the meate be concocted in the Stomack and Liver, and the spirits that are taken away are restored, which space is not equally in all, lesse then six houres scarce sufficeth, but beyond 9. houres sleepe is scarce to be extended, for the most part the space of seven houres is sufficient.

*Sleeping
and wa-
king.*

But those which are studious principally offend in their sleep, if they wake long after supper, and sleep after the rising of the Sun, for they do not onely pervert the order of nature, but also much hinder the concoction, whilst they impeade the instauration of spirits, which were wasted with diurnall labours, and warchings, and call them from the Stomack, and fill the head with vapours.

*Sleep for
those that
are studi-
ous.*

But we ought to lie downe with our legs and armes a little bent, our head something elevated, on either side, since lying supine hurts much, and first to lie on the right side, that the concoction of the Stomack may bee helped by the Liver, nor under the canopy of Heaven, nor the Beames of the Moone, and the windowes are to bee shut, and the nocturnal aire to be kept out, the bed-chamber ought to be without any smell, the bed should bee soft, and fitted to drive away the frigidity of the Aire, when you please, the Head also is not to be wrapt with too many cloathes.

*Manner of
lying.*

Watchings after sleep should bee moderate, for too much consumes the native heate, and dissipates Spirits, dries the body, brings forth crudities, dulls the senses, and offends all the actions.

Watchings.

There

Bathes.

There is no small profit also of Bathes, for the preservation of health, as is said before, part the first chap. the seventh, yet the right use of them is to be appointed, neither are we to go into a Bath before the meate be concocted in the stomach, least crud humours should be carried into all the parts of the body. In a Bath we must abstaine from all meate and drink, and we are to go out before we are weary, and to defend the whole body from cold, nor must we eate nor drink before the heate of the bath be expired.

Lotions of the head.

Lotions of the head open the pores of the skin and discusse Vapours, yet they are not to be used when either a Catarrh, or paine of the head offendeth, but are to be used in the morning, or an hour before Supper, and after the washing of the head it should be thoroughly dryed with warme linnen cloathes. Lastly the washing of the feet is not profitable, to hinder their sweating, but to avert humours which would flow from the head thither.

Excrements.

Lastly we must endeavour that presently after sleep, the dregs of the paunch may be cast out, if the paunch answers not to desire, tis to be moistned with Raisins of the Sun, the broath of a Cock, a decoction of the stankes of Burrage, Malloves, Beares brecch, or six or seven Pruius, boyled in the broath where Senna hath been infused, to be taken for the first course, or a little before meate, the excrements of the third concoction are to be expelled by dayly exercise, the head is to be combed in the morning, the mouth to be washed with water, the eares, nose, and palate to be cleansed, the eyes and the whole face, are to be washed in cold water, and the body, especially the Armes, and the Legs are to be rubbed.

And if so any error be committed in the use of these things, which may casily happen, afterwards it is to be mended the next day by its contrary, and an inequality being introduced the contrary cause is taken away.

CHAP. V.

Of the dyet of old men.

Diet for old men.

THAT part of Physick which rules, or governs the age of old men is called, Geronomick, but because in old age the body every day is more and more dryed, and the native heate is consumed, we are to endeavour that drynesse may be prevented

prevented, and the native heare so much as may be preserved.

Hotter and moister Aire therefore is agreeable to this age, *Aire.* and unlesse it be such of it selfe, tis to be corrected by art, especially in Aurumne and Winter, which Aire is chiefly offensive to old men.

The Aliment it selfe also ought to be hot and moist, of *Aliment.* good juice, and easie of concoction, but thick meates, hard, glutinous, and which fill the head, grow sowre in the stomach, and are easily corrupted, are to be avoided, and if hurt be contracted by the use of such things, tis to be corrected, by the use of Diatrion, Pipercon, Diacalaminth, and such like.

Of the usuall quantity also every day something is to be abated, for as Hippocrates writes, *1. Apho. 10.* there is little heare in old men, and therefore they need little nourishment, sith thence their heat is extinguished with much; and therefore meate is to be given sparingly, but often, and indeed very conveniently thrice aday, *viz.* break-fast, dinner, and supper.

The best drink for old men is Wine, from whence Wine is called old mens milk, yet tis not to be taken in too great plenty, and it ought to be of a hotter nature, and other things good and generous, middle aged, but thick Wines which cause obstructions, and have an astringent faculty or hinder urines, are not convenient for old men, wine mingled with hony is good for old men also. *Drink.*

Old men should use moderate exercises before meate, yet so that no lassitude may thence ensue, but principally moderate frication is commodious for them, especially in the morning. *Exercise.*

Old men should sleepe longer, and if they are troubled with waking, that remedied with the use of sweet Almonds, Lettice boyled with Sugar, and dill being taken the last course, and with Somniferous lotions of the feet and hands. *Sleepe.*

First of all let them avoid vehement perturbations of the mind, and let them rather refresh their minds and bodyes with honest pleasures. *Perturbations of the mind.*

Lastly let old men be carefull that they void their excrements well, and therefore, if the body be costive, the belly is to be moistned with convenient meates or with hony of Roses solutive, but stronger, and more Physicall things are not to be given to old men. *Excrements.*

CHAP. VI.

Of the Dyet of such as are out of temper and of neuters.

Bodies
that are
neuters
how many-
fold.

AS for what belongs to the Dyet of bodies, that are neutrals, there are two kinds of bodies deviating from perfect health, for some are more remote from a sickly constitution, others are neeter to it, and these are twofold as before is spoken *lib.* the first Chap. the third, neuters falling away, which governing part of the Method of the defence of health is called Prophylactick; in neuters tending to health and waxing strong, the governing part of the Method of restoration of health is called Analytick.

But those former neuters which are as yet far from diseased, yet decline from the best health, whether from their birth, or whether they have contracted such a habit from custome and dyet, it is hard to echange, neither can it be done suddenly, but by degrees, and with long diligence; but if leasure doth not permit, tis neither commodious, nor possible, for as *Galen* 2. of the defence of health Chap. the third those who are busied in civill affaires, and distracted with many busineses tis safer for such a one not to indeavour to change his temperament.

Dyet of un-
temperate
men.

Such bodies therefore, if either leasure will not permit, and their minds are not bent to reduce them into a better state, they ought to be preserved so by their likes, but if you intend to reduce them to a better condition, you must use contraries by degrees; yet a hot and moist distemper, since that tis more agreeable to our nature, is by no meanes to be changed, because it introduceth no disease, but bodies which are become too dry, are alwayes to be moistned as much as may be, during the whole terme of life.

Of such as
are hot.

Hot bodies therefore should avoid hot Aire, hot and sharpe meates, their drink ought to be more plentifull, but smaller, and strong drink rather than wine, their exercise ought to be moderate, the use of bathes, of fresh waters warme, frequent; they must shun anger, too tedious meditations, and their sleepe ought to be longer.

If drynesse be joynd to the heate, let them avoid the use of hot and drying things, and therefore let them beware
of

of a hot and dry constitution of Aire, and vehement exercises, if humidity be joyned and that be moderate, since that temperament is most agreeable to man, and conduceth to the prolongation of life, tis to be preserved as much as may be, and only to be fore-warned that no more of the heat and humours may be added, and cause diseases, and stir up putrefaction, wherefore let these avoid Aire that is too hot and moist, let meat be given which hath attenuating force, and let them endeavour that it may be well concocted, let their exercises be such, as may discusse excrements, yet not dry the solid parts; let all other things be moderate, and principally let them endeavour, that the excrements of the belly and the urine may freely passe from them.

Those which are cold are to be nourished with hot meates, let them use exercises, which may stir up heate, let them evacuate timely the pituitous excrements. *Of cold.*

Dry constitutions should use moist meates, and moistning drink, and bathes of fresh water, but the most unhappy constitution is cold and dry, which represents old age from the beginning, and hastens to it and therefore such are to use heating and moistning things, and to be nourished with hot and moist food, their exercises should be moderate, such as only stir up the naturall heate; their sleepe longer and the use of bathes of fresh water frequent; Venery is very hurtfull: cold and moist, if the constitution of the body be so, the frigidty is to be corrected, and the humidity preserved, to which purpose moderate exercise conduceth, and excrements if they are timely and duly evacuated. *Of dry.*

Neuters declining, which now incline to sicknesse, diseases are imminent to them, especially for two reasons, Plethory, and Cacochymic, both of them therefore are to be taken away; if the falling away from health be but little, it may be done with rest and abstinence; but if it be greater, opening of a veine, and purging is to be used, which is spoken of in the following book, for this Prophylactick part is placed in the end of a cure. *Dyet of neuters declining.*

Only we here admonish two things, first that the Spring-time is best for preservation; as Hippocrates 6. *Aphe.* 47. teacheth, he sayes, to those that the breathing of a veine or purging are profitable, to them the opening of a veine, and a purgation is to be commanded

manded, in the Spring; it is also profitable, to purge black and Melancholy humours, before Aurrune.

*Use of the
aloes.*

Moreover the use of aloes doth much conduce to the preservation of health, since it gently purgeth the excrements which stick in the first passages, which are oftentimes the causes of many diseases, it resists putrifaction and corruption, and seldome reacheth the Liver, but because aloes, if it comes to the Liver offends it, it is not to be used too often, and in too great plenty, least it should penetrate to the Liver, but it purgeth onely the first passages, which is performed profitably, if it be taken in a small quantity, a little before Supper.

*Dyet of
neuters
growing
better.*

Lastly, for what belongs to the dyet of those newters that are inclinable to health, two things in the first place are to be obserued in their dyet, first that they fall not againe into the disease; secondly that they may suddenly recover their former health: first when, as it is 2. *Apho.* 12. those things which are left in diseases after a crisis are wont to cause relapses, it ought of the peccant matter be yet remaining, that is to be taken away by degrees, and by helping, and the principall parts are to be strengthned, but if nothing of the vitious matter be present, the body is carefully to be refreshed with moist aliment, and that which is easie to be concocted, namely the yolkes of eggs, broathes with Bread, Chickens, Hens, Capons, Fish; lastly Goates flesh, Mutton, Veale; sleepe helps concoction, unctions strengthen the stomach, before meate are appointed frications also, moderate walking, Baths of fresh warme water, lastly strengthening things are to be used, and such as may resist the reliques of the causes of imbecility, and of sickly disposition, but those things which may call back the distemper, which trouble sick, these are to be avoided.



T H E

F I F T H B O O K,

P A R T I.

Of the Materialls for Cure.

S E C T. I.

Of Medicines.

C H A P. I.

What a Medicine is.

THere remains the last part of Physick which is the Therapeutick, which restores men that are fallen into diseases to their former health, and expells those diseases from mens bodies which torment them, but that the Physitian may obtaine this end, it is necessary that he be instructed in two things, first a Method whereby he may find those things that are helpfull by Indications, secondly Instruments or Materialls for cure, whereby he may performe that which he found out by Indications.

The matter fit for cure is properly reduced to three heads, *Instruments of Physick.*
 dyet, manuell operation, and making up of Medicines.

First you are to be admonished that you are to distinguish cures, from the materialls used in curing, for cure is that whereby instruction is given from the Indicant to performe or act something, and is alwayes one, as to heate or make hot, but the Matter of helpe is that whereby that is performed by the Physitian which the Indicant commands, which

dicant commands which may be manifold, as whilst you are to heat, it may be done with Pepper, Ginger, Wormewood, &c.

*Medicine
what is it.*

But since that of Dieteticall matter is spoken sufficiently in the former book, it remains that wee speake of Medicines, and Manual operation, and first as for Medicines, by a medicine wee understand every thing that is a different thing from nature, which may alter our bodies and reduce them to a naturall state from a preternaturall. In which respect it differs from aliment and Poyson, for Aliment, as it is aliment, is onely that which increaseth the substance, or it renews and increaseth our bodies; a Medicince alters, but doth not repaire, but if any thing can together nourish and alter our bodies, tis alimentall Medicine, or medicinall aliment; but poysons neither nourish, nor alter our bodies, but are destroyers of our bodies, and have power to corrupt them.

CHAP. II.

Of the faculties of Medicines in generall.

*Medicines
how many-
fold.*

*Simple
Compound*

*Simple
how many
fold.
Plants.*

*Living
Creatures.*

Mineralls.

Medicines are two-fold, some are simple, other compound; a simple is that which is such by nature onely, and hath nothing nixt with it by art; compound are when more naturall things are mingled by art into the forme of one medicine.

Simple Medicines are taken from Plants, Animalls, Mineralls; and Plants are either taken whole or their parts, Roots, Woods, Piths, Barkes, Leaves, and Branches, Flowers, Seeds, Fruits, Juices, Gumms, Rosins, Oiles, and Liquors, as Wine.

Animalls also are used whole, or their parts, as Harts-Horn, Marrow, Flesh, or those things that are generated in them, as Milke, Eggs, or their workes, as Hony, Wax, or their excrements as Gall, Urine.

Under Mineralls are comprehended not onely those things which are properly called Mineralls, Vitriall, Antimony, Sulphure, and Mettalls, and the excrements, but also divers kinds of earths, as Uermillion, Irish Slat, Bole-Armynack, as also all Stones and Gemms, also divers kinds of Salts, and concreted juices in the earth, of which Naptha is one, also bathing-waters, in which ranke Manna may be put, if there be no other place fit for it.

The faculties are various, of so many different things, and The difference of
 from hence the divisions of Medicines are various, for *ence of*
 first; some Medicines are said to be such in action; Medicines
 others in power to be such; things as are said to be such in *A ctuall.*
 action; which in them containe that which they are
 said to be, the act being as it were present, and absolved, and
 so the operation is in a readinesse, and can affect our bodies
 at the first touch, with that quality wherewith they are en-
 dued: so Water, and Ice, are cold in action, because after
 what manner soever they are applyed to a body, they can pre-
 sently coole the same; but those things are such in *potentia,*
 whose force is not perceived at the first touch, but lyeth hid *Potentia.*
 and as it were asleep, nor doth it discover it selfe by action,
 untill it be some way changed by our heat and be burnt, and
 reduced into action, so Pepper, and Wine, although to the
 touch they are cold, yet nevertheless they heate.

But although the force of Medicines are various, yet they *Faculties*
 may conveniently be divided into manifest and occult; those *of Medi-*
 are called manifest which affect our senses, or which excite *cines mani-*
 qualities in the patient which are discerned by our senses, *fest.*
 and whereof a manifest cause may be rendred.

But occult are such which doe not produce qualities in a *Occult*
 Patient, obvious to sense, but performe something by a hid-
 den propriety, to wit; they purge a certaine humor, they
 strengthen a certaine member, they resist poyson, or being
 hung or carried externally, worke upon the body, the mani-
 fest causes whereof cannot be explained, and no other reason
 can be given, then that such a power or force is in them, by a
 peculiar propriety of nature, although there are some who re-
 ject hidden qualities; yet *J. C. Scaliger* rightly thinks that
 tis a high peice of impudence to reduce all things to manifest
 qualities; in the 218. of his exercises *Sect. 8.* and those which
 endeavour this, bring foolish and ridiculous reasons, or deny
 those things which are confirmed by experience; and these fa-
 culties and actions are different from those in their whole
 kinde as also from others, which are spoken of before in the
 2. Booke 2. Part. *Cap. 12.* both from hence in the first place,
 because the strength of these qualities, are far greater then
 theirs of the primary qualities, and their efficacy is great
 oftentimes in the smallest body.

But both of them, the manifest and occult fa- *The first*
 culties and actions of Medicines are various, of ma- *the second.*
 nifest qualities some are primary, others secondary,
 T or they

The *third kind of qualities.* others of a third kind; the first have power of heating, cooling, moistning and drying; the second to soften, to harden, condense, rarify, resolve, attenuate, thicken, to draw, to repel; the third, to provoke Urine, to cause and stay courses, to move vomit, generate flesh, and to breake stones, although the power of breaking stones may more fitly be attributed to the propriety of the whole substance, as beneath Cap. 17. shall be shewne.

Occult are of three kindes, for either they evacuate a certaine humour by a peculiar faculty, or they have a sympathie with a certaine part, whence they are called cephalicks, or cardiacks, or they resist poyson.

The kinds of faculties in Medicines.

But the faculties of all Medicines according to the changes which they make in our bodies, may be referred to four ranks or formes, first some belong to an inducing of a new quality, such as are those which are said to have the efficacies of the primary qualities, to wit heating, drying, cooling, and moistning, but because every thing that alters, cannot be safely applyed to every part, appropriated Medicines are conveniently joyned to every member which do alter. Moreover hitherto is to be referred those which are accounted amongst the number of secondary qualities, such as soften and harden, loosening, rarify and condense, stiptick, and obstructing, astringent and opening, attenuating and incrassating, filling, and deterging or cleansing: lastly hereunto belongs, Anodunes, Stupefactives, and Hypnoticks or such as cause rest.

In the second forme are those which prevaile in causing motion, attracting and repelling; to the third forme those things are referred, which consist in the generation of any thing, ripening, generating quitture, breeding flesh, Glutinating, cicatrizing, and procuring milke and sperme.

To the fourth forme are referred those things which corrupt, corrode, putrify, such as cause dry crust, burning, and such as doe corrupt seed and milke.

The fifth forme comprehends those things which belong to the taking away of any thing, such things as make lesse, such as purge, such as cause Vomiting, Urine, or sweats; or provoke courses, expel the secondine, or send forth a dead child, such things as break and expell the Stone, Errhines, Sternutatories, and Apophlegmatismes, such things as purge the breasts, and such as kill and expell Wormes.

They may be placed in the last forme which resist poyson and are the drugs against poyson.

CHAP. III.

Of the first faculties of Medicines.

AS for what belongs to the first forme, and first for altering Medicines, some of them being compared with mans body are called temperate, which cause or bring forth no mutation in man either in coldnesse, drynesse, heat, or moisture; and these are either such simply and in all the qualities, or els in two of them only; but the intemperate are such as have power to change the heate or moisture of our bodies.

Altering temperate.

Intemperate.

Moreover these qualities are divided by Physicians into certaine degrees, which are left to bee esteemed by their effects; the first degree is when a Medicine alters our bodies obscurely and scarce sensibly; the second is, when it manifestly changeth our bodies, yet without hurting, inconvenience or trouble; the third degree is, when it doth not onely manifestly alter the body, but vehemently, and not without trouble, and paine, yet without corruption; the fourth degree is that which altereth the body not without paine, and that most grievously.

Degrees of qualities.

To either of these degrees there are appointed certaine Latitudes, which are commonly called mansions, as they alter more intensely or remissly, or betwixt both, which they call in the beginning, middle, and end.

Mansions of degrees.

The temperate are, Venus haire, Sparagus, Licorish Sweet Oyle, Pine-nuts, Jujubes, Figgs, Sebsteens, Rayfins, Dates, Gum Elemie, and Tragacanth, Calyes and Goates Suer, and Hoggs Grease.

Temperate Medicines.

The hot in the first degree are, Marsh-mallows, Burrage, Buglosse, Beets, Cabbage, Camomnil, Bindweed, Agrimony, and Fumitory, Flex, Melilot, A lease that swims in Ditches without any Root, Spikenard, Wall-wort, and Coltsfoot, the flowers of Borrage, Buglosse, Bettony, Oxe-eie, or Wild Camomil, Melilot Camomil, black Poplar, Arabian Strachodos, an herbe with grey downe like an old mans haire called Senecio in Latin: Fruits; sweet Almonds, Chestnuts, Jujubes, Ciprus-nuts, green Walnuts, Grapes, ripe Mulberies, sweet Apples, Fragrant Seeds, Coriander, Fenegreeke, Flax, Grumwell, Lupines,

Hot in the first.

pires, Selanix rice, Rootes, Marsh-mallows, Bares Breech, Beets, Buglosse, Licorish, Satirion, Barkes, Guaicum, Tamarisk, Liquors, Juices, and Gummes, Sugar, Bdellium, Ladanum, *Al. 2. i. e.* Others in the second degree, Gumme of ivy, the tallow of Goates, Does, Harts, fresh Butter.

Hot in the
second.

Hot in the second degree, Worme-wood, Pimpernell, greene Dill, Angelica, Parsly, Mugwort, Bettony, Calanus Aromaticus, ground Pine, Fænugreek, St. Johns-woort, Ivy, Hopps, Bawme, Horehound, Motherwort, Sweetc-ferne, Bassill, common-Burnet, Maiden-weed, Poley, Rosemary, Summer or Winter Savory, Sage, Scabious, Scordium, Stachados, Feaverfew, Flowers of Night-shade, Saffron, Gilliflowers, or Carnations, Schænanth, Lavender, Lupines, Bawme, Ros-mary; Fruits, as Capers, Nutmeggs, Pistack-nutts, dried Figs, dried Nuts; Seeds, as Dill, Parsley, Bitter-vetch, Water Rocket, Pulse, or Vetches, Nettle seed. Roots, as Parsley, Caper-roots, Mayden-weed, common Burnet, Turneps, Zedoarie, Rosewort; Barkes, as the Barkes or Wood of Cassia, Cynamon: others in the third degree.

Frankinsence, Roots of Capers, Liquors, Gums and Rosins; Wine that is new, Ladanum, Aloes, and Galbanum, Myrrh, Mastick, Frankinsence, dried pitch, Rosin, storax; Fats, as Lions fat; Libards, Beares, Foxes.

Hot in the
third.

Hot in the third degree are Mettalls; Flos æris, which is that which comes from the Brasse in melting, burnt Brasse, Squama æris or the Scaling of Brasse, Verdegrease, Dreggs of Brasse, Allum, Salt, Nitre, Brimstone, Red-vitriall; Herbes or leaves, as Sowthernewood, Afarabecca, or the chaff Plant, Wake Robin, the Herbe called Hierusalem, or Ladies Rose, the herbe Ammios, dried Dill, Bayes, Dittany, Carnations, Germander, blew flower, Bastard Saffron, Century the greater and lesse, Celandine, (or Pile-wort) Calamint, Fleabane, Horsemints, Fennel, Epithimum, so called, because it growes upon Time, Juniper, Elecampane, Hyssop, Laurell, Marjerom, Marum an herbe cald Marjerom, Mints, Fennelflower, flowers of the wild Vine, wild Marjerom, wild Woodbine, Parsley, Sneeze-wort, Penny-royall, Oxe-stay, Rue, Savine, Wild Time, wild Mints. *Al. 2.* Time, trifoile, Vervaine, Nettles, Flowers of Agnus-castus, Epithimum, Violets, of the wild Vine, of the wild Woodbine. Fruits, Juniper-berries, Cloves, the fruit of Balsimum, Anacardium, that is a fruit of an Indian Tree, like a Birds heart, and the juice like blood, Pepper, *Al. 4.* Seeds of Ammi, and Anniseed of Hierusalem,

Salem, or Ladies Rose, Carawayes, of Garden Cresses, bast-ard Safron, according to *Galen*, Fern. 2. of Fennell, Cummen; Carrots, Fennell Flower, Turneps, Parsly, Hartwort, Stavfager, of a Vine. Roots; of sweet Garden Flag, others in the second degree, Asarabacca, wakerobbin, Sea Onion, or Squills, Dittany, Leopards bane, Fennell, English Galin-gale, both kinds of Hellebore, Elecampane, Orrice, Parsly, Raddish, Barkes of Mace, Liquors, Teares and Gums; old Wine, and sweet Afa, stinking Afa, Ammoniack, Cedar, Pitch, Opoponax, Muske.

Hot in the fourth degree, are such as belong to mettalls *Hot in the* as vitriol, Arsenick, Sandaraca, which is a Gemme; Chry-*sowth.* focolla is a kind of a minerall found like sand in veines of Brasse, Silver, or Gold, which Goldsmiths use to solder Gold, and Silver with; Mysfory, is that which the Apothecaries call vitriol, Melantheria, Inke; wherewith Chyrurgions consume putrified flesh, Herbs, or Leaves; Pepper-wort, Garden, and water Cresses, some would have them to be hot in the third degree, great headed Leekes, the fullers herbe Thapsia, a Milke Thistle; Fruits, as Pepper &c. Seeds as of both kinds of Cresses, Mustard-seed; Rootes, as Garlick, Onions, Costus, Leekes that have great heads, bastard Pelitory, or sneezing wort, Euphobium.

Things cold in the first degree, Herbs, or Leaves, as O-*Gold in the* rack, sowre Sorrell, Mallowes, Mirtles, Pelitory of the wall, *first.* Flowres, of Mallowes, Roses, Violets; Fruits, as the substance of Citrons, Quinces, Pares, Plumbs; Seeds, as Barly, Miller; Rootes, of Mallowes, Concreate Juices, Acacia, others in the second, Draggon's blood; Stones as a Hyacinth, a Saphir, an Emerald.

Things cold in the second degree, Leaves, and Herbs, a *Cold in the* kind of beete which some call Spinack, Spanish Succory, *second.* Lettice, Ducks-meate, Endive or Succory, Violet leaves, Sorrell, Plantine, Knot-grass, Fleawort, Night-shade; Flow-ers, of wild Poppies, Cichory, water Lillies; Fruits, as Gourds, Cucumbers, Oake Apples, Oranges, Pomgranates, Damaske Pruius, Pippens, Peaches; Seeds, of Sorrell, Cicho-ry, Winter Cherries, Wood of Santalls.

Things cold in the third degree, Herbs, or Leaves, Pur-*Cold in the* slan, Mandrake, life everlasting, Henbane, others think it *third.* hot in the fourth degree; Flowers, as of Pomgranets. Fruits; as Oringes, Mad-Apples of Mandrake; Seeds, as of Hemlock, Henbane, Poppy; Rootes of Mandrake, juice of the juice of Holly Rose.

Cold in the fourth. Things cold in the fourth degree; Herbs or Leaves, Hemlock; Poppey; Fruits, Apples of Pern; Concrete Liquours, as the juice of Poppy or Meconium, also Opium, according to the vulgar opinion, which is not true, for they are hot.

Moist in the first. Moist in the first degree; Herbs, Buglosse, Pellitory of the wall, Mallows; Flowers, of Buglosse Mallows, Endive; Fruits, as the substance of Citron, Injubes, Sweet Almonds, Seeds, of Mallows, Sefami, which is a white graine growing in India; Rootes, of Satyrion, Buglosse, Lycorish, Mallows, Rape Rootes.

In the second. Moist in the second degree; Herbs, as Violet Leaves, Water Lillies, Milk Thistles, a kind of Beet which hath no favour, which some call Spinach, Lettice, Ducks-meate, Purslan; Flowers, of Water-lillies, Violets; Fruits, Gourd, Melons, Pompions, the juice whereof some place in the third degree, Peaches, Damask Pruius, ripe Grapes, Sugar.

Dry in the first. Dry in the first; Herbs and Leaves, Beetes, Cabbage, Camomill, Fennill, Violets, or Purple coloured Lillies, Malabathrum *i. e.* a certaine Herb, the swims in Ditches in India without any Roote appearing, Mirtles, Petty Mullein, or Longwort, Flowers of Oxe eye, Camomill, Saffron, Violets, Melelot, Roses; other in the second degree, Fruits; as Juniper berries, Chesnuts; Seed, as Beanes, Fenegreek, Barly, Roots; of Briony, of the wild-Vine, of madder, Tamarisk, Marshmallows, Wake-robbin; Gums; Frankinsence, others in the second degree.

In the second. Dry in the second degree, Herbs as, Pimpernell, Mugwort, others say in the first degree, Green Dill, Bettony, Bindweed, Calamus Odoratus, Endive, Sea Cabbage, Shepherds-powch, Horstaile, Chervills, Mints, wild Mints, Plantine, Rosemary, Spikenard, Walwort, Fumetory, Burnet, Sorrell, Vervine, Shepherds rod; Flowers, of Piony, Scarlet, Anemone or wind Flowre, ground Pine, Wood-bines, Stachados; Fruits, the Oily acorne, Capers, Quinces, Ciprus-nuts, Nutmegs, Pares, Pistach-nuts; Seeds, Fennell, wild Saffron, Lentills Ervum, Millet, Rice, Poppy, Night-shade; Roots, of Caper, Cichory, Raddish, Wood of a Santall Tree, Teares, Gums and Rossins; as Galbanum, oppopanax, dry Pitch, Myrrh, Storax, Mastick, Hony.

In the third. Dry in the third degree, belonging to mettals, as flowre of Brasse, burnt Brasse, the dregs of Brasse, Dragon-wort Salt, Solder of Gold, or Saltpeter, Brimstone, red vitriol; Herbs, and

and Leaves, Fearne, Yarrow, Cinqfoile, Poley Mountain, Trifoile, Worme-wood, Southernwood burnt, Dill burnt, Parsely, Asarabecca, Ammi, Calamints, Germander, Ground pine, Epithimum, Hyssop, Juniper, Marjerom, Horehound, Origanum, Maiden beets, Wildstone, Parsly, Sneezing-wort, Rue, Savine, Willow, Water-mints, Time, wild Bettony; Flowres, of Pomgranates, Epithinium, Ground pine, Wild-wood-bine; Fruits, of Cloves, the Fruit of Balsamum, Oak-Apples, Pepper, Juniper-berries; Seeds, as Graines which Dyers use, I think he means Cutcheneale. Dill, Parsley, Ammi, of the herbe Jerusalem; or Ladies Rose. Anniseed, Carraway, Cumming, Coriander, Gith, bastard-stone Parsley, Millet of the Vine; Rootes and Barkes, of sweet Garden Flag, the hollow Roote of Galingale, Squills, common Cinqfoile, Trifoile, Mountaine Ofier, Asarabecca, Smallage, Leopards-bane, Hellebore, Cinnamon; juices, and Gums, Aloes, the juice of Sorrell, Acacia, Camphir, Muske.

Dry in the fourth degree, Metalicks, Coppras, Arsenick, Sandaracha, Borax, or green Earth found in the Mines of Brasse, Silver, or Gold, Misyfory, that which the Apothecaries calls Vitroil, Milantheria or a Metallick juice; Herbs and Leaves; Wild-rue, Garlick, Cresses, Mustard-seed

CHAPTER V.

Of Medicines proper to every part, or of corroborating Medicines.

But whereas occult qualities are often adjoynd to the primary qualities, the same things altering are not convenient allwayes, nor accomodated to all parts, but those things are to be chosen which have regard to every or any part in respect of the whole substance, and by reason of some occult proprieties have some singular Sympathy therewith, which Medicines therefore are called Appropriated or Corroborating Medicines, for so occult qualities concur with manifest, and conspire in acting, or performing together.

Medicines proper to every part.

Cephalicks Heating and drying: Bettony, Marjerom, Sage, Hyssop, Bawme, Rosemary, Bay-leaves, Bay-berries, Savory, Rue, Calamint, wild Time, Spike, Lavender, Origanum, Herba Paralysis; I take it to be true love or one berry

Herbe, Lillies of the Valley, Stechados of Arabia, Chamomill, Basil, Ocymum husked which is a pulse for Cattell, Piony, Seed of Osiers of the Mountain, Fennell, Root of Orris, Gilliflowers, Flowers of Linden or Teile Tree, Juniper berries, Coriander, Anacards or fruit of an Indian Tree like a Birds heart and the juice as red as blood, Nutmegs, Amber, Muske sweet and precious, Aloes, Cloves, Cubebs, Cardamoms, sweet Garden Flag, Acorns is the same with Calamus Aromaticus, Mace, Galingall, Beavers Genitalls, Birdlime, Amber, as also those things which for the most part are externally applied, as Benzo, Gum of Juniper, Ivy, Tacamahava, the seed of Fennell flowre, Ladanum, Mastick, Storax that useth to be brought out of Syria in Reedes, Thapsia, the fat of a Beare.

For the head cooling and moistning.

Cephalicks cooling and Moistning, are Roses, Violets, Water-Lilly Flowers, the leaves and seeds of Lettice, Purslan, Poppy seed, and other cold things, as sorrell, Gourds, to which for Humectation you may add especially in Melancholians, Burrage, Buglosse, sweet Apples, sweet Almonds, as also those things which for the most part are externally applied to the head, as the leaves of Vines, fallows, Fleawort, Heads of Poppy, Womans milke newly drawn, the juice of Cucumbers, Gourds, and for moistning sake the seed of flex, Fenugreek, sweet Almonds, Elder Flowers.

Hurting the head.

Things offending the head, the seed of a Vine, juice of Wormwood, Milke in drinke, Acrons of the Oake in meat, black Olives, Crabs, a kind of pulse called Ervum, which also resolves or loosens the joynts: these do more offend, Frankinsence, the tops of Jvy, the fruit of Lentsci, that is, the Tree whereof Mastick comes, Saffron, an herb called Maydensced dried, sow Bread drank with Wine, Mandrake, Hemlock, seed of Darnell, Storax plentifully taken.

For the eyes.

Ophthalmicks, Fennell, Eyebright, Rue, Vervaine,celandine, Marjerom, Bertony, Elecampaine; Rootes of Valerian, seeds of Clary; these that follow offend the eyes, the seed of Hempte, stalkes of Lettice, Lentiles (or Ducks meat) Beans, Raddish, Mustard seed, Onions, Leeks.

Hurting the eyes.

Hearing the Eares.

Things that heate the Eares, Cephalicks as Rue, Lawrell or Bayes, Costus, Fennell Flower, Caster or the cods of a Beaver, also bitter Almonds, Onions, white Hellebore with Hony, Muske being put into them, white silke spun by the silke worme.

Cooling the Eares.

Things that coole the Eares, Womans milke Luke warme, Roses

Roses, Mallows, Violets, March Mallows, the Leaves of Willows, Lettice, Water-Lettice.

Things heating and drying the Breast and Lungs, Iffop, Scabious, Venus haire, Coltsfoote, Hore-hound, Calamint, Bittony, Speed-well (or Fluellin,) Oake of Hierusalem, *Carduus Benedictus*, Licorish, the Rcots of Elecompane, and Orrice, Squils or Sea Onions, Round Birth-wort, Nettle-seed, Fennell seed, of Figs, of rayfins of the Sun, of Almonds, of Pine Apples, Fox Lungs, the roote of Dragons, wake Robin, Burnet, Flax-seed, Flowre of Brimstone.

Things belonging to the breast, cold and moist, Violets, Mallows, the seed of white Poppey, Flea-wort, Iujubes, lebastines, Tragacanth, Barley; these offend the Breast, things too cold, sharpe things, putrified (or unfavoury) sowe; astringent things, as unripe fruit, Vitrioll, the Sea Hare, the Oile of Nuts.

Things corroberating the Heart, Bawme, Rosemary common Basil, *Carduus Benedictus*, Germander, Fluellin, the Barks and seed of Citrons, Graines of Kermit-Berries, Garden Gilliflowers; the Roots of Angelica, of Elecampane, of Marigold flowres, the wood of Aloes, Gold, Saffron, Amber, Muske, Wormseed, Mace, Nutmegs, Cloves, Cinamon,

Simples appropriated to the heart that are cold, Roses, Violets, Sorrel, Burrage, Bugloss, Water-lillies, Plantine, the juice of Citrons, Lemons, Pomegranates, Cherries, Sweet Apples, Black-berries, Santals, Harts-horne, the bone of the Heart of a Stag, or Hart, Unicornes-horne, Irish flat, Bolcarmenick, Pearle, Corall, Beazor, Hyacynth, a Saphir, an Emerald, *Lapis Lazuli*.

Things heating and drying appropriated to the Stomack, Mints, Wormwood, Fennel, Rosemary, Sage, Bay-leaves, Bay-Berries, Juniper Berries, Cartaway-seed, Anniseed, Comminseed, the wood of Aloes, Galangale, Sweet-garden-flag, or Ginger, Nutmegs, Mace, Cloves, Pepper, Cinamon, Wormseed, Cardamons, Cypresse, Amber, Mastick.

Things cooling the stomach, sorrel, Wild-Sorrel, Purslane, Plantine, Endine, Sow-thistle, Cichory, Roses, Violets, Peaches, Quinces, Melons, Gourds, Cucumbers, Citrons, Pears, White Curtants, Barberies, Pomgranates, the juice of citrons, Acacia, the juice of Lemons, Medlars, Strawberrieis, Mulberies, Santalls.

Things heating the Liver, Agrimony, Worme-wood, Venus haire, Sage, a kind of Bind-weed; that growes about the Liver.

Flax

Flax, Asarabacca, Liver-wort, Squinanth, Spikes Maudelin, Fennell, Parsley, Smallage, Sparagus, bitter Almonds, Elecampane, the flower of Bettony, Raysins of the Sun, Pistack-nuts, the hot Seeds, Sweet-Garden-Flagg, &c. Wood of Cassia, Cinnamon, and the rest of the Aromaticks.

Cooling it.

Things cooling the Liver, Endive, Cichory, Garden Endive, Lyons Tooth, and those which belong to these, Purslan, Lettice, Roses, Violets, Water-lillies, Sorrel, Strawberries, the greater cold Seeds, namely of Mellons, Gourds, Cucumbers, and Citrons, and the lesser namely of Lettice, Endive, Garden Endive, Purslan, Barley, Santalls, Camphire, Pomegranates, Currants, Barberies, Strawberries, Melons, Cherries, Sorrell, whey of Goates Milke.

Heating the Spleen.

Things heating the Spleen, Ceterach, Spleen-wort, Epithimum, Wormewood, Fumetory, Hops, Rue, Calamint, Parsley, Speedwell, or Fluellin, wild Germander, Ground-pine, Bawme, Garden or Water-creffes, Scurvy-grasse, Horehound, Broome, Elder, Asarabacca, the Rootes of Polipody, Elecampane, Ferne, Fennel, Smallage, Vinc-roots, Tamariske, Capers, Birth-wort, Madder, Bitter-almonds, Squils, Sweet-garden-flag, Ammoniack, Bdellium.

Cooling the Spleen.

Things cooling the Milt, Mallowes, Endive, Cichory, Purslan, and for the most part the rest of the cooling Hepaticks.

Heating the Reines and Bladder.

Things heating the Reines, and Bladder, Venus haire, Rue, Saxifrage, Betony, Lovage, Fennell, Rocket, Mugwort, Calamints, Eringo, Sparagus, Butchers Broome, Burnet, Liquorish, Parsley, Smallage, Nettles, Carrots, Dropwort, red Madder, red Parsnips, Grumwell, Iuniper-berries, flowers of Camomill, Cardomoms, Turpentine, Chervill, Almonds, Pistack Nuts, the Kernels of Peaches, Cherries, Rootes of Capers.

Cooling the Reines.

Things cooling the Kidnies, Mallowes, Lettice, Purslan, Pellitory, Barley, the foure great cold Seeds, Poppy, Lettice, Fleawort, Quinces, Pepons, Stone-berries, Violets, Flowers of Water-lillies, Camphire, Santalls, Sorrell, Juice of Lymons, Melons, Currants.

Heating the Womb.

Things Heating the Womb, Mug-wort, Mother-wort, Bettony, Dittany and Origanum, Penny-royall, alamins, Marjerom, Sage, Time, Bawme, Summer or Winter Savory, Rue, Rosemary, Bay-leaves, Flowers of Canonil, Cumminseed, Anni-feed, Fennel-feed, Carrot seed, Parsley, Smallage, Rootes of Birthwort, Red Madder, of Eringo, Fennel,

nel, Parsley, Sparagus Burnet, Angelica, Valerian, Masterwort, the meate and liquor of the Indian Nut, Bay-berries, Juniper-Berries, Cloves, Nutmegs, Mace, Sweet garden flag, Cinamon, Worm-seed, Saffron, Galingale, Mirrh, Castor.

Things cooling the Wombe, Water-lillies, Violets, Roses-Quinces, and the SIRRUP thereof, Purslane, Lettice, Garden-Endine.

Hot simples belonging to the joynts, the Gout, and diseases of the sinews, Marjerom, one Berry Herbe, Lovage, Bettony, Groundpinc, Rosemary, Sage, Bay-leaves, Lavender, Stæchados, Mugwort, and most of the chephalicks, Castor, carth Wormes.

CHAP. V.

Of extenuating, and preparing of humours.

Of this forme of humours are sought digerent, digestive, or preparing things; so called, all which, since they hinder nature in acting, take away and change the qualities, which resist the action of native heat, namely they coole too much those things that are hot, and heate too much those things that are too cold; they moisten dry things, and dry up moist things, they attenuate what is thick, and increase what is thin.

Namely yellow choler is to be corrected with cooling, moistning and thickning things, Phlegme is to be prepared with heating, drying and attenuating things; melancholy humors are to be corrected with things moderately heating, moistning and attenuating; black Choler is to be prepared with things that are very moistning & attenuating.

And those things are to be used which are fitted to every part, according as the humour resides in this or that part, cold cephalicks prepare and digest choler in the head; cold Thoracicks, in the Breast; cold Cardiaacks in the heart, things cooling the Ventricle, in the stomach; cold Hepaticks in the Liver.

Hot Cephalicks prepare Flegme in the head; hot Thoracicks in the Breast, hot things appropriated to the Ventricle prepare flegme in the stomach; hot Hepaticks in the Liver; things heating the Reines in the Reines; hot things appropriated to the Wombe in the Womb.

These

*Melancholy and black chol-
ler.* These things prepare Melancholy, and black Choler, Fur-
mitory, Bugloss, Burrage, Spleen-wort Bawme, a kind of
bind weed growing about flax, Venus haire, common Ger-
mander, ground-pine, Hops, Barkes of Citrons, Fennell Rose-
mary, juice of Apples, Ceterach, Capers, Epithymum, Vio-
lets, Burchers Broome, the flowres, and seed of Tamariske
of Basil, Ashen Keyes.

C H A P. VI.

*Of Emollients, Relaxing, Rarifying. &c.**Emolli-
ents.*

EMollients are those things which power out that which
is concreate, such are those things which neither are very
hot nor exceeding dry; many hot in the second degree, and
something moist, and moreover having a clammy or em-
plastick force, such as are the Leaves and Roots of Mallows,
and Marsh Mallows, the Roots of white Lillies, Orach,
English Mercury, the Seed of Mallows Scfami, (a white
graine growing in India) Flax, Fenugreeke, Marsh mal-
lowes, Fat Figs, Simple Oiles, the Fat of Hens, Soves Fat,
Calves, Kidks, Sheeps Fat, and such like, almost all Mar-
rowes, fresh Butter, Wax, Pitch, Rosin, Bdellium, Amoni-
ack, Storax melted, Ladanum, Galbanum.

*Things
hardning.
Loosening.*

To these are opposed hardning and binding things, which
are cold and moist, Sengreen or life everlasting, purslan,
Fleawort, Ducks-meat Night-shade.

Things loosening are compared to those things which
bind, which joyning together humors contrary to nature,
become hard, and are especially those which when certaine
matter, or a vapour or Wind fills the space of the parts, and
extends them, rarifies them, and attenuates and discusses an
unfavorly spirit and matter, such are those things that are mo-
derately hot, moisten more largely, and are of a thinner
substance, that they easily penetrate and are not hindred
by thickenesse, as Lillies, Oile of Camomil, Flaxseed, Fenu-
greek, Fats, Butter, Greazy wool and such like.

*Condense-
ing.*

Condensing things, are of a more watry nature and con-
tract more weakly, and moreover they close the thin and ex-
ternall Pores, they contract and condense, but they cannot
contract the whole part on every side, and powerfully, such
are cold water, Purslan, Sengreen, Fleawort, Mouse-eare,
Duckes

Ducks meate, Thistles, green Houfeleek, the greater and the lesser.

Stiptick things are cold and astringent, and of a thick substance, for being applyed externally, by their thicknesse they stop the pores, and by their frigiditie and siccity they contract the part and close them into one another, of that kind are those which are otherwise called binding (or astringent) the Barks of Pomegranates, Frankinsence, Mirobolanes, the Roots of Tormentill, Rhubarbe Torrified, Plantine, Horsetaile, little double Dazies Blood-wort, or Wall-wort, the Floures of Pomegranates, Flowers of Roses, Sorrell; seeds; as of Plantine, Roses, Purslan, Ciprus-nuts, Mirtles, Quinces, Pares, Medlars, Mulberries not ripe, Cernises, or (swallow Pares,) the fruit of a Cornell or Dogg Tree, Oake Apples, Kernels of Grapes, Cups of Acorns, the red juice of Wax or Hony in the Hony-Combs; also such juice of Wild Hony, Acacia, Mastick, Vermillion, Spode, which is foot arising in the rising of Brasse, Pearles, Coral, Bolcarmenack, Irish flat, Allum, Lapis Hæmatites or Bloodstone, Iron.

To condensing things are opposed rarifying things, and to astringent things, opening things; rarifying things are those which open the Pores of the Skin, and render the passages wider, that Vapours may be blowne or breathed out the better; such medicines are hot, but moderately, of thin parts and not drying, as Marsh-mallows, English Mercury, Dill, Flowers of Camomill, of Melilot, of Elders, seed of Fenugreek, Flax, dry Figs, old Oile, Butter.

Opening things are those as dilate the Orifices of the Vessels, whence they may be called in generall aperient, yet those are principally called aperient, which penetrate deeper and attenuate the thick humors, and are hot in the second degree, endued with somewhat a thicker substance, and are not easily dissipated until they have performed their operation, to this purpose bitter things are very usefull next to these are attenuating and cutting, which divide, dissolve, and make lesse, those attenuate the thick, these the viscid, and glutinous humours, and are moreover of a rinner substance, and hot for the most part in the third degree; also sharpe, and such as appeare biting and

Opening.

hot, to the smell, or taste, or to them both, and have a nitrous and salt savour, or they are sharpe and bitter, such are the five opening Rootes, so called, that is, of smallage, Fennell, Sparagus, Parsley, and Butchers broome, Grasse, Cichory, Eringo Rootes, Gentian, Ferne, wild or Garden madder, Century the greater, Asarabacca, Capers, of Tamarisk, of Ashes, Fumetary Wormewood, Agrimony, Venus haire, Liver-wort Ceterash, Ground-pine, common Germanander, Bind-weed, Hore-hound, Calamints, Penny-royall, Scurvygrasse, Brooklime, Water-Cressles, Anniseed, Fennell, seed, seed of Ammi, of Agnus Castus, red Parsnibs, Lupines, bitter Almonds, Capers, Kernells of Peaches and Apricocks, Cinnamon, Cubebs, Sorrell, Ammoniaek; the juice of Lyons.

Incrassating.

To these are opposed, Incrassating things, which make the thinner, and more liquid juices thicker, such are cold or temperate, without sharpnesse, of a thick and terrene substance, whereby, whilst they mingle themselves with thinner humours, they make them become of a thicker consistence; as Bolearmenack, Poppy, Sorrell, Rice, Lentills, Quinces, wild Pares, Amylums, tis a food made of Corne without grinding, Chalybeate milke, the juice of Pomgranets.

Playster-like things.

Emplasticks, and those which have a clammy and Plaister-like force, are such as adhere close to the passages of the body, and Plaister up the pores, as it were, fills them, and stops them, and they are certaine dry, and earthy things, yet without mordication, and acrimony, and if they are be daubed over the passages of the body, they are hardly taken away, but some are also mixt with an aqueous, and acrious humour, yet are tenacious, as sweet oyle, such are Amylum, Pompholix, which is the soile that runs off Brasse, Cerusse, Chalke, Bole armenack, Irish flat, Parget Litharge; burnt lead, the Rootes of Marsh Mallowes, Lillies seed of Fene-greek, all mucilages, and bran of wheate, Kernells of Pine nuts bruised in water, Gume Arabeck, Sarcocolla, Tragacanth, fresh Grease, and Marrowes, fresh butter, new cheese, whites of an egg, wax.

Detergent things and such as open obstructions.

To these are opposed detergent things, and such as open obstructions, wherof these cleanse filth in the superficies of the body, or skin, but those are of a more subtil substance, & penetrate into the pores also, and open obstructions, and moreover have a drying faculty, with tenuity

tenuity of substance whether they be hot, or cold, for there are both hot and cold abstergent things, such as are all salt things, bitter things, nitrous things, as Hore-hound, Century the lesse, smallage, Wormewood, Southernwood, Hyssop, Cresses, the bread of Lupines, and of a kind of Pulse called Orabus, Agrimony, Beets, Germander, Tansey, Bitter Almonds, Roots of Birthwort, Orice, Gentian, *Solomons Seale*, Barley, Bran, Juice of Lymons, Nettle-seed, Rootes of Tamariske, Bark of Capers, Spleen-wort, Squils, Nitre, Hony, Sugar, all Lixiviums, or Lee, Whey, the Galls of living Creatures, Verdy-greafe.

CHAP II.

Of Medicines easing paine and causing rest.

Lastly, in this forme are Anodunes, Narcotticks, and Hypnoticks, those are properly Anodunes which doe not take away the cause of a disease or dull sence of paine, but such as mitigate the paine, the cause stil remaining, and they are temperate and gentle, and endued with mild heat, and are soft to the touch, and bring forth a pleasant and sweet pleasantnesse and those performe that, which are endued with a luke-warme and gentle heate, and are most like to our bodies in temperature, and for the most part are soft and fat, and loosen, and mollifie the part that it may be the lesse apt to be sensible of paine, such are Camomil, Melilot, Dil, Elder, Mallows, Marsh-mallows, Seeds of Fenegreek, Flax, wheat, Barley, sweet Oyle of middle age, Oyle of sweet Almonds, and other things prepared, with those above, fresh Butter, Hens grease, Goose-grease, Whites of Eggs, the pulpe of White-bread, warme Milke, and Hoggs grease.

Narcoticks or stupefactives, and Hypnoticks, which also cause sleep, but neither take away the cause of paine, but stupifie the part and benumes it, least it should perceive that which is painefull; but this power depends on a hidden quality, such like are Lettice, Water-lillies, Poppey, Nightshade, Henbane, Mandrake and Opium.

C H A P. V I I I.

*Of drawing and Repelling Medicines.**Things drawing.*

IN the second forme, are drawing Medicines which attra& the humours, and Spirits out of the body into the superficies; but that attraction is made by heate, concurring with tenuity of substance, and some are hot and dry in the second degree; which draw moderately; others in the third degree, which draw more; others in the fourth, which draw most of all, and with their heate raise a tumour in the skin, with rednesse, and lastly raise blisters, from whence medicines to take away haire, Synapismes, Rubifying medicines are prepared, such are the Rootes of both kinds of birthwort, selandine, sow-Breed little Dragon, Gentian, wild Pellitory, or sneezing-wort, Crowfoot, mustard-seed, Cresses, Garlick, Onions, Leaven, an Indian fruit like a Birds heart, and the juice like blood, Gum Amoniack, Galbanum, saganum, Opoponax, dry Pitch, Propolis or that in a Honey-combe like wax, Goose dung, Pidgeons dung, Hen dunge, and Cantharides.

Repelling.

Repelling Medicines, are opposed to attracting, and prohibit the Flux of humours, or represseth and casteth back that humour which hath newly flown in, and moves therein, and is not as yet settled; they performe this, either because they are cold or astringent, or because they have both a cold and astringent faculty; astringents are two-fold, some are cold, others hot, and indeed they doe most powerfully bind, which are both cold, and astringent; those things which repell only by frigidity and are aqueous, or humid, are cold water, life for ever, Purslan, Ducks-meate, Endive, Lettice, Night-shade, Coltrrops of water, Venus Nauell, Fleawort, the white of an egg; cold things astringent are, Planrine, narrow leaved Solomons seal, Mousseare, Daizes, Horsetaile, the leaves of service, or sherve Tree, Oake, Mirtle, Medler Tree, the Flowers of Rosemary, Pomgranates, Mirtle-berries, Oake Apples, swallow Peares, Barberries, Mirtles, the Barks of Pomgranates, the Rootes of wild Damsons, the Rootes of Barberries, the Rootes of Cinquoile, Snake-weed, (or small Bistort) Tormentill, the juice of Pomgranates, Acacia, Hypocistis, or sap of the Rootes of Cystus, of Mulberries not ripe, sorrell, Irish flat, Bolearme-nack,

nack, sanguis Draconis, Tutty, hot astringents are, spike, Aloes, Frankencense, Mirrh, Cypressse, Worniewood Cyprus Nuts, the Barks of Frankencense, sweet Garden Flag, Allom.

CHAP. IX.

Of Ripening things, and such as generate quitture, also of such as generate flesh and Brawny flesh, of such as dry and cleanse green wounds and cause Cicatrizing, and of such as generate seed and milke.

IN the third forme are ripening and concocting things, and moving purulent matter, so called, because without them the generation of matter cannot be easily performed by nature, to wit, such which by the similitude they have with our bodyes, defend and increase the substance of the native heat, for they are temperately hot, and together moist and emplastick, which shutting the pores or passages, keep in and retaine the spirits and heat, such are sweet Oyles Oyle, mixed with water, Butter, Hogs grease, Calves grease, the seed, and Bran of Wheate, Wheaten Bread, the seed of Fenugreek, Flax, Leaves and Rootes of Marsh Mallowes, Mallowes, Beares breech, the Rootes of white Lillies, boyled Onions, dry Figs, Fats, liquid Pitch, (or Tarr) liquid storax, Turpentine, whereof some if they seem, either too dry or too moist, you must observe, that scarce ever one of these is used alone but are mingled with others, so that the drynesse with the one may be corrected with the humidity of the other, and the humidity of the one with the drinessse of the other.;

Ripening and concocting of quitture.

Sarcotricks or such as generate flesh, are such as conduce to the restauration of flesh, in a wound or ulcer, indeed nature; in the generating of flesh is the cheif workeman, yet certain Medicines doe as it were helpe nature, whilst they remove excrements, which hinder nature in the generation of flesh, and preserve the native heate of the part, of which kind are those which moderatly heat and dry, and cleanse filth, without biting according to the plenty of quitture, and according to the humidity or siccity of the body, sometimes they ought to be gentler, sometimes stronger, such are Barly Bread, a kind of pulse, called Ervum, Fenugreek, Tra-

Generating flesse.

gacanth, Orice, Teares of jeat, Mastick, Frankencense, Scamony, Aloes, Mirrh, Hony, Walwort, Saint Johns-wort, Birth-wort, Brasse Oare, Cerusse, Tutty, Pompholix, Litharge, (or white lead.)

Next to these are Glutinating Medicines, which are no way detergent, but rather astringent, and by some are called Enaima, and Traumatica, because they are used, in joyning of bleeding wounds, although they are used in cleanseing Ulcers, from which neverthelesse, according to more or lesse, Epuloticks differ from such as cicatrize, as being such dry more to the second degree; in the number of Glutinatives, and Epuloticks are, Allum, Litharge, Circocolla, Aloes, Bolearmenack, Lead, Brasse-oare, Birth-wort, the Flowers of Pomgranates, Corall, Horse-taile, Plantine, Wal-wort, Tormentill, Cinqfoile, common Thurrow-wax, the Barkes of Pomgranates, Frankencense, Burnt-brasse washed, Sanguis Draconis, Lapis calaminaris, Antimony.

Hereunto belongs Traumatick Medicines, or vulnerary which by a peculiar force, so dispose the blood, that fit and laudable flesh by it may be restored, or any other substance, which is lost, and afford matter, for potions; called vulnerary, such are; great and little Cumfery, Sannicle, Cumfery, the middle Sarracenus, Agrimony, Winter-green, Fluellin, Mug-wort, Plantine, Savine, Horse-taile, Rootes of Tormentill, of Gilli-flowers Cardus Benedictus, common, or water Burnet, Ladies-mantle, Periwinkle, Pimpernell, Goldenrod, Mouse-eare, century the lesse, Adders-tongue, Bittouy Saint Johns-wort, Flowers of Roles, Tanscy, Veruine, Dragon, Rupture-wort, Cinqfoiles, Scordium Crabs-eyes, Mace, Bolearmenack.

For
wounds.
Genera-
ting hard
f. f.

To Epuloticks Poroticks all such as generate brawny flesh are nere alike unto, namely, such as dry, thicken, harden, moderatly heate, and bind, some of those are given inwardly as juice of Primeroses, or Cowslips, powder of the Roots of Agrimony, of the juice thereof, but especially the stone called Osteocolla, some are externally applyed, as Bolearmenack, meale, Osteocolla, Aloes, Cypres Nuts, Frankencense, Tragacanth, Acacia.

Genera-
ting milke.

Lastly to this forme belongs those things which generate and increase milke and seed, they helpe to generate milke which conduce to the generation of good blood, and draw blood to the pappes, and have a peculiar consent with the breasts, such are Fennell, and Dill green, Louage, Smallage, Poley

Poley Mountaine, Rocket, Milke-wort, yet some are said to conduce to the generation of milke, by a propriety of substance, as powder of Chrystill, Fennell, and Dill.

In like manner those things for the generation of seed, which generate the best blood, which is the matter of seed, and what things soever, draws the blood to the vessels, appointed for generation of seed, or which fill the seed with wind; namely moderately moist, and temperatly hot, such are, Leekes, Parsnips, a kind of a land Scinks, Satyrion, Rocket, Ashen Keyes, Flax, Garlick, Onions, Eringo-roots, Turneps, Sparagus, Green-ginger, Galingale, sweet Almonds, Pine-nuts, Pistack-nuts, Chestnuts, Dates, Beanes, Carrots, Rapes, Rice, Artechoakes, obftreæ.

*Generating
seed.*

CHAP. X.

*Of such things as make the skin red, of such as cause
Blisters, and of such as cause scabs, or pustules,
of burning things, of Corrosives, Extrifactives
and of such things, as take away haire, and ex-
tinguish milke and seed.*

TO the fourth ranke, belong those things which breake forth, Rube-factives, Escaroticks, and Causticks, which are all comprehended under the name of fiery Medicines, which with their exceeding heate, as the heate of water, or fire, burne our bodyes, the most gentle amongst them, are Rube-factives which onely by heating make the skin red, and those things which lye deeper, they draw out to the skin, such are Mustard-seed, Cresses-seed, Nettle-seed, the Rootes of Thapsia.

*Making
red the
skin.*

The stronger are called vesicatories, because they raise Pustules, or Blisters, which for reason of the tenuity of substance, burne only the Cuticle, or the ourmost skin, and draw out a humour, like scalding water, and pull the cuticle from the cutis, or thick skin, and raise it into a bladder, such are, Cantharides, Mustard-seed, Leaven, strange Clematis, Crow-foot, seed of Cresses, Thapsia, roote of Sow-bread, bastard Pelitory, sea Onions, Garlick, Doves-foot, Euphorbium, Pidgeons-dung, Soape.

*Vesicato-
ries.*

The more vehement are Escaroticks, or such as cause, *Burning
Pustules, the skin.*

Pustules, or scabs, so called because they burne, not only the cuticle, but also the cutis, and they are hot in the fourth degree, and of a thick substance.

Cauſticks.

Amongst these the most vehement are Cauſticks, and they are endued with extraordinary heate, and thick substance, which burne not only the skin, but sometimes the flesh also, as burnt brasse, Flowre of Brasse, quicklime, vitriol, Athes, or dust of the dregs of Wine, little Figs, Ashes, of Ash, Savine, Pidgeons dung, Ashes of a Pine Tree, white Hellebore, Salt prepared of the lee, whereof soape is made, Arsenick, Oaker, Mercury sublimate.

Of corroding Medicines.

Besides these there are yet other Medicines which draw away flesh, and they are two-fold, some of them are more mild and are called Cathereticks, others are stronger which are called Stypticks; Cathereticks, or Corrasives, are those which take away the soft flesh that is growing, and only the outmost which they touch, they take away the superficies not suddenly, but by degrees, but cannot be indured to penetrate deeper, and they are hot in the third and fourth degree, the milder whereof are, Aloes, Allum, Ashes of Oyster-shells, Ashes of an Oake, and Fig-tree, the Rootes of a white Vine, of black Hellebore, burnt Lead, Antimony calcined, the stronger are quick-lime, Flowre of Brasse, burnt Brasse, vitriol calcined, Quick-silver precipitated, sublimate vitriol, Mysfory (a stinking mettall) burnt lead, oyle of vitriol, sulphure.

Things putrifying.

Stypticks, or Putrifactives, soften the harder flesh, and they are the hottest, dryest, sharpest, pernicious to the native heate, which seeing they destroy, and take away the radicall moisture there followeth corruption of the substance of the part, and a deadly putrified disease, such are Arsenick, Orpiment male, or Female stone-Ferne; Pityocampes, they are wormes in a Pine Tree, Monks-hood, sandaracha.

Taking away of haire.

Hereunto belongs those things that take away haire, and extirpate them, and make the part bald, and if they continue long in the skin, they exulcerate and burne it, such are strong Lee, quick-lime, Ants, or Pismires eggs, sandaracha, Orpiment and Arsenick.

Consuming of milke.

Moreover concerning the extinguishing and diminishing, of milke and seed, the generation of milke is hindered, if the store of blood be abated, which medicines do not performe, but spare dyet, or exercise, hinders the coming of it to the brest, such are Hemlock, Lettice, Ducks-meat, Water-Lillies, Gourds, Night-shade, Purslan, Poppy but milke that is generated

generated, is consumed, by the seed of Agnus Castus, Calamints, Cummin, Rue, sage, saffron, Bean-meale, Lupines, Basil, some whereof are thought to doe it by a hidden propriety.

Certaine things consume the seed by a hidden propriety, Rag weed, the lesser, as the greater, increaseth seed; seed of Agnus Castus, some by a manifest quality, cold things as Hemlock, Gourds, Henbane, Lettice Water Lillies, Woodforrell, Ducks meate, sorrell, and sower things; hot, Calamints, mints, Dill, Rue, Hemp seed, hereunto also belongs Saccharum Saturni, Camphir, which J. C. Scalliger denyes. *Eatinguishg the of seed.*

CHAP XI.

Of Medicines purging through the Paunch.

IN the first ranck of Medicines, namely of those things which consist in the ablation of any thing, and are first called Purgers, but although all Medicines in generall which free any parts of the body from excrements may be called, purging medicines, yet use hath brought it to passe that they are only called purging medicines in particular which lead or drive out excrements through the paunch or by Vomit; those which move by the belly and are wont to be known by the common name of Evacuators, are twofold; some of them are such as only purge the belly and the first passages, others there are which reach beyond the first Region of the body and emit peccant humours from the more remote parts, which are more properly called purging medicines. *Purgig.*

The former sort the Greeks call, Enteropticks and Hypacticks that is Lenitives, because they evacuate ordure out of the guts, and whatsoever is detained in the stomach, gurs, and Orifices of the Meseraick veines, whether they doe it by mollifying and humecting, or by lubrityng and making the passages slippery, which they imbue, and melt the feces with their abundant humidity, and provoake to expulsion, or whether they have a power of cleanseing and moderately stimulating, such are, Mallowes, March mallowes, the herbe Mercury, Beets, Cabbage, Blites, Orach, Sparagus, Rayfins, sweete Pruins, Sebestens, Cassia, Manna, Tamarinds, Oyle of sweet Almonds, new fat Figs, sweete Apples, fat Broath, especially of a Cock or Capon, whey, especially of Goats milke, fresh new Butter. *Lenitives.*

*Cholagogues, or the milder Purgers of choler.**Things
purgings.*

But the purging medicines are most properly so called which send forth some particular humour out of the body, from some particular part, but by what power they performe, that is much controverted by Physitians, but it seemes probable, that purging medicines, whither taken in at the mouth, or by Clister, or externally applyed to the Navell or belly, or held in the hands or applyed to the Buttocks are resolved and deduced into action by the heate of our bodies, and that the most subtil spirits, or vapours of them so resolved are disperfed through vessels into the whole body, and by a hidden force and propriety, move the humours which have affinity with them, and trouble, stir up, and as it were ferment them, and do so bring it to passe, that those humors, which before were mixed with the blood, and caused no disturbance of nature, being now stirred up and seperated from them, and being by themselves, stimulate nature and irritate it to expulsion, which being irritated by the helpe of the expulsive faculty, expells both the purging medicine, and the vitious humor so seperated by the power thereof, together from the body.

*More
mild.*

But some of them are more mild which mollify the belley, yet besides this, by a propriety of substance, regard a peculiar humour, and exercise their strength beyond the first wayes, to the Liver and Spleen, yet cannot evacuate from the whole, and the most remote parts, some are stronger, which evacuate beyond the liver and spleen, also greater vessels, but the strongest purges are those which evacuate humours out of the whole body, and from the most remote parts, and from the smallest yeines; there are divers purging medicines, yet the difference of them is drawn, from the number of humours, which they attract by a specificque force.

*Stronger.**Cholagogues, or the milder purgers of choler.**Manna.*

MANNA, which in the broath of Beef, or of a Hen, or in a decoction of Pruins, or Tamarinds being dissolved, and strained, is given, from an Ounce to three Ounces.

Cassia.

Cassia Fistula, is a benigne, and safe medicine at all times and all ages, unlesse that it be too moist and windy, and therefore, not so convenient for a moist stomach and guts, and

and those that are flatulent, and therefore is corrected with Cinamon, Mastick, Anni-seed, Fennell-seed, Carrot-seed, halfe a drachm, or a whole drachm being added to it, it is exhibited conveniently in the forme of a Bolus, or Electuary not long before meate, it is given from halfe an Ounce, to two Ounces.

Tamarinds are cold and dry in the second degree, and for that reason, repress the Acrimony, and heate of humours, the pulpe is given from an Ounce to two Ounces, or three Ounces, and in decoction to foure Ounces. *Tamarinds.*

The juice of Roses, syrups, and Hony prepared of it gives strength to the Liver, and bowels, but it opens the Orifices, and therefore is not to be given to such as are with child, the juice is given to two Ounces, the Syrup and Hony to three or five Ounces. *Juice of Roses.*

The juice of Violets, and Syrup and Hony prepared thereof, mitigates heate, the juice is given to two Ounces, the syrup and Hony to foure Ounces. *Violets.*

Flowers of the Peach-Tree cause not only purging, but vomiting, and purge chollerick and serous humours, the Syrup prepared of them is given to two Ounces, the conserve to an Ounce, a handfull of them infused in Wine doth performe the same. *Peach Tree Flowers.*

Myrobalans, of citron colour, are cold and dry, and also bind, and strengthen the bowells, but are not so safe in obstructions thereof. Their astringion is corrected, opening things being added, and sweet smelling seeds, or if they are rouled in Oyle of sweet Almonds, they are given in powder to two drachms, in infusion to five drachms, or to an ounce and halfe. *Citron Myrobalans.*

Rupbarbe besides yellow cholera, purges phlegme also, but not unlesse it stick in the highest passages, tis principally good for the liver, it hath divers parts, by the more subtile it purgeth and opens, by the thicker it binds, whence it is profitable, in a Lientary, and in spitting of blood, and in ruptures, it is given in the substance, in infusion, and decoction, it ought to be very light, and the third part of Cinamon is added, or of Camells hay or Indian spike, when you are willing only to purge, or open, tis best given, in infusion or decoction, but when you would bind and corroborate tis best in the substance; there is also an extract prepared hereof, but such a one, which scarce purgeth stronger, then when it is taken in the substance, tis given in the substance *Rhubarb.*

Stronger Purgers of cholera.

tis given in the substance, to two drachms, in infusion to halfe an ounce.

Turpentine.

Turpentine moves not only the belly, but the bowells, and especially cleanseth the reines, tis given with the powder of Rhubarbe, or Licorish, and Sugar, made into a Bolus, or with the yolke of an egg, and some convenient water therewith, wrought in a Morter, and reduced into a milky liquor, tis given from halfe an Ounce to six drachms.

Aloes.

Aloes is hot in the second degree, and dry in the third, exceeding bitter, it opens the mouths of the veines, and therefore is hurtfull to such as are apt to a Flux of blood, or such as are with child, and Hecticks, and no way safe for those that are hot and dry, extenuated; tis most conveniently taken prepared, and extracted, and Rosated, as they call it, by reason of the bitterness of it; it is not easily given in drinke, but in pills, most properly it is given from halfe a drachm, to three drachms.

Fleawort.

Fleabane, or Flea-wort, the seed of it, is cold and dry, in the second degree, tis given in infusion, rather then in the substance, from a drachm to three drachms,

Stronger Purgers of Cholera.

Scammony.

Scammony is hot and dry in the third degree, it primarily drawes cholera, next Phlegmaticks humours, and unlesse it be well corrected, it frets the guts by its Acrimony, causeth gripings, opens the Orifices of the vessells, and causeth a Flux of blood, it hurts the stomach, Liver, and Heart, inflames the Spirits, and stirs up feavers, and therefore we seldome use it alone; and least that it should offend, fat things are to be added, Tragacanth, Bdellium, Oyle of sweet Almonds, seed of Fleabane, Cinamon, Spike, Galangale, Fennell seed, Quinces, Mastick, the juice of Violets, and Roses, tis commonly corrected, by boyling it in the substance of a Quince, and so prepared tis called Diagrydium, there is also prepared of it an extract, or Rosin, it is scarcely fit to be given to those that are weake although it be corrected, the dose of Dyagrydium is given from five to fifteen graines, some give a scruple.

Asarabacca purges chollier by the Paunch, yet it rather stirs up vomit, it attenuates, opens obstructions, and provokes sweats, and therefore is profitable for Hydropick and Isterick persons, and such as are troubled with the Spleen, and Quartan Agues, tis given in the substance from halfe a Drachme, to two Scruples or a Drachme, in infusion from two Drachmes to halfe an ounce.

The milder purgers of Phlegme.

Myrobalans, Chebulæ which principally are good for the Braine and Liver, according to some evacuate also black chollier, emblick which are appointed for the heart, Spleen, and Liver, as also Bellirick are cold, in the first, and dry in the second degree, and bind, and therefore are not safely given in obstructions, nor when Phlegme tenaciously cleaves to the guts, but in fluctuations and in a loosenesse, and when there is need of astringtion and corroborating, they are prepared according as we have shewed before, of the Citron Myrobalans there is also the same Dose to be given.

Agarick purges onely thin, and aqueous Phlegme, but not viscide, and principally evacuates the excrements of the Braine, and Lungs, opens obstructions of the bowells, yet is not so commodious for the stomach, and therefore the third part of Cloves, Nutmegs, Galingale, Sal gemmæ, Ginger, are to be added, tis given in the substance to two Drachmes, in infusion from two Drachmes to halfe an ounce.

Mechoacan also purges Phlegme, but principally ferrous and aqueous humors, and therefore is excellent in Dropfies; tis corrected with the third part of Cinamon, Anniseed, Mastick, tis given from a drachme to two drachmes in the substance, in infusion to halfe an ounce.

The stronger Purger of Phlegme.

Turbith is hot in the third, and dry in the second degree, and draws out thick and viscide Phlegme, even from the remotest parts, tis hurtfull to the stomach, and causeth

seth loathing, and Vomit, and is not to be given to children, old men, nor Women with child, and when tis exhibited, it is to be corrected with Ginger, Mastick, Pepper, Cinamon, Fennel, Galingale, nor must you eat fish after you have used it, the Dose is from 2. scruples, to 4. scruples, in the substance, in infusion or decoction from 2. Drachms to 3. Drachms to 6. Drachms.

*Seed of
Cartha-
mus.*

The seed of wild Saffron, purgeth Fleagme, and Water, by Vomit and Stool, and is very good for the breast, and such as have Asthmaes, but it is an enemy to the stomach, and therefore it is used with the third part of Cinamon, Galingale, Mastick, or Anniseed, tis given in decoction from three Drachms to six Drachms.

*Coloquin-
tida.*

Coloquintida, which is hot and dry in the third degree draws out Flegme, from the most profound and more remote parts; Turbith cannot evacuate but is a most vehement medicine, and offends the stomach and Guts, when there is a Fever; and moreover it useth to be sod, being bound up in a skin, tis seldome used alone, but instead thereof Troches made thereof, which they call Alhandals, are wont to be used, tis corrected with Cinamon, Tragacanth Mastick, Bdellium, and other Cordiacks, Hepaticks, and Stomaticks, tis given to 15. grains or a Scruple.

*Hermo-
dactiles.*

Hermodactiles purge thick Phlegme especially from the joynts, and therefore is good for the Gout; tis corrected with Cinamon, Ginger, Mints; tis given in the substance from 2. scruples to a Drachme and halfe, in infusion, or decoction to 3. Drachms.

*Euphorbi-
um.*

Euphorbium is hot and drying the fourth degree, it draws away thick and tough Phlegme, but more powerfully aqueous humours, it is a violent medicine, and tis reckoned by some, rather among poysons, then purgers, tis corrected by cordials and stomaticks, Oyle of sweet Almonds, Saffron, Mastick, by the sowerness of a Lymon or Cytron, the highest Dose of it is 10. Graines.

Opopanax.

Opopanax heates in the third, and dries in the second, it draws away thick and viscid Phlegme from the more remote parts and joynts, tis corrected with the third part of Ginger, Spike, Cinamon, or Mastick, tis given from halfe a Drachme to a Drachme.

*Sagape-
num.*

Sagapenum is hot in the third, and dry in the second degree, and purges clammy and thick humours from the Bowels, Braine, and more remote parts especially of old men

hurts

hurts the stomach and Liver, it is corrected as opopanax, the Dose is from halfe a Drachme to a Drachme.

The milder Purgers of Melancholy and black humours.

Indian myrobolans are of the same nature with the rest of them, onely that these purge melancholy.

*Indian.
Mirobo-
lanes.*

Polipodie evacuates adust choler, as also Phlegme; tis profitable in diseases of the spleene, and Hypochondries, the Dose is from a Drachme to three Drachmes, in infusion to an Ounce and above,

Polipodie.

Epithymum purges a dust choller, and Melancholy without trouble, and is profitable in Diseases proceeding from hence; yet because tis hot and dry in the third degree, tis safer to be used in Winter, then in Summer, tis given in the substance from two Drachmes, to three Drachmes in infusion from halfe an ounce to an ounce.

*Epithy-
mum.*

Sena is as it were the middle betwixt the stronger and weaker, hot in the second, dry in the first, tis a very usefull medicine, which not onely evacuates adust humours, but also choler and Phlegme; cleanseth all the bowels, and is convenient for all ages, when tis more dry tis not inconveniently corrected with the flowers of Violets and Burrage, Ginger, or Cinamon, or the fourth part of Galingale is added to it, the powder is given from a Drachme to two Drachmes, in infusion from halfe an ounce to an ounce.

Sena.

The stronger purgers of Melancholy and adust humours.

Lapis Armenius purges dull, thick, melancholy humours, yet more gently then Hellebore, it is corrected by washing in Cordiall waters, tis given from halfe a Drachme to a Drachme, or sometimes to a Drachme and halfe.

*Lapis Ar-
menius.*

Lapis Lazuli hath the same vertue but is something weaker, tis corrected with Cordialls, the Dose is the same.

*Lapis La-
zuli.*

Black Hellebore is not usually to be given to children; women that are great, nor to weake bodics, and indeed it is more safely given in decoction, then in the substance, tis corrected with Cordialls, and stomaticks; tis given in the substance

*Black Hel-
lebove.*

substance from a scruple to two, nay to a Drachme, in infusion or decoction from a Drachme to halfe an ounce.

Hydragogues and such as evacuate aqueous humours.

Root of O-rice.

THe juice of the root of Flowerdeluce is hot and dry in the third, opens drawes, out thin Choller and water; but for women with Child tis not so safe, because it provokes the months, tis corrected with a little Wine and Cinamon, and Manna, or honey of Roses is added; or decoction of reysins of the Sun, tis given from halfe an Ounce to an Ounce and halfe, or two Ounces.

Hedge Hy-sop.

Gratiola or hedge Hyssop purges by stoole and vomit, but troubles not a little the body, tis corrected with Cinamon, Anniseed, Liquorish, tis given in the substance to a Drachme, in decoction from halfe an Ounce to an Ounce.

Elaterium.

Elaterium or the juice of wild Cucumbers drawes water and choller out of the Bowels, and happily drawes forth the water of hydropick persons, but it provokes vomit also, gripes the bowels, opens the mouthes of the Veines, and unlesse it be cautiously exhibited doth mischiefe; tis corrected with Tragacanth, Fleawort, Bdelium and Cinamon; in the Dose you must not easily exceed six Graines.

Spurge.

The rine and juice of the root spurge, purgeth and gnaweth powerfully, and therefore is corrected with Bdelium, Tragacanth, Mucilage of Fleawort, Cinamon, Spike, the Dose of the Barke of the Root is from six graines to fiftene graines, but of the milke (or juice) from three graines to eight graines.

Mezereon.

Mezereon whose force is fiery, exceeding sharpe, exulcerating, biting, kindling Feavers, dissolving the strength of the heart, and noble parts, and purging choller violently; and Bilous serosities, tis corrected with Sorrel, with the juice of Pomegranates or of Quinces, of Purflan, Mucilage of the seed of Fleabane, the Dose in the substance is from six grains to ten graines, in the decoction from halfe a Drachme to a Drachme.

El der. Dwarfse.

Dwarfe elder, or Dane wort and elder, the seed and middle barke, and juice of the root and leaves, draw out water, they are corrected with Cinamon, the Dose of the berries is given to a Drachme, of the barks to two drachms, of the juice from

from halfe an ounce to six drachmes.

Soldanella or sea Colewort are the best remedy to draw out Soldanel-water, but tis an enemy to the stomach, tis corrected with Ci-la-nanon, and Ginger, the Dose is from a drachme to 2. drachmes, of the juice to halfe an ounce.

Gunmigate purgeth choller and water, and oftentimes causeth vomit, which is prohibited by the addition of the spirit of salt or Mace, the Dose is from five graines to eight graines.

The root of Ialap powerfully and with violence purgeth ferrous and black humors, tis given from a scruple to 2. scruples.

Although each of these do purge single humors, yet some of them do purge other humors also secundarily, Rhubarbe, Aloes, Cassia, Agarick, Scammony, evacuate choller with Phlegme; Myrobolanes, Chebulæ, *Lapis Armenius*, *Lapis Lazuli*, Phlegme and black choller: Sena, Epithimum, Polipodie, black Hellebore, purge choler, Phleame, and Melancholy, the latter Physitians have drawne other medicines into use unknown to the Ancients, prepared of Venus Mercury and Mars.

CHAP. XII.

Of Medicines that cause vomits.

SEcondly amongst evacuating medicines are such as cause vomitings, which indeed evacuate the stomach immediately, yet if they are too strong they draw the neighbouring Bowels and the greater veines, they performe that for the most part by a peculiar propriety, by reason of which they have an inclination upwards, yet some of them for a manifest cause, namely because they swim in the stomach and oppresse it, and loosen the Orifice of the superior ventricle, such are all fat and oily substances. But some are gentle, others indifferent strong, others very strong.

The gentle are simple water, or Bafley water luke warme, especially with a little honey, and salt, drank by little and little at one draught, common oyle luke warme, foure ounces or six ounces, Hydromell largely taken, Hydrcles to ten ounces, Figgs newly eaten, and cold water dranked after.

The middle sort are the Flowers of Dill, as also the Seed of Orach, and of Raddish, they are given from two drachmes to halfe an ounce, the root of Asarabecca, and Orach are given in the substance to foure scruples; Bittony, the middle barke of a Walnut, to a drachme, in infusion to halfe an ounce, the greene pill that cover the walnut shell dryed in an Oven, from halfe a drachm

Things causing vomits.

The most gentle.

The middle sort.

a drachm to a drachm, the juice of Raddish to two ounces, the tops of green Elder, (or the berries.)

The strongest.

The strongest are the Rootes, of Spurge, of Sow-bread, to a drachm; in infusion, from a drachm to two drachms; the Rootes of white Hellebore, in infusion from halfe a drachm to a drachm, adding cardiacks, Flowers of Danewort, Barkes, or Roote; Flowers of broome, seed of broome, from two drachms, to halfe an ounce, the seed of spurge, the husks being taken of, ten in number, a water to provoke vomit made of green Walnuts and Raddish Rootes, Ana, parts 2. of Vinegar part 3 d, being distilled, is given to two ounces or three ounces, white vitriol, Salt of vitriol, glasse of Mars, and Flowers, crocus Metallorum, and from thence a water to cause vomiting prepared by Rulandus, Mercurius vitæ &c. are in use with the chymists.

CHAP. XIII.

Of Medicines causing Urine.

Diureticks. **O**F Diuretick medicines, or such as cause Urine, some are properly so called, namely such as easily penetrate into the veines, and poure humors into them, they cut, and separate the thick from the thin; that they may so doe, tis necessary that they be hot in the third degree, and of a most thin substance, of this kind are, the Rootes of smallage, Fennell, Parsly, Butchers-broome, Sparagus, Valerian, Burnet, Spikenard, Asarabacca, Wormewood, Agrimony, Nettles, Ground-pine, Cheruil, Rue, Scordium, Anniseed, Fennellseed, Hart-wort, cheruil, Gromwell, Saxifrage, Juniper-berries, sweet Almonds, Peach-stones, and water distilled out of them with Malmesey Wine, Cubebs, Garden-creffes, the wood cassia, Medicines of spirit of Salt, and of Tartar, others lesse properly so called, whercof some are hot but doe not attaine to the third degree, as Turpentine, Parsnips, Dill, Venus haire, fresh gathered Rootes of Smallage, others are moist also which supple, or loosen the passages of Urine, as Licorish, march Mallowes, the seed of Mallowes, others are cold, which have an absterfive faculty moderate, attenuating, and refrigerating force, such are Pippens, Gourds, Cucumbers, the substance and seed therof, Barley, Strawberries, whey, juice of citrons, and Lymons, others besides that they are of thin parts, they afford much aqueous humidity, as thin
white

white Wine, the seed of Melons, Gourds, cucumbers, waters of baths.

C H A P X I V.

Of Medicines provoking sweats.

IDroticks, or Sudoriphicks are endued with a greater tenacity of parts, then Diureticks; they are hot also and besides they penetrate into the farthest parts of the body and cut humours, they attenuate, rarify, and turne into exhalation, and what ever is in their way, they carry with them, and drive into the extremities of the body, or if some amongst them are cold, or astringent also, by a hidden quality, whereby they resist poyson, they drive malignant humours to the superficies of the body. Provoking sweat.

Such are *Carduus Benedictus*, Venus haire, Rootes of Fen-nell, Smallage, Parsley, Burdocke, Burnet, Angelica, Tormentill, Worm-seed, China, Flowers of chamomill, the wood guaicum, Sassafras, Irish slat, Harts-horne, juice of Elder, Bezoarticum, Minerald without, and with Gold fixed steele, or Diaphoretick, and copper, and steele fixed, Diaphoretick, Mercury precipitate, also to provoke sweates, Laconick bathes, of sweet water are profitable, also fomentations, as warme Bottles, and hot Tiles, Frictions, Vnctions and such like.

C H A P. X V.

Of Diaphoreticks and Medicines, discussing wind.

Diaphoreticks, with the Greekes are the same, with discutient and dissolving medicines with the Latines, and they drive out through the insensible passages, and secrete pores, all such things are hot and dry, and have power of converting humours into Vapours, and of opening, and dilating the pores of the skin, such are camomill, Melilot, Dill, Fenugreek, Rue, seed of Flax, Lupines, Galbanum, dried Pitch, Storax, Brimstone, Sagapenum, and such like which are lately named. Dissolving.

Next to these are they which are called, discussers of wind, which as well can discuss, and consume wind within the body as when it is moving to the extremities, such are, Discussing of wind.
besides

besides those already named, century the lesse, which wonderfully conduceth to the discussion of wind, upon the Hypochondries, Anniseed, Bay-leaves, Pennyroyall, Fennel-seed caraway-seed, cummin, Ammi, carrot seed, Parsley, *Agnus Castus*, Dill, Juniper-berries, Bay-berries, Galingale, cloves, Mace, the Pills of Oranges, the genitalls of a Beaver.

C H A P. XVI.

Of provoking courses, expelling the secundine, and a dead child.

*Bringing
downe
courses.*

Such as bring downe menstrous, are either improperly so called, to wit, such as corroborate the expulsive faculty, or further the generation of blood, or else attenuate its thicknesse, and viscidiry; or properly so called, which open obstructions of the wombe, and draw down blood to the wombe, which opening and cleanseing things most powerfully performe, and such as are not of a very thin substance, least through their tenuity of substance, they should presently be scattered, and therefore there is most conveniently provided for this purpose, things which have some bitterness, mixt with Acrimony; such like are Sage, Pennyroyall, Dittany, or Garden-ginger, Marjerom, Rue, Calamint, Wild-Marjerom, Bittony, Spike, Asarabacca, Mugwort, Germander, Worme-wood, Ground-pine, Rootes of red Madder, Birth-wort, Fennell, Parsley, Flowerdeluce, Eringo, Lovage, Burnet, Saffron, Flowers of white Violets, Parsnips, Juniper-berries, of Bays, Flowers of Camomill, Cinamon, Mirrh, native Borax.

*Expelling
Secundines
and a dead
child.*

The stronger of these drive out the secundine, and expell a dead child, which therefore are called casters out, and drivers out, or Ejaculators, because they drive out the young; such like are, *Afa fætida*, castor, Myrrh, and those things which are variously applyed externally, as Opopanax, Galbanum, Amoniacum, Sulphure, the smell of the burnt hoofes of an Ass, Coloquintida, Rue, wild Cucumbers, the gall of a Cow, or Calfe.

C H A P. XVII.

Of Medicines that breake the stone.

Since the common Doctrine of the generation of stones is *Breaking* suspected, as is said before in the second Booke, page 2. *the stone.* C. 9. also the common opinion which strives to support it concerning the power of dissolving stones is suspected, and therefore here we deservedly fly to the propriety of the whole substance, which nevertheless is not inconveniently drawne, from a Saline or salt force, the medicines breaking the stone are Ground Ivy, Bitony, Pelitory, the Rootes of Rest-harrow, the five Diureticks, the Rootes of Raddish, Saxafrage, Burs, bitter Almonds, cherry-stones, the stones of Apricocks, the Kernells of Medlars, Grunwell, Parsnips, cinamon, Gourds, crabs stones, Goates blood, Lapis Judaicus, the Rootes of Spatrage, Snales, Lignum Nephriticum.

C H A P. XVIII.

Of Errhines, Sternutatories, and Apophlegmatismes.

Errhines draw out phlegme into the Nostrills, not from *Errhines?* the ventricles of the braine but such as is about the membranes covering the braine; they performe that by their heate and viscosity wherewith they are endued by their extergent and sharpe faculty; such are made of Marjerom, Rue, Pimpetnell, cabbage, Beetes, Rootes of Flowerdeluce, Fennell flowre, Penneroyall, Wild Marjerom, Hore-hound, Sowbread, Wild Cucumbers, celendine, Fell-wort, the juice of double or single Pasque flowre.

Pratticks, or Sternutatories, or such as cause sneezing, *Sternutatories.* are those which by their Acrimony irritate the expulsive faculty of the braine, which being wearied desiring to expel the medicine, sends out together with it the excrements, which remaine about its membranes, and in it selfe, such like are certaine Errhines most curiously powdered, and likewise white Pepper, Ginger, white Hellebore, bastard Pellitory, Caster, Cloves, sneezing-wort, Euphorbium.

Lastly, Apophlegmatismes, Masticatories, or Gargarismes *Apophlegmatismes.* are those which being put into the mouth and touching the *Palate*

Of things causing spittle

Palate, draw excrements from the braine into the Palate and mouth, and that by their whole substance, or by their heate and Acrimony, which poure out and melt excrements, and stimulate the expulsive faculty of the braine to expell, such are made of Mastick, Raisins, Hyssop, wild Marjerom, sweet Marjerom, Penneroyall, Caster, Cubebs, the barkes of the Rootes of Capers, Ginger, Fennell flowre, white and black Pepper, Mustard-seed, Turbith, Staves-acre.

C H A P. XIX

Of things causing spittle.

*Expectora-
ting things.*

THose things which helpe to evacuate humors in the breast and lunges when they are therein contained, ought to be cutting and attenuating and somewhat sharpe, that they may render what is thick thin, and what adheres by reason of visciditv, may be cleansed, least the thinner parts being resolved, the thick should be left behind and become unfit for expulsion, nor should they be too sharpe least they should stir up the cough, such are made of Hyssop, Venus haire, Scabious, Raisins, Horse-hoofes, the Roote of Elecampane, Birth-wort, Angelico, Flowerdeluce, Wake-robbin, Squills, Licorish, Raisins of the Sun, Injubes, Sebestens, Almonds, Figs, Pistack-nuts, the seed of a silke worme, Garden Cresses, Water-cresses, Hartwort, Nettle-seed, Sperma ceti.

C H A P. XX.

Of Medicines killing and expelling wormes.

*Killing
wormes.*

LAstly those things may conveniently be referred to this ranke which kill wormes, whither they doe it by bitterness, or by a peculiar or occult force, such are century the lesser, Wormewood, the Herbe Lung-wort, Mints, the leaves of Peach-Trees, Rue, Purflan, Sorrell, Lyons-Tooth, Cynæ or Santonici an Herbe like Southernwood, the stalkes of Leckes, Orach, Plantaine, Lupines, Rootes of Grapes, Ferne, Gentian; Elecampane, bitter Almonds, Peach-stones, Aloes, Syrup of Pomgranates, Citrons, Hearts-horne prepared, Bole armenick, Myrrh, whither they are taken inwardly or externally applied to the Navill.

CHAP. XXI.

Of drugs good against Poyson.

IN the last rank of Medicines, we will place those things which resist Poyson which are called Alexiteria or Alexipharmaca, all of these if we rightly weigh the matter, performe that which they doe either with their whole substance, as they say, or else by some occult propriety: Medicines against Poyson are two-fold, some are generall, and common, which resist all manner of Poysons, and strengthen and comfort the heart and vitall Spirits, so that they cannot easily take infection, others are particular which oppose some peculiar sort of Poyson.

*Drugs good
against
Poyson.*

Common Antidotes against Poyson are Angelica; Carduus Benedictus, Valerian, Dittany, Scabius, Divells-bit, Swallow-wort, Burnet, Tormentill, Rue, Germander; Sorrell, Worme-wood, Plantine, Marigolds, Speed-well, or Fluelin, Vipers-grass, Zedoary, Gentian, Juniper-berries, Citrons, Bezoar stone, Unicorne-horne, Harts-horne, Bole armenick, Irish-slat.

*Common
Antidotes.*

Of those Alexipharmicks which resist particular Poysons, many are delivered by Dioscordies in his sixth booke.

Proper.

CHAP. XXII.

Of the manner of finding out the vertue of Medicines.

WE come to the knowledge of the faculties of these Medicines two wayes, by reason, and Experience; and indeed especially by experience; for the force of some Medicines, as acting in their whole substance, is found out only by experience and although reason may seeme to persuade some things, yet unlesse it be confirmed by experience it is to be rejected; truly those indications are not plainly to be rejected which are taken from externall passions of things, from the place, and Aire, from colours, and smells, and remarkeable signes, yet in many things they faile, unless experience be joyned: nay experience alone often sufficeth, for those things which are cleerly manifest to our senses, leave nothing of doubt, yet if that which is found by experience,

*How the
vertues of
Medicines
may be
found out;*

Manner of experiments. can be confirmed by reason, that is, by much the most certaine knowledge, but when reason seems to be adverse to experience, tis better to cleave to experience, yet experience ought not to be taken rashly, nor to be taken from one example but many observations, and those are choicely to be collected, which may be done if the medicine acting, and the body or subject suffering, be diligently considered.

In medicines, especially such as are taken from Plants, the substance, quantity, quality, age, time of gathering, native place, and such like, are to be considered, and especially to be regarded, whether it have got any strange, and acquired quality, but it ought to have its owne vertue whole and entire.

The subject is mans body, and all medicines are said to be such, not absolutely, nor in respect of other things, but in regard of mans body, whence it comes to passe, that experience ought to be made, of the primary qualities in a temperate man; in others for the most part, especially those that are sick, and those that are affected with one simple disease, and not a compound, least experience should be put out of its course, nor is it enough, that experience be made once, or in one body, but observation ought to be made in many that are alike in Temperament, age, sex, structure of body; it is also to be considered whether any Medicine, performs any thing primarily, and by its selfe, or by accident.



THE
FIFTH BOOK,
PART. I.

SECT. II.

OF

CHYRURGERY.

CHAP. I.

Of Chyrurgery in generall.

After we have spoken of the faculties of the medicines, it remains that now we speake of Chyrurgery, and that we propound all the operations, which are made by the hand, and Chyrurgicall instruments, in mans body, for the recovering of healths sake, we will propound the operations which often are the matter of helpe.

But although the word Chyrurgery, which signifies manuell operation, may be taken of all actions, which are done by the hand, yet according to Preheminency, tis taken for that part of Physick, in particular, which by the artificiall use of the hand, cures diseases of mans body, which are contrary to nature, and so Chyrurgery is employed only in the externall parts of the body, and exercised in those internall parts also to which the hand, and Chyrurgicall instruments can reach.

Sith hence three things are required to performe an action, the Agent, the Subject patient, and those things by which

*Chyrurgery
 ys what.*

*Description
of a Chyr-
urgeon.*

the action is made, in Chyrurgery also, these three are to be considered; the Agent, is the Chyrurgeon, which Celsus in his seventh Book, and the beginning of that Book thus describes, a Chyrurgeon ought to be a young man, or a middle aged man, with a strong hand, stable and never shaking, and as ready with his left hand as with his right, sharpe, quick and cleere sighted, not daunted in courage, not pittifull, as he is willing to cure, whom he takes in hand, one that may not by the clamour hasten his motion more then the matter requires, nor lesse then is necessary, let him cut, but let him performe all things, as if no others paine could trouble him by their crying.

*The sub-
ject.*

The subject is mans body, the knowledge exactly wher of, and the figure of every part, and their scituation, and concoction is required in a Chyrurgeon, which often defection of bodyes will bring forth.

Those things by which an action is performed, are instruments; and some other things are necessary for performance of operations, as the place, light, garments, Servants, standers by.

*Instru-
ments.*

The Instruments are various, yet the cheife are, an incission knife, a Pen-knife, a paire of Tongs, an instrument to pluck haire from the body by the Rootes, called *vossella*, a Probe, a broad Probe, a Seaton needle, a Needle, Threed, a Hooke, a little hollow Instrument of Chyrurgeons, boarded, a Phillet, Swathing-bands, Clouts, and little rags, Lint, Sponge.

Place.

The place is to be chosen, which is most commodious for Chyrurgicall operations, and wherein the sick may not be hurt, by wind, cold, heate, or any externall accident.

Light.

The light whether it be that of the Sun, or some other, ought to be such, that the Chyrurgeon may accurately discern that part, which he dresseth, least he should offend himselfe or the patient.

*Servants
and stan-
ders by.*

The Servants, and standers by ought not to be displeasing and troublesome to the sick, but ought to be attentive to the commands of the Chyrurgeon, silent, and which is their duty, faithfull to performe his dictates.

Garments.

The garments of the Chyrurgeon ought to be so made, that they may no way hinder him in his operation.

The Chyrurgeon himselfe ought to endeavour as much as in him lyeth, to performe his operation presently, safely, and with delight, and as much as possible without paine.

All

All the Chyrurgicall operations are five, a putting together or conjunction of seperated parts, a correcting and setting right of those things which are out of joynt; or out of their place, a Solution of continuity, an Extirpation, or cutting off of Superfluities, and a Restitution of deficiencies, of which now in their order.

CHAP II.

Of putting together, and binding in generall.

Position is that operation of Chyrurgery whereby the parts, are joyned together, which were seperated contrary to nature. *Setting or putting together.*

Deligation or binding is necessary to this as also for the most part to other Chyrurgicall operations, to which belongs fasciation, or Swathing-bands, and the putting in of Tents, fitting of Splints to bind about wounds, and the action it selfe or putting in of a round string to cleanse the wound, aright or true placing of the part bound. *Binding.*

Of Swadling.

A Swath is a long and broad band (or list:) a convenient circumduction and convolution of the swathing-band about the member to be cured, the most convenient bands are linnen, which are cleane, light, soft, which have neither seames, nor knots. *Swathing.*

The differences of Swathing-bands are various, which are taken from their figure, length, and breadth, they differ in respect of figure, because some are rolled up thick, long and equally broad, and rolled up into a round circle, others are rent, or broken, which consists only of one linnen cloath, but that cut or parted, either in the middle or out sides, others are sowed together, which are Swathing-bands and Ligatures ending in divers heads, and representing severall figures; Swadlings differ in longitude, because some are longer, others shorter, and so it is of latitude. *Differences of it.*

There are two kinds of deligation, the one simple, the other compound or manifold, the simple is either equall or unequal, the simple that is equall, is only round, which incom- *Differences of deligation.*

passeth, the affected member, in a round circle, alike every way, without declination, unto either part, but is simple & quall, binding is divided into *Asciam*, and *Simam*, which only differ in respect of more and lesse, because *Asciad* declines a little from a round, but *Sima*, much of severall wayes of swathing are many differences, taken from the similitude of the parts which are bound, or from the similitude of certaine Animalls or other things, of which *Galen* in his Book of swathing.

The manner.

As for what belongs to the manner, sometimes the binding, is to be begun from the part affected, other times from a sound part, neereft to the part affected, sometimes from the opposite part, moreover sometimes swathing is to begin, at the end of the swathing-band, sometimes at the middle, thirdly swathing-bands should neither presse the part too hard, nor suffer it to be loose, for when tis too loose, it doth not sufficiently containe the part, and when it is too hard it causeth paine and inflammation.

The use.

The use of swathing is twofold, one by its selfe, which is to draw together the disjoynd parts, to contract the dilated, to direct the distorted, to containe the member framed and the adjunct parts, to resist a humour flowing, or to repress a humour which is already flowne, or to force blood to extenuated parts; but that which begins in a place affected represseth from the part, that which begins from a sound or opposite, forces towards the part, the other is by accident, which is to keep on medicines applied to any part.

Of Cerots or Bolsters.

Splents
made up
with Lin-
nen.

Splenia, are Plaisters so called, from the figure of the Spleen, the Ancients calls them, *Plumaccoli*, but now they are called *Pulvilli*, *Plagulæ*, they are linnen rags folded up together, which are put to the part, some according to longitude right, others oblique, others transverse, and some doubled, some threefold, others fourefold, sometimes single, and sometimes more, according to the use which they are put for to strengthen; the binding members, unequall in thicknesse, or thin and hollow parts are to be equalled, and filled up; that the whole dilagation may be equall, the parts also are

are to be defended from the paine of the swathings and bands, and the Sanies, and thin matter, is to be expressed and imbibed.

Of Splents.

Splentors, or splents, which are wont to be fitted to broken bones, and such as are out of joynt, after they are set, which were prepared by the Ancients, of wooden-slips of a cane, but now they are prepared of the wood, of Firre, or splentors of some other wood, or of the Barks of Trees, or Paistboard, and hard Leather, which may answer to the parts greivously wounded, or broken, or put out of joynt, especially to the hands, sometimes to the chest of the body, so made up, of light wood, that they may answer to the figure of the member, or of white thin plates of Iron, or tough skin, or shell, Paper glued together, and fitted, so that they may containe, the parts drawn and joynd together, least that they shake or totter, and slip out againe, and slide out of their places.

Of Binders.

Laqueus, is a band or binder so knit together that being drawn in or prest by weight, is shut, or closed, the use thereof is to extend broken limbs, or such as are out of joynt, to continue such as are put right in their places, to bind the parts and draw them in straight, also to bind the heads of vessells out of which blood flowes, the differences of them may be seene, in *Oribasius de Laqueis*.

Of fit placing of a member that is bound.

The convenient placing of a part that is bound consists in this, that it may have that position, which may preserve its naturall figure, and may be without paine, and may be convenient for the cure of a disease. A member shall be so placed

Of Coaptation of broken bones.

placed if all its parts, bones, muscles, nerves, veines, and arteries, may enjoy that position whereby they neither are distended, nor pressed; if the member be set or placed softly, and equally; if the orifice in a hallow ulcer, or wound, tend downward as much as may be, that the quittance may be purged out; lastly if moderation be observed in ordering of the binding so that it be neither too straight nor too loose.

But collocation is made either by putting in, or by suspending; a member is fitly restored, when tis underpropt with certaine stayes, with feathers, wooll, or soft rags, that it may be quiet and leaning or resting on somewhat, it should lye allwayes even, and soft, least it either should be shaken by motion, or extended by reason of flux, or least the sanies and thin matter should be retained in it: the member is suspended, either when the sick keeps his bed, or newly begins to walke, and especially the hand, and the arme are to be kept in a Swath, which Celsus calls, *Mitellam*.

CHAP III.

Of Coaptation of broken bones.

Setting
how many-
fold.

Synthesis, which joynes together seperated parts, is either of bones, or of fleshy and soft parts, setting together bones which were out of joynt, or a restoring those that are broken, or a restoring those which were out of joynt.

Of broken
bones.

The putting together of broken bones, is performed by two operations, whereof the one is called *Catastasis*, *Anritasis*, or extension; the other is called *Diorthosis*, or tis called reposition of the bones, into their owne places; extension is either equall, or unequall, equall is that wherein the member is equally extended from either side of the broken bone, but that is said to be unequall, when the member is more extended on one side; that side ought to be more extended, wherein the broken bone is contained but no man can rightly performe those operations, unlesse he knoweth the nature, and differences of bones and fractures, for when a muscle is drawn back to its head, and so carries with it that part of the member which is joyned to it, first there is need of extending, which the Greekes call *Anritasis*, which ought to be done, as neere as may be, with little or no paine, and that is performed by one worke, or more, and that either with the hands only, or raynes as it were

Extension.

were swathings, or instruments, according as the bone is more or lesse broken.

Diorthosis, or conformation, is a restitution of a broken *Strength-* bone into its place, and a right fitting of the extremities of *ning.* the broken bone, which is performed if after the member be so much extended, that in putting it back the bones cannot touch one another, the Chyrurgeon is to take hold of the member on both sides, with both his hands, and that which is slid into the right part he should thrust into the left, and the contrary, and what ever hangs out of the bones, he should put back into their owne cavities, untill the extremities of the bone are rightly united, and thrust back, into their places, and the member hath recovered its naturall figure.

But if the extremities of the broken bones, breake through *The cure of* the skin, that they hang out, some convenient instrument of *a fracture* Iron, like a barr, is to be used, to force the broken bones into *with a* their place, but if any parricle of a bone so hang out, that it *wound.* cannot easily be put into its place, it is to be cut off with a sharp paire of cissars, or to be filed off with a file, that it may be shorter, neither let it any more hinder the reposi^{tion}: in such a fracture which is joyned with a wound, if any thing stick betwixt the broken bones, which may impede their glutination, whither particles of a bone, or any thing whatsoever, it is to be taken away without violence; when the bones are rightly placed, the extension is to be remitted by degrees, and with convenient binding and placing of the member, and so to be performed, that the bones united and rightly framed may remaine so.

Yet before swathing-bands are put about a broken member some medicines used to be applyed, to hinder the Flux of humours and inflammation, and to farther the generation of brawny flesh, of which, read the Institutions.

The deligation is to be performed, neither too straight *Manner of* nor too loose, with two swathing-bands, whereof the first is *swathing* to begin above the fracture, and to be bound about it, twice *or deliga* or thrice upwards; the other, being longer by halfe, is to be *tion.* rolled about the contrary way, and is to be put on first upon the fracture, and beginning from thence to be rolled about something downward and againe is to be carried above the fracture, and lastly towards the

Of restoring of bones that are out of joynt.

the superior sound part, but in fractures of great bones, that the deligation may be the more stable, and the bones firmly put into their places, may remaine so, Bolsters or crosse-folded cloathes, and splentors, and Plates, are also to be used, moreover the member is rightly to be placed, gently, equally, and inclining upwards, so that the part may obtaine its naturall position, to which purpose, both a hollow Pipe, and Cane, or Plate, or such like, are sometimes to be applyed, the deligation being well performed, is to be loosned the third day, the fracture to be cleansed, and bound up againe, and this is to be continued untill hard flesh be grown, and the fracture healed, but if a fracture be joynted with a wound, after the extension is abated, and there is convenient conformation of the broken bones, the lips of the wound are to be drawne together, and being drawn, to be kept together, yet so that the swath-bands be not too straight bound, which ought to be flacker, and to be extended on both sides, beyond the lips of the wound, least paine should be stirred up, but in the following deligations, a hole, or vent, may be cut above the wound, both through the Plaisters, and swathing bands, that it may be perfectly cured.

CHAP IV.

Of restoring of bones that are out of joynt.

Synthesis which puts bones slid out of their places into them again, calleth is Arthrembla, this is performed three wayes, either with the hands of the Chyrurgeon which is convenient in tender bodyes, and when the hurt is newly done, or with certaine common instruments, as by the helpe of raynes, swathing-bands, *Laqueorum, scalarum, sedilium, forium bifidarum*, and it is convenient for children, Women, and those whose muscles are grown stronger, and luxations have been longer, or by instruments, certaine Engines, peculiar for that purpose, is performed, and are used for strong bodyes, and old luxations, and altogether on those, which cannot be restored by the two former wayes, of such Engines, you may see *Hippocrates*, of joynts and fractures, and *Oribasius* of Engines intituled, *de machinis*.

But after what manner soever, restitution of a bone out of joynt is performed, foure operations are necessary to doe, it

first Extension, Reposition, Deligation, and Confirmation, *What things are required for the setting of bones.*
and Collocation, of the members so replaced.

Extension, is made, either by the hands of the Chyrurgeon, or his Servants; or by raynes, bindings and swathings, or Instruments, and Engines, as is said.

Extension being made, the bone which is slid out of its place is to be put into it againe, which worke the Greekes call, *Moclia*, and *Mocleuses*, namely a compulsion of a bone that is out of joynt and extended into its owne place, which being slid from or out of the end, in the same way which the joynt slid, it ought to be put back to that place out of which it slid, whereof there are so many wayes as there are joynts.

The joynt being restored, the intention is to be remitted and the member afterwards, so to be strengthened that the joynt cannot againe goe out of its place, which for the most part is performed in the same manner as in fractures. *Reposition.*

Lastly the member is to be placed gently, and equally, and to be kept unmoved till the fourth or seventh day. *Deligation.*

Collocation.

CHAP. V.

Of the putting together of the soft and fleshy parts.

The fleshy and soft parts, disjoynd, preternaturally are *Setting of soft parts.*
joynd together, either without any division of them, or by solution of their continuity, that putting together, which is performed without any division of parts is various, and of different parts, and first of all sometimes certaine parts being slid out of their places, come to be put into their naturall place againe, such are the guts, and paunch, which sometimes by the wounds of the paunch come out, sometimes the Rim of the belly being loosned, or broken, falls into the groine, and cods, or breake out at the navell, hitherto belongs the wombe, and gut Rectum, which sometimes also fall out of their places, and therefore all these are to be put into their places againe, but how the restering of each singular part ought to be performed, is spoken in our Institutions, and 3 d. Book of praxis.

Moreover, for what belongs to the manner of joyning together, wounded parts, without division, the lips of the wounds, since they are disjoynd, are to be brought and joynd together, and when they are brought, being joynd are to be kept together, which may be done too wayes without solution of continuity, either *wounds, how set.*
by

Swathing. by swathing, or gluing, or a suture with the Glue, and indeed as for swathing that is convenient being made for Wounds according to the length of the member, and not very deep, and when we hope by fasciation only, the lips may be joynd. A suture is not rashly to be appointed, and indeed if the wound be long, narrow, and straight, swathing is better, that is, deligation of three fingers breadth is enough. The manner of fasciation may be seen in the Institutions.

A suture by glue. But when in-transverse and long wounds, fasciation alone is not sufficient to draw and continue the lips of the wound together, there is need of a suture; but when in wounds of the face prickings cause deformities, and in other long and great wounds before the glutination of the wound the sutures are broke; tender bodies also cannot indure a seam which is made with a needle, a certain lutation or suture is invented by glue, by which without any division of the wounded part, or stitching with a needle, the lips of the wound are drawn together. Provision to perform this may be seen in the Institutions.

A suture by a needle. But that conjunction of wounded parts which is made by solution of continuity is performed with a suture and pipes to the suture, three Instruments are to be used, the Needle must be triangular and thredstrong, least it should be broken, not too hard, but softned with Wax, equall, or even, the Pipe ought to be Gold mixt with Copper, or Silver, with a hole in the end that the Needle may passe through the hole, and the Pipe holding it, and being put to it, it may stay the lips of the wound, least whilst the needle is put to it it should be stirred, neither should it be lengthned to the protraction of the thred and needle; the manner of the suture is two-fold, the one is that which is performed in the same manner as Skinners or Furriers use to sew their skins, being fitted for wounded guts; the other is thus, in the middle of the wound, with a Needle drawing a double thred, the lips of the wound are tied, and a knot being made, the thred a little above the knot, is to be cut off; Moreover in the middle space on both sides another hole is to be pricked with a double thred, and a knot being made in the like manner, tis to be cut off, and that is to be continued till the lips of the wound be rightly sowne together, and brought to mutuall contract.

Fibula.

There is mention also amongst the ancients of a Pipe, but

but what it was for the most part is unknown at this day, since it is incredible that those iron hooks should be fixed to the skin, since that would have caused intollerable pain, the opinion of *Gabriel Fallopius* is more probable, who teacheth that pipe to be that suture newly described, which is called *Intercisa*, and at this day is most frequent, which is drawn with a needle drawing a double thred through both the lips of the wound, and above the wound, with three involutions, both the ends of the thred are tied together and knit into a knot. But the word *Fibula* signifies every Instrument that joyneth things together. And thus much of the Chyrurgicall operation which is of putting or joyn-
ing together.

CHAP. VI.

Of correcting of Bones that are repress or set awry.

THe other Chyrurgicall operation is *Diorthosis*, or the putting right, a correcting of bones put awry, or written; The Skull if it be deprest, which often happens in Children, is to be reduced into its naturall condition and place, either with Cupping-glasses, the haire being shaved with a great flame put to them, and the mouth and nostrils being shut, the Patient by expiration, together with a violent striving, by putting *Cucurbita Cornea*, out of which the mouth and nostrills of the sick being shut, a strong man may suck up aire, or with some Plaister sticking very fast to the skin, which is to be applied, and when it cleaves very fast then to twich it up, or with an elevating Augur, or trepan, or by perforation and elevation of the Skull.

The bones of the nose being broken or bruised, are to be drawn back by the finger, or a Specillum put into the nostrill, and without are to be directed and put into frame by the hand, and afterwards a tent is to be put into the hollow of the nose or nostrill. *Of the nose*

A member being contracted first it is to be softned, afterwards either gently to be bowed, or with an Instrument of contract fit for that purpose it is tenderly and by degrees to be drawn in, or stretched out. *Directing of contracted members.*

*Direction
of crooked
Legs or
Armes.*

The Legs or Armes in Infants being awry, the best way of directing them is, that they may be reduced by handling and directing them gently with the hands and by degrees, and with swathings drawing them the contrary way to that which they are in, and by rolling the swath-band by little and little they may be reduced into their naturall and due figure, but if the swathing be not strong enough, and that the child desire to goe, little bootes like bagging shooes in that manner as *Parvus* hath described them in his twentyeth book of Chyrurgery, Chap. the eleventh, are to be fitted to his Legs; and thus much of the second operation of Chyrurgery.

CHAP. VII.

Of disjunction in generall, and of dissection of soft parts.

*The kindes
of division.*

THe third operation of Chyrurgery is disjunction, which divides those parts of the body which are joynd and continued together, of the first of these there are two kindes, Section, and Ustion; Section, some is of soft some of hard parts; and of soft parts according as it is made by cutting or pricking, in particular it is called, Tome, or cutting, or *Paracentesis*, pricking; of the bones and hard parts there is perforation or boaring with a wimble, shaving, filing, sawing; lastly Ustion is common both to hard and soft parts, all which operations are now to be explained in their severall kindes.

*Opening of
a veine.*

In cutting soft parts, first comes the opening of a veine, which is appointed for emission of blood out of the body, in divers parts of the body, the provision and convenient preparations for that purpose may be seen in the institutions.

*Opening of
imposthumes.*

Moreover since that sometimes the matter in tumours should be changed into quitture, nor doth an imposthumation, allwayes breake of its owne accord, and it is to be doubted least the purulent matter retained should offend the neighbouring parts, and bring rottenesse to the bones, sometimes also there is venemous matter, and affects the way to the internall parts, or an imposthumation or Ulcer neere a principle part, or joynts, may stop the fundament, oftentimes an Ulcer or imposthume full of matteris to be opened with an Instrument, or by which opening ought to be so performed

as that the adjacent veines, arteries and nerves may not be offended; the Sanies either is included in a bladder, or else hath no bladder; if the quittance be not included in a bladder; let that part be wounded that the tumour may come to its height, and the skin is very thin, yet as neere as may be doe it in a declining part; the Instruments fit for cutting are, variety of Incision knives, according to the variety of figures, and necessity of their use, the bignesse of the cut is to answer to the quantity and the quality of the matter to be emitted, an incision being made, and the matter in some part evacuated, least the wound before the whole matter be let out should close up againe, tents are to be put in, nay if neede be, the wound must be dilated, and the part so bound up and placed, that the quittance may conveniently flow forth, but if the purulent matter be inclosed in a bag, the tumour according to its longitude if it be lesse or cut athwart like, the letter X; if it be greater and the whole bagg with the matter in it, tis to be taken out and nothing of it to be left behind.

Thirdly Fistulaes also are often to be cut, which is done *The cutting* with a fit Instrument, which therefore the Greeks call *Syrin-* *of a fistula.* *gotomon* that is a Pipe cutter, the manner of cutting may be seen in the Institutions.

Fourthly parts also are sometimes to be separated which *Separations* are joyned together from ones birth, after ones birth, where- *of parts* unto belongs the cutting of the tongue when it is tyed, *of that are* cares when they are shut, of the fundament when it is joyned to- *gether pre-* closed, the opening of the private part of a female, the free- *ternatural-* ing of the prepuce when tis straightned, a separation of it *ly.* from the glans, the opening of the top of the yard, or glans *ly.* when tis closed, separation of fingers growing together; the opening of the eye lids when they grow together, all which may be performed by cutting by a skiltull Chyrurgeon, and how it shall be performed, shall be explained in the Institutions.

Fifthly hitherto belongs scarrification, which is performed *Scarifica-* with an incision knife, or lance; and so that the skin may *tion.* be opened only with gentle cuttings, or to wound it deeper, and that the more ready evacuation of blood may follow; cupping glasses for the most part with a burning flame are to be applyed, which may attract the humours more potently; yet sometimes scarrification is appointed without cupping glasses, such as that of Mallets which was in use amongst

the Ancients, and the scarrification, in use with the Egyptians this day.

Cutting of
Vessells.

Sixtly, *Angio'ogia* so called in particular, which is a cutting of the vessells in the forehead, in the Megrim, and an inveterate Ophthalmy, and when there is a perpetuall weeping of the eyes, whereby a vessell, freed from the neighboring parts, is tyed with a threed on both sides, and afterwards in the middle betwixt the two threeds it is to be cut *transverse* according as the manner of operations is delivered in the Institutions.

Cutting of
the varices.

To the cutting of vessells belong the cutting of the *varices*, which was done by the Ancients, almost in the same manner as the cutting of the other vessells lastly propounded, as you may see out of *Celsus* the 18. Book Chap. the 13. *Paulus Aegineta* the 6. Book the 82. Chap. *Hier. Fabricius* hath another manner of Chyrurgicall operation, Tit. of Chyrurgery of the vessells called *varices*, namely such a one, the Instrument *Volcella* (which is to pluck up haire by the Roote) bowed or lifted up first with a hooke, he pricketh the varices in many places, afterwards he puts to it a binding medicine representing the figure of a candle, according to length of it, and upon this he puts the barke of a hollow reed or Cane,

Cutting of
an Aneurisme.

To *Angiologie* also may be referred that cutting of an *Aneurisme*, out of *Paulus Aegineta*, 6. Book, 37. Chap. and 64. Chap. which may there be seen, which neverthelesse is scarce to be attempted unlesse the Aneurisme be very small, and in an ignoble part, not having any great vessells, since without great danger it cannot be performed.

Paracentesis.

Seaventhly, to Separation or Section, belongs *Paracentesis* by which word every pricking in generall was denoted by the Ancients, and tis performed in divers parts, and that either with a needle or with the point of a knife, this operation is famous and Ancient, in the paunch, to evacuate water of those that have dropsies, which retaines the name of the generall name, the manner and reason of performing whereof in the Institutions and in the 3. Booke of Practise part the 6 th. sec. the 2 d. Chap. 3. is delivered; in water of the head the same pricking is sometimes used in the skin of the head, and in the cods filled with water.

Couching
of Cataracts.

Hereunto belongs the cure of a Cataract by pricking which is so to be performed as *Celsus* also describes in his 7. Book and 7. Chap.

As also the cutting of the wind-pipe, which is called *Laryngo-
gosome*, which when it is necessary is to be performed with *some*
a launce, (the other parts being removed, under the Larynx
betwixt the third and fourth ring of the Wind-pipe, the
manner of operation is propounded in the Institutions.

As also the cutting of the brest, in an Empyema, or an
Ulcer or imposthume, in the cavity of the brest, which is
performed on one side of the brest, betwixt the fifth, and sixth
rib, and how it also is to be performed is explained in the
Institutions. *An incision of the brest.*

Moreover a Seton, or using of a Seton Needle by which
operation the neck is prickt, and the wound kept open, that
peccant humours may be evacuated by it, of which operation
you may also read in the Institutions. *Applying of a Seton.*

To prickings, we have annexed leaches, or the applica-
tion of leaches, which being chosen, prepared, and cleansed,
are applyed with a rag, or a reed; by their biting they open
the veines and draw out blood, and indeed from the sub-
cutaneous parts only, and capillary veines, if they are apply-
ed only to the skin, but if they are applyed to any great ves-
sell, they draw blood from the innermost parts of the whole
body, and therefore they are applyed according as there is
need of this or that evacuation, and are applyed to children
when we dare not use the launce to open veines. To the
veines of their armes when they are affected with any grei-
vous disease that requires evacuation of blood. *Leaches.*

CHAP VIII.

Of Section of Bones.

But that cutting which is performed in hard parts of
bones is fourefold, according to the various manner of
seperation, and variety of instruments, namely shaving, filing,
perforation, and sawing.

First shaving is a plaining and a making smooth of the
inequality of bones with an incision knife shaving them, or
a detraction and taking away of the filth clinging fast to the
bones, and it is performed with files, in magnitude and
figure, according to the severall natures of diseases and of
bones; either straight, such as are hammers which they use
in driving, or bent in the end such as they use in drawing,
sometimes they use both a file, and a Hammer wrapt in a
clout, *Shaving.*

Filing.

Secondly filing, or wearing away of bones with a file, is usefull in the teeth when they hang out contrary to nature.

Perforating.

The third is perforation whereby we cut the part out of the middle of a bone, either with a Trepan or with a file, or together with a Trepan and a file; the perforation which is made by a Trepan, the Greekes call, *Trupestis*, a wimble they call *Trupanon*, and *Trupane*; but a *Trepan* is either straight and sharpe, and in a hollowed circle, which is called a wimble in particular, or it is hollow which is called, *Modiolus*; *Trepan* is like to common wimbles which Carpenters use, and tis twofold, the one is that which answers plainly to the wimbles of Carpenters; the other, which neere the point at such a distance as the thicknesse of the skull is of, hath a knot without, or a circle fitted, which whilst the Trepan is within the skull, hinders it that it cannot goe deeper then is fit, which kind of Trepan, because it cannot goe deeper, the Greekes call *Trupanon*, or *Abapiston*; *Modiolus* the Greekes call, *Cointhion*, and *Coinichis*, and *Prion Cavattos*, tis a hollow Instrument of Iron, round and long like a Pillar, at the bottome of the mouth like a saw, or full of teeth, and straight Trepan, which are called *Peruteia*, are opposed to it, which are turned about with a handle, which if it have a nail (or pin) in the middle tis called male, and if it have not is called female, but the perforation or boaring is performed principally when the skull is broke, or when some matter, or blood is contained within the skull, the manner of which operation may be seen in the Institutions, sometimes also in rotten bones when the rottenesse goes deep.

Sawing,

Lastly by sawing, or cutting with a saw, bones are divided, when any dead part, the flesh being first cut away with a knife to the bone, and the bone is laid open, or when some broken bone hangs out, and cannot be put back into it place, or when any chinke is to be filled up, or when the table of the skull is to be taken away.

CHAP. IX.

Of Burning.

THe last kind of separation remains, which is burning, *Burning.* which is to be used when diseases cannot be taken away by medicines, nor cutting; burning is performed two wayes, *Burning* either by those things which actually have in them fire, and *twofold.* a fiery quality as Iron, or other fiery Instruments made of Gold, Silver, Brasse, which are called actual Cauteries, or with burning medicines, which are called potentiall Cauteries.

There are some differences of actual Cauteries, especially, *An actual* in respect of matter and figure, and differing also some other *Cautery.* wayes; as for matter, Metallick Instruments prepared of Iron, Brasse, Silver, Gold, are in use this day, Iron burnes potently, Brasse and Gold not so violently, the figures of Cauteries are various, which are described every where, sometimes they are fiered more, sometimes lesse, sometimes impressed deeper, sometimes superficially only, the manner of burning is to be seen in the Institutions,

Another manner of burning is that which is performed by potentiall Cauteries, what Caustick medicines are, and Escaroticks, is spoken above, part the 1. sect the 1. Chap the 10 th. and in what manner Cauteries are to be prepared shall be shewne in the end of this Book. *Potentiall.*

Fontanells, and Issues are made by actual and potentiall *Issues.* Cauteries, namely little Ulcers, prepared to evacuate, draw back, and drive humours through them, but in what parts, and how these Fontanells are to be made shall be shewn in the Institutions.

To this third operation may be referred that, whereby *Cupping* something is drawn in the body, or out of the body, by cup- *glasses.* ping glasses, but a cupping glass is a vessell with a belly which is fastned to the body to draw, all whose strength of acting comes by reason of vacuity, but what the differences of them are, the manner of applying of them, and their use, shall be shewn in the Institutions: and thus much of the third Chyrurgical operation.

CHAP. X.

Of drawing of things out of the body which were sent into the body from without

How many ways things may be drawn out of the body.

Drawing out of things thrust into the body.

A Dart how many ways it may be drawne out.

THe fourth Chyrurgicall operation is, *Exairesis*, or extraction of hurtfull and unprofitable things out of the body; but things which are to be taken away, are either sent from without into the body, or begotten in the body.

First for what belongs to the extraction of things sent from without into the body, they are twofold; first all those things which are sent to wound the body, as darts of all sorts, and Bullets shot out of Guns; Moreover certaine externall things which come into the Chops and Throate, Eares, Nostrills, and Eyes, and stick in them,

But Darts are taken out two wayes, either by extraction, or impulsio, that is, either that way which they came in, or that way which it aimed to goe out at; tis drawne out by the part which it came in at, either without any launcing, or with launcing; for if the dart pierced not deep, if it hath not passed through great vessells, or nervous parts; and and meetes with a bone, veines, arteries, or nerves, out of the region whither it tended, and if there be no feare of any great tearing, it may be drawn back that way, which it entered into the body, and that without cutting; but if there be danger, and that it be to be feared least that the body should be lacerated, if the dart should be drawn out the same way that it went in at, the wound is to be dilated either by cutting, or without launcing, namely with that Instrument, which *Celsus* in his 7. Booke and 15. Chap. calls *Hypstoides*, or Swans, or *torques beake*, or other dilating Instruments whereby the Dart may the easier be drawn back. Tis drawn out by the hand, if it may be, when it is apparent; and is fastned only in flesh, or with a *Volicella*, when it sticks so deep that it cannot be taken hold of by the hands, or other Instruments which the Greekes, *Boloulca*, that is certaine Instruments to pull out Darts, of which kind are long Tongs, Tongs with teeth, straigh, a little bent inward; but the outmost part broad and round, to which the latter Chyrurgeons have given severall names from their figure, and call them Crowes, Storkes, Ducks, Geese bill, the figures whereof are extant, in *Amb. Parey* in the 10 th. Booke 18 th. Chap. but

if the point of the Dart, hath pierced into the member more then halfe through, and the place by which the dart is to be drawn through, be more, then it hath hitherto passed, and neither bone, Nerve, Veines, nor Arteries hinder it, tis more convenient, to drive the Dart thither whither it tended; dissection being made in that part, and to draw it out by making of a new wound; but yet if the Dart be too broad tis not expedient to draw it out through another part; least that we add to that great wound, another greater one.

The reason of drawing out Musket bullets in many things is agreeable to the extraction of Darts, for three things are required to extraction, the first that the way may be dilated with an Instrument; secondly that the bullet be taken hold of; the Instrument takes the bullet, either as a paire of Tongs, or the point of the Instrument enters into the bullet, incompasseth it with its cavity, or it takes hold with the end that is toothed like a saw; thirdly a bullet being taken hold of with an Instrument, is drawne out by the hand of a Chyrurgeon with the Instrument, of which more in the Institutions.

The way of taking out of Musket bullets.

Moreover sometimes things happen externally to the Chops, Throate, Eares, and happen into the Nostrills, and Eyes, and use to stick in them, each of which require severall ways of drawing forth; if a little fish bone, or the back bone of a fish stick in the Throate, and that it be in sight when the mouth is opened, tis to be taken out with a *Volsella*, and that either straight, or a little bowed towards the end, and convenient to take out the bones from the Throate; but if it should descend deeper into the Throate, or having used a *Speculum* of the mouth to open it wide, if it doth not appeare, a vomit is to be stirred up with oyle of sweet Almonds, or of Olives, or with a quill, or putting downe ones finger.

Things that stick in the Chops.

A Worme sticking in the Eares, first of all it is to be drawn out a live, and that it may be the better performed, and the worme may the easier be taken, it is to be enticed outward, by injecting sweete things into the Eares, and applying of them outwardly, but if it cannot be enticed, or drawn out a live, it is to be killed with those things that are bitter, and by a peculiar propriety and force, are destructive to wormes, but being killed, tis drawn out by powring in water or wine and Oyle luke warme, and putting in of tents made of Cotton, wet with Hony, Turpentine, or some glutinous gum, wherewith

A worme in the eares how to be taken out.

wherewith twisting it up and down in the Eare; the worne is drawn forth, the sick leaning on that side the Eare is affected.

Other things which may be put, or slid into the eare are either hard, or liquid; if the things are hard, warme Oyle is to be powred in that they may be dissolved, if it be possible, or certainly the passages of the Eare may become slippery; but if the thing which falls in be of that nature, that it will swell with moistning, as Pease, Beanes, &c. all moist things are to be avoided, afterwards sneezing is to be provoaked, the Nostrills, and the mouth being shut, that the spirits may be forced to goe out through the Eares, and so that together to be thrust out which was slid into the Eares, but if the thing cannot be extruded in this manner, tis to be drawn out with a convenient Instrument, yet very warily, least either that which is to be taken forth should be thrust deeper, or the membrane called the drumme of the Eare should be broken.

If that which is to be taken out be liquid, the affected should hop upon his foote on the contrary side, bending his head downward on the afflicted side, that the moisture may come forth, which if it doth not come to passe, sneezing is to be occasioned, or a little dry sponge is to be put into the Eare, so that the extremity of the Channell which goes into the Eare be first stoppt and fortified with Cotton, that whilst the spirit is drawn, there be no roome granted for the letting in of Aire in any wayes.

If any thing come into the Nostrills sticks in them, there is another way of drawing of it out, then that of drawing out those things that stick in the Eares.

If sand or dust stick in the Eyes, the stone found in the maw of a Swallow, Crabs Eyes, Pearles, if they are cast into the Eyes, cleanse them, but if any greater thing be fixed in the Eye, tis to be drawn out with a fine linnen cloath, wet in pure fountaine water, or with a sponge tyed to a soft quill, but if it be greater, tis to be taken out with a little *Volcelle*, or unlesse extraction in this manner doth succeed, *Andones*, or medicines taking away paine, being applyed and other convenient medicines, the businesse is to be committed to nature.

CHAP. XI.

Of drawing out of things generated in the body according to nature, but retained in the body beyond the limits of nature.

After these, amongst those things which are to be drawn out of the body, somethings are found which indeed are generated in the body according to nature, yet are detayned there contrary to nature, and higher to belongs first of all, extraction, or excision of a living or dead child out of the body, moreover the drawing out of Urine detained preternaturally.

First of all, if the young can neither be brought out by the helpe of the mother, nor by any other, there is no other helpe remains then cutting, whereby the living child is taken out, and those which are brought forth on this manner, are called *Cesares*, the young is cut out when the mother is living or dead, but of this *Cesarean* bringing forth, you may see a peculiar Book of *Francis Roussel*, but as for the extraction of a dead child by what means that may be rightly performed *Celsus* teacheth in his 7. Booke, 29. Chap. 23. *Aetius Tetrach* Book 4. Ser. 4. Chap. and *Hieron Fabricius ab Aqua P.* of Chyrurgicall operations, *Amb. Parey* describes fit Instruments for this operation in his 23 d. Book Chap. 26. *Job. Andr.* a *Cruce*.

Next to these is the drawing out of a Mole and the same reason for the most part is in drawing out them as in the extraction of a dead child.

Lastly hitherto belongs the drawing out of Urine by Chyrurgicall operation, but that operation is performed by Silver, or brazen Pipes, which they call *Catheters*, which that they may be fitted for every body greater or lesse, three of them are to be prepared for men, and too for women in a readinesse, the manner of operation is in the *In-* *stitutions*.

Of taking out a lived child.

Of a dead.

Extraction of a Mola

Drawing out urine with a Catheter.

CHAP. XII.

Of taking away the corrupt parts of the body.

Cutting of dead flesh. Sometimes the parts of the body are so corrupted that there is no hope of curing of them, which as being unprofitable and hurtfull, and such as may infect the parts next to them, and pollute them, are to be taken away; whatever therefore is corrupted, is to be cut off, but the manner of cutting off is various according to the variety of the parts that are hurt, and the place where they are, and nature of the disease it selfe, and therefore the rightest manner of taking away such from the body is known by particular operations, yet oftentimes in fistula's and other malignant Ulcers, cutting alone is not sufficient as being that which cannot take away the smallest *fibriilas* and particles, but after cutting there is need of an actuall or potentiall Cauterie that the remainders may be taken away, nay sometimes without cutting, by Cauteries only things so corrupted are taken away.

Amputation of a cancer. Hereunto belongs the Amputation of parts corrupted with a Cancer, also a cutting off of the Uvula, corrupted either by inflammation or by *Morbus Gallicus*, the cutting off also of the putred, or corrupted yard, as also of the corrupted wombe.

Of a Uvula, yard, wombe. Corrupted bones are taken away by filing, shaving with an incision knife, or with a wimble, of which it is spoken before, as also with divers kinds of Tongs, whereby the corrupted bones of the fingers, and broken bones hanging out may be taken away.

Teeth. Hitherto belongs the plucking out of teeth, which is performed, the Teeth being first loosned from the gums, and is done with severall Instruments, whose names are taken from the figure, and similitude for the most part, which they have with the beakes of living Creatures, which *Hieron Fabricius*, reckons up, the figures of them are extant in *Amb. Parey*. the 16 th. Book Chap. the 17 th. and *Job. Andr.* a *Cruce*.

Amputation of Limbs. Lastly it sometimes happens that in mans body certaine parts are corrupted with mortification & they so dy that there is no hope of recovery of life, when there is one indication that

that which is corrupted is to be cut off, least the sound also should be affected, which operation the Greekes call *Acroteriasmos*, or a tearing off the dead flesh, but in what place and when that Amputation is to be made cannot be delivered in a *compendium*, see the Institutions.

CHAP. XIII.

Of freeing and taking away things generated in the body contrary to nature.

THE last kind remains of taking away things out of the *Things* body, namely those which are generated in the body *con- preternatu-* trary to nature, but there is no little difference amongst those *rall begot-* things, for some of them are borne together with the parts of *ten in the* our body and are adhere tenaciously, as Warts, Warts great *body how* above and small below, swellings and inflammations in the *many-fold* fundament, the top of the yard, the way to the wombe, cal- lous flesh, Cornes, Knots, the Kings Evill, excrescencies of flesh in the Nostrills, and *Polypus*, swelling in the Chops, small tumours in the Urinary passage, Excrescencies on the eye lids, fleshy ruptures, or else they are contained in some part of the body, as water in an aqueous rupture in the paunch, stones or gravell in the reines, bladder or yard.

The cutting of warts is performed either by binding, *Warts.* cuttings, or burning; Warts hanging downe are taken away either with a silken threed, or Horse haire, or they are to be tyed with some other strong threed every day harder and harder untill they come off; cutting is performed with an incision knife, like a Mirtle leave, or with a launce; burning is performed with an hot Iron, or with green wood that is burnt; but how severally the tumour called *Thymus* in the fundament, *glans* or *prepuce*, are to be taken away is shewn in the Institutions, and in the 3 d. Book of practice.

Sometimes a little tumour ariseth in the Urinary passage *Caruncles* from an Ulcer, and is so increased sometimes that it stops *extirpated* the urine, this is to be taken away by the helpe of a Chyrur- *out the* geon, and fit medicines, but least that other parts should be *Urinary* eroded, medicines are to be ejected through a silver Pipe, to *passages.* the tumour, or else it is to be incorporated and mixt with the top and head of a wax Candle, and thrust into the place affected, or a little Cane with Lint and white wax put into it, and bedaubed with a fit medicine, being hollow that the

Urine

urine may passe through it. This isto be put into the urinary passages.

Taking away a Polypus. Polypus if it admits of cure, it is to be cut off with a sharpe Iron Instrument made after the manner of a *Spatula*, being put into the Nostrills, of which operation see the Institutions, and the first Book of Practice.

Epuli Fleshy excrescencies in the Chops called, *Epuli*, as also **a nail in the eye.** *Encanthis*, or excrescencies in the greater corner of the Eye, and the nail of the Eye, unless they can be taken away with medicines, are to be cut off, as also peices of flesh here and there growing in the skin of the body, and excrescencies which represent a kind of soft flesh, which are like the rootes of Mushrooms, and grow like them, and therefore are called Mushrooms, knots also, Kings evill, Kernells, swellings in the Throate, and swellings in the flesh, or fleshy ruptures if they cannot be eradicated by Medicines, must be taken away by cutting.

A watry rupture. A watry rupture, or water collected into the cods cannot always be taken away by discussing medicines, the cods are to be opened, and the water to be let out through the wound.

Stone of the bladder. Lastly the stone of the bladder, since it is seldome diminished by medicines, the bladder being cut, tis to be taken out, and sometimes a stone sticking in the urinary passage is to be drawn out, but in what manner those cuttings, and operations all of them ought to be performed, is spoken in the Institutions, and may there be seen, nor can the wayes of those operations be reduced into a *compendium*, but all things which are there spoken in the operations are diligently to be observed, and thus much of the fourth Chyrurgicall operation.

CHAP XIII.

Of the restitution of parts that are lost, or of the Chyrurgery of imperfect parts.

Chyrurgery of such as are maimed.

THere remains the last Chyrurgicall operation, which is required in the cure of such as are imperfect and maimed, namely when the extremities of the Nose or Eares or Lips are shortned, and these parts maimed, but although parts that are lost are counterfeited by Instruments fained made and painted, out of severall matter representing the similitude

similitude of the part lost, yet this is only a counterfeite
 and palliating cure, but when it cannot be restored by a
 new generation of the deficient part, tis to be restored by the
 flesh of another member being brought and united to it, yet
 that operation is not to be tryed on every body, but first it is
 to be observed what kind of body it is which is to be cured,
 for in old men or in a body which hath an ill habit, wherein
 wounds are difficult to be cured, this way of cure is not to
 be easily attempted. *Casper Taliacotius* in his Book of maim-
 ed Chyrurgery, by inserting, accurately and largely describes
 the manner of this operation, the sum of this operation is
 this; he makes his transferring, or bringing into the Nose,
 and Lips, from the Shoulder; but to cure unperfect Eares
 he takes away from the Region behind the Eares, namely
 he appoints a convenient cutting in those parts, and the
 maimed parts being first cleansed, he commits and joynes the
 skin of that part which is cut off with the maimed part, and
 that they may be kept joyned together untill they grow
 together, he binds them with swathing bands. And indeed
 he puts that part of the Nose or Lips which is maimed, into
 the wound made in the Shoulder, with the head tyed to the
 Arme, as it were to a prop, that it is immoveable, and fixt so
 that it can be moved no way. And in this manner when it
 hath stuck so long, untill the flesh of both parts be united
 and growes together, he cutteth off againe from the Nose
 or Lip, the tract, or that which was brought from another
 place and is here grown, then he makes conveniently, and
 frames that flesh so cut off from the Arme into a forme of a
 Nose or Lip.



THE
FIFTH BOOK,
PART. II.

Of the Method of healing.

SECT. I.

Of shewing how to preserve health.

CHAP. I.

Of the Method of healing and of indications in general.

But it is not sufficient to know the Instruments for the recovery of health, and those things which are profitable for the curing of a disease, but tis necessary to understand how and in what manner every thing is to be used, or to know the Method of healing, and restoring of lost health, the next thing therefore is that we may shew the Method of healing.

Capivaccius defines the Method of healing to be an art wherein by indications remedies are found out that the lost health of man may be restored, for the Method of healing (as also all Physick) is a certaine principall effectine, hadbit using indications as Instruments to find out remedies for the cure of diseases.

For the end of the Method of healing is twofold. The inter-nall, or proximate, namely invention of fit helps and remedies

The Method of healing.

remedies in every disease, or rather an invention of indications, that shew what will cure. The externall is a restitution of the lost health, or which is the same, an extirpation of a disease.

But an indication which the Greeks call *Endixis* is sometimes taken in generall for every shewing or demonstration, yet properly and in particular, and as it pertaines to the Method of healing, it signifyes the shewing of remedies, and tis a perception of what is healthfull in the Indicant, known by causes, or which is the same, tis a perception, and comprehension of that which is helping, or indicated, with an apprehension of what indicates without experience or any forceable argument from the cause to effect.

But although Indication be the first Instrument of Dogmatick Physick whereby tis discern'd from other Sects, yet hat doth not plainely reject experience, and any forceable arguments, but when diseases and the morbifique causes of nature are not sufficiently known, it flies to experience and example as to a forceable Argument.

Experience is the remembrance and observation which oftentimes is seen to come to passe in the same manner.

An *Analogisme*, or forceable Argument to perswad is an apprehension of what is helpfull from the like, but that similitude is either amongst the affects or remedies, or amongst the members.

As for the Indication, that is really a certaine *Enthymema*, by the force whereof that is found out which is done, for the consequence is so manifest that no man can deny it, and indeed by the force of those propositions which are the foundations of Method, and like Axiomes, and principalls in the Method of healing, and they are these.

Every thing which indicates shews the conservation of its selfe, or the taking of it away.

That which is according to nature is to be preserved, and that which is contrary to nature is to be taken away.

Contraries are cured by their contraryes, likes are preserved by their likes.

But there are various differences of Indications, the first and most generall is taken from things about which they are conversant, which are according to nature, and preternaturall, and it is because an Indication is a perception, and insinuation of the preservation of that which is according to the nature.

nature, of the indicant to be performed by its likes, the other is an apprehension of the taking away of that which is preternaturall, to be performed by the contrary of the indicant.

Genericall Morcover one Indication is genericall, another subalter-
Subalter- nate, another specificall and determinate; genericall which
nate. the common and genericall nature of the indicant supplies,
Specificall. and which simply teacheth how to take away the disease,
 and the cause of a disease, and to preserve strength, but in
 what manner that may be performed, it doth not shew; sub-
 alternate, which the subalternate essence of the Indicant
 shewes, and which indeed determinates the matter more, yet
 not perfectly; specificall which is taken from the specificque
 nature of the Indicant, and describes the whole Indicant
 exactly and its remedie, and is also called the determinate.

Profitable. Thirdly one Indication is profitable, another unprofitable;
 profitable is that, to which some matter answers, or which
 indicates such remedy, the matter whereof may be found out,
 and primarily, and by its selfe can take away the disease;
 but unprofitable is that, which shews such helpe, the matter
 whereof which can take away the disease of the first is not to
 be found.

Unprofitable.
Inartificiall. Fourthly of Indications some are artificiall, others inarti-
 ficiall; inartificiall is that which may be known by others and
 to the vulgar, as well as to the artist, who equally knowes the
 disease is to be taken away, and the strength to be preserved,
 but knowes not a reason how that may be done, such as is
 genericall, and sometimes subalternate; but artificiall Indi-
 cations are those which are not known to all, but only to Ar-
 tists, and require a great deale of skill that they may be
 known, and the Indicant, and helping things are exactly
 described such as are specificall and determinate.

Artificiall.
Curatory, Lastly some Indications are to restore, others to preserve,
preservato- some are vitall, according as they are taken from the resto-
ry, vitall. ring Indicant; the preserving, or vitall.

CHAP II.

Of Indicants.

An Indi- **B**ut an Indicant as it belongs to the Method of healing
cant. **I**s some Agent permanent in mans body, which by its
What. proper

proper nature and essence shews some help, and shews the Indicate which it requires to be directed to its selfe that the lost health of man may be restored.

Whence it appears what are the true notions of a true Indicate, for first it is required that it doe act, or that it be some Agent, Secondly that it be something permanent and present, or adhering to it, Thirdly the Indicate ought to be known to the intellect, Lastly one Indicate, as it is one, indicates also one.

What is required in a true Indicate.

As for the numbers and difference of Indicants, is taken from the end of the Method of healing; which is an invention of remedies, for whereas things preternaturall are to be removed and things according to nature to be kept, the Indicate should be twofold; called removing or curing in generall, or vitall, and since that things contrary to nature are three, a disease, the cause, and the Symptomes, there are properly foure Indicants so called.

The differences of Indicants.

The Indicate which is taken from a disease is called *Cura-tory*, the common name being retained of the method of healing, but that which is taken from the cause besides the containing cause, is called *Preservatory*; that which is taken from the Symptome, is called an urgent Symptome, nor are Symptomes to be excluded from the number of Indicants, since that also is preternaturall, and hath peculiar indicates which of its proper nature it affords, and that different from the indicates which the diseases and causes afford, and remedies may be brought for Symptomes which regard neither the disease, nor the cause of a disease, which is manifest in paine which *Anodynes* shew.

An indicative curatory.

Preservatory.

An urgent Symptome.

The Indicate which is taken from things according to nature is called vitall, but since things according to nature, are health, the causes of health, and the accidents of health, a vitall indicate may also be sub-divided.

A vitall Indicate.

But although some reckon more Indicants, yet they are not new and peculiar Indicants, but belong either to the causes, from whence *Preservatory* indication is taken, or they are not true indicants, but rather manifest true indicants and by accident, and the intervening of another help to discover remedies, such like are temperament, habit of body, age, sex, kind of life, strength, custome, the peculiar nature of every one, the condition of the part beset with the disease, site, condition of Heaven, the time of the yeare, the Country, the place of habitation, the times of the disease, and the force of the remedies. *Z* Namely

Indicants lesse properly so called.

Namely the temperament indicates the preservation of its selfe, of which, a rule; That disease which differs most, from the naturall state, is to be cured with more vehement medicines, that which differs lesse, is to be cured with milder. Age circumscribes the vitall indicant, of this there is a rule also; By how much the more a disease recedes from the nature of the age of the sick, by so much the more violent remedies tis to be cured with; by how much the lesse, by so much the more gentle remedies. There is the same reason of Sex, as there is of age; as for custome, those things that are accustomed along time, although they are worse, doe lesse hurt, then those which are unaccustomed, whence a disease which differs much from custome, is to be opposed with stronger, that which recedes lesse, with weaker medicines. The course of life for the most part requires the same as custome.

Idiosyncrasia shews that choice is to be had in Medicines. It is to be considered about the part affected, first its excellency, whence, a rule; Noble parts are not to be tampered with strong medicines, but ignoble parts will endure them more safely; moreover, its conformation and figure which determinates the Indicant and the Indicate; so a thinner part being moistned over much requires not great dryers, but a thick and compact part requires great dryers, Thirdly situation, of which you must know, that parts which are deepe in the body, are to be cured with stronger medicines, but those that are in the *Superficies* with weaker: Fourthly, the place, of which is to be noted, that if many wayes lye open for the giving of medicines, the next are to be chosen. Aire according to a severall respect, sometimes signifies a *Curatory* Indicant, sometimes a *vitall*. Of the season of a disease *Hippocrates* his Axiome is, In diseases beginning, if any thing seeme proper to be removed, move it; but in diseases that are quiet, tis better to be quiet.

Lastly, medicines sometimes shew a greater, sometimes a lesser regresse from the naturall state.

CHAP III.

Of the concord, and discord of Indicants.

But those Indicants, according as they sometimes agree amongst themselves, and sometimes disagree, they are allotted new names, and are called Indicants, Consentients, contrary Indicants, Prohibents, Permittents, Repugnants, Correpugnants.

Co-indicants or *Consentients* are those, which conduce to the finding out the same remedie, and more of them indicate the same thing, yet others would not have *Co-indicants* to be Indicants, which require the same helpe, but to be that only which in the foregoing chapter we have said to be called not so properly Indicants, namely such as indicate mediately, and by the intervening of another, but the rest which are properly called Indicants, and require the same helpe, which is required by another Indicate, are called by a peculiar name *Consentients*.

Prohibents which you may call contrary Indicants, and Repugnants, they are those which differ from other Indicants and require, and indicate another thing which is adverse to that, which was indicated from another primary Indicate and indeed so that the indication thereof be to be preferred before the other, and that which was indicated from the other is to be omitted.

Those are called Correpugnants, which resist together with othes, and prohibit something.

Lastly, Permittents are those which although they indicate contrary to that which was indicated by another, yet they are overcome by another, as being more powerfull, so that they are compelled to suffer that which the other perswades.

From whence it is manifest that a Physician ought to consider not only what one Indicate perswades, but also what another requires, for if all the Indicants agree, and conspire as it were in one, that is boldly to be performed which is commanded by them, but if there be some disagreement amongst them, tis diligently to be weighed which of them perswades most powerfully, and those things which dissent amongst themselves are to be valued by their strength, dignity, and number. If they are equall according

to power and dignity, and are uneven according to number, those which exceed in number are to be preferred, and that is to be preferred which is indicated by most, but if the Indicants are uneven in strength and dignity, that is rather to be preferred which is commanded by the more noble; or even by one more noble, but if those Indicants are equall both in strength and number, in all things they are to be regarded according to each severall respect.

From whence it is manifest that if the magnitude of Indicants be even, the vitall indications are allwayes to be preferred before the rest, and the greatest respect is allwayes to be had to the strength, but if there be not a parity amongst the Indicants, that is rather to be performed which is indicated from that which most perswades, yet the rest if it may be are not plainely to be neglected.

CHAP. IV.

Of Indicates.

An Indicate,

AN indicate is that which helpeth, and is shewn that it is to be used by the Indicant, it is also named *Sumbheron*, that is, profitable, *Prospberomenon*, that is aid, that which is required, the scope, and tis called the second scope, to distinguish from the first (for so the Indicant is sometimes called) also a remedie in the *Curatory* or restoring part.

An indicate is divided into something to doe as they *Division of* speake, or into the very essence of the remedie and nature *an indicate* of it, and into the use, or right Administration of that matter fit for remedie.

What is to be done is known by its selfe from the nature *what is to* of the true Indicant, whereby is known that the body is well *be done.* or ill affected and consists in two things, and the Physitian propounds to himselfe two things principally to be performed, namely that he may preserve the strength, and drive away those things which are contrary to nature, as a disease, the cause of a disease and Symptomes, from whence and, what is to be done, as the indicants above shew, is divided into *Curatory*, which is a remedie taking away the disease; *Preservatory*, which is a remedie taking away the cause, and vitall, which is helpfull for the preservation of life, to which as is said may be added, mitigation of urgent Symptomes

In these oftentimes contrary indications doe meete, and that which is perswaded by one, is dissuaded by another, for the strength requiers giving of nourishment, contrary to which a disease and the cause doe indicate, for they are increased by the exhibition of aliment, but then that is to be helped, which hath most need.

But in giving contrary things, this principle is to be observed, that the remedie may be given contrary to the indicant, very exactly, but since that which is equally contrary may be given two wayes, either by applying such a thing once which is equivalent to the regression from the naturall state, or oftner by exhibiting contraries, not so directly contrary at severall times, the first kind of remedie is to be used in two sorts of diseases, namely in those which are weake, and in those diseases, which are extreame, dangerous, but the latter way of remedie is to be used in those diseases, which are moderate as it were the middle betwixt the extreame dangerous, and the weake disease.

Moreover that which is to be done, as of indications, so of indicants, one is genericall, another subalternate, another specificall, another appropriated, one is profitable, another unprofitable, one is artificiall, another inartificiall.

But the use and right Administrations of helpe are comprehended under quantity, place and time which aimes Practitioners commonly name how much, when and where to act or doe, yet it is here to be observed that those circumstances and manners of Administrations have place both in the helpe it selfe, and in the matter fit for cure.

As for what belongs to quantity, since that it may be taken both for a definite degree of Administring of a remedie, in which respect quantity, and what is to be performed by a specificque agent are the same, and for the dose, plenty, and bignesse of the matter of cure it selfe: quantity or magnitude of the essence indicating denotes quantity taken in the former sense, for example sake, great heat shews that it must be much cooled. Yet heere is to be considered whether the part be scituated deep in the body, for then a stronger Medicine is to be chosen that it may come to the part affected, with its full force.

When, or the time is shewne from the time or presence, of the Indicant, for then helpe is to be Administred when that which requires it is present.

Order also belongs to time, for that which in simple, is Order of Time, doing.

Time, incomplicate is order, and the presence of a vehement Indicant shews the order of performing, but that is first to be done which is shewn by the Indicant, which over-rules the rest in indicating, and that overcomes the rest in indicating, by which the greatest danger is threatened, and without the removing of which the rest cannot be taken away, and therefore three things being observed, we may proceed in a right order of cure; if first we weigh what urgeth most, and from whence there is feare of greatest danger, for that is first to be opposed, which strives most, or from whence the greatest danger of life is threatned. Secondly, if we consider what regard it hath of the cause, and what of the effect, for the cause is to be taken away before the disease. Thirdly, if we consider what may be in the stead of an impediment, and what before what, and what with what, and what after what may be cured, for whatsoever may be a hindrance in the taking away of a disease, or the cause of a disease are first to be removed, and therefore it is to be considered whether a disease be joyned with a disease, or with the cause of a disease; if a disease be joyned with a disease, it is to be considered whether those diseases agree or not, if they no way agree but are resident in divers parts, you may cure them severally, or together, each by their proper remedie, and tis no matter to which you apply the first remedie, yet regard is to be had of the parts wherein those diseases reside, for those which are in noble parts, or those parts which serve the noble parts, or have consent with them, or which performe any publike duty, they are first to be taken away, but if the diseases have some agreement, and are some way united, it is to be considered whether the cure of the one is beneficiall to the cure of the other, or at least no way hinder the cure of the other, or whether the cure of the one may bring any impediment or hindrance to the cure of the other, or whether they partly consent, and partly dissent; if the cure of the one bring no impediment, or hindrance to the cure of the other, or also if it promotes it, as if a distemper of the liver, and an obstruction thereof concurr, you may cure them severally, or together, and begin with which of them you please; also when a reason thereof may be had from that which urgeth most, if they are not of equall force, but if they are so joyned together that the one is more dangerous then the other, you must begin with that which is most

The other, neither of them is to be cured by its selfe, but the remedies shall so be tempered that they may both be cured, most dangerous, but if the one be no more dangerous then both be cured, Lastly, if they partly agree, and partly disagree, you are to begin with that, the cure whereof hinders not the cure of the other, and without removal whereof the other cannot be taken away; if a disease be joynd to a cause, the cause is first to be removed, but in the removing of causes it is to be observed, that they are to be taken away in that order wherein they follow one another, so that you are to begin first with that which was first in generation and last in dissolution, from thence you are to goe on to the next, and so to goe on forward in order untill we come to our desired end, and that we may briefly comprehend all the matter, the presence of the Indicant which overcomes the other Indicants, and the absence of the prohibiting Indicant, shews when to act, and the order of performing; and moreover it teacheth whether the same remedie be to be repeated often, for so long and so often, it is to be repeated, as the Indicant remains present, and no hindring Indicant happens.

The place, or substance of the Indicant sheweth where, and the place of applying remedies, and the place is to be found out in which, by which, and to which as they commonly use to distinguish.

In all alterations the place in which is principally to be taken notice of, in evacuations the place from which, and by which, if the matter be carried out of one place into another, the place to which *Manner.*

As for what belongs to the place of application of matter fit for remedie, since a contact or touch of the matter and Indicant cannot allwayes be immediate, that is to be chosen by or through which the matter of cure may come to it, that there may be a touch, and action and passion thereof and of the Indicant.

As for Mode, if it regard the remedie it selfe without consideration of matter, it seemes not to differ from quantity, time, and place, but rather to be a Symmetry in measure, and equity to be observed in these; but if it be taken for the forme of a medicine, that is delivered in the doctrine of the composition of medicines. *How the matter medicinall answering to the Indicate may be found*

The helpe or Indicate being found out, that the Physician may be carefull of the matter of cure tis very requisite, out.

fit; which is taken from three beads, Chyrurgery, Ingredients, and Dyet, the same Indicate shews matter, circumscribed and determinate with its conditions, quantity, time and place, for that matter is proper and fit, which can performe that, which the determinate Indicate requires by its rule s, and which may have force, but if there be more Indicates, or matter to be sought which have more faculties, or if these be wanting more shall be compounded together.

But because allwayes as is said, regard is to be had of the strength also, and it is to be weighed, whether by the application of this matter, there may come more good or not, the nature of the whole body, and of the part to which the medicine ought to be applyed is to be considered, in which businessse not only manifest, but also occult qualities ought to be weighed, and tis to be enquired by the Physician whether the sick have any peculiar hatred to any particular thing, which therefore is in no wise to be given in the cure, but in parts affected in their kind, the excellency of a part is to be weighed, the sense, scituation, conformation, for if a part be a principall one or performes a publick Office, no Medicine is to be given which can much hurt it, and disturbe its Office and Duty, for then losse would redound to the whole body, so to the mouth and chops poysons and things ungratefull to the taste and sordid are not to be exhibited, nor stinking things to the Nostrills, nor gnawing and biting things to the eyes, nor those things to be applyed to nervous parts affected, that cause paine.

*Quantity
of matter.*

The same rules which we have now even propounded in the right use of remedies, are to be observed also in choice of matter, the quantity of matter regards the measure, & weight thereof, which was indicated by the Indicant, and is proper for the performing of the Indication; the quantity of the matter is found two wayes, first in what quantity any medicine whatsoever is to be given, and what are those bounds betwixt which if it be given it performes that which itought, and no way hurteth, is manifest by experience only, but in what dose, whether in the highest, lowest, or middle, the medicine be to be given, to this or that sick person, what the quantity is of the matter to be administrd, that is known from the magnitude, or extent of the Indicant, and if the quantity of the Indicant be great, the quantity of the medicine ought to be great likewise, in which matter the condition is to be weighed and the strength of the whole

whole and of every part, for if a part to be altered is more remote in place, a greater quantity of the remedie altering is required, namely that it may come with its full force to the part affected.

But the time of Administring of matter is taken not simply from the presence of the Indicant, but is that when it can helpe, but this time is known, and the knowledge of the matter to be administered, and the nature of the part to which it ought to be Administered, for some things worke presently, others after some space between; the action of of some things continues long, of others it ceaseth presently. The part as it is open, or placed deepe, so it regards the action of the Agent presently; the Administration of the matter is to be prohibited when it doth more hurt then good, but it may doe hurt, when it may preserve any thing contrary to nature which ought to be taken away, or when it may take away that which ought to be preserved.

The place of Administration of matter, is that place where the matter is to be given, may helpe and performe that which tis required to do, for since every action is performed by contact, the Physitian ought allwayes to endeavour that the matter which he useth might penetrate to the place where the Indicant is, and may touch the Indicant, but some parts are Externall, others Internall, in Externall the matter is plaine, for there the matter of the medicine is to be applyed where it is to worke, or where the Indicant is, since the Externall parts may be immediatly touched with the medicines, but medicines cannot be so immediatly applyed to the Internall parts, and therefore when we are willing to evacuate, common wayes are to be chosen, and the next through which the matter may be evacuated; if we are to alter in the interior parts, either manifest wayes are to be found out or occnlt passages, through which the matter that is given may penetrate, and indeed as for manifest passages, the widest and nearest are allwayes to be chosen.

But concerning the measure, or manner shall be shewn hereafter, part the 3 d. Sect. 3 d: where various formes of medicines, both simple and compound shall be proposed. *Mannev.*

CHAP. V.

What Morbifique causes indicate, and peculiarly of purging of a juice in the body which causeth ill digestion.

FOrasmuch as hitherto we have explained the uniuersall Method of healing, now peculiarly we will propound the Method of taking away of Morbifique causes, removing diseases, and preserving strength, and will begin from the causes.

What the differences of causes are, is spoken before in the 2 d. Booke, part the 1. Chap. the 3 d. for of what kind soever they are, whether begotten in the body, or externally, or admitted into the body, and become as it were internall or stirring up, cherishing, and increasing a disease without, they all require remouall.

*Causes
what they
shew.*

But whereas causes offend either in the whole substance, or quantity, or quality, or motion, or place, first, all things which put on the nature, of a cause, as in their whole kind they are contrary to nature, they indicate, an absolute ablation of them out of the body, or as latter Physicians say, an Eradication.

*What
things
shew in
their whole
nature pre-
ternatural.*

But that here we may treat only of humours, severall wayes there are of rooting out and evacuating corrupt humours out of the body, for sometimes they are purged through the paunch, sometimes they are ejected by vomit, sometimes discussed by sweates, sometimes cast out by urine, of which we will now speake in their order, and first of purgation.

*What
shews
when to
purge.*

Purgation taken in the largest sense is indicated from a *Cacoehymie*, or juice which causeth ill digestion and bad nourishment, and a purging medicine taken in the largest signification is the matter of remedie, indicated for a *Cacoehymie*; but that this doctrine of purgation may be more evident, in the first place tis to be observed, that Physicians in respect of purging medicines, divide the body into three common Regions, into the first, which is without the liver, and is extended from the stomach, through the middle part, home to the liver; the second which is dilated from the middle of the liver, through the greater veines, to the outside

outside of the body; the third, which comprehends the habit of the body with the lesser veines: private parts also have their excrements and peculiar wayes to void them, and hence one evacuation is called universall, another particular, universall is that which evacuates humours from the common Regions of the body, such is evacuation of blood after what manner soever, purging by the paunch, vomiting, voiding of urine, sweate, insensible transpiration; particular is that which evacuates some private part, as the braines, lungs, wombe.

Universall
evacuation.

Particular.

As for universall purgation which evacuates the common Regions of the body, *Cacoehymie* consists of what Indicates it, either on this side, or beyond the liver; *Cacoehymie* which consists in the first Region of the body, by its selfe, and properly indicates those medicines which have power without any manifest agitation of evacuating superfluous humours through the paunch, which stick in the first Region of the body, although sometimes if the matter have an inclination upwards, and the sick can easily endure a vomit, by vomit also humours may be purged out of the first Region of the body, so that those things which cause vomiting are not purging, and vehement, but gentle, such like are as above said part the first, Sect the first Chap the second: others are called *Encoproticks*, only such as loosen, and mollify the belly; which evacuate only by softning, and washing away, and drawing away, others by a singular propriety, purge peculiar humours, whose force notwithstanding since it cannot be extended beyond the liver, by some are called *Lenitives*, by others, gentle purges; both of them and first the former, since they evacuate without much troubling the body, the strength easily endures them, and therefore they may be securely given in what age soever, sex, or time of the yeare, so that the use thereof be lawfull, namely that they are given in their due quantity, and before meate a little, and in feavers not neere the fit.

Lenitives.

But excrementitious humours, which consist beyond the liver are to be evacuated by Cathartick medicines, so called peculiarly, or purgers, stronger, and strongest, and *Catharsis* or purgation in particular so called is an evacuation of excrementitious humours abiding beyond the liver by *Cathartick* medicines through the paunch, and by vomit, and is indicated from excrementitious humours, and such

Purges
properly so
called.

is

as are unprofitable for the nourishment of the body, and some of those are naturall, others contrary to nature, the naturall are those which are generated by the purpose of nature, as sweet phlegme, Melancholy, choler, for these if they abound, and are generated in the body in greater plenty then they ought, constitute a *Cacochimy*, but preternaturall are those which are generated contrary to nature, and unto which naturall humours degenerate, both of them, if they so offend that they can neither be taken away by dyet, nor any other milder kind of evacuation, as by sweates or insensible transpiration Indicate purgation.

But as *Cacochimy* subsisting beyond the first passages, and that being greater, Indicates purgation, so such require such kinds, as purge a definite humour; namely phlegme requires Phlegmagogues; Choler, Chologogues; Melancholy, Melanagogues; watry humours, Hydragogues; mixt humours requite mixt.

Yet it is to be weighed what the strength permits, and prohibits in purgation appointed, by a Noble medicine, and whether the strength can endure purging, and the sick be apt, or unapt to purge, and whether more profit or hurt will ensue by purging.

*Permissiō
of purga-
tion.*

All the rest of the signes which are said to forerun purgation, belong to the strength, whether they are strong or weak, of which kind are Temperament, habit of body, age, sex, of which *Hippo. 4. Apho. 1.* speaking of purging women with child saies: Those that are pregnant are to be purged if the humour be unbridled after foure months, and untill the seventh month, although these lesse, for those that have lesser or greater young are more warily and religiously to be medled with, the kind of life, custome, property of nature, constitution of Aire and such like. As for the Temperament, hotter and dryer bodies endure with more difficulty cold and moist indifferently, hot and moist easily: strength of body admits of purgation, imbecility very little, a leane habit of body warily, a full body easily, a fat body hardly, of age it is principally to be noted that sucking children are most conveniently purged by medicines given to the Nurse: as to custome, those that are wont to be purged, more boldly; those which are not accustomed are more ringly to be purged; of Aire you must know that neither the hotter, nor the colder; but purging is principally in the

the spring time to be appointed: concerning the nature of a disease it is first to be noted that in hot diseases, if the disease will beare it, cooling things are to be administred before purging, moreover because in them the store of ill humours is rather to be taken away by loosning things then by true purgation. Thirdly because those which are apt to a *Diarrhæa*, *Crampe*, &c. are not easy to be purged. But principally you must observe whether the sick be prepared and fitted for purging, namely whether the wayes through which the matter ought to be conveyed, are open, and the humours themselves fit to be evacuated, of which it shall be spoken.

C H A P. V I.

Of the time fit for purging of a disease.

BUT although peccant, corrupt and putred humours all-ways Indicate their own taking away, and evacuation out of the body, yet because they are not allways apt for purgation, you may not evacuate them at any time, but are to enquire of the time and occasion of giving purges. The convenient time of purging is, when the humour Indicating purgation is present, and other Indicants permit it, and nothing hinders it.

Time of purging.

But in the beginning you are to be admonished here, that those things which are to be purged either may stir up a feaver, or other diseases without a feaver; if the feaver be absent, the wayes open and the humours themselves prepared for motion, you may purge them at any time, so in the Scab, *Cachexie*, paine of the head, Palsie, Trembling, paine of the Teeth, you may purge during any time of the disease, when nothing prohibits, it and that a concoction is not expected, when those humours are not properly crud, the are ill drawn hither by some *Artho. Hippo. 22. Sect. 1.* things concocted, are to be purged not crude, but the whole disputation of the fit time for purging of a disease is of Feavers, and that acute, especially wherein the humours are properly crude, although the time of a disease shew not, yet there is a signe which shews either the prohibiting, or permitting vertue; for since that in the augmentation of a disease, nature begins a combate therewith, in the state there is a great conflict between them, let him endeavour this one thing with all his industry that

that he may overcome the morbidique cause, and having overcome it may drive it out of the body, and all the Symptoms if they are greater, nature is neither to be opposed any more with purging medicines then, nor to be called away from its good purpose, nor being debilitated enough by the Morbidique matter, and most greivous Symptomes, is it to be hindred; there remains therefore two times, namely the beginning of a disease, and that after the state, neither notwithstanding is it equally profitable to purge in which you please of these in all diseases, but allwayes to consider whether more profit, or more inconveniency will ensue by purging, but what it is to be done here Hippo. teacheth in the 2. Apho. Sect. 1. which Galen, in 4. of preserving health Chap 5. calls an Oracle, he sayes, concocted, and ripened humours are to be purged and moved, not crude.

Purging is the best in the declination of a disease.

Out of which it is manifest that the most convenient time of purgation is after the state, and when the humours are concocted, for if we purge concocted humours, that is such as are overcome and tamed by nature, and seperated from the profitable blood, we have nature our helper, and the humour more aptly follows the leading of the purging medicine, but if we endeavour by purges to evacuate crude humours, that is such as are not as yet Elaborated, and become benigne, nor as yet seperated from the profitable, the sick will receive more damage then benefit from thence: neither have we nature to assist us, nor are the humours apt for purgation, wherefore either the purge performs not its purpose and brings out nothing, or very little, or if the medicine be very strong, it draws out not only the unprofitable, but profitable humours, (since they are hitherto mixt,) it melts, and consumes the body, disturbs the humours more, and confounds them, brings forth obstructions in the first passages, the matter being sturd and not sufficiently evacuated, whence greivous Symptoms doe arise, but if any voluntary purge shall happen, and that sufficient, or that any future loosness be expected, there will be no need of any purging; according to Hippo. 1. Apho. 20. those things which are perfectly judged, and exquisitely confirmed are in no ways to be removed, neither moved, neither with purging, medicines, nor other endeavours, but are to be let alone.

Sometimes you may purge in the beginning.

But although the best time for purging is after concoction, yet sometimes you may purge in the beginning, by the command

command of Hippo. 2. Apho. 29. where hee sayth, in the beginning of a disease, if any thing seeme fit to be moved, move it, but when you may, purge it in the beginning of a disease: It is variously disputed amongst Authors; Galen shews it clearely, whilst 1. Apho. 24: he saith, that then onely purging is to be used, when greater profit may follow by the evacuation of offending humours, then the detriment is, which the body receives from purging medicines; or when any present danger doth more urge, then crudity of humours; but Hippo. shews the cause, and that danger, 1. Apho. 22. whilst he writes. That purging is not to be used in the beginning of a disease, unless the matter raise Tumours, or be angry: for if hot humours, acrid and biting wander up and down in the body, and it be doubted least the strength should be debilitated by the agitation of the matter, or least the matter being stir'd up should rush into some principall part with violence, or into some part, which may draw a principall part into consent, or least the native heat should be extinguished, you may purge them presently in the beginning of a disease, especially when they also of their owne accord are moveable, and easy to be evacuated, and nature wearied out by them, affords its assistance towards their expulsion, and indeed that should be done in the very beginning, Apho. 10. Sect. 4. of Hippo. To purge in very acute diseases if the humour swell, the very first day, for delay in diseases of this kind is dangerous.

C H A P V I I.

Of preparation and concoction of humours.

AT another time, concoction of humours is to be expected before purging be appointed, and the Physitian shall study to prepare those things which further concoction, and cause more commodious evacuation, for we must distinguish betwixt concoction and preparation, and concoction is attributed to nature, preparation to Art, namely nature only concocts humours, and Elaborates them, and draws them to that perfection, and better state by putrifying which they can receive, that they may the more conveniently and without prejudice or detriment to the sick be evacuated, but it is not in the power of Art to concoct humours, yet it may be helpfull

Concoction and preparation of humours differ.

Concoction of humours the work of nature.

helpfull to the native heate, concocting both by cherishing and strengthening it.

Preparation of humours twofold. Digestion.

Besides this true concoction which is the worke of nature only, there are yet other preparations of humours, which are appointed for the more happy concoction, and more profitable evacuation sake, which the vulgar call concoctions also, and medicines effecting them, they call Concoquents, or as they commonly speake Digestives.

The first preparation of humours.

These preparations are of two kinds the one is that which preceds the concoction which is performed by nature, the other is that which followes it, the former is that which takes away all things which are impediments to nature whereby it may the lesse begin, or happily perfect concoction, and commonly useth to be called concoction; the quality of humours besides their quantity, hinder concoction; therefore what qualities soever hinder concoction are to be taken away by their contraries, and hot humours are to be cooled, cold to be heated, dry to be moistned, moist to be dried, in likemanner humours that are too thick are to be attenuated, those that are too thin and sharpe are too be thickned and allayed, and those that are rough to be wiped away or purged.

Phlegme how to be prepared. Choler.

Namely phlegme which is cold, moist, thick, and dull, requires heating, drying, attenuating, cutting, and detergent medicines.

Yellow choler since it is hot and dry, tis to be corrected with cooling and moistning things, but as it is thin, and by its too much tenuity may molest the body, it is to be thickned, the other kinds of choler which are produced by too much aduision, sithence they are now thicker, require extenuation.

Melancholy.

Moreover the melancholy humour since it is cold, dry and thick, is prepared with things moderately heating and attenuating and moistning, but black choler, since tis a hot humour very dry and thick, requires cold things, much attenuating and moistning.

Another preparation of humours.

The other preparation is that which is appointed when putred humours already concocted, or others also not putred, by reason of some impediment are not evacuated without difficulty, unlesse that be taken away.

But sithence humours which ought to be evacuated, ought to be moveable, and the wayes through which they ought to be moved open, hence it easily appeares that there are

two hinderances, which impead the happy purgation of humours, namely thicknes of humours and obstruction of passages. And therefore the Physitian which would purge as Hippo. commands 2. *Apbo.* 9. must well prepare, as *Galen* explains it, tis to extenuate the thick and dull humours, and open the passages through which they ought to be traduced, and drawn by the force of purging medicines.

C H A P VIII.

Of the quantity of purgation.

THAT we may purge as much as is convenient, and no *How much*
 lesse, we are to use diligence, first to know the quan- *to purge,*
 tity of the peccant humour, that from thence the quan-
 tity of the purging medicine may be determined, for the
 quantity of the purging medicine ought to be such that it
 may evacuate all the peccant humours, least any part
 thereof remaine in the body, and corrupt the other hu-
 mours, and afterwards cause a relapse.

But whether the peccant humours ought to be evacuated *whether*
 together, and at once, or at severall times is to be known *the peccant*
 from the store of humours, and strength or weaknesse of the *humours*
 Patient; for if the matter be much, and if the strength be *are to be*
 great, yet it is better to divide the purgings, nor by too *evacuated*
 large evacuation rashly to debilitate the strength, but if *at once or*
 the matter be too little, and the strength great, you may *severall*
 purge all the humour at once; if the strength be weak, *times.*
 and many, or few humours are to be evacuated, tis more
 commodious to evacuate at severall times, then to debili-
 tate the strength by one strong purge.

Moreover, you must attentively consider how the strength *Permit-*
 will endure purging, and all those things which may disco- *tents and*
 ver present strength as well as that is to come, and all those *Prohibents*
 things are to be weighed which are numbred amongst per-
 mitting things, and such as prohibit purgation: amongst
 which the first is the naturall propriety of body, for some
 having taken stronger, and greater doses are scarce moved
 by purgers, others are purged very easily having taken any
 purging medicine, therefore if the propriety of natures be
 not sufficiently discerned, tis better to try with gentle
 things, then rashly to meddle with the strongest; custome
 also and habit of body is to be known, and tis to be consi-
 dered

Signes of
perfect
purgation.

dered whether the sick can beare strong medicines or not. The perfect signes of purging Hippo. delivers 1. *Apho.* 23. he saith Excretions are not to be valued by their quantity, but if they are such as they ought, and so goe out that the sick can easily endure it; whereof the first is if such as ought are evacuated. Secondly if the sick can well beare it. Thirdly thirst happens through evacuation, according to *Apho.* 19. *Sect.* 4. whosoever are purged having taken a purge, and doe not thirst, the purge hath not reached home to the marke before they doe thirst.

More sparing
purgations how to
be provoked.

But if due evacuation be not made it shall be promoted sparingly by moderate exercise of the body, as tis in Hippo. 4. *Apho.* 14. 15. but if it be too much, you must use sleepe and rest.

Overmuch
how to be
hindred.

Too great evacuations are hindred by Ligatures, and rubbing of the extreame parts, by sweates, Cupping-glasses applying to the navell, astringent Topicall Medicines put to the Region of the stomach, taking of new Treacle, or old, with a graine of *Opium*, as also with meate, drinke, and Medicines given, that have astringent qualities.

CHAP. IX

Of the place by which purgation ought to be made.

what shew
the part to
be purged.

Lastly the place, by which purgation ought to be made the residence, or as I may say the inclination of the humours shew, for a humour is to be evacuated through that place, through which, both in respect of the place wherein it resides, and of its owne nature, it is fit to be evacuated so that the strength will permit it, which Hippo. also admonisheth 1. *Apho.* 21. we ought to lead out humours that way which they are most inclined to goe, thither they are to be led through convenient places.

By vomit.

But the convenient places are those through which nature at other times rightly acting, evacuates what is offensive, and indeed there are two wayes by which purgation is to be appointed, the one is that by which we vomit, the other through the paunch, but by vomit those humours are conveniently evacuated which are apt both in regard of the place where they reside, and in respect of their own nature to be carried to the stomach, or such as tend upward, namely

namely such as are generated, and reside in the stomach, as those also which are contained in the Spleen, Cavities of the Liver, and Pancreas; as also thin humours, hot and choleric; but by the paunch those which remaine in the inferior parts and tend downwards, as also thick and cold humours, hence *Hippo.* writes 4. *Apho.* 6. those that are leane, and easie to vomit are to be evacuated upwards, being carefull of the Winter. As for example, those which abound with choler which tends upwards; but on the contrary those which are hard to vomit, and are somewhat thicker, and of an indifferent habit of body are to be purged downward being cautious in the Summer, because they more abound with phlegme.

By the
paunch.

Moreover the time of the yeare shews the humour, and from thence also the place of purgation, hence *Hippo.* 4. *Apho.* 4. in the Summer the superior ventricles, in the Winter the inferior are to be purged, for in the Summer yellow choler and hot humours abound, and by reason of the heate all things in our bodies seeme to tend upwards, in Winter, phlegme rather abounds which is heavy, and by nature tends downwards.

Time of the
yeare.

Symptomes also shew the nature of humours, and whither they incline, as *Hippo.* teacheth 4. *Apho.* 17. the loathing of meat by one that is not in a feaver, the griping of the mouth of the stomach, a *Vertigo* with *Apparitions* of shadowes, and bitterness of the mouth shew that there is need of purging upwards, all which Symptomes signifie that choler is willing to ascend to the mouth of the stomach, and the same *Apho.* 18. paines above the Middriffe, whoever wants purging, they signify they are to be purged upwards, but those which are beneath, downward, and the same *Hippo.* *Apho.* 20. if there be gripings, and frettings in the guts in feavers, and heaviness of the knees, and paine of the Loynes, they shew that you are to purge downward.

Symp-
to mes;

Yet in provoking vomit we must consider whether the sick be easie to vomit, or not; and whether the stomach or any of those parts, which may be moved by vomit and to which the humours, or at least the vapours stirr'd by vomit may flow; be weake, and affected; for then you must abstaine from giving a vomit:

C H A P. X.

Of the due Administration of Purgers.

Particular
time.

AS for the hour of giving a purge, purging medicines are to be given at the fourth, fifth or sixth hour in the morning, but if there be any thing which impeades purgation at that time, or requires a purge to be given sooner, it may also be taken at another hour, for fits hinder, which if they come in the morning, the medicine is to be exhibited in the Evening, but a violent disease forceth us to purge, since it threatens present danger, in which case purging is not to be deferred, but to be given, although in the Evening, the purge being taken, you must abstaine from meate foure, five or six hours, after the medicine is taken, those which are given to drink should be given, hot, not cold, nor luke-warme.

Whether
purgers
may be
mixt with
meate.

Some are wont to mingle purges amongst their meates, but they did not well, for the force of the medicine is hindred by the meate; and the meate is defiled and corrupted by the medicine, and the humours which are drawn; its concoction is hindred, and being uncocted, the medicine stimulating, it is expeld; and tis to be feared, least some excrements, mixt with the meate, should be distributed into the Liver and veines, or that the meate it selfe, being not enough concocted, or rather corrupted, should breed some inconveniency in them.

C H A P. XI.

Whether it be lawfull to sleepe having taken a
purge.

WHETHER we may sleep having taken a purge. Physicians disagree, but there is need of a distinction; for if the purging medicine be gentle and benigne, having taken it we ought not to sleep, least the medicine should be carried away and overcome by nature, and its action hindred, but if the purging medicine be stronger, and requires greater heare that it may be brought into action, sleepe may be granted to the sick, yet moderate, which may only further the activity of the medicine, but not impend evacuation, but afterwards to abstaine from sleep untill perfect and sufficient purgation be

be made; moreover for the same reason, after taking strong purges tis lawfull to sleepe a little while, that the malignity of the medicine may be resisted by the more plentifull heat, occasioned by sleepe, and those troubles which the medicine occasioneth may lesse be discerned in sleepe, and so the medicine retayned without trouble or molestation, may rightly be reduced into action,

CHAP. XII.

Whether it is best after purging, to use cleansing, and abstergent medicines.

TIs the custome at this day, some houres after taking purging medicines, to exhibit cleansing broathes, and such as wipe away, and that is rightly done, for tis profitable before food be taken, that the remainders of the medicine, and the residue of its qualities, and if any vitious humours are drawn by the medicine, and remaine in the stomach, they are to be washed away, and drove downward, and the loathing, and disdainig of meate, which is wont to be occasioned by purging, may be freed and taken away.

CHAP XIII.

Of Evacuation by Urine

ALthough the watry humour is principally evacuated by Urine, which remains of the drinke, and is mingled with the blood, and the gibbous part of the Liver, Reines, Bladder, and Vessells sub-servient to these, are principally purged by it, yet the other humours attenuated, and principally the serous, thinner phlegme, the cholerick humour, and all the nerves and veines, may be purged by the same. But seeing those things that cause Urine cleanse the body by degrees, tis most profitable in those diseases, wherein tis convenient to evacuate matter by degrees, and sparingly; but in those where there is need of sudder excretion, and of evacuation to be made on a sudder, in such evacuation of Urine; not so helpfull.

Evacuation by Urine.

But what the difference is of medicines provoking Urine is spoken before, Diureticks properly so called are usefull only as often as thick humours residing in the Reines, bladder

der and parts sub-servient to them are to be evacuated, or if thick humours stay, or stick in the veines, but those which move Urine only by affording aqueous matter, are convenient in those diseases which are bred of thick and adust humours, for by the mixture of aqueous substances, these are rendered more fluid.

*Permit-
tens and
Prohibents.*

Those things which permit, and prohibit also, are here to be considered, the strength easily endures this evacuation so, that it be so administred that more profit then dammage may redound to the sick, for if either in the whole body or about the liver, many ill humours stick, there is danger, least by their plenty and thicknesse whilst they get to the straight passages, they should obstruct them; and therefore first a purge for the belly is to be appointed: Diureticks also are not so convenient for hot and dry diseases, as feavers arising from hot humours, nor for such as are leane and withered, as also if the Reines, bladder, and passages and vessells appointed for this evacuation, are ulcerated, or inflamed or affected with some such like disease,

Time.

The time of drinking medicines causing Urine is not not convenient in the beginning of a disease, since the matter is as yet more plentiful, and thicker, but in the declination when the matter is somewhat abated and thinner, but they are most profitably given before meate, and on an empty stomach.

CHAP. XIV.

Of evacuation by sweate.

*Sweate
whence it
evacuates.*

Lastly vicious humours also may be expelled by sweate, for although sweate evacuate in the first place from the circumference, and habit of the body, yet it may evacuate humours also from the rest of the body, and indeed first out of the greater veines and Arteries, and afterwards out of all other parts, namely from whence humours may be driven to the veines, and from thence to the superficies of the body, for they are not conveniently thrust out from the cavities of the stomach, guts, wombe, and such like, to the extremities of the body, and there are other wayes by which they are far more easily evacuated, but the watry humour is evacuated by sweate, which also may be evacuated by Urine, and so may every thin humour and cholericke, as

*What hu-
mours are
evacuated
by sweate.*

others

others also if they are attenuated, but principally sweates are profitably provoked by art in inveterate and cold diseases, and diurnall distillations, in the Palsie, the Sciatica, and other paines of the joynts.

Yet you must be carefull here what the strength can permit, for this is a powerfull remedie, and requires great strength, but principally hot and cholerick persons endure sweate lesse, and not long, nor doe very hot things agree with them; much matter prohibits provocation to sweate, for tis to be feared, least being dilated to the skin, it should shut its small breathing holes, or pores, and so either generate, or increase putrifaction.

As for how much, we must be carefull that we doe not over much provoke sweate, for sweate, if it be too much, weakens the strength exceedingly, resolves the body, and makes it leane, wherefore tis more commodious to cause moderate sweates often, then to debilitate the strength with one that exceeds measure.

But the fit time for provoking sweates is the beginning of a disease, but after universall purging of the body, and in the declination of a disease, but the particular time, when the meate is concocted, and in the declination of diseases, in those which have paroxisimes.

But medicines provoking sweate are especially to be exhibited with profit in pestilentiall diseases and in all malignant matter, by which the malignant matter, the pestilient and venomous matter to the great benefit to the sick is driven from the internall parts, and those that are next the heart to the extremities of the body, and is evacuated by sweate. But *Sudorifiques*, which are given in such diseases, ought to be of the number of those that resist poyson, that they may together infringe and debilitate the venome. In Administring of which, there is no need of all those rules or observations, which are necessary to be observed in provoking sweates in other diseases, but presently in the beginning of a disease those *Sudorifique* resistors of poyson are to be given, neither is too much debilitating of strength to be feared.

C H A P. XV.

Of particular Evacuations.

Particular
evacuation
of the
braine.

Errhines.

AS for particular Evacuations, if any vitious humours are collected in the braine, it may be evacuated two wayes, by the Nose, and the Palate.

By the Nose, first Errhines call out phlegme, which is spread about the braine, and filmes that cover it, and stirs up its faculty that it may strive to cast out superfluous humours.

Sneezing.

Moreover sternutatories, which are stronger, and irritate the braine, and by the force thereof humours which lye deeper may be cast forth, of both of these this in generall is to be noted, that such remedies are not to be used, unlesse universalls have preceded, and that the whole body be purged, but of the matter and forme of Errhines, and those things that cause sneezing, see before part the 1. *Seck.* 1. Chap. 18. and hereafter part the 3 d. *Seck.* 3. Chap. 30.

*Apophle-
gmatismes.*

But those things which evacuate by the Palate, are called Apophlegmatismes, and purge the more inward cavities and ventricles of the braine, they are not conveniently given to those, the inward part of whose mouth, throate, gullet or Larynx is exulcerated, and such as are obnoxious at other times to distillations to the Chops and breast.

*Purging
the breast.*

Those which purge the Lungs are called expectorating things, and because humours cannot cast out from the lungs through the Wind-pipe, without a cough they are called *Brochica* of which kind for the most part are Arterjacks *i. e.* medicines for Rhumes all of them, especially those which cleanse, cut, or any way prepare the matter for expulsion, but that humours may the more easily be evacuated by cough, their consistence ought to be indifferent, neither too thin, nor too thick, but only so thick that they may be carried upward by Aire; not so viscid, as to stick in the mouth of the Lungs, and therefore if the humours are viscid they are to be moistned and cleansed with sower things but if too thin, to be somewhat thickned.

*Things
purging sto-
mach, Li-
ver, Reines,
wombe.*

The stomach is evacuated by vomit or by the paunch, the guts with glisters, and medicines purging the belly; the cavities of the liver, through the belly; the gibbous parts, by urine; the reines, and urinary passages, by urine, the wombe by the courses. Of which tis now spoken in universall evacuation.

C H A P. XVI.

Of the abating abundance of blood with Leaches,
Cupping-glasses, Scarrifications &c.

THe other fault amongst morbifique causes is quantity and the common Indication which is taken from hence that that which aboundeth may be deminued, and that which is diminished, may be increased, but since nothing can be said to abound, unlesse that at other times it be naturally present; but in the body blood only and such excrements are contained which proceed from nature; blood and naturall excrements in this second manner may be the causes of diseases, as also milke and feed, and moreover the spirits and solid parts of the body, all which if they are deficient in quantity, ought to be increased, but if they exceed are to be deminued; naturall excrements are seldome deficient in quantity, but they often exceed; but since the same reason is of evacuating naturall excrements, which there is of the humours, in their kind preternaturall, here only we will speak of taking away of blood when it abounds.

*what
shows the
fault con-
cerning
quantity.
what
offends in
quantity.*

Therefore if Plethory, be present and the blood abound, the blood is to be diminished, and that which aboundeth to be taken away, and too great plenty of blood indicates diminution of the same.

*Plethory
what it
shows.*

But concerning the manner how we abate the blood, some performe it more strongly, others more weakly; frictions, Sweates, Bathes, Exercise, Fastings performe it more weakly; Leaches, opening of the Hemerhodes, pro-
vocation of courses, Cupping-glasses, and Scarrifications performe it more strongly; but the most generous, and powerfull remedie here, is opening of a veine.

*The man-
ner of a-
bating
blood.*

Frictions, sweates, Bathes, and Exercises, they diminish the blood one way, because they stir up the heate in the body, which dissolves and dissipates the substance of our bodies.

But fasting doth not evacuate by its selfe, but by reason that it takes away humours, and diminisheth the body, because it puts nothing in the stead of that which is consumed by heate, and denyes necessary aliment to the body; but because fasting evacuates the whole body equally, tis then requisite when the humour abounding

Fasting.

doth

doth abound not in one part but in the whole body; yet shorter fasting first evacuates humours out of the stomach and about the stomach; but because fasting evacuates by degrees it is not profitable, nor sufficient for an indication, when plenitude is suddenly to be abated. But tis endured when the strength is powerfull, to which all other things, which prohibit fasting are to be referred, as temperature of body, hot and dry, hot and moist, a thin habit of body, griping or biting in the Orifice of the stomach, vomiting, flux of the belly.

Leaches.

Leaches by opening the mouths of veines, and sucking blood, evacuate blood by themselves, and sensibly, yet by little, and little, in which respect they may diminish the plenitude of the whole body and helpe diseases of many parts to which they are applyed, and evacuate, sometimes a greater, sometimes a lesser quantity of blood, as they are applyed to a greater, or lesser veine, in the application therefore of them, you are to observe, whether they are placed for the evacuation of the whole body, or for a disease of some private part, for if they are applyed for the evacuation of the whole, they are to be put to the great and prominent veines, in the Legs and Armes or Hemerhodes, yet in women that are with child, they must be applyed only to the Armes; but in regard of peculiar diseases they are to be applyed to divers parts, as this or that part is affected.

Hemerhodes.

The Hemerhodes if they use to flow at other times, the opening of them may be instead of breathing a veine, but otherwise the Physician in opening of them shall labour with little profit, unlesse happily they are opened by leaches putting to them; but since the Hemerhodes are twofold, externall and internall, the externall are opened to abate a Plethory, as also for diseases of the Reines, Wombe, Back, Hips, and other diseases arising from the hollow veine with profit; as in diseases which proceed from the *Hypochondries*, the Liver, Spleen, Mesentery, the internall may be conveniently opened; but the externall are opened with frictions, the leaves of a Fig, course rags, Leaches applyed, the juice of an Onion, the juice of Century, or Scw-bread, the Gall of a Hog, or Bullock, or with rags wet in these, but the internall with suppositers and sharpe Glisters.

Courses.

The courses whilst they flow exacuate also and diminish persuous blood; but nature appointed that flux, which if

if it be supprest is to be opened; in which businesse this is to be observed, that in provoking them, the Physician should make use of that time, when at other times they use to flow, for if he should endeavour it at another time, he looses his labour.

Cupings, which Scarrification also, are matter of remedie, evacuating blood by themselves, and sensibly, but by degrees; for which reason they are something applyed for good reasons, sometimes instead of opening a veine; if they are applyed with good reason, they are indicated from no great fault of the blood. But when they are used instead of Phlebotomie they are applyed for some great fault in the blood, which indeed requires the breathing of a veine, which notwithstanding weak strength will not endure; but Cupping-glasses properly evacuate cutaneous blood, yet because some of the blood which comes out of the skin is powred into the capillary veines from the great veines, in this respect also they are said to evacuate the whole body: but if that evacuation be more sparing it doth not reach the whole. And when Cupping-glasses evacuate by drawing, the use of them is most profitable if any revulsion be required at the same time: as for the place of application, if they are applyed in respect of the whole, they should be put to the inferior parts; if in respect of any part, then to that part which requires this remedie; yet in those that are pregnant, they are not to be exhibited to the inferior parts but rather to the Armes.

Lastly simple scarrification also without cupping, may evacuate blood; which truly is used sometimes instead of opening a veine; and tis appointed in the Legs especially, by which meanes it may not only evacuate but also re-vell from the head, and superior parts, yet sometimes in the Arme and back also, but in its proper use tis exhibited, when there is a purpose to evacuate only out of some one part, but especially when we would evacuate some acrid, malignant, and venemous matter, least being retained, it should cast the sick into danger, which is used also in a Gangrene, and by the ancients in a callous Ulcer.

C H A P. X I V I I.

Of opening a veine.

But the most efficacious remedie for evacuation of blood is the breathing of a veine, which neverthelesse hath other uses, whereof we will here speake together, for tis a question of great moment when the breathing of a veine, or evacuation of blood by opening of a veine is to be appointed, where first this is to be noted, that the opening of a veine is not some one Indicate, but the matter of remedie which is profitable in many Indicates.

What indicates a breathing of a veine.
The use of opening a veine.
 There are two generall benefits in the opening of a veine, to evacuate, blood, and by accident, whilst it draws away the blood, the vehicle of heate, to coole; againe in evacuating it performes two things, for it both takes blood out of the body, and allwayes the course, and violence of humours in the veines; first the way it both takes away the ill blood, and only diminisheth it offending in quantity, but the latter way it can revell, and draw back and derive the blood flowne into a part, and the blood which is flowne in whilst it is yet moveable, can draw it to the parts neere therunto; so that the opening of a veine may wholly performe five things; namely to evacuate corrupt blood, to diminish blood, to revell, derive, and refrigerate.

Putred blood evacuated by the opening of a veine.
 For first the vicious and putrifying blood may be evacuated by opening of a veine, as that which is contained in veines, and they being opened it flowes out, and indeed tis most profitably appointed in beginning of diseases, since nature for the most part in feavers use to drive no small portion of the peccant matter to the extreames, and those greater veines under the skin.

Secondly, breathing a veine is an excellent remedie to diminish the blood.

The cutting of a veine diminisheth blood and veins.
 Thirdly, the opening of a veine is used for revulsion, for a veine being opened, the violence of the blood is turned and drawne back to the contrary part, and therefore tis a very efficacious remedie to stop flowings of humours, contained in the veines.

It derives.
 Fourthly, the opening of a veine may derive the blood, which newly flowe into the part, and is not yet settled there, but as yet fluid; a veine being opened nigh at hand it may, I say drive the blood to a neighbouring part.

Cooles.
 Fifthly, opening of a veine cooles by accident, but if distemper

temper only be present, which may be corrected by other remedies, and no other fault of the blood be joyned with it which requires breathing of a veine also, cooling medicines are ordered to be used; but if the blood be so exceeding hot that it requires sudden refrigeration, which other medicines perchance cannot performe, or some other fault of the blood be joyned, which by the same means, opening of a veine may helpe, for this cause also you may open a veine.

From whence it is manifest, that the breathing of a veine may be profitable, whilst the blood either putrifies, and is corrupted, or offends in quantity, or flows to any part, with violence, or oppresseth a part, or burnes vehemently.

Yet it is not allwayes necessary to open a veine when these inconveniences are present, since we can take them away by other means, but then only breathing a veine is convenient, when there is a great corruption of the blood, and it requires sudden releasing, as being that which is the best and most efficacious remedy amongst the evacuations of blood, then presently blood may be evacuated.

In short, the Indicant to which by mediation of the Indicate, as being the matter of helpe, opening of a veine agrees, it is a vehement fault of the flowing blood, which is corrupted either in its substance, or it offends in quantity, or rusheth into some part, or oppresseth some part, or grows exceeding hot; yet besides these principle faults, the blood also sometimes, as a cause without which it cannot, and as adjuvant, it may offend; and then also it requires opening of a veine.

Yet we may not allwayes open a veine when these Indicants are present, for since the opening of a veine evacuates blood together, and also exhausteth somewhat of the spirits, and so debilitates the strength, if the strength be great, it permits opening of a veine, if it be weak it prohibits it, and regard is to be had here not only of the present, but of the future strength, for when the strength is weak, either oppressed with store of humours, or loosed, in the latter imbecility only breathing of a veine is prohibited, but in the former it is profitable.

All other things which are said to permit, or prohibit the breathing of a veine, besides strength, they doe it only in this respect, namely as they are the tokens or signes of strength, or debility of nature, as Age, which flourishing admits of opening a veine, Child-hood and old Age prohibit

*For which
Indicants
cutting of
a veine
serves.*

*The adequate
Indicant of
cutting a
veine.*

*Things per-
mitting
opening a
veine.*

Sex.

the same, the Sex, as to women with child, especially in the last monthes, the opening of a veine is prohibited; unlesse some disease inforce it and there be store of blood, propriety of nature, custome, habit of body, course of life, constitution of Aire, some Symptomes, as large evacuations, watchings and such like, which dissipate the spirits, and substance of our bodies, and loosen our strength, unlesse they are taken away by opening of a veine.

How much blood to be evacuated.

The quantity of letting blood is indicated from the greatness of the fault depending on the blood, and according as that hath greater or lesse force, so blood is to be evacuated more largely, or sparingly, yet the strength, as also things permitting are here to be weighed, and all those things, which are the signes of strength, and weaknesse; and tis to be considered whether the strength will beare that evacuation, which the magnitude of the disease requires.

But whether the quantity of blood which is indicated be to be taken away at once, or severall times, the greatness of the disease, and the strength doe shew; in a most violent evil, tis convenient to evacuate the blood at once, in milder at severall times; also strong bodies will beare one large evacuation of blood, but if they are weake, tis better to doe it at severall times.

Time.

The presence of those Indicants which serve for the letting blood, shews the time of letting blood, and the absence of the prohibiting; therefore the most convenient time of letting blood for the most part is the beginning of a disease, yet it is not to be appointed whilst crude juicc, and unconcocted meates are in the first passages, and in diseases wherein there are certaine intermissions, and wherein the fits returne at certaine times, the time when the fit is, is not convenient for letting blood, but the time of intermission is more commodious, or if that be too short, the declination of the fit, or the abating of a disease.

Hour.

As for the hour, if a disease that is violent, provokes or urgeth, in what hour of the day soever, or even at midnight, no preparation being made before, and no delay being made, you may open a veine, at other times, one hour or two after sleep is most convenient.

What veines to be opened.

But where, or the place, and veine to be opened; although what veines soever be opened it may evacuate the whole body, yet the larger performe this best, and regard is to be had, to the fountaine of blood, and the rise of the evil

evil, which are principally the liver and spleen, the veins therefore in the right or left cubit are to be opened, according as the disease requires, the internall, externall, or middle, and especially the internall, but what veins are to be opened for Revulsion and Derivation sake shall be shewne in there proper place.

CHAP. XVIII.

Of Revulsion.

AS for the third fault of humours, namely when hu- *Default of*
 Amours recede from their naturall state in respect of *humours*
 qualities, how that is to be amended, from those things *according*
 which were spoken before of the preparation of humours, *to quali-*
 and which shall be spoken hereafter of curing of diseases of *ties.*
 intemperature, is manifest enough.

But the error in motion is various, and humours *decline* *In motions.*
 from their naturall state, if either they are not rightly mo-
 ved, that is, when they are moved thither whither they
 ought not, that is, when they ought to be quiet according
 to the Law of nature, they are moved at that time; or else
 are not moved, when they should be moved; or are moved
 in parts or thither where they ought not to be moved; the
 first error is called the restraining motion, the second the
 inciting, the third the helping, the fourth the correcting,
 and averting to another place.

First therefore humours as they offend in motion afford one *Humours*
 indication only, of stopping of motion, of staying the vio- *offending in*
 lence of a humour, or an averting of a humour from a *motion*
 place, to which it flows contrary to nature, unlesse hap- *what they*
 pily nature unburdens it selfe conveniently by that *indicate.*
 meanes, or the body puts away humours that trouble it to
 some ignoble part of it, but we may satisfy this indication
 severall wayes, namely if either we take away those things
 from the humour, which are necessary for motion, or whe-
 ther we draw back the same by force, namely, if out of what
 is thin and fluid we make it thick, if we stop the passages to
 it, and straighten, and make narrow the wayes, through
 which it ought to flow, lastly if we prohibit its coming, and
 bind the passages which are in the part that it may not be
 conveniently received, but when we cannot hinder these
 often, or it is sufficient to stay a flux, we call back and re-
 tract

track those humours by force: Humours are drawn back either by reason of vacuity, or heat, or paine: By reason of vacuity, or rather evacuation humours are drawn back, which power out and evacuate them out the body through other parts, as the opening of a veine, scarrifications, leaches, flowing of courses, Hemmerodes, purging by the Paunch, vomitings, urines, sweats, : By heat and paine they are drawn back, by those things which have power of inciting heat and paine, or have power of performing them both, as are frictions, ligatures, lotions, fomentations, vesicatories, causticks, and such like.

How many waies the motion of humors may be hindered Anso, although there is one Indicant, namely a fault of the humours in motion, so there is one Indicate, namely, of remedy hindring motion, and averting the humour from the part to which it flowes, yet the manners of performing these are various, namely foure; Revulsion, Derivation, Interception, and repulsion:

Revulsion, what. Revulsion, which the Greeks call *Antispasis*, is an averting of a humour flowing into some part, into the contrary; But humours are Revelled, not those which are in the affected part (for these are properly evacuated out of the part affected, or nigh thereunto) but they are such as do flow to some part, or are about to flow. But since this is common to every Revulsion, that a contrary motion may be occasioned for the flowing humour, and may move it to a part, not to that whither it tends, but to a contrary; hence it followes, that Revulsion ought not to be to the next, but to the remote and opposite parts, and principally according to length, and breadth. As for the other oppositions some observe them also, whilest they make a twofold Revulsion, the one which is simple and absolutely such, or a

universal. universal Revulsion as it is called, which observes contrariety in respect of the whol body, & in it regards contrary termes, from whencesoever the humours flow, as when we revell from the head to the leggs and feet. But there is another particular Revulsion, or locall, which in one member onely regards contrary termes and opposition of the parts of the same member, and in the same member revels from the anterior parts to the posterior, or from the hinder to the former parts: Which nevertheless scarce deserve, the name of a Revulsion: And this former in the beginning of diseases, when the body is as yet very full, is most proper: But the latter is not convenient in the beginning

ginning of diseases; also whereas in revulsion the flowing humour ought to be drawne to the contrary part is manifest, flowings are to be drawn back together to the beginning; hence when humours flow from the whole body, or the beginnings of fluxes lye hid, the revulsion is fitly made to the remote parts, but when the beginning of the flux is certaine, to that the flux is to be re-called, although it be not the remotest part.

In particular, as for the revulsion by opening of a veine, *Revulsion by opening a veine.* although that also is to be appointed in a distant, and remote place, yet not simply the most remote part is to be chosen for the opening of a veine, but that part which is exactly on the contrary, or which also hath communion of veines joyned to it, or Euthyory which is a certaine direction of vessells, by which the reduction of humours may conveniently be made, and may easily flow from one part into another, and therefore veines, which are open for revulsion sake, rather communicate with the part sending, then receiving, as it is necessary; so we recall blood flowing to the place from whence it begins, and we cause a contrary motion for it; namely we ought here to choose veines which are remote to the part affected, and have communion with the part sending, which are directly opposite to the part affected, either according to longitude, or latitude, hence an interior part being affected, a veine in the Arme of the same side, a superior part being affected a veine in the Arme of the contrary side: the liver affected the interior veine of the right cubit is to be opened.

As for the Administration of a Revulsion, the quantity of *The right Administration of revulsion.* revulsion answers to the quantity of the flux, and strength tollerating, but that is greater which is made with the letting out of a humour, then that which is without it, and there are certaine degrees and differences of magnitude in every kind, every one whereof answers to the certaine error in the motion of the peccant humour.

As for the time of flowing since revulsion ought to be of *The time.* humours flowing, tis principally to be administred, when the flux begins, but if the flux be more lasting, it ought to be exhibited after the beginning also; but if the flux be lesse so that it may be stoppt by derivation, or repulsion, there is no need of revulsion.

The places, to which revulsorie remedies are applyed, *Place.* are various, according to the variety of the parts affected.

CHAP. XIX

Of Derivation.

Derivation
what.

Derivation regards that matter which newly flowes into the part affected, but as yet is not spread abroad into the space of the part without the veins; but as yet it flowes in its veins, and it is an averting or drawing away of the humour offending the part, to the adjacent parts, and an evacuation of it through the same, and in this evacuation, namely that which is made by opening of a veine, the communion of the veins with the part affected is observed, whereof mention is so often made by Author; also if the matter in the body be plentifull, derivation is not to be appointed unlessse that plenitude be first abated.

Quantity.

The quantity of Derivation of a humour which flowes into the part, answers to the quantity which so flowes, and to the strength of the sick, but in letting of blood the measure, and limits of Derivation in inflammations Hippo. commands us to learne by the changing of the colour; the second of the reason of dylt in ac.T. 10. so that the strength will beate it.

Time.

The convenient time of Derivation is when the matter flowes into the part, and the store of matter is taken away, and the flux is abated, yet it ought to be performed before the matter be smeare the part.

Place.

The scituation of the part shews the place; which in generall ought to be neere the part affected, and to communicate with the passages.

CHAP. XX

Of Repulsion.

Repelling.

Repelling things drive away the humour flowing, to another place, and hinders its coming to the part affected; and that which newly hath flowne, they free the part from by pressing of it out.

Repellents
not convenient
for fluxes.

But you may not exhibit Repelling things in all fluxes, for first they are not to be given in ignoble parts; Secondly, when the flux is nigh to a principall part, least the matter repulsed be carried to the principall parts. Thirdly, to parts placed too deep. Fourthly, if the matter be malignant

nant, and venomous. Fifthly, when a wound is inflicted by the stroke, or biting of a venomous Creature. Sixthly, if nature rightly acting, drives any matter into a part critically. Seventhly, if the humour be much, and the body as yet full. Eighthly, if the humour be fixed in the part. Ninthly, if there be vehement paine.

The most convenient time for Administration of repell-*Time.*
ling things, is the beginning of the flux; but when the beginning proceeds towards the augmentation, Digerents are to be mixed.

But since as is said before, some repelling medicines are cold and moist, others cold and dry, and astringent, those doe best agree when the humour shall be thin, and little, and is in the extremities of the body, or when fluctuations happen by reason of two great heate of the parts, or when they have great heat adjoynd, or if the paine be vehement, but these when paine doth not so provoke, and fluctuations are made through the debility of the parts.

The place to which repellents are to be exhibited is the *Place,*
same from whence we ought to repell.

CHAP. XXI.

Of Interceptings.

Such things as doe intercept, for the most part agree with *Intercepti-*
those things that doe repell, and they differ only in re-*ents.*
spect of place from them; for repellents are exhibited to the part affected; but interceptants to the wayes through which the humour flowes; such like are Defensitives, commonly so called, which being endued with a cold faculty, dry, earthy and astringent, stop the coming of the humours in their passages, and hinder them that they cannot come to the part affected, and since some are more powerfull, others more mild, the strongest are to be used in a grosser habit of body, when the vessells are wider, and the condition of the Aire hotter, which loosens, and dilates the passages, and that there is greater violence of the humour flowing; if the matter be otherwise, the milder are to be applyed.

But they are most fitly applyed to places void of flesh *Place.*
wherein the vessells are more evident, and open.

Motion of humours taken away. 'Tis contrary to the error of humours in motion, when those things which ought to be moved, are not moved at all, as when the months, Hemerhodes, or other accustomed Evacuations are suppress'd, for then the humours which lye still are to be attenuated, and heated, and the passages to be relaxed, and the straightnesse to be taken away, of which in their place, which if they helpe nor, we must come to those things, which can stir up humours by violence, which we have accounted before, namely which drawe humours into some part, by reason of heate, paine, and vacuity.

CHAP. XXII.

Of discussing.

Humours offending in any part.

THE last fault of the humours, is according to the place where, namely when some humours abide in some part where they ought not, the humours therefore which cleave to that part are to be taken away, which is done either insensibly, by the secret pores, or by Evaporating, whilst the humour being dissolved into vapours is discuss'd, or the humour is plainly evacuated and under the forme of a humour is drawn out.

Discussient's in what diseases convenient.

Those which take away the humour by insensible transpiration, are called Discussients, Resolvents, and Digestants; but they are most profitably administr'd, when the humour is thin, sticking under a soft skin, to which the force of the discussing medicines may penetrate; for you may not use Diaphoreticks if there be plenitude in the body, but rather must evacuate the body first,

Time.

The most convenient time for exhibiting Discussients is the state, and the declination at hand, yet in the augmentation they may be used, but not alone, but mixt with such as repell.

But since some Diaphoretick medicines are stronger, and hotter, some not such, we use the gentlest when the matter is in the superficies of the body, the part affected soft and loose, the stronger are given when the matter is scituated in a deeper place, under a thick and grosse skin, and it selfe is colder and thicker.

CHAP. XXIII.

Of Softning and Ripening of matter.

EMollients are necessary as often as the matter is thick, *Emollients.* and hard; for as often as the matter is thick and hardened, in vaine we exhibit Diaphoreticks, since that such matter cannot be dissolved by them, but they are forced to be softened; of Emollient medicines tis spoken before.

Yet if the matter cannot be dissolved, and dissolved, tis to *Suppuratives.* be turned into quitture, whereof if the Physitian see that the humour cannot be dissolved by Evaporation through pores, in this part he ought to helpe nature, and to exhibit ripening medicines, but if there be hope that the humours may be dissolved, he must abstaine from suppuration, tis to be noted also that all humours cannot equally and aright be turned into purulent matter; blood indeed is easily turned into quitture, but in diseases arising from choler, and Melancholy suppuratives, or ripening medicines are scarce to be exhibited without danger, since by the use of these, those humours often times do so degenerate, and are corrupted, that they may excite a cancer, and other malignant ulcers.

Neither are they safely administered to every place; In the internall parts suppuration is not rashly to be procured; amongst the externall parts, suppuratives are not safely used about the joynts.



THE
FIFTH BOOK,
PART II.

SECT. II.

Of shewing how to cure.

CHAP. I.

Of diseases of Intemperature.

*Distemper
 what it
 shewes.*

After we have finished the Indication Preservatory, now we come to the Curatory, and are to shew the way of curing diseases, and first diseases of the simular parts, and indeed what belongs to diseases of Intemperature. Of Intemperature there ought to be an alteration by contraries, namely a hot distemper, indicates medicines cooling, a cold heating, a moist drying, a dry, moistning, hot and moist requires a medicine cold and dry, hot and dry a medicine cold and moist; cold and moist require hot and dry, cold and dry indicate hot and moist.

*How a de-
 gree of con-
 trariety is
 to be obser-
 ved,*

But not only in alteration is contrariety to be observed in generall, but also certaine degrees of contrariety, as much as may be; and therefore a disease which receds very much from the naturall state, wants more vehement remedies, and on the contrary a disease which differs not much from the naturall state, requires gentler remedies; hence a hot disease in a body by nature colder, then those that are well, is to be resisted with cold things. And a cold disease in a body

body hot by nature, requires hotter remedies: A moist disease in a dry body, and hard by nature, requires exceeding drying Medicines: A dry disease in a moist body, and soft, requires things that moisten exceedingly. On the contrary, a hot disease in a body, hot by nature, requires milder cooling remedies: A cold disease in a colder body, requires weaker heating remedies. A moist disease, in a body moist by nature and soft, wants dryers not so powerfull: A dry disease in a body, dry and hard by nature, hath need of remedies moistning less.

Moreover in alterations, not onely a Medicine exactly answering to the present distemper, as neer as may be should be opposed; but it ought to be appropriated, and have a peculiar agreement to the nature of the part affected. Also we must beware least the Medicine have some other quality, joyned with the quality which is necessary to correct the distemper which may hurt the part.

Also sith hence in the cure of simple distempers, Simple contrary Medicines do best agree, if they are not alwaies in a readines, that quality which doth not agree, or which is hurtfull may be taken away by the mixture of others; As on the contrary compound distempers, if we cannot have a Medicine which is convenient for the compound contrary qualities, that which is wanting must be supplied by the mixture of others.

From all these it is manifest, that in curing diseases of the head, tis not easily to be altered beyond mediocrity, least the native heat should be weakned and dissipated; yet tis more safe to heat then cool.

In diseases of the Breast and Lungs, you must alwaies beware that you dry not too much, least the matter should be thickned and unfit to draw out. But when there is need of cooling, first beware that cold astringents are not given, but moistning, for cold things are very hurtfull to the Breast, *S. Apho. 24.* not onely applyed outwardly, but taken inwardly.

In the cure of the heart Medicines are alwaies to be mixed which have a corroborating power, and therefore moderate astringents, and odoriferous, and *Bezoarticks* as they are called, should alwaies be mixed with the Medicines which are given to the heart: But alwaies beware of vehement coolers and heaters.

Stomach.

The stomach is easily hurt as well by too much heate, as by too much cold, and in a hot distemper tis to be warily cooled, by degrees, and by little and little, but in a cold you must take heed lest the innate heate, be too much dissipated by hot things; and therefore somewhat astringent and strengthening is allwayes to be added, which may hinder the dissipation of the innate heate and Spirits.

Liver.

In curing the Liver, these medicines are to be chosen, that have some binding and strengthening faculty with tenuity of parts; such like are those that are astringent and are bitter; but you must abstaine from sweet things, by which the Liver, as also the spleen doe easily swell.

Spleen.

The Spleen requires, and endures the strongest medicines, and therefore they may safely be applyed outward, yet so that the humours contained in it may not increase by sudden cooling, or be hardened by drying; but they are scarce safely given inwardly, lest the other bowells be offended by them, and therefore what is wanting in vehemency, is to be made good by dayly use of them.

Wombe.

In a disease of the wombe, you must abstaine from vinegar, for pleasant things are more gratefull to the wombe, yet such as are great must abstaine from them.

The eye.

The Eye since it is very sensibly it doth not endure sharpe medicines, or such as may bind, and exasperate it.

But in the cure of distempers, not only contraries convenient are exhibited, but the use of likes are altogether to be avoided.

Distemper with matter.

Yet if the distemper be with matter, alteration alone doth not suffice, but the cause from whence it is cherished is first to be taken away; and therefore Indication in distempers of this nature, is evacuation and alteration, where notwithstanding by the name of a cause are not only understood causes simply so called, but also diseases and affects, some of which excite, and cherish other diseases, for these in like manner are to be taken away in the first place.

CHAP. II.

Of curing diseases of the whole substance.

IN curing diseases of the whole substance, the occult malignant quality is to be driven out by its contrary, and a re-

a remedie against poyson; and the venemous cause to be taken away, and rooted out of the body; and therefore poyson which is drunke or taken in at the mouth, is to be cast out by vomit, or presently to be drawne out through the paunch; but if it be drawne in with Aire, or hath passed beyond the liver, tis to be expelled by sweates; but those which are communicated by the biting, or striking of venemous animals, are brought by drawing after what manner soever to the body, first of all we must labour to draw back, and extract, and to hinder it all manner of wayes, least it penetrate and creepe within the body; but principally, every sort of poyson is to be expelled by those remedies, which experience teacheth to be most repugnant to them, and with those the heart is to be strengthened; yet to observe the manifest qualities also in poysons, is a great part of the cure.

CHAP III.

Of the cure of diseases of Conformation.

AS for the Errors of Conformation, if the bones are set awry, and ill shaped, in those which are growing, the cure is possible; but in those that are come to ripeness of yeares, and which grow no more, they are incurable.

But tis a generall Indication which supplies the fault of the figure, a changing of the part of the vicious figure to the contrary, untill it acquires the figure which naturally it ought to have, but this is performed two wayes, by fashioning, and alligation or binding; by fashioning that mending of the figure is to be taken, which by drawing and pressing with the hands, by little and little and often, is perfected; by binding, that correction is understood which is performed by swathings, and Ferrules, or Canes, namely by which part of the vicious figure by swathings is drawne contrary-wise, and retained by splinters, least it should bend back againe towards its erroneous figure.

Cure of figure in diseases, what they show.

How corrected.

The second sort of diseases of Conformation are in the hollow places, which two generall indications doe helpe, namely to open that which contrary to nature is shut, and to shut that, which contrary to nature is opened.

The cure of diseases in the channel or passages.

But

Of obstruction. But amongst diseases in defect the most common is obstruction of passages, whose common Indication is, apertion of obstruction But sith thence the causes of obstruction may be various, particular indications are taken from them, and those being taken away, the obstructions are also opened: Therefore that obstruction which is made by thick and viscid humours, requires attenuating, cleansing, and cutting medicines; amongst which, sometimes the weaker, sometimes the stronger are used, according to the nature of the humour it self, and the condition of the place wherein it resides; But if obstruction be made by many humours, and they contrary to nature in their whole kind, the cure thereof consists altogether in evacuation. But if the humour be not contrary to nature in its whole kind, but onely offends in quantity, the Indication is *Apokenosis, &c.* That which abounds is to be abated, according to its abundancy: But although all the obstructing causes should be evacuated, yet they differ as well in other things, as also especially in this, that each of them require their peculiar and convenient places: Those which obstruct the Breast and Lungs, are to be ejected by cough, nor can they easily be evacuated any other way: But those which are contained in the Liver, or in Veines, or in Arteries, or in the Reines, are cast out by Urine, the belly, or vomit.

Coalescence The other kinds of straightness, when the causes are taken away, they are likewise taken away, things growing together, or Coalescents, since it comes to pass by the growing together of parts and sides of a passage Indicate a Medicine breaking and taking away that Siccatrizing again.

Pressing & closing. Constipation Indicates the cause to be taken away, which make that straightness.

Compression. Compression since it proceeds from externall causes, resting upon the passages, the Indication is common, namely, to take away that cause of pressing together, and shutting the passage, but the speciall Indications are various, according to the variety of causes, and the whole cure consists in the ablation of those causes which shall be shewn in their owne place.

Lastly, Subsidence, if it be caused by too much humidity, the part is to be dryed: If the part be wrung hard, and as it were contracted, with drying things, and too many Astringents, and cold, the contraries, namely, Relaxing and moistning things are to be exhibited.

On the other side, if the passages, and vessels which ought to be shut are opened, and humours flow out from thence, the common Indication is, that the opened vessell is to be shut, which may be performed in the externall parts, with convenient Medicines applyed, and bound: But if the opening be in the inward parts, the manner of performing that is various, according to the variety of causes: If it be an *Anastomosis*, or opening of the mouth of a vessell, the orifice of the opened vessell is to be hardned and bound. If by a *Diapedesis*, thickning and incaffating Medicines are required: If by a Rupture, the broken vessell is to be united, and shut: If from Erosion, Sarcotticks first, afterwards consolidating medicines are required.

Thirdly, If the part which naturally ought to be smooth, should become rough, tis to be made smooth againe, which is performed in the Wind-pipe and Tongue: If that which is evacuated be filled up, or that which is extant be taken away; That is performed in soft parts by Medicines which moisten, and have a clammy nature: But this with abstergent Medicines; But in bones whether they are eroded, or have any superfluity annexed to them, the roughness is conveniently taken away by shaving.

Cure of diseases of the superficies.

Of roughness.

Smoothness contrary to nature, requires a contrary way of cure, and the naturall roughness is to be brought againe, by abstergent Medicines, and indeed such as throughly cleanse, namely, such as can free the glutinous humours, tenaciously cleaving to the out-sides of the parts, and restore the naturall roughness to the part.

Of smoothness.

CHAP. IV.

Of the cure of Diseases of number.

Diseases in Number, since they are two-fold, in excess, and in defect, either of them require their Indication, and that which is wanting, and naturally ought to be present is to be restored: But that which abounds is to be taken away and removed; but since that which is wanting onely can be a naturall thing, tis the part of Nature onely to make up

Diseases of number

what they indicate.

up

up and regenerate that which is wanting, but the Physician is only the servant of nature in these things whilst he defends the strength of nature, Administers fit matter, and removes impediments, but this generall indication is varied according to the variety of parts, and cannot allways be reduced into action: for it proceeds in one manner in the generation of flesh, in another of a bone, in another of a nerve, and other parts, of which in the solution of unity.

Moreover since some parts are simple, others compound, if compound are lost, neither the same in paticular, nor any thing like unto them, can easily come in their stead; in which the third scope is to find out a certaine comelinese, or to make something, which may some wayes doe the office of a lost part, yet later Physicians have invented a way of curing imperfect parts, whereof above, part 2: *sect. 1. Chap. 16.*

On the contrary excessive requires its removall, but since those things are various which ought to be taken away, each of them deserves its peculiar cure, according to the substance, dignity, situation of the parts, and differing also in other respects, for we allways beware of this, that other parts may not be hurt, or at least to doe our endeavour that they may receive very little hurt, and that there may come no greater losse to the body by the taking away, then that was which came by the thing abounding.

But the Instruments wherewith a Physician may appoint the ablation of things which abound contrary to nature, are three, Iron, Fire, and medicines; by Iron all acute Instruments of every kind which are fit for the cutting off superfluities, are understood: by fire, actual cauteries are understood, whilst that which abounds is burnt with Iron, Silver, or fired Gold. Medicines for this purpose most convenient, are those which are called potentiall cauteries, Catharticks, namely, Septicks and Escaroticks, all which are mentioned before.

CHAP. V.

Of curing diseases of magnitude.

When either the whole body, or any member thereof is increased contrary to nature, so that the naturall actions

Magnitude increased what it shews.

Actions are thereby hindered, the Indication is that the magnitude increased may be diminished: and indeed since the substance of the part is not found, when tis increased in magnitude, as in wounds, and ulcers, the same medicines are to be exhibited as to those abounding in number; but if either the whole body or any part be equally increased, and it too much increaseth through the whole, you may not use Iron, or Fire, nor corrosive medicines, but there are two speciall aimes, namely, to draw away the too great plenty of aliment from the parts, and to consume it, or take it away by Digerents, and discutients, wherefore fasting, and spare dyet, are then convenient; and such use of the non-naturalls as may attenuate and discusse, and medicines of the same nature.

Tumours also have their peculiar aimes which that generall Indication satisfieth, which commands us to diminish that which is increased contrary to nature; of which in its owne place.

Cure of Tumours.

The magnitude diminished on the other side indicates its increase, but this is performed by new nourishing, or restoring, and by generation, by renutrition; that which is wanting is restored by good and plentifull aliment, and the part acquires a greater, and naturall bignesse; but generation is then necessary when any thing is lost of the substance of the part: for there that is restored by the re-generation of flesh which was lost, and the cavity of the ulcer filled up.

Bignesse diminished what it shewes

CHAP VI.

Of curing diseases in situation and connexion.

MOREOVER Organick diseases, since there are diseases in position, and connexion, that which hath lost its naturall place, Indicates its reposiion into its naturall place, but that, which is not joynt to those which it ought, Indicates its conjunction with them; the first indication performed, and bones out of joynt are cured by bending and forcing them from the opposite part to that from whence they were removed; which by what meanes it may be performed is shewne before part 1. Sect. 2. Chap. 4. so other parts are to be reduced into their owne places.

Diseases in position and connexion without they shew.

But

But if the parts which according to nature ought to be separated, are joyned together, and grow together contrary to nature, they are to be freed and separated: But that separation is made either by Chirurgery, and the help of an Incision Knife, and Iron, or with a silken string, or with a Horse hair, or with caustick Medicines and Septicks.

Diseases in connexion.

But the other kind, when the part is not joyned with those with which it ought, Indicates that, that which contains should be rendred more firme and solid: And therefore those parts ought to be strengthened and contained.

CHAP. VII.

Of the cure of Solution of Continuity.

Unity dissolved, what it bewes.

what to be done by the Physician.

THe first, and most usuall Indication of Solution of Unity, is uniting, or unity dissolved Indicates that the parts that are separated should be united; which thing although it be the work of nature, yet the Physitian is the Servant of nature in this matter: For these are the principall duties of the Physitian here. First, he is to be carefull that nothing fall into the part affected, which may impede conglutination.

Secondly, That the extreames, or lips in the dissolved unity are rightly joyned againe, and are mutually applied to each other.

Thirdly, That the extreames so joyned may be kept together.

Fourthly, That the Temperament of the part it self may be preserved, and the help of nature is necessarily required in agglutination.

Fifthly, That the Symptomes which may ensue be prevented and corrected.

The cure of wounds.

But these aimes are not alwaies performed in all parts alike: For in wounds, every extraneous thing is to be taken away out of the Wound, then the lips of the Wound are to be joyned together, and it is to be endeavoured that they may be kept united: As before *part 1. Sect. 2. cap. 5.* is spoken, the parts being joyned, the rest of the work is to be committed to nature, tis the part of the Physitian onely to endeavour that the blood which comes out offends neither in quantity, nor quality, and to use Medicines that generate flesh, of which

which *Galen* 3. of his Method of healing, cap. 3. And lastly, to cicatrize the wound: yet if certaine Symptomes which may hinder the cure, do follow, as Hemerodes, paine, convulsions, they are to be resisted, and principally care is to be taken that no inflammation ensue.

In the cure of Fractures, the Physitian propounds to himself two aimes. First, that the broken bones may be rightly joynd together againe, and that the naturall Position and Figure may be restored to them: The other that being joynd they may be kept together and retained, and grow in their naturall figure: But in what manner that may be performed, is spoken before, p. 1. S. 2. c. 3.

But the generation of hard flesh and skin, whereby the bones and skin may be conglutinated and grow together is the work of nature: But the Physitian ought to help nature, which he doth if he beware least any inflammation or such like accident which may hurt the substance and temperature of the member, should follow, and the alimēt is to be so disposed through drying Medicines, that it may the sooner be changed into callous, or hard flesh, of which tis spoken before.

Of Fractures.

Generation of hard flesh.

CHAP. VIII.

Of the cure of oppressing and urging Symptomes.

The third sort of preternaturall things remaines, namely, Symptomes. Symptomes as they are preternatural Indicate in generall the ablation of themselves: But that Indication for the most part is unprofitable: For since they depend on diseases, and their causes, those being taken away, these also are taken away: But because it cannot alwaies be expected, or waited, untill the cause, or the disease be taken away, somethings necessary Indicate, vvhich require a peculiar cure different both from the cure of a disease and of the cause, and that they require to be done speedily: Such Symptomes are those which are said to urge or enforce: All those things provoke which threaten such danger and mischief, that the ablation of the disease, or of the cause on which it depends cannot be expected, but if it should be expected, it would threaten the hazard of life, or some great hurt; But then the ablation of the disease is not to be expected,

Symptomes urging, & how many.

cted,

sted when either it is incurable, and the Symptomes belong to an action hurt, that is necessary, not absolutely for life, but for amendment, or if it be cureable, the cure whereof is so tedious, that before it can be perfected, danger and hazard of life will be like to happen, by reason of the Symptome; those Symptomes are commonly accounted but few, principally paine, watchings, and immoderate Evacuations, yet there are some others.

Cure of
paine.

Paine indicates a medicine taking away or mitigating paine, but since paine is either a sad sensation, or else is not made without a sad perception by sense, and two things are necessary to sensation, perception of a thing Tangeable, or sense in the part which it meetes with, and advertency of the mind, if one of these be wanting neither sense nor paine is, and therefore those things which take away, and hinder one of these, are contrary to the paine: and as for what belongs to the sense in the part, we may resist paine two wayes, either by opposing a contrary object to the sad sensation, or by taking away the sense; sithence therefore a sweet and pleasant sensation is contrary to a sad, that the sad sensation may be taken away, that is to be offered to it, which is endued with a mild and gentle heate, and brings forth a pleasant, and sweete sensation when touched, which are *Anodines* (or medicines mitigating paine) properly so called, as a bath of fresh water, common Oyle, the fat of Animalls, Muscillages, and other things endued with a temperate and pleasing heate, of which above P. 1. S. 1. Chap. 7.

Anodines.

Stupefac-
tives.

Moreover Narcotticks mitigate paine, or Stupifacives, which stupifie the Spirits, and together provoke sleepe, and so doe it, that the Dolorifique subject is not perceived.

Secondly, Intentiveness of mind is hindred if it be averted to other objects.

Cure of
over much
watching.

Overmuch watching indicates a medicine causing sleepe, sleepe may be occasioned foure wayes; first if all things may be removed which may excite any sense to operate. Secondly, if the mind be drawne away from the agitation of the externall senses, and the animall spirits are pleasantly invited, from motion to rest. Thirdly, if those things are exhibited, which allay hot, dry, and sharpe vapours, and send pleasant fancies into the braine, wherebv it is moistned, and as it were stupified. Fourthly, if those things are exhibited which by a peculiar faculty make the animall
Spirits

Spirits drowzie, and unapt, or dull, which specially are called, Hypnoticks, and Narcoticks.

Thirst since it is the desire of cold and moist, and is made through the defect of cold and moist, it Indicates cold and moist, as its contrary.

Cure of Thirst.

Too great a flux of the belly, as it is such, is stoppt by astringent things.

Of the flux of the belly.

Blood flowing Indicates a remedie that stanches blood; but it is stoppt two wayes, either by prohibiting, that the blood cannot returne to the place, out of which it came, or if the vessells suffer it not to flow, which will be done, if they are shut, or closed; and sometimes, one of them only sufficeth, and sometimes, when there is a great flux of blood both are necessary. That the blood may not flow back to the place out of which it came, is to be brought to passe if it be not drawn back by it, if it be repelled, it it be drawn to another place, tis not drawn back if the causes, by reason of which tis drawn back be taken away, as heat, pain, troublesome thirst: tis repelled by the use of the Refrigeratives; and astringents, tis drawne into another part by Revelling, or Deriving, but that the blood may not flow back, is prohibited when the end is shut, which is done, when the way is obstructed, and stoppt; through which it flowed.

Flux of blood.

We cure a swooning by refreshing the Spirits, although it cannot be done presently by removing the cause, for this purpose the most sic things; are pure Aire, excellent and odoriferous Wine, and spirits distilled ofir.

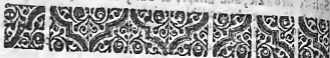
Fainting or swooning.

But not only actions hurt, but other Symptoms also sometimes trouble, if the Arme pits stink and smell ranke, that inconveniency is remedied by the use of sweet things, if the breath stinks, that imperfection is hid by the chewing of sweet smelling things;

is taken from the mouth, because it procureth a more fresh according to nature, for the strength of the body, according to nature, are called...

But since as above in the... THE

Some Medicines, and many or dull, which, probably are



Care of
Thirst

THE

FIFTH BOOK,

PART II.

SECT. III.

Of the vitall Indication.

CHAP. I.

What doth Indicate Dyet in those that are

sick.

Since hence, it is spoken by what means things preternaturall are to be taken away; now it remains that we speake, how that which remains in a sick man, according to nature may be kept, or preserved: but those things which are according to nature commonly come under the name of strength, or force, and Indication which is taken from thence, is called vitall, and Conservatory, because it preserves those things which are hitherto in the sick, according to nature, and those things which can preserve the strength of our body by themselves, and are according to nature, are called vitall and Preservatory Indicates.

But since as above in the 4. Booke, part 2. Chap. 1. it is said there are three vitall, or Preservatory Indicators, health, the cause of health, and sound actions, as we are to endeavour, that in a sound condition all these may be preserved, so it is to be aimed that as much as it is possible they may be kept

kept in such as are sick, and this is to preserve strength; namely to preserve the native heat, in the whole, and in all the parts, and the right use and observation of things called non-naturalls.

Namely the strength shews the Aliment, in this respect *The* because 'tis placed in spirituouse, solid, and fleshy parts, *strength* having a just quantity, and doth use them as an Instru- *what it* ment; and the vitall Indication is busied only about keep- *shews.* ing the substance of the spirituouse; solid and fleshy parts.

But although the strength only Indicate Aliment, yet it *Things* may be prohibited from others, for oftentimes the giving of *prohibi-* meate increaseth the morbidique constitution, and also to- *ting.* regard this, that 'tis not to Indicate Aliment, but to prohi- bit it, for when meate is given nature is called away from concoction, and evacuation of morbidique matter, and therefore when the powers Indicate their preservation, which is performed by exhibiting nourishment in that quantity which the substance to be preserved wanteth, but the morbidique cause Indicates its Evacuation, and therefore commands nature to be at leisure for it selfe alone, and so prohibits Aliment, whereby nature would be called away, and hindered from its worke, you must be carefull, what urgeth more.

In breife: strength only Indicates Aliment; the morbidique cause permits, or prohibits; the rest, as age, custome, Time of the year, the state of Heaven, and such like are the signes of firme strength, or of weaknesse, or such as may shew the force, and greatnesse of the morbidique cause.

CHAP. II.

What things belongs to Dyet.

Although Dyet consists principally of meate and drink, *Things pro-* yet other things also called non-naturalls, as Aire, sleep *hibiting to* and watchings, exercise and rest, and accidents of the *Dyet.* mind, belong thereunto: but amongst these there are some things out of which primarily, and by themselves Aliment is generated; such is Aire, meate and drink, but others, are accounted amongst the matter of food, in this respect, not because really out of those as the matter, Aliment of the body is generated, but as they are the causes of Aliment by accident,

accident, and helpe that those things which are the true materialls of Aliments, may be more commodiously turned into Aliment: such are sleep, and watchings, exercises, and rest, Repletion and Inanition, and passions of the mind; of which is spoken above in the 4. Book.

CHAP III.

How many sorts there are of Dyet, and which agrees to which diseases.

*Dyet three-
sola, Thick.
Indifferent.
Thin*

BUt Dyet is threefold, thick, thin, indifferent, or bewixt both, thick or full Dyet is that which can preserve not only the strength which is present, but also can increase it, indifferent is that which preserves the strength as it finds it, the thin is that which preserves the strength yet somewhat abated. Of thick and full Dyet again some is simple, which agrees to those that are sick, and is made by a ptisan, with the Barley whole; another is fuller and thicker, which is made with fish and Eggs; another which is the fullest of all, which gives way to flesh of creatures that are gelded. Simply thin is threefold; simply such and is made by the juice of ptisan, the thick juice or creame of ptisan, or ptisan strained; the thinner is that wherein water and Honey is mixt; the thinnest Dyet was that of Hippo. wherein nothing was put; the middle sort was made with bread dipt in broath, or also with the fish of fowles.

But regard is to be had of custome, places and Countries, since in some Countries, full Dyet is more in use, in others more sparing, and according to that, the matter of thin Dyet is to be moderated.

*What food
is fit for
what dis-
eases.*

But what kind of Dyet agrees to what diseases, the comparing of the strength which Indicates food and the morbifique causes, which hinder the same, do shew; for by how much the more nature is busied, in opposing the morbifique cause, by so much the more sparing Dyet is convenient; but by how much the lesse it is busied, by so much the more plentifull Dyet may be given; but by so much the lesse it is oppressed, by so much the state of a disease is nigher, and therefore also, by how much the disease is more acute, by so much the Dyet is to be more sparing; so that the strength can endure with it, untill the state, but tis known when the strength can endure and subsist untill the height, but when it

it cannot, the nature of the sick is to be considered: for if the body is made bitter with choler, hot and dry, abounding with choler, especially about the stomach, he cannot endure thin Dyet, or fasting; for such bodies motion is easily hinderd, regard also is to be had of age, for as it is in Hippo. 1. Apbo. 13. old men easily endure fasting, as also those of middle age, young men lesse, boyes least of all, and amongst them, especially those which have sharper, and quicker wits.

But as for the nature of a disease, in long diseases there is need of an indifferent or full Dyet, and so much the more plentifull, by how much the diseases are slower, but in acute diseases, thinner is requisite, least if we should give too much meat, we should cherish the disease; but since there are degrees of acute diseases, so much the thinner is to be given, by how much the disease is the more acute.

Yet it is allwayes safer, to give thicker Dyet than is fir, rather than thinner; as for the quantity you ought rather to study subtraction according to Hippo. 1. Apbo. 5: In thin food the sick doe faint; whence it comes to passe that they are butt the more, for as much as every fault here, is greater then it useth to be in a little more plentifull Dyet.

whether more error is committed in full or spare Dyet.

CHAP. IV.

Of the right Administration of the Dyet of sick persons.

IN the same manner as in medicines, so in vitalls, a threefold these may be observed; namely the highest, middle, and lowest, which may be administred in all Dyet, whether thick, indifferent, or thin. But which dose is to be given, and when, is collected, by comparing of the strength, and morbisique cause one with another; for since the morbisique matter sometimes urgeth more, sometimes lesse, and sometimes the helpe of nature is more required in resisting the cause of a disease, the same forme of Dyet may be observed, sometimes a greater, sometimes a lesser is to be given, according as nature is sometimes buied more, sometimes lesse in the combat with a disease.

Quantity of meate.

Namely in the beginning of a disease, nature contends not much as yet with the morbisique cause, neither whilst it is yet employed in concoction, and Evacuation; wherefore

you may exhibit victualls, which are convenient for the disease, then the highest dose.

In the
Augmenta
tion.

But in the Augmentation because nature begins to contend with the disease, and is more busied about the morbid matter then in the beginning, then some of the quantity is to be abated, and Dyet is to be given in a middle dose.

In the
state .

But in the state when the combat of nature, and the disease is most violent, and nature is most busied in concoction and evacuation of matter, the victualls are to be administered in the smallest quantity, and nature not to be called away from its purpose.

The time
of giving
food to the
sick.

The time, and when meate is to be given, as for that in continued diseases, and such as have no differences of fits, Dyet is to be administered according to custome, principally at that time when the sick use to eat before; But in diseases which have fits, when meate is to be given Hippo. shews 1. Apbo. 11. It becometh to take away meate in the fits themselves, for to give it is hurtfull, and when by circuit diseases returne, in the Paroxismes themselves you must abstaine, which neverthelesse is not simply to be taken, but if a feaver be from a sharpe and biting humour kindled by the Sun, anger, fasting, labours, and the sick be thin, and leane in body and in Temperament, and especially in Summer time if he be hot and dry, either a little before the fit, or in the fit it selfe meate is to be taken, otherwise he easily falls into a burning feaver or Hectick, swooning, or convulsion, or such like, and indangers the losse of his strength.

THE



THE
FIFTH BOOK,
PART III.

Of the Compositions of Medicines.

SECT. I.

Of preparing and compounding
of Drugs in general.

CHAP. I.

Of the necessity and profit of preparing and
Compounding simple Medicines.

THere remains now the Pharmaceuticall part of Physick, which prepares and compounds simple medicines, for the word Pharmacopia comprehends them both, namely the alteration of simple medicines by the helpe of Art without mixture of others, and the mixture of simple medicines.

But this part of Physick is necessary, for many and great causes, for first the cause may be in the medicine it self, namely if the substance of medicines be not so proper, and troublesome to the sick, by preparation and composition that which is wanting may be supplied and that which is unprofitable, troublesome, and hurtfull may be taken away; sometimes a medicine hath a superfluous quality which we do not then want, therefore we ought to allay that by mixture of the contrary; some simple qualities are easily

corrupted, wherefore there needs digestion, distillation, concoction, to be used, or to preserve, or pickle those things with Honey, Sugar, Vinegar, Salt. The strength of some medicines is easily taken away, whence we are to effect by the mixture of more viscid things, that so it may not be easily dissipated. moreover the causes in effect it selfe contrary to nature, for if simples are not to be found which have all those faculties, which are requisite, in one sick person ofentimes, and in the mixture of diseases contrary to nature, then one medicine is to be compounded of severall simples, which may performe all the Indications; which kind of medicines the Greeks call, Polychreston. Thirdly since that simples are not allways supplied by nature which may agree to the Temperament, Sex, kind of life, and various constitution of the parts of every one, there is need of preparation and composition. Lastly, for the severall formes also whereof this is more pleasing to this, that to that person, nay in regard of the disease also tis necessary to prepare and compound medicines.

Or that we may briefly contract these things, there is need of compounding medicines, for two reasons, either for the strength of the medicines sake, or for its use and application sake; for if the vertue of the medicine be weak tis to be strengthened by mixture with more vehement, if any faculty be deficient, tis to be mixt, if a medicine be stronger then it is required, something is to be added by which it is to be abated, or corrected. If a simple have any superfluous quality or hurtfull, that is to be mixt, by which that hurtfull quality may be taken away.

But that the medicine may rightly be applyed and drawn into action, tis necessary that the medicine maybe preserved, least before administration it looeth its strength, by mixture of some preservative, for example, with Sugar, or some other. Moreover that it may come to the place, a vehicle is to be mixt, which leading it, it comes the easier thither, and least it should be weakened by the way, tis to be mixed with the stronger, that it may come to the part in that degree which it ought. Lastly, tis necessary, that the medicine applyed to the part affected, may continue, whence are required medicines which may retaine those things which ge away, or do not adhere to the part, in the part.

CHAP. II.

What things are necessary for the artificiall preparation and Composition of Medicines.

ALL those things which are requisite for the composition of Medicines may be reduced to foure heads; first a medicine which may supply the Indication whereby a disease or the causes of a disease, or the Symptome it selfe which offends, may be opposed: and such a medicine, in composition is called the basis because on that as on the foundation, the edifice is builded, the whole composition depends on it and al the rest are referred to this, & are mixed together, for its sake, and that its strength be great in the compound tis necessary; But the basis is sometimes simple, sometimes compound, and indeed not in one manner, for that is called a simple basis, which satisfies one Indication and brings forth one effect, although it doth not allways consist of one, and a simple medicine, but oftentimes is compounded of more, but that is called a compound basis, which can performe more uses, but at other times that is called a simple basis which consists of one medicine, a compound which consists of many, but a compound medicine takes its denomination, sometimes from the basis, sometimes from the medicine, set downe in the first place in the prescription.

But that the basis, or medicine, which is opposed to the disease contrary to nature, should be accommodated in all respects, besides preparation, oftentimes correcting and helping things are required; for since that sometimes the basis is weaker, thicker, or slower, or stronger, and more powerfull then it ought, or hath any malignant, and hurtfull, quality or is ungratefull to the smell or taste, or any other way troublesome, and have any strange and unprofitable quality; the dull and idle are corrected by the mixture of whetting things, and such as increase strength: thick qualities, are to be amended by mixture of thin; sharp, vehement, too hot or too cold, or malignant are to be corrected by the addition of their contraries: in unpleasent savour, or taste, by things having pleasent savour; those things which

what things are required for the
 required for the
 for the
 compound-
 ding of me-
 dicines.
 The basis
 of medi-
 cines two-
 fold.
 Simple.
 Compound.
 Correctors
 and Hel-
 pers.
 are

are indued with an ungratefull and unpleasant smell, by those things which have a fragrant and pleasant smell, and by all other pleasant things are to be corrected, and all hurtfull qualities or unprofitable, are to be amended and taken away, by the mixture of their contraries.

Directers.

Thirdly, If medicines of their owne accord cannot conveniently come to the part affected, there is need of Directers, as they call them, namely such as either are familiar to the part affected, or open a way for the medicine.

Preservers.

Lastly, To the composition of a Medicine those things are required which preserve from injury and corruption, and give it a certaine forme and consistence: Hence some are preserved with Honey, others with Sugar, others with Oyle, and receive from them the forme either of an Electuary or of a Sirrup, or a Conserve: But some are rendered fitter to endure, or keepe, by preparation only.

CHAP. III.

Of the Weights of Medicines.

But before we come to the preparation and composition of medicines, by which two Pharmacopeia is finished, something is to be premised of the weights and measures of Physick, and of the dose of medicines, for things out of which the formes of medicines are prepared, are esteemed either by number, or a heap, or weight, or measure.

Fruits and Pulse, and the greater seeds, are numbred, and when the number is equall, they are divided into paires, or couples, and tis written, Par. 2. 3. But the quantity of medicines is described by heape, by little handfulls, by great handfulls, and little bundles: and Physitians use these principally in leaves, herbs, flowers, barley, and certaine seeds, salt, and other things. A Pugill is as much as can be comprehended by the extremities of the fingers joined together, and drawne together, and tis called by some a little handfull: A handfull is as much as can be held or comprehended in the hand: A little bundle is as much as we can take between our armes.

What things are accounted by number.
By heape.
By pugill.
Little handfull.
Bundle.

By weights, as by the balance and scales, they weigh By weight dry things for the most part, but liquid things they measure, although they also may be described by weights. And the measures are no other then such as are described by pounds and ounces.

But although there be great variety of weights, we will By measure propound onely those which Physitians use at this day everywhere up and downe, and are most necessary for the reading of Authors.

The least of all weights is a Graine, which moreover is A Graine. constant, and ought to be one and the same amongst all Nations; for although without doubt, it tooke its name from a graine of Barley, or Wheate, yet since there is not the same weight of these in all places, not these but the smallest Money, which in all Nations is the same, and is kept unchanged, and is to be accounted for the foundation and beginning of all weights: But it is noted by Physitians in this manner, Gr. \bar{g} .

A *Chalcus* with the Greeks, consists of two graines, *Chalcus*. which kinde of weight the Arabians named *Kesuf*, commonly called *Arcolum*, or two graines.

Dicalcon makes foure graines, with which agrees *Siliqua*. *Chevation*: *Siliqua* or foure graines, which the Arabians call *Chirat*.

Hemiobolon, or Hemiobolion, a Semiobolon is six *Semiobolus*. graines.

Obolon, or Obulum consists of twelve graines, the sixth *Obolus*. part of a drachme.

Foure and twenty graines make a scruple, for a scruple A Scruple. consists of two Obolacs. Whence with the Greeks a Diobolon, is the same with the scruple, whence it is also called by the Greeks *Gamma*, that is, a Letter, to wit because an ounce containes so many in it, as the Greeks have Letters: and it is the four and twentieth part of an ounce. But amongst later Writers, for the most part, those which followed *Nicholaus*, and *Venetous*, a scruple containes only twenty graines, and it is thus noted, ζ .

Thirty six graines make Hemidrachmon, or Triobolon, *Semidrachma*. that is halfe a drachme, which they call an Egyptian bean, *ma*. or an Alexandrian bean, β .

A Drachm.

Seventy two graines make an Attique drachme, which is used by Physitians; but the drachm of *Nicholaus* and *Venetus*, which at this day, for the most part, is used every where, contains onely sixty graines, *Drachmi*, and *Darchimie*, or *Darchimet*, with the Arabians, the word being corrupted, is called *Drachmes*, in English a Drachm. By *Serapio*, and the same Arabicks it is also called *Aureus*, and by the same these names, *Drachme*, and *Aurei*, are often confounded: But at other times, *Nommus Aureus*, or *Denarius* contains foure scruples, namely a whole Drachm, and the third part of a Drachm; eight Drachms make an ounce, and it is thus marked, ʒi .

Twelve ounces make a pound, *lb*.

Deunx makes eleven ounces, ʒxi .

Dextans hath ten ounces, ʒx .

Dodrans hath nine ounces, ʒix .

Bes hath eight ounces, ʒviii .

Septunx hath seven ounces, ʒvii .

Semios or Selibra hath six ounces, ʒvi .

Quincunx hath five ounces, ʒv .

Quadrans hath foure ounces, ʒiv .

Triens hath three ounces, ʒiii .

Hereunto belongs the Table *

CHAP. IV.

Of Physicall measures.

A Description of measures.

AS dry things for the most part are weighed, so liquid things are measured, although the manner of measures be appointed by Physitians, according to the manner of weights: But measures may be explained two wayes, either greater by lesse, or on the contrary, lesse by greater; or by weights: For if it be asked, what a Pint or a Pound is, tis answered, to be the halfe of a Sextarie, or to containe six Cyathos, or Cupps, or its answered, it contains nine ounces of Oyle: For the former way of describing measures, is certaine and stable, but the latter way of explaining them is not alwayes the same; for although the capacity of measures be not changed, yet the weight of the things

things that are measured by the same measure are not the same; whence Physitians at this day, since in liquid things they rather regard the weight then measure, and they use measures onely for to save the labour of weighing. Three kinds of measures of liquid things are used; namely, some for measuring of Wine and distilled Waters, others are appointed for Honey, others for measuring of Oile; all which measures, although they are distinguished by the names of Ounces, yet the weight of liquid things varie in the distinction of ounces: for since Oile is light, more of it goes to an ounce, Wine since tis heavier then Oile, lesse of it goes to an ounce; Honey since it is heavier, then both, a small quantitie, in comparison of the other, makes an ounce.

The first and least of measures which are tryed, not by weight, but onely by quantitie, is a spoonfull, and the division of measures doth not go beneath it: But a Cochlear, or a Spoonfull, is four-fold; The least, that a little bigger, a great, the greatest; the least contains halfe a drachm in weight, of a thing that is of a middle weight; that a little bigger, a whole drachm; a great, a drachm and halfe, or two drachms; the greatest contains halfe an ounce in weight.

A common little Spoon is halfe a cup, and contains in weight of Oile, six drachms, of Wine or Water twentie scruples, of Honey nine drachms. *Mustum.*

A Cyathus or a Cup, is the sixth part of a pint, by common observation, it holds in weight of Oile twelve drachms, of Wine or Water thirteen drachms and a scruple, of Honey eighteen drachms. *Cyathus.*

Acetabulum, which by the Greeks is called *Oxybaphum*, is a Cup and halfe, the common observation it holds in weight, is eighteen drachms of Oile, twentie drachms of Wine and Water, twentie seven drachms of Honey. *Acetabulum.*

Quartarius, or the fourth part of a Sextarie, contains three cups. *Quartarius.*

Hemina or Cotyla, is the twelfth part of a Congie, halfe a Sextarie, it contains six cups, but in weight nine ounces of Oile, ten ounces of wine and water, thirteen ounces and half of Honey, (this measure contains three quarters of a pint.) *Hemina or Cotyla.*

The Italian Sextarie is the sixth part of a Congie, it contains two Heminaes (or a pint and halfe) twelve cups; but in weight it contains eighteen ounces of Oile, twenty ounces of wine and water, 27 ounce of Honey. *A Sextary.*

A Con-

A Congie.

A congie is the eight part of Amphore, (which is a Tankard, or Rundlet,) containing eight gallons: it contains six Sextaries, twelve Heminae, but in weight, nine pound of Oyle, ten pound of Wine and Water, thirteen pound and halfe of Honey.

Urna.

Amphora.

Urna, is half the Italian Amphora, but the third part of the Attick, for a Greek Amphora which is called, Cadus, and Metreta, is greater then an Italian, it contains 48. Sextaries, but in weight it holdes seventy two pound of Oyle, ninety pound of Wine and Water, one hundred and eight pound of Honey (this Urne of our measure contains foure gallons and halfe.)

Culeus.

Culeus is a measure containing twenty Italian Amphorae, tis the greatest of measures, but of these things tis spoken more at large by others.

C H A P. V.

Of Doses of Medicines.

Although in this darknesse of mans understanding, tis not so easy to define, by what Rule and proportion; Elements agree in mixture; yet by the most, the opinion of Alchindus is retained, and a Geometrical proportion is appointed in degrees, not an Arithmetical, and that for this reason, because betwixt the neereſt degrees, there is a far greater difference, and inequality, then there is between two numbers, immediatly following one another.

Hence from two scruples to two ounces is accounted a temperate dose: the dose of a medicine, in the first degree from a scruple to an ounce; in the second from halfe a scruple to halfe an ounce; in the third from five graines to two drachms: in the fourth from two graines, and a halfe to a drachm: yet it is here to be observed that in every degree as appears by the dose, there is a certain latitude in the highest degrees, you may not allwayes ascend to the highest dose, nor may all those things, which are in the fourth degree be given to a drachm, but according as some are in the beginning, others in the middle, and others in the end of the fourth, so the dose is to be moderated.

Moreover 'tis here to be noted that regard ought to be had of occult qualities also, and therefore experience is especially to be consulted with

The Doses of Purgers.

As for the doses of purging Medicines, they may be limited according to degrees, but since that in every degree there are three mansions, tis not lawfull to give what medicine you please of what degree soever from the lowest to the highest dose of that mansion. But every mansion hath its highest and lowest dose.

The dose in the first mansion of the first degree is from two ounces, or three to six or seven ounces; such like are Syrup of Roses solutive, and Honey of Violets solutive.

Those which are in the third mansion of the second degree are given from 32. to 33. or 34. to these belong juice of Roses and Violets, Manna, Cassia, Syrup of the flowers of Peaches, juice of Flowredeluce.

Medicines in the first mansion of the second degree are exhibited, from halfe an ounce, or five drachms, to an ounce and halfe, or two ounces; hitherto are referred Tamarinds, and Cassia; in the second mansion of the second degree, they are given from halfe an ounce, to an ounce and halfe, as Turpentine.

In the third mansion of the second degree they are administered from 3. Drachmes to 7. Drachmes, of this kind is Epythimum.

In the first mansion of the third degree the dose is from a Drachm to halfe an ounce, hereunto are referred Myrobalsans, Rhubarbe, Agrick;

In the second mansion of the third degree, purging medicines are exhibited from a scruple to two drachms, in this rank are Aloes, the seed of Fleabane, Polypodie, the leaves and powder of Sena, Mechoacan.

In the third mansion, the dose is from halfe a drachm to a drachm, hitherto belongs Asarabacca, Cartharums, or bastard-safron, Soldinella, Hermodactiles, Turbith, Lapis Armenus, Lapis Lazuli, Opopanax, Sagapenum, black Hellebore, the roots of Jalap.

In the first of the fourth degree, Purgers are given from ten grains to halfe a drachm, hitherto belongs Mezereum, the seed of Thymelea, or Oneorum, or Granum Gnidium, i. e. Mountaine Widdow-waile, Coloquintida, Elaterium, Hyfop.

The

The dose in the second mansion of the fourth degree is from five grains to fifteen grains; in the end of this mansion, is Scammony.

In the third mansion of the fourth degree, they are given from three grains to ten grains, of this kind is Euphorbium, Spurge, Antimony.

But of the dose of these simple purgers, is spoken particularly, above, part. 1. Sect. 1. Chap. 11.

But as for the doses of compound medicines they are first found out by the qualities of the simples which are mixt together; Secondly, from the degrees of their strength; Thirdly, from their quantity, of which in the Institutions.

The Doses
of com-
pound me-
dicines
how they
are to be
found out.

In the finding out of the dose therefore of compositions; first tis to be considered, how many doses of purgers are in any composition, afterwards the weight is to be determined; of the whole composition, and hence by the rule of proportion you must enquire how great a part of the whole compound may be given for one dose; as for example, if we examine, *Pillule Cochiae*, there are in that composition of *Hierapicrae* ten drachms; which in its self contains ten high doses of Aloes, of *Coloquintida* three drachms, and a scruple, which contains seven doses, of Scammony two drachms and halfe, which hath ten doses, Turbith five drachms; which for the most part make foure doses, *Stechados* five drachms, Syrup of *Stechados*, for the most part ten or twelve drachms.

And so since the whole composition which contains twenty foure of the highest doses, hath for the most part thirty six drachms, a drachm and halfe answers to one dose, and the highest dose of *Cochiae* pills shall be a drachm and halfe.

The doses are 24.

The composition 36. drachms.

Therefore the dose is 1. drachm and halfe.



THE
FIFTH BOOK,
PART III.

SECT. II.

Of Operations necessary for the
preparation, and composition
of Medicines.

CHAP. I.

Of the parts of Pharmacopœia.

THE whole art of an Apothecary may be divided into two parts, whereof the first handles the operations by which the Apothecary obtains his desired end, and whereof oftentimes in the preparation of one Medicine they are more, and the same are required in divers preparations; The other teacheth, to prepare certain remedies by those operations, and to reduce them into a certain form, and when it is needful, to joyn and compound many of them. To the former part belongs Chymistry in some measure. But since, that is largely spoken of in the tract of consent and dissent of Chymicks, and Aristotelians, as also in the Institutions, I am unwilling to repeat those things here in this compendium.

*The art of
an Apothecary.*

CHAP. II.

Of the kinds of heate.

The degrees of heate.

AS for what belongs to operations, and performances, since all Apothecaries whatsoever have need of heat and fire, as being the most common and usefull Instrument, first let us treat of heate.

But in heate in the first place, the degrees thereof are to be considered and the manners, of adding of fire; the degrees of heate in generall and absolutely are accounted foure; The First is that which appears pleasing and milde or gentle; the Second is that which is quicker and almost not to be endured by the hand; the Third destroyes, the Fourth is the highest: but every of these degrees have a great latitude, and therefore not undeservedly every degree may be divided againe into its degrees, in rightly shewing whereof much discretion is required, but for the most part tis better to erre in defect, then in excessse, for if any thing be once corrupted by the violence of the fire, it cannot be restored to its selfe againe, and oftentimes glasses are corrupted, and other dangers are accumulated, but if there be any error in defect, by continuance and increasing the degree of heate, it may be recompenced, although the time of operation be prolonged.

How they may be varied.

But the degrees of heate may be made up divers wayes, and depend on divers causes, the chiefe whereof we will propound. For first fire may be used divers wayes and manners, for sometimes the matter with a fit vessell, or without a vessell, naked and open, is put to the fire, which againe is done severall wayes, for either it is circular, which in plaine incircumfereth the vessells and is removed from a distant place by degrees neerer to the vessell, untill at length, tis heaped up over the vessell, or else the vessells are put in a fit furnace or the fire is made above the vessel *reverberatory*, or striking back when the flame is repercussed by the cover, or doore of the furnace, it strikes as it were the matter, and so it flies round every way.

A dry Bath.

At other times the matter with its vessell is not exposed to the open fire, but is set against another body intervening, and that divers wayes; for first, if a pot to put sand or such like

like matter into, put on a vessell standing on a Trivet containing the matter to be prepared, be empty, tis most conveniently called a dry Balneum or a dry Stupha, but if the vessell be not empty, a various heate according to the variety of matter which is put in it, may be afforded, and may be called by severall names; if it be filled with water and the vessell together with the matter to be distilled, be set into the water; it is simply called *Balneum Maris* or *Maris*; a Bath also may be prepared not only of water but of the saw-dust of sawed wood or Hay filling the vessell and then moistning it, and so cover it with a glasse, but if the vessell with the matter to be elaborated be not set in water, but be so placed, that it may receive only the vapour of the heated water, it is called *Balneum Vaporosum*, afterwards let the pot be filled with the dust of Bricks, with Sand, Saw-dust, the filings of Iron and such like.

Balneum
Maris.

Secondly, the moderation or governing of the heate, depends on the store of fuell, the quantity whereof in the kindled coales, the Artift can at pleasure abate or increase, or make it how he please, and that either by the plenty or want of coales, or by the more free eventilation of Aire, and the shutting out interception of the same; for a greater quantity of coales make a greater and stronger heate, if they can by the fuming of the Aire, and by opening of breathing holes, be kindled, all which may be better shewne then described.

Thirdly, for the variation of the fire, the dishes commonly called *Cappelle* do make it according to their various distance from the fier; for if they are moved neerer to the fier it is increased, but if further off, the heate is remitted.

CHAP. III,

Of the first rank or forme of operations of Breaking,
Sleeking, or making plaine, Shaving and File-
ing.

In the in-
stitution's

Chap. 3^o

4.5.6.7^o

The kindes

of opera-

tions Phar-

maceuti-

and call.

NOW for what belongs to Workemanship and operations, although all these may seeme to be refer'd to conjunction and separation, yet it pleaseth us in this place according to our purpose to reduce them into three formes,

and to comprehend them in the three following Chapters, In the first we may contain those operations which pertain to the dissolution and corruption of a thing; In the second we will put in those things which are separated, and the detraction of any thing; In the third, we will explain those which are appointed for the alteration, immutation, perfection, and preserving of a thing.

In the the first rank are breaking, or grinding, shaving, fleeking, filing, melting, or dissolving, drayning, burning, turning into ashes, or incineration, calcination, precipitation, funigation, putrification and fermentation.

Tritura.

As for breaking or grinding, the chief end thereof is, that things may reduced into their smallest parts; that afterwards they may the easier, and more exactly be mixt with others, and their vertue may be drawn out.

Levigatio.

Sleeking, or levigation, is nothing else then a most exact breaking or grinding whereby some Medicine, red marble, or some other polite stone, a convenient liquor being powred in, or else without liquor, is so long wrought with a little kind of Mil stone, by the turning of the hand, that it is reduced into the form of fine flower, and wonderful smal dust, in that manner painters use to prepare their colours.

*Cutting
Shaving
Filing*

Next to these are Section, Shaving, and Filing: Leaves, Staulks and rootes of plants, are cut with Scizzers, or Knives, and by this means they are prepared, for boyling, infusion, or grinding, other things are shaved, or lessened by a turn, as woods, horns, hoofs, or nails, teeth of living creatures, for the same purposes. But those things which can neither be lessened by cutting or breaking, should be filed with an iron File, and reduced into the smallest parts, such like are most metalls, as iron, and others, and also woods, horns, and bones of Animales.

*Melting
Dissolving.*

Melting is a reduction of harder things, into a more liquid substance. Dissolving differs not from this, unlesse because that is done alwaies by the benefit of heat, and for the most part without adding of moisture; but this is alwaies done with moisture, and oftentimes without heat, so they melt fat, butter, marrow, wax, Pitch, rosin, certain kinds of gummes, as also metalls by a greater strength of fire, but for the most part with powder added that they may the better run; all kinds of salt, are dissolved teares, juices, many kinds of gummes, Rosins.

Drayning or dissolving is a peculiar sort of solution when *Deliqui-*
a body is made fluid, by moist aier, which insinuates it self *sum.*
into it, so salts, allome, nitre, and such like melt, all
which turn into liquor, also lynie, or chaulke, of which the
greatest part are dissolved into liquor, or some thing of them
onely melt, according as they contain more or less salt.
To these belong burning, and torrifying, yet they differ in *Burning.*
this, that these are performed with the lesse, they with the *Toasting.*
greater fire, whence, in toasting things are rather dried, then
burnt, and if any thing be burnt, tis the out-side, but in burn-
ing as well the internal parts, as those on the outside are
burnt together. This drying is performed in a Platter, or
Frying pan, especially of iron, wherein medicines put to the
fire may often be stirred about, that either the superfluous hu-
miditie may be consumed, or the qualitie that abounds in the
medicine may be taken away, but burning, when any medi-
cine, as harts horn, mans skull, ivory, oils inclosed in a pot-
ters furnace, are burnt, and being burnt, and as yet hot are ex-
tinguished in a convenient liquor, and afterward rubbed, or
crumbled to dust.

Cinefaction, or a reduction into ashes, is so called when the *Burning*
moisture, which was in the combustible matter, by which the *to ashes.*
parts hung together, is consumed by the fire, which is per-
formed, two wayes; First, the fire being opened the thing it
self is cast in naked, and is reduced into ashes, moreover in
a Vessel that is closed, matter is burnt and turned into ashes,
which combustion differs from the former in this, for in the
former, whatsoever is volitile flies into the ayer, but in this
some volitiles are retained, and fastned with the
fixed.

Calcination is a pulverisation of a thing by fire caused by *Calcining.*
the privation of the moisture of the part joyned with it. This
principally takes place in minerals, and metalls, and other
things which of themselves do not burn, and are more firmly
united, and tis appointed either that a thing may be made
the fitter for solution, or to lose the acrimony, which it hath,
although on the contrary some things become the sharper
for burning whilst the aqueous humiditie, whereby the acri-
mony is occasioned is consumed by fire. But this is perform-
ed two wayes, either by actual fire, when things are fired, and
the bond of continuitie is broken by actual fire; or by poten-
tial fire, when things to be calcined, are corroded, by strong
and corrasive waters, and other causticks.

That calcination, which is made by actuall fire is againe various, for some things are calcined by themselves, and without any addition, but other things, with additaments, which either prohibit the fusion, or else burne and corrode.

But that calcination in particular, which is made and corrosive powders mixt therewith, is called *Cementing*, and tis performed when a crucible is filled with thin plates of mettall, and corrosive powders, one ranke above another, First Plates, then Powders, then Plates, then powders, &c. As the manner is in doing, after the crucible is exposed to a circular fire or Reverberation by degrees, yet some things are extinguished first by certaine waters, before they are calcined, some are corroded first by their own waters and afterwards are Reverberated; on the contrary some things are Reverberated first, afterwards corroded.

Calcination which is done by potentiall fire is finished by *Corroding*, precipitating, or Fumigation. Corrosion is a solution of mettalls, or such like by waters and sharpe spirits. Precipitation is when a mettall descends to the bottome, in the likenesse of Chaulke, and is seperated from the water that dissolves it; but Fumigation is when some body is corroded and brought into a body like chaulke, by the exhalation, or vapour of a corroding thing.

Hitherto pertaines Amalgamation, which with the Chymists is an operation which is nothing else then a corroding of mettalls by Quick-silver and Mercury.

Lastly putrifaction, which others call Fermentation, and digestion, is that operation whereby a mixt body is someway dissolved by a moist heate, and losing its naturall juncture, or Union, is rendred the more fit for artificiall seperation.

CHAP. IV.

Of the second ranke or forme of operations.

TO the second forme of operations we refer those things, which are employed in seperation and detraction of any thing; and in seperation of *Homogenialls* from *Hetero-*

Cementing.

Corroding.

Precipitation.

Fumigation.

Corroding of mettalls by Quick-silver.

Putrifaction.

In the Institutions chap. the 8. 9. 10.

11. 12. 13.

14. the second forme of operations.

Hetero-

Heterogenialls, of pure from impure, of profitable, from unprofitable, such are sitting, washing, infusing, boyleing, straining, fuming, Clarifying, Filtering, Digestion, Expression, Distillation, Sublimation, Exsiccation, Evaporation, Exhalation and Coagulation.

Sifting is not only a separation of things beaten, and brought into powder, of the finer part from the thicker, by means of the seive, but also for the most part, a casting of moist and boyled things through a haire seive. *Sifting.*

Washing is not appointed for that end only, that medicines defiled may be cleansed, but that some superfluous quality may be taken away from the medicine, or a new, may be introduced. *washing.*

Infusion is nothing else but a steeping of a medicine in some liquor, whereby the medicine may be moistned within and without, that its force or strength may be drawn out, or increased, or its malignity corrected, or that which is hard may be softned. *Infuson.*

Next to infusions is boyling, or seething, which differ only in this, that medicines in infusion are moistned with longer time and lesse heate, but by boyling tis performed sooner and with greater heate. *Seething.*

Straining is that whereby moist things, either si ft heated, as the thicker and more viscid things, or lukewarme or cold, as those that are thinner, are cast through a thick, or thin strayner, the thicker parts and dregs being left behind in the strainer, they become the purer. *Straining.*

Scumming is when during the time of seething the froath swimming on the top, is often taken away with a spoon, for the most part perforated. *Scumming.*

Clarifying, although it may be taken in general for any sort of separation of filthy, and thick things, which may be performed many wayes, either by standing still whilst the feculent matter, descends of its selfe to the bottome, and settles or by straining, or by froathing, yet principall with the Apothecaries, Clarification is that purification of things boyled by despumation, having added the white of an egg, namely whilst the white of an egg is beate with a Spatula, or spoone, untill it come into froath, and after wards is mingled with the Syrup or decoction hot to clarify it, and when it hath contracted any blacknesse tis taken away, and a new is put in so often till the liquor become cleare. *Clarifying.*

Filtring.

By Filtration, or straining through a brown paper, that which is thick and fœculent, mixed or confused in any liquour is separated, namely whilst the pure liquour descends through the strainer, whether it be a linnen ragge or brown paper, into the Vessel that is under it, but the impuritie is left in the strainer.

Digestion.

Digestion, although sometimes it signifie putrifaction, sometimes a certain exaltation, and circulation, since that in general, to distribute or dispose in order, is to concoct, and digestion is concoction, yet in this place, by digestion, we understand such a concoction only whereby that may be separated, which is as yet foule in things, whilst the substance of the liquour is attenuated, and separated from its earthy impuritie.

Pressing.

Hereunto belongs Expression, by the benefit whereof by a strong endeavour, either with the hand alone or with a presse, we separate the liquid and moist from that which is dry and earthy.

Distillation.

Distillation is nothing else, but a collection of exhalations elevated by heat, out of something exhalable, by the help of a Vessel, and receptacle, thick, and cold into a liquour.

This is commonly accounted threefold, the one is that which is by ascent, the other is that which is made by the sides, the third is that which is made by descent.

Distillation by ascent.

By ascent Distillation is said to be, when the exhalations and vapours ascend upward, from the Alembick, or the head of the Furnace. And the Vessels which contain the matter to be distilled, the head being put on in it, tis condensed into a liquour, which distills drop by drop through the beak or nose into the receiver, and it is gathered together. This is performed, either by the Sun beams or by fire, sometimes lying open, sometimes not manifest, namely some other body intervening, as sand, ashes, water, &c.

Distillation by a glass.

Hitherto also may be referred conveniently Distillation by a Glasse like a ball so called, whereby oil of sulphure is prepared, namely when the brimstone is kindled, glasse, hammer receives the vapours, and condense them into oil.

Distillation to the sides.

Distillation to the sides, or else it is called by inclination, when the exhalation, and spirits do not ascend straight upwards in the Alembick, but tend towards the receiver by the sides and obliquely, This is performed either when the fire is opened to it, or when some other body comes between, as sand, ashes, &c. By a Vessel which they call a Retort, or a

Straight-

Straight gourd, yet placed oblique in the furnace, that the Alembick may incline downwards.

Distillation by descent is when a liquor, is not carried upwards, from the dissolved exhalations, nor to the sides, but tends downwards, and drops into the supposed Vessel. This again is performed, the Vessel lying immediatly on the fire, or sand, ashes, &c. intervening.

Distillation by descent.

To distillations belongs Rectification, or Cohobation, whereof that is no other then a repeated distillation of a thing, to purifie and exalt it the more, the dreggs being left in the bottome, or to seperate the phlegme from oil, or the spirit from phlegme, but this is said, when the humour which was distilled, is powred off, and again, and again, is drawn, and distilled in the same Vessel, where the matter was left.

Rectification.

Sublimation, which is performed sometimes by fire that is open, sometimes by some intervening body, as Sand, Ashes, &c. Tis the nearest to distillation by ascent and differs from it only in this, that as in distillation vapours, which are exalted, come together into a liquor, so in sublimation exhalations ascend dry, and being carried up on high, stick to the sides of the Alembick like attomes.

Sublimation.

Præcipation seems to be contrary to this, which is done when bodies dissolved by waters and corroding liquours, are again separated from the liquor, that the form of chaulk or dust may remain, which commeth to passe, when any thing is cast or powred into the solution, by whose force the dissolving liquor, or that which was the cause of solution in the liquor, is separated from the dissolved body.

Præcipation.

By Exsiccation the superfluous moisture is taken away, whether in the shade, or in the Sun, or whether it be done in an Oven, or in a Frying-pan over Coales, both for that the Medicines may the better be preserved, and may not contract thirst by their superfluous humidity, and putrifie, and be corrupted, and also, that they may the casier be contained, and made into powder.

Drying.

By Evaporation the aqueous humidity expires, as by exhalation, dry exhalations are elevated by heat, as that which is superfluous in the thing being dissolved into vapours and exhalations may go out, and the more useful part only may be left.

Evaporation.

Exhalation.

To these operations is added Coagulation, which is nothing else but a reduction of a liquid thing to a solid substance by the privation of moisture.

Coagulation.

CHAP. V.

Of the third manner of Operations.

The third
forme of
operations.

THe third forme comprehends those operations which are appointed them, for alteration, immutation, and perfection of a thing, and aime at this, that a thing may be reduced to a better state and more noble degree. But although some do reckon more such operations, and perhaps there are more, yet in this place all of them are properly called by the name of Digestion, and as it is distinguished from the two higher kinds of digestion, whereby a new quality of a thing newly elaborated, is introduced, so that if the thing contains any thing that is hurtfull, it puts away that, or if any thing is wanting to it, it begets that; and if there are any others to be here repeated, they ought to be accounted for certaine wayes of Digestion; For all of them for the most part, in the same manner by a gentle externall heat, exciting the internall force of a thing are performed, which here is the primary agent.

Digestion.

Institution
Chap. 15.
and 16.
Circulation.

But amongst the manners or kinds of digestion, the cheife is Circulation, tis called by some Pelicanation, from the vessell wherein it is performed, where by a gentle externall heat being exhibited, the matter which is circulated, is exalted continually in the forme of vapours, and is againe condensed, and so by that continuall concoction and this circular motion of resolution and condensation, it attaines to the highest degree of perfection in its kind.

Conditioing.

Hitherto belongs conditioing, preseruing, and confectioing; fruits, flowers, roots, are conditied or pickled with Honey, Sugar, Vinegar, Salt, not onely that they may be preserved the longer, but that they may be the more pleasant to the taste.

Confectioing.

In confectioing, fruits, roots, seeds, sweet smelling spices, are preserved and candied with Sugar, more for the taste sake then preservation, or augmentation of the strength.

Nutrition.

Nutrition of medicines is a certaine humectation, but such whereby the thing is presently wet, or moistned, and immediately dried againe by the Sun or fire, and is to be wet and moistned againe; which labour is to be repeated thrice, four times, or so often until the medicine hath sufficiently imbibed that humour which we desire.

The



THE
FIFTH BOOK,
PART III.

SECT. III.

Of the Formes of Medicines.

CHAP. I.

The Division of Medicines.

After we have finished the operations necessary for an Apothecary: It remaineth that we now come to the preparations themselves of Medicines, which are perfected by those operations. The differences of Medicines, are taken either from the substance or from the parts to which they are applyed. Medicines being considered the former of these wayes are, some full of Vapours, others Corpulent; Corpulent are either fluid, or having a consistence; Fluid are various, as distilled waters, Spirits, Liquid tinctures, Vineger, Medicinal wine, Hydromel or Hony and Water; clarifies Juyces, Oyles, Emulsions, Decoctions, Infusions, Ju-
 lebs, Syrrups, Baths, Clysters, &c. Again those that have a consistence, some of them are actually moyst, others dry; Of the former sort are Conserves, Electuaries, Eclemmas, Juices, Extracts, Boles, Muscillages, Fat Lineaments, Balsomes, Unguents, Cataplasmes: Those that are actually dry, are either continuous, and the parts cohære together, or else they are discontinued. Of the former kind are, Pills, Troches, Rotules, Morsels, Plaisters, Cerates, Suppositers, Glasses, Regulus, and certain things sublimed: Of the latter sort are, several Species and Powders, Meal or brann, Flowers, & things precipitated.

The Division of Medicines.

But

Internal.

But in respect of the parts to which they are applied, some are called internal, others external. The internal are those which are taken into the body that common and usual way as we take in meat and drink, all the rest whether they are applied to the body, or spread over the body, or any other way applied to the bodie, or if they are cast into the body any other way, as, at the fundament, ears, nostrils, wombe, we call them externals.

*External.**The difference of internal Medicines.*

The formes of Internal Medicines are various; for some are fluid, others not fluid, and these are either soft and liquid, or altogether dry, The fluid are, Decoctions, Infusions, Medicinal VVines, Honey and VVater mixt and boiled together, wine mingled with honey, yineger, and honey, and barley-water, Juices, distilled waters, Spirits, tinctures, and Liquid extracts, Oils, Sirups, Julips, Emulsions; Soft and not fluid are, Extracts, Conserves, Preserves, Medicinal Juices thickned, Electuaries, Eclegmaes, or Medicines to be licked or supt, Boles, Not fluid, and plainly dry are, powders, Sweet meats, Salts; Saffron-flowers, Precipitates, Comfits, little round Cakes, Morfels, or little snips, march-paines, And those which belong to these, as Troches, and Pills.

Of Externals.

But externals are either sent into certain parts of the bodie, or they are only applied, or exhibited to the superficies of the bodie, or they are only hung about, as Ammulets, and Periapticke medicines, or medicines to hang about ones bodie; Suppositers and Clysters are injected, and cast into the body; Clysters, and pessaries, are also injected into the womb, also certain Liquours are injected into the yarde and bladder; into the mouth are put gargarismes, to wash the mouth, or throat with, Apophlegmatismes to draw away Phlegme, Dentifrices to rub and cleanse the Teeth, To the nose Erhines, Sneezing-wort; Odours, Suffumigations, peculiar injections into the Ears, Collyries, or medicines, applied to the eyes. To the outside of the bodie only are exhibited, and applied, oiles, balsomes, ointments, linements, cerots, plaisters, Cataplasmes, Dropases, or ointments to take away hair, Sinapismes, Phænigmaes, or medicines causing the bodie to break out in blisters, or Pustules, Epithems, or medicines somewhat softer then plaisters to be applied to the bodie, fomentations, or any thing applied plaister-waies to awswage pain, little baggs, powders, embrocations, washings of the extrem parts, baths, washbals, searing irons or cauteris.

Some others do best agree with certain other parts; all external things for the most part, communicate their strength to the head, as distilled waters and spirits, oils, extracts, decoctions, infusions, syrups, conserves, preserves, comfits, electuaries, little round cakes, morsels, pills, powders. But external medicines applied to the head, in the form of powders, little baggs, round balles, oiles, balsoms, ointments, unguents, plaisters, cerots, cataplasmes, oxyrhods, that is medicines with vinegar and roses, epithemes, or the softest plaisters, embrocations, suffumigations, perfumes of divers sorts, as also washings of the Feet are profitable for the Head.

what Medicines are applied to the Head.

Externally waters, and Collyries, ointments, fomentations, unguents, cataplasmes, are convenient for the eyes.

To the eyes.

Into the ears distilled waters, Juices, decoctions, oiles, and other liquours are infused and dropt, and other Medicines in the form of evaporation, and fumes are sent into the ears, also liniments, ointments, fomentations, epithemes, Cataplasmes are applied.

To the Ears.

For the teeth are convenient, lotions for the mouth, liniments, small pills to be put into hollow Teeth, unctions for the Jawes, powders for rubbing the Teeth, and also troches, and penfills made in the form of suppositors are convenient for the Teeth, and being dryed, and hardned, the Teeth are rubbed therewith.

To the Teeth.

Medicines applied to the mouth, and Chopps are lotions, and gargarifines, ointments made of hony, of syrups and juices, lohocks.

For the mouth and Chopps.

Most internal things are good for the Breast, but especially, lohocks, troches, and litle rolles, such as they use to hold under their tongues, the thicker sort of syrups, vapours, and fumes drawn in with aier, externally, the same medicines may be applied in the form of oiles, ointments, unguents, cataplasmes, plaisters, and cerots, litle baggs, fomentations, and epithemes.

For the Breast.

Medicines are applied to the Heart, for the most part after the same manner, and moreover fumes, or steames, which are profitable for the recreating and refreshing of the spirits.

To the Heart.

Internal Medicines may be conveyed to the Stomack in all formes, but principally those which are taken in at the mouth, but externally, in the form of oiles, unctions, fomentations, liniments, unguents, cataplasmes, plaisters, epithemes, baggs.

To the Stomack.

To the
Liver,

Moreover, all internal things may penetrate to the Liver. But external in the forme of Ointments, Fomentations, Linements, Cataplasmes, Unguents, Plaisters, little bags, Epithems, are applied.

To the
Spleen

Reines and
Bladder.

In the same manner Unctions are exhibited to the Spleen, Reines, and Bladder; Bathes also, and Tubs of waters to sit in, are usefull for the Reins, Bladder and spermatick Vessells; and Clysters injected are good for diseases of the Reines.

All the same things are convenient for the wombe, and moreover injections into the wombe, Pessaries, Errhines, or medicines to put into the nose, fumes, and Evaporations, Lotions of the feet.

And all these sorts of medicines shall now be explained in their order, as far forth as this compendium will admit of.

CHAP. II.

Of Decoctions.

Decoctions
what.
How many
fold.

Decoctions which the Greeks call Apozemes, are potent medicines prepared by the boyling of plants and of their parts, seldome of Animalls; all Decoctions may conveniently be reduced into two formes; namely into Decoctions altering, and purging; under Decoctions altering, we will comprehend all those that have any other vertue besides purging, and do alter the body, whether they are given in regard of themselves only, or for some following purge; which Decoctions are then called Preparatives, Digestives, or Apperatives, that is opening things.

The matter
of them.

But the matter to be decocted is taken out of the rank of Vegetables, wherein are variety of parts of plants or herbs, seldome of living Creatures.

Quantity.

But as for the quantity of the materialls to be decocted, if a weight be to be assigned generally to what ever is to be boyled, it begins from an ounce or two ounces for the most part, and ascends sometimes to halfe a pound, nay sometimes to a pound, a pound and halfe, and two pound, but as for the dose of the severall kinds Decoctions are prepared.

Of the Roots and Barks $\frac{3}{2}$, $\frac{3}{3}$, and $\frac{3}{4}$.
Of Leaves, 3, 4, 5, or 6. handfulls.

Of seeds 3. 4. 5. 6. drachms
 Of Fruites, in number 1. 2. 3. couples or paires 5. 6.
 Of flowers, pugills 4. or 5.
 Halfe an ounce, five drachms or six drachms answers to a little handfull, two drachms or three to a pugill, but it is not necessary to mixe all those together in every decoction, and to heape up a mixture of them all, but when a few will performe the intentions, tis in vaine to put in many, yet if the decoction be provided to be given at many severall times, such a quantity of materialls ought to be taken, as that the decoction made of them may be powerfull to performe the aime of the Physitian:

But in the seething, the preparation of the things to be boyled, and the manner of seething, is to be observed, for first if the materialls are too thick or hard, they are first to be cut or gently bruised, or fyled or beaten in a mortar.

*Preparation of the matter.
 Or of boyling.*

In the manner of seething, order is to be observed in putting in the things to be decocted the fire and instruments and Liquor which is decocted; and time also is to be observed.

Order of boyling is to be observed, that all the things may not be put in together, but the Roots, Barkes, Woods, which are the more sollid things, and without smell, should be put in first, then the Leaves, and seeds, last of all flowers, and Aromatick things, and all those things which smell strongly, and those things which may disperse their strength by much boyling; but this cannot be observed except the vessell be opened, but if the decoction be made in a thing that is covered, it matters not much to put in all the things altogether, and if any of them are more difficult to be seethed, those should first of all be bruised by themselves.

The fire should be cleare and equall, but very gentle, since the vertue is easily called forth, but stronger when there is need of much boyling.

But decoctions are made by the Apothecaries commonly when the vessell is open and the fire also, but tis more convenient, least the strength of the medicines should vanish in boyling, to make a decoction in a Biploma, as they call it, or a double vessell, the vessell being shut, or if a decoction be made the fire being open, tis convenient to set on it a close Alembick, or if it hath a beake, or snout, to fit it with a receiver to take the liquor, and to mixe it with the strained decoction.

The

*Liquor for
the Decoction.*

The Liquor in which the things are boyled ought to be such as may performe the intentions of the Physitian, as water of the Fountaine, distilled water; Barly-water, Chalybeate, Water, Whey, water mixt with Honey called Hydromell, sometimes Wine is taken, seldome strong Beere is used, sometimes some Vineger is put in, that the viscid and rough humours may more powerfully be cut thereby, and the medicine may penetrate the more; sometimes Roots alone, before the decoction is made, are brayed in Vineger. Distilled waters also are often used for decoctions with no great profit but with great charge, unlessse the decoction be made in a close vessell, since so long boyling takes away all their strength.

The quantity of Liquor.

The quantity of the Liquor ought to be such as may satisfie for the decoction, and ought to cover the medicines three or foure fingers breadth; which for the most part is left to the discretion of the Apothecarie. But if the proportion be appointed by the Physitian, the Liquor is for the most part foure-fold, six-fold, eight-fold, in proportion to the medicines, according as the Herbs are dry, or full of juice, thick, or thin, and may imbibe more or lesse of the Liquor, and they ought to seeth a little, or long:

Sometimes before boyling, the medicines are somewhat cut, or bruised; and sometimes they stand a while (after decoction) before they are strained.

But they are boyled to the consumption of halfe or of a third part, or of a fourth part only of Liquor, or till but a third part remaines, according as the medicines and the scope of the Physitian requires: for those whose vertue easily vanish and are in a thin, and seperable substance are to be boyled the lesse time: but those whose substances are thicker, the strength cannot be drawn forth without longer boyling, the decoction is strained with, or without squeezing, according as there is need of the thinner parts only, or thicker, and such as lye deeper.

A decoction is prepared either for one dose or more; for one, three, four, or five ounces may suffice, if for more; the decoction should be made that the remainder may be a Pint, or a Pint and an half, and afterwards of things making it pleasant, for one Dose an Ounce, or an Ounce and an half may be added, yet more than a Pint, or a Pint and an half of a decoction, at one time, is seldome made; (except the decoction of Guaiacum and such like) since that if more should

should be prepared, it would easily be spoiled before it would be taken by the sick; Unto three four or five ounces of the decoction strained are added, of Sugar, which often is used or Honey, six drachms, or an ounce, or of some convenient Syrup in every dose an ounce, or an ounce and halfe: Sometimes the juices that are most convenient of Herbs, or Fruits, and often other Liquors, as *Aqua vite*, Spirit of Vitriole, Copper, Salt-peter, some drops thereof are added, and indeed only one of these is added sometimes to an Apozeme, but of lenitives more, as more Syrups, or juices & Syrups, or of juice and Sugar, when juices are administered, for the most part; Sugar or Syrup is mixed with them, and sometimes pleasant things; that they may be the better mingled, a gentle ebullition is appointed at a weak fire, if it be convenient, the white of an egg may be added, that the Sugar and Honey, and decoction also may be clarified; or if that clarification doth not suffice, the decoction is to be put into the *Balneum Marie*, till the thick dregs settle in the bottome, and they by settling in the bottome, and powring off of the cleare Liquor are seperated, and that is to be repeated sometimes if it be needfull; sometimes the decoction is to be made pleasant either for the acquiring of a good taste, or smell, or some other vertue, namely the Aromaticks a little before the end of boyling being reduced into into powder, or Aromatick species fitted for the disease, halfe a drachm, or a drachm thereof in each pint, is to be hung in a thin skin, or bladder in the decoction, and are often pressed out, or else a little after, the decoction is removed from the fire, the decoction being as yet hot, they may be cut, or bruised more grossely, and so injected, and after they have stood together some time in a vessell well covered, it is strained againe. Muske also, and Amber-greaze, if it be convenient, may be also given to the dose of a graine of each; or a drachm or two of Cinamon-water may be added. If Wine or Vinegar be necessary, tis more convenient to add them after the boyling, or a little before they have done boyling.

They are given for the most part in the Morning, or Evening, or two or three hours before dinner, or supper, the stomach being empty and the decoction being first warmed, three four or five ounces thereof is given at a time, and that is often performed two, three, four or five dayes following, and either once only, or twice a day; if the de-

The time
of giving.

coctions are prepared for many doses, they are to be kept in cold places under ground, for they will scarce continue above a weeke although it be in the Winter: but in the Spring and Summer, for the most part they are renewed every way.

Restorative broaths. Hereunto belong restorative Broathes as they call them, which are made of Hens, or Capons, to which Veale, or Goates flesh may be added, and there are of three sorts; the first they call a compleat, or a perfect broath, because 'tis most absolute, and fittest to nourish: it is prepared as ordinary broathes are, only that they boyle longer, and indeed so long untill the sixth, eighth, or sometimes the tenth part only remains; the second is called Gelatina, which is made if these meates are boyled in a double vessell without powring off the water, and the juice is pressed out from thence, from which after it is cooled, the fat swimming on the top is to be scummed off: the third is called Contusum, which is prepared when the meates first sodden or roasted, afterwards are beaten in a mortar, so long untill they may melt when broath is put to them, and afterwards are strained.

Purging Decoctions.

The manner of preparing purging decoctions. Purging decoctions differ not from other decoctions, unless in respect of materialls; namely that simple purging medicines are mingled in purging decoctions, the manner of preparing is the same; for purging medicines convenient for the evacuation of the humours are taken, and that for one and more doses, yet because in scething their strength will decay, or waste they ought to be taken in a greater dose, then in the substance, the strongest for the most part double, but of the milder purgers, four-fold. Of which before in the doses of medicines.

Other things are added to these, which may either resist and correct the malignant, and noxious qualities of the purge, or may prevent the mischeives which may befall nature by the use of strong purgers or which may increase and stir up the dull faculty of a medicine, or extimulate them to worke more speedily, or may bridle them if they worke too strong and quick, or such as have regard to some private part, and may leade and direct the purging medicine

cine thither; Aromatick powders or Specics are added to the decoction strained, for to please the palate, halfe an ounce or an ounce of Syrup is appointed and prepared.

2. Oftentimes something that purges is added to the decoction as Syrup and Honey of Roses and Violets solutive, also Cassia, Manna, which are dissolved in the decoction, which is againe strained.

3. Sometimes purging electuaries are mixt and dissolved in the concoction, in such quantity that they make one dose when they are mingled with many things that are boyled together.

4. But because decoction, by the mixture of electuaries become thicker; tis not inconvenient if they are strained againe, and also clarified, but then the Electuaries may be used in a larger quantity.

5. Somerimes, some of the purging powders are added to the Liquor or decoction.

6. Or some quantity of a purging extract is dissolved in it;

7. Lastly, decoctions are oftentimes made of purging and altering medicines together.

Hereunto belongs decoctions to cause vomits, sweates Urine, examples whereof are extant every where.

Vomiting
things &c

CHAP. III.

Of Infusions and other purging Potions.

Infusions are next unto decoctions, and differ only from decoctions simply so called, in that they are wont to be prepared only by boyling without macerating them before hand: but these are when the medicines are broken, or beaten before, and put into a convenient Liquor for some certain time that they may leave their vertue in it.

Infusions.

They are prepared of nee lieines of all sorts, but most commonly of Purgers, which should be given in somewhat a greater weight, then in the substance, namely halfe so much in the substance, and double in the Infusion, with their correcters and directers being cast in also in a due quantity, (somerimes in a nodule or little bagg of fine linnen, shut) in a Liquor convenient for the purpose of the Physitian: the Chymists at this day, that the extracts

The manner of preparing.

may be made the easier, put to the menstruum or prepared matter some drops or spirit of Salt of Vitrioll, or Oyle of Vitrioll is added, which is made by draining, which they call *per deliquium*.

The quantity of the Liquor ought to be such as may cover those things that are macerated, and may be something higher then they, being infused in this manner, six, twelve, or twenty foure hours in a warme vessell stopt or shut, they being beaten or cut in peices should so long lye in it untill the Liquor hath extracted all their strength, which may be known by the taste and smell. But if, which often happens, there be urgent occasion, the medicines cannot be macerated for want of time, that defect may be supplied by gentle boyling of them, afterwards that which is strained with or without squeezing is appointed for use, and indeed without squeezing or pressing that which is strained is more cleansing and pleasing to the taste, but weaker; but with expression tis more troubled and thicker, but more efficacious.

You may add to the infusion things that sweeten it or other purging things as tis said before of decoctions.

Sometimes Decoctions, and Infusions are given together; namely a Decoction is prepared in the same manner as is said before. In a sufficient quantity of that decoction are infused purgers with their correcters, and the rest of the things are afterwards mixt as in other infusions.

Another way also a Potion is made of infusion and decoction mixt, or an infusion with a decoction, namely the decoction is prepared by its selfe, and the infusion by its selfe, both of them according to the method formerly described, and these two Liquors are afterward mingled together.

A purging
Potion.
The man-
ner.

To these purging decoctions, and infusions, by reason of their similitude we add a purging Potion peculiarly so called by some, which is prepared in this manner, first a sufficient quantity is taken of any sort of Liquor, decoction, distilled water, Whey, water and Honey mixt, Broath, Wine, Juleps of Violets, sufficient for a draught, namely two 3. or 4. ounces, in the Liquor a sufficient quantity of Cassia, Manna, or a sufficient quantity of any one purging electuary, or more, is to be dissolved for one dose; sometimes of some Syrup half an ounce, or 6. drachms, or some of the Aromatick powders are added, and these potions are taken as the rest, which we have spoken of heretofore, hot in the morning fasting.

Secondly

2. Secondly, as tis spoken of purging things, so here also straining, and Clarifying may be appointed, but then the electuaries are to be taken in a greater quantity, then if they are given without straining.

3. Thirdly, purging Potions may be prepared of purging extracts, but seeing that extracts are wont to be given in a smaller dose, they require lesse quantity of Liquor, and therefore are more gratefull to the affected: sometimes two or three ounces of other Liquors are taken instead of Muscadine, and the extract is dissolved in them, and if there be danger of being too hot, some Sorrell, or Lemons, or some other convenient things may be added.

4. Lastly, purging Potions are prepared of powders as well simples, as of compound purging medicines, as also with purging Roles, but the dose of such powders, ought not to be much more then a drachm, otherwise the Potion will be too thick, and ungratefull: and sometimes some powder is mingled with dissolved electuaries.

In the same manner also, Infusions and Potions for vomits, sweates, and medicines provoking of Urine may be prepared,

Potions and infusions for vomits.

CHAP. I V.

Of Medicinall Wines, drinks of honey and Water sodden together, of Wine mingled with Honey, of Oxymel, of Medicinall Vinegar, Decoction or Barley-water, also of Clarified Juices.

OUT of those things which have bin hitherto spoken of Infusions and Decoctions, it will easily appear how medicinal wines are prepared, and they are either altering, or purging and altering together.

Medicinall Wines.

They are prepared, either of Must; or of Wine that is refined, those that are prepared of Must, have a more pleasant taste, and they are thus done; The dry Medicines are put into little wooden Casques; when the Must is somewhat abated, and the Wine cleaned, and made clear, it should be drawn out into another Vessel, and kept for your use.

In the same manner Physicall drink may be prepared, of Physicall

Wormwood, Harts tongue, Bitony, Sage, Rosemary, and other herbs, and also of purging things: but for the most part, the herbs are first bruised in the drink, after tis brewed, being as yet warm, and afterwards in due season things to make it work, being put in, they are suffered to cool.

Of Wines so cleansed, Medicinall Wines are prepared; Dry medicines are cleansed, cut, and broken, and are put into a glasse, or earthen Vessel, sometimes into a Nodule, or little Bagge of fine linnen, or thin linnen sewed up; a sufficient quantity of good white Wine is powred in, so they stand in infusion, in a Vessel that is shut, afterwards strained, unlesse they are inclosed in a little Bagge.

But this proportion for the most part is observed, that to a pound of medicines, there is taken of Must, or Wine eight Pints, twelve, nay, to twenty five, nay thirty, or thirty six, so that an ounce may answer to the proportion of two or three Pints.

Medicinall Wines also that alter, are prepared if distilled Oyles are added to them being first mixt with Sugar, or Spirits, or tinctures, spirit of Wine drawne out of simple medicines, or moist extracts.

Claretum.

Sometimes medicinall Wines are sweetned with Sugar or Honey, and are called Clarets, and Hippocratick Wine, they are profitable in cold durable diseases, they are made in this manner: Aromatick things or roots also and seeds gratefull to the sinell and taste, principally are grosely beaten, or cut, and such as have great efficacy, are infused in sweet Wine, so they are to stand sometime in the Infusion, in a warme place for some hours, or let them simmer in *Balneum Marie*, for halfe an houre, especially if you may accelerate the worke, or to prepare Wine mingled with Honey; afterwards there is added a sufficient quantity of Sugar to make it pleasant to the taste, so that to two, three or foure parts of Wine, one part of Sugar may be taken, and oftentimes Wine is drained through Hippocrates sleeve, that it may become cleare, some of the distilled waters that are convenient, may be mixt with the Wine.

Some infuse the Aromaticks in spirit of wine, about eight or ten parts whereof is used to one part of the Aromaticks, and when the spirit of wine hath drawne out the tincture, they sepearate it by declination, and straining or filtring, and keepe it for their use, but when tis convenient to make Hippocraticall wine, they power some drachms, and withall
an

an ounce or two ounces, to one measure of Wine; a sufficient quantity of Sugar to sweeten it.

But such Wines and Claretts, may be prepared not only to alter, but also to purge, with the same dose for the more choice sort of persons, namely with purgers, principally the Leaves of *Sena*, *Mecocam*, *Agrick*, *Turbith*, with their correcters are put into a sufficient quantity of Rhenish Wine, and being heated in water luke-warme in a glasse afterwards must stand in a warme place, six hours in Infusion, afterwards add of Julep of Violets, or Roses halfe an ounce, or let them be sweetned with halfe an ounce of white Sugar and be strained, and filtered through a browne paper, let three ounces of that which is strained be perfumed with two drops of Oyle of Cinamon; Manna also may be taken instead of Sugar.

If the Wine be sweetned with Honey instead of Sugar, ^{is wine mingled} called Oinomell, Mulsun, or Wine mingled with Honey, ^{led with} is prepared of one part of Honey, and two or three parts of Honey. Wine mixt and boyled together: and Aromaticks of every sort may be added, and it may be prepared at the time of gathering of Grapes, namely if one part of Honey be taken and two of Must: of water if it be convenient three parts or five parts in quantity, and let them heate together.

Hydromell, and Mulsun, and Melicratum, are names of ^{Hydromell.} medicinall Potions of the same nature, namely made of ^{Mulsun.} water, and Honey, and sometimes of other things boyled ^{Melicratum.} therewith, or if there be any difference amongst those, 'tis ^{tum.} only in comeliness, for Melicratum is made suddenly for present use of a mixture of Honey and water; but Hydromell is prepared to keep longer, and is neater made; of Mulsun some is more cleanseing, others purer, so that there is a severall proportion of Honey to the water, according to the various scope of the Physician, and temperatute of him that takes it. To prepare it eight, ten or twelve times the quantity of Fountaine water is to be taken: but this is made of one part of Honey and five or six of water, boyled till the fourth or fifth part be consumed.

Amongst the kindes of Mulsun, which can keepe, the most noted at this day, is that drinke which is called ^{Meade.} Meade. and the best indeed is prepared in Lituania.

But Hydromell is prepared not only of water and Honey but also of severall Aromaticks, Herbs and Rootes, as

Clary, Hyſop, Bettony, and others, both kindes are made, that which is for preſent uſe, and that which is more durable, and will keepe longer, it is prepared for preſent uſe, if in a pint of the water of Plants, a drachm, or at moſt two drachms are boyled, the 10th. or 12th. part of the beſt Honey be added, to every pint of the decoction. Hydromell is made after the uſuall manner; But ſometimes Hydromell is compounded, when the ſimple Hydromell is ſented with theſe only, although no other thing be boyled in it.

Befides the compound Hydromell which doth alter, a purging Hydromell is alſo prepared, which is nothing elſe but a purging decoction made with ſimple Hydromell.

Oxymell.

The next to Muſſum, is Oxymell, which differs from it, only by the mixture of Vinegar, a drinke very uſuall amongſt the Ancients; but the old Phyſicians did not make Oxymell alike, but ſeverally and added Vinegar according to the nature of a diſeaſe and of the diſeaſed and other circumſtances, and they gave it not only mingled with other medicines, but alone to quench thirſt, and other purpoſes to drinke, but that which is moſt cleaſing, and may alſo be uſed in feavers was made of twelve parts of water two of Honey and one of Vinegar; they were gently boyled and ſcummed, and the fire not being fierce, and by the addition of the white of an egg were clarified, and afterwards ſtrained through a woollen cloath, till it become cleare and pure.

There are prepared by the Phyſicians other kindes of Oxymells compounded of more medicines; ſuch is the Oxymell Helleborated of Geſner or rather of Iulian.

Barly water.

To this head we refer the water, or decoction of Barly which is made of whole Barley boyled in the water till it comes to a Piſan, and ſome is ſimple when nothing is boyled beſides Barley; another is compound when certaine other things alſo are added to the Barley, namely Raiſons, Licoriſh, Anni-ſeed, Fennell-ſeed, Cinamon, Sugar: of Licoriſh is added, from two drachms to halfe an ounce or ſix drachms, Raiſons from an ounce to two ounces of ſuch as are ſtoned, halfe or a whole drachm, Cinamon to one drachm, or 2. drachms, for a pint and halfe or 2. pints of Liqueur.

Medicinall Wine.

Sometimes a ſowre medicine is prepared, as with Squills, Roſes, the rindes of Scordium, the Flowres of Elder and many others, and not only of one, but more ſimples by infuſion and maceation of them in the ſame manner, as in medicinal wines.

More-

Moreover to this Head we may refer clarified juices, *Clarified* which being pressed out of new gathered Plants are purified, *juices.* either by the white of an Egg, or by straining, often repeated, principally by filtering, or by separation.

CH A P. V.

Of distilled Waters and Spirits.

THose things which are prepared by distillation are called distilled things, which are of divers kinds, yet all of them may be reduced to two formes, for either the things distilled are in the forme of waters, or Oyles; those that are of the same consistence with water are again two-fold, for either they come neere the nature of water, and are plainly called waters, or else they are spirituous, and are called Spirits, yet these names are often confounded, for oftentimes that which is spirituous is called a water. *Things distilled.* *water.* *Spirits.*

1. First distilled waters are prepared of divers things: of herbs and Flowers, all for the most part are distilled by ascent; and principally of fragrant flowers, and other thinner and colder things, whose force easily vanisheth, for the most part, waters good enough are distilled in a crooked glasse, by the *Balneum Marie.* *of Manner of distilled waters.*

2. Others bruise the flowers, and herbs that are to be distilled, and presse the juice out of them, and out of that juice by distillation through an Alembick they draw out water into the *Balneum Marie.*

Some cut in small peices the Plants to be distilled, or bruise them, and being bruised they they fill the Gourd having a narrow mouth almost full, and the patelli the glasses being put on with the powder of the glasse of Copper and borax Hermetically, they shut and afterwards they put the glasse full of water into a Cauldron, and boyle it six or seven hours, afterwards they put the glasse when tis taken out of the water, into a warme place to cleanse it, untill the drops cease to stick to the sides of the glasse, and the digestion be absolute: they distill the matter digested in *Balneo Roris*, they separate the Oyle from the water they power out the water with the reliques againe and repeat the distillation.

4. But the hotter, and Aromatick Herbs, and those whose strength doe not so easily vanish and lyes deeper, are not so conveniently distilled by *Balneum Mariae*, but in vesica, but in this distillation by a vessell of water, some diversify also is observed, for some bruise the herbs, or cut them into smal peices, and fill the fourth part of the Vesica besides for them, then they poure of the pure water that three parts of the Vesica may be filled therewith, and one quarter for the most part remains empty, and a Refrigeratory vessell, being applyed and the worme also (if you desire meereley a spirituous water) or with an Alembick with a Refrigeratory, and their conjunctions or joynts shut, and a convenient fire being kindled and placed under the Vesica they distill water gently and by drops.

5. Others having powred in hot water into a vessell close shut, first they bruise the herbs, twenty foure hours for the most part, they think it most profitable if the herbs are not only macerated in warme water a day and night space, but being bruised, or beaten, they should stand in digestion, and putrifaction in Horse dung, or *Balneo Roris*, or *Mariae*, for ten or fourteen dayes, afterwards they should be distilled. That water which first drops out is the best: but that which comes out last is like water it selfe; distilled water, if it be convenient, may be poured off, with new herbs to be digested, and distilled againe.

6. But since that water and spirit ascend together, they must be seperated, which is most conveniently done by the *Balneum*, namely all the water is to be powred into a crooked glasse or Violl, and by a gentle heat only the spirituous part is to be distilled, by which distillation if the heat be rightly governed, the separation happily may be made at once, yet if it shall not so happen the first time, the distillation is to be repeated, and that rectification which was first made by a Gourd, afterwards rectification is appointed by a Phyll. Examples may be scene in the Institutions.

CHAP. VI.

Of Oyles.

Oyles.
FOR the most part it comes to passe that with the water in distillation of hot herbs, and Aromatick seeds, Oyle comes

comes forth together, which is to be separated from the water; but this is performed first by a kind of tunnell which they call a Separator or Tritorium, afterwards through a filter or a course woollen cloath, thirdly through browne paper: the Precepts of which operations are to be sought out of the Institutions.

Yet certaine Oyles are distilled also without waters; so Oyles are drawn by distillation from Amber, Mastick, Frankinsense; Of which in the Institutions.

CHAP VII

Of Syrups and Juleps.

Syrups, and Scraps, derive their names from the Arabicks, and therefore are not to be written with a y, which the Arabicks want, and 'tis drawne from the roote Schareba, which signifies to sup, and therefore it signifies a Liquor to be Supt; Syrups therefore are fluid medicines prepared of a convenient Liquor, whether it be boyled, or infused, or a juice made up with Sugar or Honey, and boyled for the most part to the consistence of Honey: Syrups are invented both for delight to the taste, and for durability, that convenient medicines may be in a readinesse at any time of the yeare.

Some of them are simple, which are made of one simple medicine only, and with Sugar, or Honey; compound which are prepared of more; both kindes are appointed for severall uses, of them are some altering and strengthening, others purging, and the liquour is taken from decoctions, infusions, clarified juices and Vinegar.

This is the manner of preparing, First the decoctions are taken; to the Decoctions are added Sugar or Honey, according as the use and scope of the Medicine requires; namely, two pounds of Sugar or Honey to a pound, or a pound and halfe of the decoction, as it is desired to be thicker or thinner, and ought to be kept more or lesse time: Then afterwards it is to be clarified by adding of the white of an Egge, that the decoction by a gentle Fire may seeth to the consistence of a Syrup: If Honey be added, it ought to bee boyled lesse, because being cooled it easily becomes thick: Syrups also, like as concoctions, may be made with Aromaticks, or Aromaticke Powders.

Secondly,

2. Secondly, they are prepared of clarified Juices, to which is added half the quantity of Sugar, and boiled to the consistence of a Syrup.
3. These Syrups are better if fresh flowers are infused 24. hours in the expressed juice in *Bal. Mariae*, and are again expressed, and that repeated as often as it is fit. Then the juice is to be clarified by digestion, and half the quantity of Sugar to be mixt with it.
4. Others boil the juice till half be consumed, then they strain it, and suffer the decoction to stand and settle, that the juice may be the purer, the which when Sugar is added, they settle to the consistence of the Syrup.
5. Sometimes the juice pressed out is poured into hot clarified Sugar, and exposed to the heat of the Sun, to consume its aqueous humidity. But if the heat of the Sun be not sufficient, it may be performed by gentle boiling.
6. Syrups are also made of Infusions, Sugar being added in the same manner as of Decoctions.
7. And sometimes other things are infused in juices, and afterwards when 'tis strained, Sugar is put to it, and the Syrup is made according to art.
8. Syrups may be made of extracts also, if a little Sugar be added to the extract being thickned by abstraction of the *Menstruum*.
9. Syrups may also be made of soft Electuaries, if the Electuary be dissolved in six times or eight times the quantity of warm liquour, and strained, and half so much Sugar added thereto, by a gentle heat without boiling, the liquour should evaporate to the consumption of the third part.
10. Also Syrup is prepared of Sugar and Vineger onely, namely four pound of Sugar, and two of Vineger, and according to some five Pints of water, and 'tis called Syrup of Vineger simple.
11. Moreover, Syrups are made much more artificially, especially of hot and dry Plants, if onely so much water is poured off as that so much of the liquour may be left after straining without concoction, as otherwise useth to be left after concoction is made, and the matter infused on this manner in a Glasse or other convenient vessel, such as Fire-vessels

vessels, or earthen vessels, whose orifices may be fitted with a cover made for it, that is round and channelled, which should be put into the *Balneum*, three or four days to digest, and afterwards should be strained, and that which is strained should again be put alone in *Balneo*, or because of straightness of time, it should be clarified with the white of an Egg, what ever is feculent in it. Afterwards Sugar should be taken and clarified, and boiled to such a consistence, as is observed in the Confection of *Penides*, and it should be mingled with the clarified infusion.

The nearest to this is *Oxymel*, which is to be had in the Shops, which is prepared of one part of Water, one of Vineger, and two parts of Honey, whereof divers compositions may be made also.

Syrups are seldom given alone in Diseases of the Breast and Stomack; but oftentimes are mixt with double the quantity of distilled waters, or decoctions; and an Ounce or an Ounce and an half of Syrups may be drank with two or three Ounces of Water or Decoction at one time.

To Syrups and Juleps belong *Rosated water*, which is a Potion compounded of *Roses*, and Water, and Honey or Sugar: *Oribacius* put into sixty Pints of warm water, ten pound of *Rose-leaves*, he shut the Vessel till they were perfectly boiled, afterwards the *Roses* being taken out, he infused of boiled and clarified Honey thirty pound, and put it into a Cellar. *Alianus* took ten Pints of water, and five pound of Sugar and boiled them together to a convenient thickness, afterwards he infused a pound of the juice of *Roses*.

The likest to Syrups are *Juleps* and *Zulaps*, as they are called, from the Arabick word *Sialaba*, which is to heal or make sound, without doubt it is derived from thence, so that indeed Physicians often times take them for the same Medicine, and Potions that are mixt of Water and Syrups called *Juleps*, but the name of *Juleb* is often extended farther now than with the *Arabians*, who invented this Medicine to be made; for the name of *Juleb* was absolutely given by them, when Sugar onely is dissolved in *Rose-water*, and boiled, as *Julep of Roses* is; otherwise called *Alexander's Julep*.

But a Julep, if there be any difference betwixt it and a Syrup, is a Medicine clearer than a Syrup, and therefore more delicate and gratefull, and it is made of distilled waters, clarified Juices and Sugar.

The manner of preparing of Juleps.

They are made with, and without boiling; without boiling on this manner, Common or distilled water is taken, or a decoction of Barley, to the which some Juice also of Citrons, Limmons, Pomegranates, Quinces, or Vineger may be added, and white and clarified Sugar is poured in, or instead thereof common Juleps of Roses and Violets, which being boiled to the consistence of a Syrup, are kept for use, and are diligently mixt together, and if there be need, are drained through *Hippocrates's* sleeve. But the proportion of Sugar, or usual Juleps, which is observed to the waters and juices is various, as the present occasion requires it. For the most part the Palate of the sick is their guide, and sometimes the proportion of water and Juices to Syrups and Sugar is threefold, sometimes fourfold, sixfold, eightfold, or twelvefold. Sometimes Juleps are made with Aromatick Powders, or convenient little Tabulets are dissolved in them. 'Tis most convenient also in some Diseases to add Spirit of Vitriol.

2. Moreover, Juleps are prepared of Conserves and medicinal Juices, if distilled waters that are proper, or a Decoction of Barley be poured into them in a sufficient quantity, and are stirred with a Pestle in a Morter, or are mingled together over a gentle fire, and strained.

3. But those Juleps which are said to be prepared with decoction, are nothing else but the pure and finer decoctions of Syrups, and the same manner of preparing of them which is of decoctions and Syrups, onely that they are removed from the fire before they receive a thicker consistence.

C H A P. VIII.

Of Emulsions and other Mixtures, bringing or causing milk, and of strengthening things.

Emulsion.

AN Emulsion is so called, because it is like Milk, and is prepared as it were by milking; for 'tis a potent Medicine prepared of the pith and strength of seeds and certain fruits,

fruits, especially of sweet Almonds (Which Emulsion in particular by some is called *Amigdalu*) by the affusion of convenient waters, or of some other liquour, and by pounding and pressing of them, to which the Pulpe of a Capon or Pullet may also be added, if you have a desire to nourish.

They are prepared for severall purposes or uses, according to the variety of the matter, namely, to quench thirst, to cause sleep, to provoke sweats, and other things; and sometimes externally in stead of Epythems, and may be exhibited for the heat of the braine, and to mitigate paine; and cause sleep. *The use.*

They are prepared in this manner, Sweet Almonds are blanched, so are the foure great cold Seeds, and other things, the Kernels also are beaten in a stone or marble Morter, pouring in by degrees some fountaine water, or of Roses and other convenient distilled waters, or clarified with a convenient decoction that is pleasant to the taste: The proportion of the liquour is uncertaine, sometimes more, sometimes lesse, according to the strength of the seeds and fruits, and according as the Emulsion is required to be thicker or thinner: But at the least a threefold, oftentimes a six-fold, eight-fold, ten-fold, &c. quantity of the liquour is required; being beaten they are strained, and if convenient, Syrups or Julips that are proper, as of Violets or Roses are added: The Emulsion being made sometimes it is to be sweetned with Sugar, or Rowles of *Diamarg. frig. manus Christi perlati*, or the Juleps lately mentioned: Sometimes there may be added some Cinamon water, if the disease will suffer it; and sometimes conserves, Comfits, and liquid Electuaries may be added, from halfe a drachm to a drachm, two drachms or more. *Manner of preparing.*

Pearles also, Corall, Harts horne burnt, and other powders and Spices, may be added to Emulsions.

Sometimes potent Medicines may be made of Pearles onely, Corall, Harts horne, and such like, with convenient waters, which also by reason of the colour of Milke, which they have, are called Emulsions, and are very frequent, with moderne Physitians.

Oftentimes Juices also that are drawne out by expression, as of Pomegranates, Lemmons, or other liquours also are mixt with those waters (yet so that the distilled waters for the most part exceed the rest in quantity) sometimes, but

but seldome, some convenient Syrup. But because Physicians for the most part desire a white colour in this water, for the most part they omit all those things that may discolour

CHAP. IX.

Of Tinctures, and Extracts, and liquid dissolutions.

An Ex-
tract.

AN Extract is nothing else but the pure essence of a thing separated from its grosser body by a fit *menstruum* (whence they are also called Essences by many) which whilst it is as yet in a more liquid substance, and joyned with the *menstruum*, it hath also the colour of the thing, and therefore is called a Tincture; although sometimes they are called Tinctures also, when the essence of a thing is now separated from its *menstruum* which extracted it.

Essences.

Essences or Tinctures that are liquid, are prepared either of green Plants, or of Juices: when they are prepared of green things, the Herbs are bruised, and a little Spirit of Wine is put in for the preservation of them, and the juice is pressed out, which being cleansed is called an Essence.

Those that are properly called Extracts are prepared of dried Plants, from whence if the whole *menstruum* be not separated it is called a Tincture, or liquid extract: But *menstruums*, that is, Liquours exhibited for the drawing out of the essence of a thing are various, according to the diversity of the matter, and use; they of Spirit of Wine, distilled Waters, Whey, Vinegar, and such like, are exhibited.

In choosing a *menstruum*, first you are to consider whether you desire a liquid tincture, or an extract, or a thicker or grosser body: For if a liquid tincture be desired, a *menstruum* is to be taken, which is of the same kind and faculty: But if the *menstruum* ought to be separated, it is no matter, although it be of another kinde then the Tincture is of.

But since it is required in a *menstruum* that by the subtilty of its substance it may penetrate the matter, and by its familiarity intice out the purer parts, and without spoiling and corrupting of the Extract it selfe, may againe be separated

rated from it: Spirit of Wine may easily be esteemed the best amongst them, and take the first place; but May-dew, distilled Vineger, Spirit of Salt, of Turpentine, &c. are used also according as some present occasion may require.

If compound Extracts are prepared, and the simples be of *The manner of preparing Extracts.* divers natures, each of them severally, or those which are nearest one to the other, are drawn off by their *Menstruum*, and afterwards the Extracts are mingled.

The way of preparing Extracts is plain of it self, namely, the *Menstruum* is poured into the matter, that is beaten and poudred, which sometimes by the help of an external heat, when the essence of a thing is drawn out, and the *Menstruum* coloured enough, 'tis poured out, and another is put in, and that so often repeated, till all the strength and virtue is extracted; afterwards the *Menstruum* is separated by heat, which if it be not separated whole, 'tis called a Tincture or liquid Extract; but if almost whole, and of the consistence of Honey, 'tis called a simple extract; examples may be seen in the Institutions.

Nor are such Extracts as well liquid as thicker prepared simply alone, but also compounded: to these belong *Elixir*, of propriety, purging Extracts, and universal purgers, *Laudanum* opiated.

To Extracts belong those Rosins also which are prepared of Scammony, Mechoacam, Jalep, and such like, containing in them a kinde of gummy substance.

Of Tinctures, of Gemms, Coralls, Metalls, as of Balsum of *Venus*, may be seen in the Institutions.

C H A P. X.

Of Conserues, Preserues, and medicinal Juices.

THe name of Conserve is given principally to Flowers, *The manner of making Conserues.* and sometimes to Herbs, and certain soft and tender Roots, which being made up with Sugar are kept many years: they are prepared in this manner, the Flowers or Herbs newly picked or cleansed, and (if they abound with too much humidity) first a little dried in the shade, let them be mingled and brayed in a stone-morter, with a wooden Pestle, with twice or thrice the quantity of Sugar, and afterwards

wards the mixture is to be put up in a Glass or glased vessel. If the Plants are moister, 'tis profitable to heat the Conserues when they are made, by a gentle Fire.

2. Others take a Glass, and cover the bottom of it with Sugar, then they put in the Flowers to be condited, the depth of three Fingers breadth, and then they put in Sugar again, and in this manner heap upon a heap, and the Glass close that they expose it to the Sun some certain weeks.

3. Sometimes the Roots are boiled untill they can be pounded, or without boiling, are washed and cleansed, and are beaten very small, to them so pounded, or to the Decoction strained through a Hair-sieve, the Sugar is added as it use to be for Syrups.

*Things
condited.*

The name of Condite although it may be taken for a compound medicine also, as well as for a simple Plant mixt onely with Honey or Sugar, so that Conserues also may be comprehended under the notion of Condites, yet in particular the name of Condite here, is given onely to medicines which are not pounded, but whole for the most part, Preserued with Sugar or Honey, both that they may be kept longer, and rendred more gratefull to the taste.

*Manner of
Preseruing*

Fruits in the first place are preserued, Roots, Barks, Stalks, and some Flowers, as of Citrons or Lemmons, and Oranges: this is the Preparation, the softer Fruits, as Cherries, Black-berries, Barberies, Apricocks, Peaches, Pears, Moshcattellina, and the like, which are soft, being put into Sugar or Honey, that is hot, they are boiled, untill the humidity of the Fruits is consumed and the Sugar or Honey receive their former consistence; or if there be danger lest being boiled they should decay and lose their colour, the Sugar onely being hot, they are poured out, and when the Sugar hath drawn their aqueous humidity, the Sugar alone is again to be boiled, till that aqueous moisture is consumed, and afterwards to be poured out again to the Fruits, to be preserued: but those which are more solid should first be bruised in Water, or boiled, untill the bitterness and ungratefull taste be drawn out, and they become softer; yet you must observe that whilest we do strive to please the Palate, we must not lose the strength of the Preserue by too much maceration or boiling; afterwards we dissolve and clarify the Sugar, either in fair water, or in the water where the Medicine is macerated, unless it hath an ill taste, we pour out the clarified Sugar upon the Fruits or Roots, and then

then we seeke them again, untill the aqueous humidity which remains be consumed.

Lastly, being so prepared, they are kept in a Glass or earthen Vessel covered with a round wooden Cover, and clean stones being put upon the Lid, the Lid is deprest so as that it covers the Liqueur.

Next to these are thickned juices, and such as are fit for medicinal uses; which the *Arabicks* call *Rob*: They are prepared for the most part of the juices of Fruits, sometimes of Flowers also, that they may be usefull in the Winter, when we want fresh Herbs and Fruits; and in this manner they are prepared, the juice being drawn out is boiled over a gentle Fire to the consumption of half, or the third part, then whilst as it is yet hot, the thickest is strained: that which is strained is permitted to be clarified by settling in the bottome; or it is clarified with the white of an Egg; that which is clear is boiled again, untill it acquire its due consistence. But because the juices of themselves will not easily keep, unless they are boiled to a thicker consistence and all the watriness be taken away, for the most part less than half so much of Sugar or Honey, or a little quantity of one of them is added.

Those purest, clearest, finest juices; like icicles in frosty weather, as they call them, being poured out use to be kept, which commonly are called *Gelatine*, or frozen juices, and they are prepared principally of juices that are made without expression, the purer and more delicate juice of Quinces, Apples, Pears, Goosberries, (or Currans.)

That composition called *Diacrydonium*, which use to be prepared for the most part in the form of a solid Paste, unless you would rather refer it to the *Electuaries*.

And Purgers may be mingled with those Juices, and of them pleasant Medicines are made for infants and more delicate Persons.

C H A P. XI.

Of Electuaries.

The name of an *Electuary*, although it be severally used by several, yet we think that it is to be attributed to Medicines, which are reduced with Honey, or Syrup, or plain

whence so
called Opi-
ats.

sugar, or some other convenient thing, being used to a thicker consistence then a syrrop, and not so fluid, yet somewhat moist, this word is derived, or rather corrupted from the word in Greek *Ellickton*, or *Elleickton*, by which name they call a Medicine which may be taken as it were by licking, by some they are improperly called *Opiats*, not because they have *Opium* in them, but because they are of the like consistence, with those Medecines of the Ancients which had *Opium* in them, such as *Treacle*, and from hence they are called *Opiats*.

Difference
of Electu-
aries.

Electuaries may be for severall uses, according to the nature of the simples whereof they are compounded, for some are to alter, and strengthen, others against poysons, which because for the most part they have *opium* in them, they are called *Opiats*, as *Treacle*, *Mithridate*, *Aurea Alexandrina*, others are fit to purge, which are called *Cathartick*.

Electuaries are twofold, the preparation of the former is thus,

Aromaticks, and other simples being beaten into a fine powder. In the first place clarified honey is put into it, or sugar, or some convenient waters, or syrups, or proper decoctions of proper simples in faire water, or a sufficient quantity of another liquor, or infusions, or juyces prest out of other Medecines strained and boyled with clarified sugar, or honey, to the consistence of a syrup, or of many of these together, whilest they are as yet warme by the fire. A third part is sprinkled in by little and little, which may conveniently be done through a Sieve, and is to be stirred about with a wooden Pestle in a Morter, and should be exactly mingled and kept in a convenient Vessel.

The other manner is thus, Conserves they are convenient for your present purpose, to which are added powders, and Aromatick Species, Troches, Conserves also, and medicinall juyces, or Robs must be exactly mixt together in a Morter, with a sufficient quantity of dissolved sugar, or a convenient syrup, or honey: But the proportion betwixt the Conserves and Powders, and Species are not so exact, as some do determine, but severall times they may be three fold, foure fold, six fold, eight fold, twelve fold: For a sufficient quantity of a convenient syrup being poured in, whatsoever the proportion be betwixt it and the Powders, they may be all reduced easily into the consistence of an Electuary, which is also to be held of Conserves. Sometimes also spirit of

Roses, of Salt, of Vitrioll, distilled waters compounded, or of distilled Oyles, some drops are to be put in. And these kinds of Electuaries were called by some Condites, as is said before, tis so called by some from the nixture. Purging E-*Mixture,* lectuaries for the most part are so made.

There is another manner like to this: Fruits, seeds, or roots are put in, or are boiled in wine or water, to the form of a Poullice. Afterwards they are strained through a haire Sieve, sugar, or clarified honey is added, or Syrups; or Man-*na,* and if it be needfull are boiled to the consistence of hon-*ney,* sometimes the Species, and Powders also. Spirits also of Vitrioll, and Salt, and distilled Oyles.

Of Rayfins and Pruants that are laxative, you may see the Institutions.

CHAP. XII.

Of Eclegmaes, and Lobocho.

EClegmaes, or Eclectaes, from the Greek word *Eclecto*, *Eclegma.* that is to rake up with ones tongue, or lick of, the Ara-*bicks* called *Lobocho*, or *Liactus*, and things that are to be *Lobocho.* licked, as they are commonly called, are like unto Electuaries, nor do they differ from Electuaries, only in that they are of a moister consistence, and as it were the middle betwixt Syrups and Electuaries, and are appointed peculiarly for di-*vers* diseases of the Breast and Lungs.

Species and Powders, Conserves, thickned juices, Honey, Sugar, Extracts, Muscellages, Syrups, Juleps, Oxymell, dis-*tilled* Oyles, the manner of preparing is the same also with *Manner of* that of Electuaries. The Powders are taken, which are most *preparing.* convenient, Gums of Arabick, Tragacanth, Juice of Liquo-*rish,* Rice, and all things are incorporated in a sufficient quantity of honey, or Syrups, or Juleps, or Muscellages, or Juices, or Infusions, or of some decoction for this purpose, prepared of roots, herbes, seeds, fruits, But principally of Muscellages, and viscid things being strained and expressed and boiled with honey, or sugar, to the consistence of a sy-*rup,* or any one, or more of these, and all of them are to be wrought so long in a Morter with a wooden Pestle, untill they are exactly mingled, and come to be of the consistence of honey, or rather the middle betwixt Honey and Electuaries.

Eclegmaes may be prepared without the addition of Pow-*ders,* and Species, if a juice, or Muscellage be boiled with honey, or sugar, to the consistence of an Eclegma.

3. Eclegmas also may be made according to that manner which is explained last of all amongst the Electuaries, so that if it ought to be licked, the consistence ought to be the moister.

4. And such things are often administered alone to be Supt up by the sick, or else they are prepared of them other things being mixt, a new Eclegma is made for the present occasion; for you may take as much as you please of the usuall Eclegma; Conserves also are added, and convenient Powders, Sugar, and an Eclegma may be reduced into the forme of a Syrup, with a sufficient quantity of Syrup, or Juleps or clarified Honey, or Sugar dissolved; To which sometimes some drops of distilled Oyles are added.

5. Sometimes an Eclegma is prepared of Syrups alone, Sugar-canded, or Penedies being added.

Saponea.

Hereunto belong medicines which by some are called *Saponea*, from the similitude of white Soape not yet made hard, by others tis called *Linctus*, from a Liniment made of Almonds. Sweete Almonds are taken being blanched, and are pounded; to those that are pounded, clarified Sugar, or Penedies, or Sugar-Candy is added; being first dissolved in a convenient Liquor, they are boyled to the consistence of Honey; a little before they have done boyling a pound of Rice is added, to wit, unto two ounces of Sugar, an ounce of Rice, and another of Almonds, and a sufficient quantity of Rose water, and a little before it be ended some Ginger also, or Aromatick may be added. Others draw a milke out of Almonds with Rose water, or some other convenient Liquor, with some portion of milke; Sugar is dissolved, the Rice is cast in afterwards, and the other part also of the mulsion being poured in they are stirred with a gentle fire.

Leucophagum.

The composition which is called *Leucophagum*, is so named from its colour, and therefore may be referred to this, or the precedent head; tis prepared of sweet Almonds macerated in Rose water, and the flesh of a Capon, or Partridge boyled with it, being very much wrought in a Marble Morter, and strained through a haire seive, with a little of the beaten blanched Almonds, and Sugar, boyled to a due consistence, to which according to the severall aims of the Physitians, Aromaticks, Coralls, and other things may be added.

CHAP XIII.

Of Boles.

A Bolus hath that name because it is a gobbet of Physick in a round figure, almost as much as ones mouth will hold, whence it is called Buccilla; but the name of Bolus agrees not only to purging, but altering Physick. *A Bole.*

Purging Boles are thus prepared: purging Electuaries are taken, and a convenient quantity of Sugar being added, they are made up in the forme of a Pyramid, not much unlike an Olive, lest they should be loathsome, they ought not to be made of Electuaries that are ungratefull, and for that reason Hiera is scarce ever given in Boles; the quantity ought not to exceed an ounce. *The way to prepare purging Boles.*

2. Sometimes some of the Powders or species are added.

3. You may add conserves:

4. Or instead of Sugar Conserves either alone, or with a little Sugar may be used.

5. Instead of Sugar, or sometimes with Sugar, especially in diseases of the reins, Licorish-Powder; or some other may be added, so may Turpentine also.

6. Moreover in the stead of purging Electuaries, Powders of simples that purge use to be taken, wherein something also which alters, or corrects the violence of purgers, or that give a pleasant smell or taste to them; or else they may be added for some other cause, or species of purging Confections, or Extracts purging, both simple and compound, which are taken and incorporated with the pulpe of Cassia, the pulpe of Tamarines, or Prunants, or some Conserve or Rob, or some convenient Syrup, and with a sufficient quantity of Sugar are made into the forme of a Bolus.

7. Sometimes distilled Oyles are mingled with a Bolus to corroborate, namely of Anniseed, Mace, Cinamon, Cloves, some few drops, and sometimes the Bolus is covered with Gould,

Vomiting
boles.

Boles to cause vomiting, and they are prepared after the same manner, and are made of some Emertick powder, simple, or compound, to which sometimes is added some of the things that alter or correct, some certaine grains, or some Emittick extract, with a conserve or some confection of the like consistence, and with syrups.

Altering.

Boles also may be exhibited for other uses, to alter, strengthen, and provoke sleep; but the composition differs not from the former.

CHAP. XIV.

Of Powders, and Trageis, or Comfits.

Powders,
and Tra-
geis.

But as for the formes of dry Medecines, Powders, are the plainest way of compounding amongst them, commonly called Trageas, without doubt corruptly derived from the word *Tragma*, which consists of one, or more Medecines compounded, if the tast be ungratefull, an equall part of sugar, or half so much sugar is to be added.

But Powders are either thin, and subtile, which if they consist of pure Aromaticks, and Sugar, they are wont to be called generally *Tragemata*, or *Trageæ*, or else more thick, and not so subtile; nay sometimes Aromaticks are not pulverised, but onely cut asunder, and seeds hardned with sugar, or candied, called Comfits, are added to them, and Species that are cut, are also called grosse Trageas.

They are used for severall purposes, according to the various nature of the simples whereof they are composed, some of them resist poyson, others purge the belly, others by vomit.

To those that purge, simples which have in them a faculty of purging are taken, and correctors are added, sometimes also a grain of distilled Oyles is mixt with a drachm of Powder.

CHAP. XV.

Of Salts.

Al things almost containe two kinds of Salts, the one <sup>Salt two-
fold.</sup> volatile, which endures not the fire and heat, but flies away and is dispersed, and vanisheth by burning, the other is fixed, which endures the fire, and is left in the ashes.

Volatile Salt is collected in distillations, so of stale Urine, Salt distilled by an Alimbeck in the first place, and by a Phiola or the bottome of a Glasse-Still; in the second place Volatile salt of Urine is collected, the same may be drawne out of other things. In the juices of Plants also, salt sometimes coagulates to the thicknesse of boiled honey, in a cold place. But fixed salt is prepared of the ashes of plants and woods, whilest a Lye is prepared out of them, and that is boiled till all the water exhals, for then the salt is left behind, which is purified first by often dissolving, and coagulating. Secondly, if it be dissolved into a liquor by draying in a moist place, tis filtered, and afterward coagulated.

Hereunto belongs the cream, or thick juice, and Christall <sup>Cream, &c.
Of Tartar.</sup> of Vitrioll, and of Tartar, which are nothing else but salt of Tartar separated from the dregs that were mixt. Also Tartar ^{Magisters.} vitriolated, salt of Tartar. To these belong Magisters, or dissolvings of Pearle, Corall, Crabs claws, precious stones, *Saccharum Saturni*, which takes place so far, if salt that is volatile, of the menstruum that dissolves doth as yet stick in them: For then according to the manner of salts they are dissolved in waters and other liquors; but if they are precipitated by oyle of Tartar, or Vitrioll, and the salt that dissolves be separated from them, they rather belong to powders.

CHAP. XVI.

Of Croces.

TO powders and salts we may well joyne those things <sup>Croci
what.</sup> which the Chymists call *Crocos*, flours, sublimes, precipitates: The name of *Crocos* is given to some Medicines from the colour of Saffron, for *Croci* are nothing else but fine powders, or tinctures reduced into the forme of a powder of Saffron-colour: But principally they are called *Crocos* of Metals, and *Crocos* of *Mays*.

Crocus
mettalo-
rum.

Crocus metallorum is nothing else but Antimony burne with nitre, and reduced into powder of Saffron colour, next to this is that of Venus of Antimony Gouden as it is called. Of which the Institutions may be seene.

Crocus of Mars is prepared severall wayes, which may also be seen in the Institutions.

To these we may well referr that which is called earth of vitrioll, whose preparation is taught in the Institutions.

Floures.

CHAP. XVII.

Of flours and Sublimates.

Those are called Flours by the Chymists, for the most part, which are the thinner, and more subtile parts of a body, seperated from the thicker by sublimation, the most common flours are of Copper and of Antimony, as also Benzoës; the reason of preparing whereof is to be had in the Institutions.

Hereunto belong the other Sublimates, amongst which the cheife is Mercury Sublimate simple, and Mercury Sublimate sweete;

CHAP. XVIII.

Of Precipitates.

Of precipi-
tates.

Although those things in generall are rightly said to be precipitated, which are dissolved in some Liquor by a peculiar Art, and seperated from the Liquor, descend to the bottome in the forme of a Powder or like Chaulk, yet the name of precipitating principally belongs to Mercury, which after it is dissolved in *Agua Fortis*, and is seperated from the water that dissolves it, and settles in the bottome, is called Mercury precipitated.

The name also of Turbith, or Turpeth, is in use amongst most Chymists, which from whence soever it had its originall, it signifies nothing but Mercury precipitated.

The way of precipitating Mercury is shewne in the Institutions: to which if any Gold be added, tis called Gold of life; of which in the Institutions,

To these belong also Bezoarticum Minerale, as it is called: tis there also described, as also Mercury of life and some others.

Turbith.

Mercury
precipitate
Gold of
life.
Bezoarti-
cum Mi-
nerale
Mercurius
Vita.

CHAP. XIX.

Of Glasses, Regalls and certain Chymicall
Powders.

Those chymicall Medecines which remaine, Glasses, Regulus-chaulks, and certain Powders, we will annex in this Chapter.

First, Glasse is prepared from the chaulks of things; and vitrification, for the most part, is the last resolution of things: for Ashes, or Chaulk is to be poured into a very strong fire, and sometimes Borax is added to ripen the fusion, or other fusill Powders, but fusill matter is poured into a Basin made hot, or upon some table. Glasse.

Glasse of Antimony is prepared in this manner; also Amber of Antimony, or as others would have it, of Mercury. Purging cups may be made of these Glasses, also Rings, Money: If glasse of Jupiter, or glasses, or Amber of Antimony, if they are set into the bottome of a cup, or into a Ring, or any Coyne: Of Glasse of Antimony golden; see the institutions, as also of Regulus of Antimony. Of Antimony and Mercury.

Moreover, the next to these are chymicall Powders and Chaulks; as for them, the first that is referred to them, is called Antimony fixt, or Diaphoretick, which is made if Antimony be burnt so often with Nitre, till it become white and fixt. Milk of Venus, how tis prepared, the Institutions shew. Rings purging, Regulus of Antimony.

To these belong Dreges, or Fæculæ, as they are called by later Chymists, which are certaine Farinaceus Powders prepared of the juice of certaine roots beaten, or expressed or extracted by some liquor, namely, if a juice, or liquor be put into a cold place, the Fæces of their owne accord settle in the bottome, which when the moisture is poured off, are dried and kept; the chiefest that are in use are the Fæces of Briony, Wake Robin, Piony, and Orrice, as also of Dragon. Antimony, Diaphoretick, Lac Veneris.

CHAP. XX.

Of Comfits, little round Cakes, and Morsells, and
Such like.

That the palate and taste may first be pleased, certaine Medecines are found out by Physitians, preserved with sugar, and are made up into a dry body: Amongst which the first

first are those which are called Comfits, as we may speake in the manner of an Apothecary, with whom, Comfits are nothing else but Conserves dryed, Seeds, Kernells, skind or blanched Roots, and Pills or Rinder.

Of purging
Comfits.

Purging confections also are prepared, and that two wayes, first if the Sugar be poured in before it be cooled, the purging things are mingled, and stird about together that they may stick to the Sugar; Secondly, which is more convenient, if the seeds, or Rindes, are macerated in a purging infusion, untill they swell, and then being gently dryed are hardned with Sugar.

The man-
ner of pre-
paring lit-
tle Cakes.

Moreover, there are little Cakes which are prepared in this manner, take of the powders or species of medicines, of Sugar, either plaine white, or of Roses or Violets, six times so much, sometimes eight-fold, to which simple or compound *Manus Christi* pearled, may be mingled, or added; in purging Rolles, also double, treble, or a four-fold, quantity is dissolved, according to the taste of the purgers, which is dissolved in a sufficient quantity of Fountaine water, or of some convenient distilled water, or juice, seldome of a decoction, or infusion; to this Sugar, Powders, and Species, are throwne in by degrees, and stirring are exactly mingled together: and are powred out by drops upon marble stone, or on a Cypresse or other table of wood, that being cooled they may concreate in round Cakes and Rolles.

Sometimes instead of Powders, Oyles or extracts are taken, and of altering extracts, five, six, seven, eight, nine, or ten graines are taken, for an ounce of Sugar, so of distilled Oyles three, foure, five, or six drops, for an ounce of Sugar, sometimes Powders, Extracts, and Oyles are taken together.

Purging
Manus
Christi.

Manus Christi purging are made two wayes, for either to every pound of Sugar, an ounce of Rosin of Scammory prepared is taken, and so its made up in the forme of a Tabuler, or the faces of Mechoacam instead of Rosin may be mingled in a three or foure-fold quantity of Sugar.

Morfells.

There is the same way for the most part of preparing morfells, only that medicines for the most part, in morfells are not beaten so fine, but in a grosser manner: to which others may be added which are not made easily into Rowles, or at least in a lesse quantity, as Fruits, and seeds, namely Almonds, Pine-nuts, Pistack-nuts, seeds of Melons, Citrons,

(or Pumpions) Conerves, Preserves; the proportion is to be observed betwixt them which is most agreeable to the intention of the Physician: and all of them as tis said of Rowles in a sufficient quantity, that is for the most part six or eight-fold, sometimes also ten or twelve fold; but in purgers a three or four-fold quantity of Sugar dissolved in a convenient Liquor is taken.

2. Sometimes Fruits themselves are not taken in their substance; but an Emulsion is made of them with convenient waters wherein the Sugar is dissolved.

3. Besides these Extracts, and distilled Oyles may be mingled in the same manner as Rowles.

4. Sometimes instead of Sugar, Manna may be used in purging things.

When all things have been exactly mingled over the fire before they are cooled, the whole masse is laid on a marble stone, or Cypresse Table, and is dilated, and folded, or is powdered into a wooden Box made for this purpose, and are cut into Tables that are four-square, or into what shape you please.

5. When the Tables or Morfells are prepared they may be moistned with distilled Oyles, or with muske and Amber dissolved in Rose-water, namely when we feare least the strength of them in boyling should flye into the aire.

6. Purging morfells may be made after another manner a due quantity of the purging extracts are taken, or some of the purging Powders are joynd with them, to these are added Aromatick powders, or Aromatick Extracts, and with Manna or Sugar little Cakes are made, the proportion of Sugar is double, or treble to that of the Extract, and the proportion of Manna is the same, but these Cakes are not made of Fruits and seeds alone, but sometimes, the flesh of Capons or Partridges, or Cockes-stones are joynd with them, namely when we intend to nourish, and especially in those which can eat no meate, whence such morfells, are called nourishers, or nutritives.

To these may be added the medicine, which junior Physicians call Pandalzum, which in matter and in the end (for which is used) agrees with an Eclegma, and is appointed for diseases of the breasts and lungs, but in some it differs not from Rowles, Tables or morfells only in that Rowles and Tables are framed into a certaine figure either round, or square, but Pandalzum, remains without

*Nourishing
Morfells.
Pandalzum.*

without being formed, and Pouders are permitted to condense with Sugar in a Box in that which is called *Pandalæon*; and when it is used a Lump of it is cut with a Knife, or taken up with a Spoon, and held in the mouth till it be consumed.

Diamygdalatum.

Moreover, to this rank pertain several Comfits which are principally prepared to restore health, and from the *Basis* they are commonly named, such are *Diamygdalatum* or Marchpane, *Testudinatum*, a composition whereof Snails is the *Basis*, *Pineatum* where Kernels of Pine-nuts are the *Basis*, and Sugar-bread.

Marchpane is compounded of sweet Almonds wrought with Sugar and Rose-water well mingled and boiled according to art; but for Physical use, Fruits, Seeds, and Aromatick Conserves are added.

Testudinatum is made almost in the same manner, Snails being onely added.

As *Pineatum* also of Kernels of Pine-nuts mixt with Sugar in the same manner.

Sugar-bread is made of the whitest Flour, Sugar and Eggs being added, and sometimes mixt with other Medicines, and boiled in a Pot, or Furnace; of which see the Institutions.

CH A P. XXI.

Of Trochees.

Trochees.

TRochees; that is, Rolls and *Cycliscai* & *Artiscai* in Greek; that is, Pills or little round Balls are solid Medicines, cohering and consisting of convenient things, taken in a Liquour made commonly in the form of Lupine-seeds, their circumference sometimes round, sometimes with a corner, both of them smooth without-side, invented principally for that end, that Medicines reduced into Pouders may be kept the safer in this solid figure from the injuries of the air.

The way of preparing them.

There are a sort of Trochees amongst the universal Medicines, and such as are for all uses almost, and may be exhibited according to the nature of the Medicines whereof they are compounded, and afford convenient matter for many

many other compositions, for some purge, some open obstructions of the Liver and Spleen, others provoke Courses, others open the obstructions of the Reins, some mitigate heat, some are appointed for the Breast and Lungs; some strengthen the Brain, some stop Fluxes, and stench Blood, some are exhibited externally, or that may repress humours that are flowing, or take away proud flesh, such like are Pills or Lozenges, of *Polyida* and *Andronis*; or to cause fumes and suffumigations.

The materials whereof they are made, are Medicines of every sort, which being macerated in a convenient Liqueur, or made into some mullage are reduced into one mass, which are divided into many Lozenges and Pills, wherein for the most part some impression is made; they are made either by a gentle fire, or rather are dried in the shade, and kept for use; not onely Pouders and *Species*, but thickned Juices also, Conserves, Extracts, Fresh-flowers, Eclegmaes, and distilled Oyls, are made into Trochees.

C H A P. XXII.

Of Pills.

Pills are so called from their similitude to little Balls by the Latins, and from the solid form, the Greeks call them *Castiposia* from *Catapineine*, that is, Drinking or swallowing down: Pills are Medicines made into the form of a Globe or Ball, principally for this end, that they may be swallowed whole, and the unfavorinels of the Medicine may the less be perceived by the taste. Pills.

They are made of Pouders, the matter whereof they are made are Electuaries, Trochees, Flours, Salts, and whatsoever things are dry do afford: but Pills, since they ought to have great efficacy in a small quantity, the Medicines out of which they are compounded ought to be powerfull, and therefore those things which have but small strength in a great mass are not to be put into them, such as are Flours for the most part. They are reduced into a mass with Syrups, thickned Juices, Extracts, and such like Liqueurs.

But although all Pills for the most part do purge, and by Pills a Purging Medicine is understood, yet other Medicines may be reduced into this form.

The manner of preparing them. Pills are prepared in this manner, convenient Medicines are to be taken, and reduced into a Poulder, and mixt in a Morter with some Liqueur somewhat viscid, as with a convenient Syrup or Juleb, seldome with Honey alone, by the benefit whereof both the mass may stick together; and if they are to be kept long they may be preserved, so that the faculty of Medicines cannot easily expire and vanish; but the Aloes which commonly is given in Pills serves to incorporate.

1. If they are prepared for many Doses and daily use, the mass is to be kept in the form of a Pyramid, (which they commonly call *Magdalias* and *Magdaleens*) and in the beginning they should be softer, that they may ferment, and the virtue of the Medicines may be the more exactly mingled; then after two or three days tis wiped over with Oyl of sweet Almonds, and covered with a Bladder or a Skin, and kept in a Box.

2. Of the usual Pills, and those which are kept in a readiness for daily use, the manner of the Preparation is thus, Take of the mass of usual Pills more or less, as much as is need, to which instead of a Goad are added some *Diagyrdium* or Trochees of Alhandale, or else some other Purgers, that all together may make one Dose, and let them be mingled with some distilled Water, or with white Wine, or some other convenient Liqueur, and brought into one mass, and let it be reduced into 10, 15, 20, 25, 30. Pills more or less.

3. Pills when they are made sometimes use to be covered with Gold, or Poulder of Cynamon, Nutmeg, Fennel, Licoris, as is convenient.

4. You may mingle Extracts with the other usual Pills or Pouders.

5. Nay, Pills may be made of Extracts alone, if they are a little thickned, or, which is more convenient, if some of the Purgings Pouders be added.

6. You may also prepare Extracts out of the masse, particulars of usual Pills, and make Pills of them.

7. There may be added also for to correct, a drop or two of distilled Oyls, as also of Spirit of Copper, Common Salt, Vitriol.

8. There is another manner also of making Pills, The Simples whether Altering or Purgings are macerated for two days in Wine or some other Liqueur, or else they are boiled in it, or a certain juice is taken out of convenient things and

and one of these things are taken, or two or more of these Liquours severally prepared are intermingled, or being new-done they are poured again into some of these, or they are boiled, and afterwards strained: to the Wine or Liquour strained, or expressed, purging, or altering *Species*, and Pouders, or Compositions of the Shops which may be poudred, as Trochees and Tabulets, somewhat less than the eighth part in quantity to the Liquour, or thereabouts, or cathartick or not cathartick Extracts; to which distilled Oyls also, some drops, or half a scruple, according as the bigness of the mass for Pills, is more or less, may be powred. Afterwards all of them by often stirring may be dried over warm Embers, or in a Stove; till they are brought into a mass, if it be convenient, the mass being dried, it may again be imbibed and wrought in the same Expression or Liquour, and dried; and you may repeat that the third time: but that they may continue the longer, some Aloes is to be added to them.

But lest that Pills should cause loathing in swallowing, the whole Dose ought not to exceed a Drachme, or four Scruples; and that the same loathing may be prevented in taking them; we have said, they are to be rolled in Aromatick Pouders, or Licoris Pouders; there are some who can easily swallow them alone; but others to take away the taste, and avoid the unpleasantness, and facilitate the swallowing, use divers means, Wines, Syrups, Pulp of roasted Apples, and other things please others; they are conveniently taken in a little Pulp of Bread in Beer. After the altering Pills, and those whose force can penetrate from the Stomack to the remote parts are taken, some liquid thing ought to be taken after them, to carry them to the Veins.

*Manner of
using Pills.*

There is another kinde of Pills which are called *Hypoglot-
tides*, because they are retained under the Tongue, till they melt by degrees, principally for the Cough, and Diseases of the Breast, simple Medicines are taken: to an Ounce, and half; more or less, and are beaten, and with a convenient Liquour, as with a Muscellage of Tragacanth, Quince-seed, Fleawort, Wine boiled to the third part with Honey or any pectoral Syrup they are taken and made into Pills; sometimes they are prepared of a Decoction, namely, to that which is strained, somewhat less than the eighth part of Tragacanth is added, the weight of

*Hypoglot-
tides.*

Sugar, and Penides equal to that of the Decoction.

Sometimes these *Hypoglottides* are prepared for preservation from pestilent air, and to corroborate the Brain, and cherish the animal spirits, as also for delight and pleasantness of smell, to correct the stink of the external air, or of the mouth within, the filth offending the nostrils, let them be made of sweet-scented things, with Muscellage of Tragacanth.

C H A P. XXIII.

Of Suppositers.

External Medicines.

EXternal Medicines are twofold, some are injected and put into certain parts, others are applied onely to the *Superficies* of the body; of the former kinde are Suppositers, and Clysters, both those which are injected into the Paunch, as those which are injected into the Womb; and Pessaries, Injections, which are made into the Yard and Bladder, Gargarisms which are in Mouth and Chops, Apthoplegmatisms, Dentifrices, Errhines, Sternutatories, Odoraments, and Fumes; Injections into the Ears, Collyries, which we shall speak of in the first place.

Glandes or Suppositers

In the first place, *Glandes*, with the Greeks, *Ballanoi*, commonly Suppositers, are solid Medicines, which are put into the Fundament, in figure somewhat long and round, like to an Akorn or Wax-candle, four or five fingers breadth in length.

Use.

But Suppositers are not always prepared for the same use, for they are often exhibited, that they may loosen the Belly, and stimulate the expulsive faculty; sometimes for other affects also, namely, when an Ulcer is in the Gut *rectum*, that it may cleanse, consolidate and dry; when pain is present, it may allay it, and draw it away; when the humours flow towards the upper part, that it may draw them back, and cause revulsion; when there are little Worms called *Ascarides*, to kill them.

Suppositers irritating the expulsive faculty are exhibited, first, when the sick is so weak that he cannot take Clysters; moreover when the Seige clings in the Paunch, there is need of a Suppouser to be used before a Clyster, that it may make way for the Clyster. Thirdly, if Clysters injected do

not work, or operate slowly, 'tis needfull to stimulate nature to expulsion. Fourthly, when by reason of straightness of time we cannot prepare a Clyster.

There are three sorts of these Suppositers, Gentle ones which are sufficient for infants, and are made of Lard, a Fig the in-side being turned outward, Bullocks fat, the stalks and roots of Beets, Cabbage, Spinach, the Herb Mercury, indifferent strong, are prepared of Honey, boiled till it be thick, a Mouses turd being sometimes added, the White of an Egg, Salt, and a little Saffron and Honey, with white Soap; the stronger are composed of Honey, Salt, and the Pouders of purging *Species*, as with a sufficient quantity of Hiera, with Agrick, Hiera, Logadii, Aloes; the strongest of all are prepared with *Species*, convenient for Suppositers, the Pouders of white Hellebore, Euphorbium, Scammony, Turbith, Cölloquintida, Indian Salt, Amoniack, Salt-Peter, a Bulls Gall, which we use onely when the faculty is stupified, and we endeavour to draw back from remote parts.

They are prepared in this manner, Honey is boiled to spissitude, that is, so long till you can take it up with your fingers; into which other things are sprinkled which are needfull, namely, half a Drachm or a Drachm of common Salt, Salt-Gemme a Scruple, of the gentler purging *Species* a Drachm, of the stronger half a Scruple, of Juices half a Scruple, (or a Drachm,) of sharp Salts six Grains, or half a Scruple to an Ounce of Honey. Hence they are made out of the mass in form of a Pyramid, as big as ones little finger, and dipt in or anointed with fresh Butter or Oyl; sometimes a Thread is tied to it, that it may be drawn out at pleasure.

These Suppositers are properly applied to those who have Ulcers, Clefts, Inflammations, and other Tumours in the Fundament. But when they are troubled with pain of the Hemerhoids they are not convenient to be used, for they exasperate pain.

CHAP. XXIV.

Of Clysters.

Clyster.

Clysters which the Greeks call *Clyster*, *Clysmos*, *Clysmo*, and *Enclysmo*, is so called from purging or cleansing, although it signifies every sort of Medicine in general, which pours in that which is liquid into any part, yet in particular, as also *Enema* from injecting, for the most part is taken onely for a Medicine which is injected by the Fundament into the Guts.

Differences of Clysters.

A Clyster is injected for several ends, whence there ariseth various differences of Clysters; for some loosen the belly, and of these some do it by Emolliating, which are made of Emollients, proposed before, p. 1. S. 1. c. 6.

Others purge, to which purging Medicines are added. Some cleanse, namely, those which are compounded of Barley, the herb Mercury, Pellitory, Wormwood, Agrimony, Century the less, Pease, Parsnibs, Lupines, Flour, Honey with Roses, Hiera. Some are composed for the discussing and breaking of winde, and are made of those Medicines that expell winde, above mentioned, pag. 1. sect. 1. cap. 1 c.

Some binde and are prepared of Astringents, proposed in the same, cap. 6. Some glutinate, and are prepared of glutinating things, spoken of in the same part and sect. cap. 9. Sometimes Clysters are made of Anodyns, or Medicines that mitigate pain, for pains of the Guts and Reins.

But Clysters are compounded in this manner, there are taken of Roots and Rindes an ounce or two, of Leafs three, four or five handfuls, of Seeds three, four or five Drachms: of Flowers some Pugils, of Fruits, Pears ten, that is, twenty; to which if a purging Clyster ought to be made, Purgers are added, Agrick, Colloquintida, Seeds of Carthamons, (all which least they should stick to the Guts, and offend them, are tied in a Linnen-cloath) the Leafs of Senna; but there is no need of such variety always, but oftentimes a few simples suffice. All the simple Medicines are boiled in a sufficient quantity of water; of the Decoction take three, four to fifteen Ounces, according to the age, for infants three Ounces, hence those that are a little riper four, five or six may suffice; for one that is come to ripeness of years, for the most

most part they take a Pint, sometimes also fifteen Ounces; yet sometimes, namely, when we would retain the Clyster long, and lest the too great quantity should oppress the other parts, onely eight or ten Ounces is taken in the Stone. In the Decoction strained those things which agree to our present purpose, we dissolve, as Oyls from an Ounce to two or three. When we onely are to emolliate, we put in Oyls onely or Butter, but indeed in greater quantity: those which have a purging faculty are then wholly to be omitted, lest by reason of the hard ordure sticking in the Guts, nature should be stimulated in vain, and humours being drawn greater evils do ensue. On the contrary, when you are to purge, to repell, and a sharp Clyster is required, the Oyls whereby the force of sharp and purging things is resisted, are to be omitted, and purging Electuaries are to be added for the most part double the weight, which at other times they use to be taken in at the mouth, or Pills are to be dissolved, Salt also is to be added from a Scruple to a Drachm; also Abstergents, as Honey of Roses, or Sugar, in weight an Ounce or an Ounce and half; all of them being mixt, and moderately heated by a convenient and known instrument, they are to be injected into the Paunch an hour or two before meat.

Those who are unwilling to have it done by others may give a Clyster, as they call it, to themselves by instruments described in many places, the most convenient whereof *Guil. Fabricius* propounds in his Chyrurgical Operations, *Cent. 1. Obf. 78.*

CHAP. XXV.

Of Injections into the Wombe, and of Pessaries

Injections into the wombe.

TO Clysters which are injected into the Guts, we may well joyne those which are cast into the Womb, and are therefore called Uterine Clysters; The Instrument, or Squirt, by which the liquor is cast into the Womb, is called by the Greeks, *Metrencytes*, but the Medecines which are injected they call *Metrencyta*.

Way of preparing.

A due quantity is taken of simples agreeable to every one's disease, tis boiled, and three or foure ounces of the decoction, or instead thereof distilled water is taken, and two or three ounces of Oyle are added, and powders, to the quantity of three drachms; and of those mixt together, three ounces are injected into the Womb.

Pessaries.

For the same causes, for the most part, for which Clysters as they call them, are injected into the Womb, Pesses, and Pessaries, barbarously called *Nascalia*, are put in.

The manner of preparing.

1. There are many waies of preparing Pessaries, the first is cotten, or wooll that is shorn and well carded, and are mixt with a juice, or some liquor, either alone, or with some convenient powders mixt, twisted, or wreathed, about the bignesse and length of a finger, tis wet in it, and applied to the generative parts of women, the quantity of Medecines that are pounded for the most part is an ounce.

2. Moreover Medecines that are pounded are taken in convenient liquors, as with oyl, fat, wax, Galbanum, Storax, honey, and are made up and mingled into a masse, and fashioned in the figure of a Pessary, to which a thred is tied, which also may be covered with fine linnen, or a thin peece of silk.

3. Sometimes green herbs, and such as are full of juice, are a little bruised, and tied about with a thred, and bound in the form of a Pessary.

4. There is a time also when Powders onely being taken in fine wooll, or cotten, being made round, are put into a thin bagg made of a fine ragg.

Nascalia.

Nascalia, as they are barbarously called, are compounded of the same Medecines, which are taken with cotten, or

or soft wooll, and applied to the externall orifice of the womb, especially in Virgins, to whom you may not give Pef-faries.

CHAP. XVI.

Of those things which are injected into the Yard, and Bladder.

Injections into the Bladder, are liquid Medecines which are injected into it through the urinary passage; in the use whereof, the whole art consists in injecting, for sometimes tis sufficient to cast in this Clyster by a Squirt, sometimes a Catheter which opens the way, as it were, and tis necessary to precede.

It happens also sometimes that there is need of injection into the Yard, namely, when it is either hurt by the stone, or troubled with paine, or the passage within is ulcerated; tis prepared of those things which are agreeable to the scope of the Physitian.

But not onely fluid Medecines are injected, but Unguents are cast in in this manner: Take a wax Candle, to which some Turpentine may be added, of that thicknesse and length which may answer to this passage and chancell, this Candle is bedaubed with an Oyntment, and is thrust in, but you must be carefull that the candle may be so prepared, and stick so long, that it may not melt with the heat of the yard; you may boyle also some convenient Plaister, and put the wax candle, or a little Instrument made of lead, into it.

CHAP. XXVII.

Of washings of the mouth, and Gargariſmes

Collations of the mouth with the Greeks, *Diachysmata*, Mouth-mouth, and without swallowing, by the help of the tongue are agitated up and down, being principally appointed for paines of the teeth, and diseases of the Gummies.

*Gargaris-
mes.*

Next unto these are Gargarismes, to wit Liquid Medicines, by which the Chaps are washed without swallowing, namely, whilst the humour contained in the mouth, flowes towards the top of the Wind-pipe by its gravity, the head leaning backward, the breath breaking out is repelled; and is agitated by a reciprocal motion.

*Use of gargaris-
mes.*

Gargarismes are administered for divers purposes, some to repell, others to resolve, and discusse, others to ripen, others to absterge, or wipe off, others to consolidate: But of all medicines for what purpose soever they are intended, those are to be chosen which are not ungratefull to the smell or taste, nor have any venemous and malignant qualitie, since it may easily come to passe, that any thing may be swallowed contrary to the will.

*Manner of
preparing.*

Some are prepared with distilled waters, others with decoctions, wherein Juices, or Syrups are dissolved, under a three-fold, foure-fold, or six-fold quantitie, so that to a pinte of distilled waters, or of a decoction, two, three, or foure ounces are taken, to which sometimes some of the Aromatick Species are added, and being mixt all are exhibited together luke-warme.

CHAP. XXVIII.

Of Medicines that draw away Phlegme.

*Apophleg-
matismes.*

A Pophlegmatismes, are Medicines also, which are held in the mouth, and draw out Phlegme from the head, and neighbouring-parts, from whence they have their name, for the most part they are called Diamastemata, or Masticatories.

*Manner
of prepar-
ing.*

But they are not all made alike, for first Apophlegmatismes are used in the forme of Gargarismes, which how they are made is newly shewn.

Moreover, Medicines may be made by beating, and with a convenient liquor, reduced into the forme of an Electuarie, wherewith the Palate should be appointed.

*Masticato-
ries.*

The third are called Masticatories, which are retained and masticated longer in the mouth, partly by their heat, they dissolve Phlegme, draw it out, and intice it forth.

forth, partly by the strength wherewith they are endued, of stimulating the expulsive facultie of the braine, they irritate it, to eject what ever troubles it, which againe may be done three waies.

For first simple Medicines, either whole, or a little cut one-ly are detained and chewed in the mouth. *The way of making.*

Secondly, The same medicines pounded, and with a sufficient quantitie of Honey, or Wax, which is taken, are made into Troches, like Lupine seeds, or Hazel-nuts, being in weight a scruple.

Thirdly, The same medicines stamped, being put in a linnen cloath, which may be bruised and chewed with the Teeth.

CHAP. XXIX.

Of Medicines to rub, and cleanse the Teeth.

Dentifrices, which the Greeks call *Odontrimmata*, and *Dentifrices Smegmata Odonton*, are principally prepared to whiten, cleanse, and strengthen the teeth, and fasten the Gums when they are loose; But there is not one sort of them onely, for first they may be washed with convenient liquors, or rubbed with cotton, or a linnen ragg, wet in a convenient liquor. *The way of making.*

2. Moreover the forme of an Oyntment may be used, if the powders are taken in honey, simple Oxymell, with Squills, honey of Roses, or syrup of Roses.

3. The Teeth may be rubbed with powders.

4. Troches, or Penfills may be made in the forme of suppositers, which being dried and hardned, the Teeth may be rubbed.

5. After Dentifrices, tis convenient that the mouth be washed, principally with Wine wherein Orice roots, or some other convenient thing is first macerated.

CHAP. XXX.

Of Medicines put into the Nose, and to provoke sneezing.

Errhines.

Ptaernica.

Way to
make them.

Errhines, as the name shews, are medicines which are put into the nostrills, which is done for severall ends; either for calling out Excrements from the braine, and to provoke sneezing, those that performe which in particular, are called Ptaernica, or such as cause sneezing; or to open the obstructions of the passages, or to heale an Ulcer, or stench blood; whence the matter of Errhines, is not allways the same but various according to the various intentions, which is shewne before in the faculties of medicines.

They are prepared also in severall formes; for some are moist, and Liquid, others hard and dry; againe, the Liquid are twofold, either they are powred into the nostrills, or the nostrills are anointed with them only expressed juices are powred into the nostrills, and are drawne in by and clarified them.

1. Or distilled waters are added to the clarified juices, Wine, Oyle, Honey, somewhat lesse then double, or somewhat lesse then foure times the weight, according as thicker, or more fluid Errhines are required, or convenient powders may be added, about a drachm in weight.

2. Or decoctions are prepared which are mixt with somewhat lesse then double, or somewhat lesse then foure times so much Honey, and are put into the nostrills.

But those things wherewith the nostrills are anointed, are most conveniently made of Oyles and Powders, to which belongs Balsoms, which the Nostrills are anointed with.

Besides these, to the moist there seemes to belong, those things which are put into the Nostrills in the forme of a tent.

But dry Errhines are made first of convenient Rootes, or Straulkes, as of Beetes, Flowre-deluce, Sow-bread, which are fashioned in the forme of a Pyramid, and afterwards macerated in the water of sweet Marjeron, or some other
sic

Dry Errhines.

afte water, or Oyle, a thred being firft tyed about them, they
re put in.

2. Moreover dry Errhines are made when fimple medi-
cines are reduced into a thin powder, and a graine or two
or two of them is blowne into the Nostrils, and fo they use
to call Errhines in particular Ptarmaca, or Sternutatories.

3. Thirdly, Errhines and Sneezings may be made of the
fame powders, if with a linnen or wooden cloath, or a
Linnen bagg, that is round, they are wrapt up in it, and
either with juice, or convenient diftilled waters; for exam-
ple of Marjerom, the Sternutatorie powder be dipt in it or
fprinkled with it, and put into the Nostrills.

4. Fourthly, medicines for the nofe being reduced into a
powder, are taken in a Mufcillage, or Gumm, or Turpen-
tine, or Oyle and wax, and diligently mixt, are made up into
Peffaries, in the forme of a Pyramid, as it were in that big-
neffe that they may be put into the Nofe, to the end whereof
a thred is tyed, that it may be drawne out at pleasure.

CH A P. XXXI.

Of sweet Smells, Perfumes, and Odoriferous, Bal- somes.

Sweet Smells also are taken in at the Nostrills, but prin-
cipally they are exhibited for altering of the braine, and
recreation of the Spirits and are exhibited for the refifting
of filthy and Peftilentiall smells.

The materialls of thefe things are all fuch as breath a
sweete Odour out of themfelves, as Muske, Amber, Civit,
Benzoin, liquid Storax and Ladanum, wood of Aloes,
Rose-mary, Lavender, Marjerom, Spike, wild Bafill, Ste-
chados of Arabia, Mace, Cloves, Cinamon, Frankinfenfe,
Myrrh, graines of Juniper, Gallia Mofchata, Camphir, and
thofe things which are given cold, as Roses, Violets, Flowers,
of Nimphea, fantalls.

But they are exhibited feveral wayer, and feveral kinde
of fweet smells, are made of thofe fimples, for firft they use
to be reduced into powders, and are kept either in a Box,
or wooden vefsell, and as often as neceffary, are put to the
Nostrills, or elfe are included in a little bagg, or nodule of
filke.

Things
caufing
sweete O-
dours.

Simples
Odorife-
rous.

Kindes of
Odorife-
rous
things.

2. Secondly, the same reduced into powder are taken with Ladanum, Wax, Liquid Storax, to which some Turpentine may be added also, and made into one masse in a hot Morter, by powring in of Rose-water, of which little balls are made commonly called Pomanders:

Balsomes.

3. Thirdly Unguents and Linements, use to be made of sweete things, which they call Balsomes at this day, they are prepared of distilled Oyles, to which is added Amber, Muske, Civit, Indian Balsom, whereof the whole force of them depends, which are mixed with a certaine body which affords a convenient consistence, instead whereof although some take other things, yet extract of Plantine is conveniently taken, or Oyle drawne out of Nutmegs, by which all the smell for the most part, colour, and taste is extracted by the Spirit of Wine, or which is most convenient, an extract and Oyle of Nutmegs, together to this mixture a colour agreeable to the Balsom, shall be made of a juice or tincture of the medicines.

4. Fourthly, perfumed waters use to be prepared, where with the Garments use to be sprinkled, or the nose, hands, and other parts of the body use to be wet, the same waters being put in a convenient vessell upon the coales, are dissolved into an Odoriferous Vapour.

5. Fifthly, wash-balls are also prepared, or sweet balls to wash the hands, and feete, of which hereafter Chap. 42.

Fumes.

6. Moreover, sweet Vapours, or fumes, belong to Odoriferous smells the Greeks Thymiamata, which although they are taken for the sweetnesse and pleasantnesse of smell, or for strengthening the braine, yet they may be appointed for other ends also, namely to stop distillations, for drying ulcers of the lungs, when they are stuffed with thick matter, peculiar suffumigations, also are prepared for the wombe, and to provoke and stop courses, the falling down, and sustocation of the mother, & the coming out of the Fundament.

How prepared.

1. But suffumigations are prepared, first of sweet medicines, that are cut, or powred, being throwne upon live coales, or hot ashes.

2. Moreover, the same powders are made into Cakes or Trochees, with a convenient Liquor, and with a Gumme or Rosin.

3. Thirdly, the coales of Lime or Teile-tree or of Willow being mixt, Pyramids and Candles as it were are made of the same matter, which is kindled, when there is use for them.

C H A P. XXXII.

Of those things which are put into the Eares:

Those things which are put into the Eares to assuage their pains, for inflammations, Ulcers, Singings, Hummings, and other infirmities, are exhibited, either in a Liquid forme, and first dropt into the Eares.

Things to be injected into the Eares.

1. Secondly, a hot Vapour of Decoctions, or convenient Liquors are injected into the Eares, (which they commonly call Embotum) or simples that are convenient are included in a bagg, and boyled, and put into the Eares.

3. Thirdly, they are exhibited in the forme of a Liment.

4. Fourthly, simple medicines may be reduced into powder, and blowne into the Eares, or sent in, in the manner of a fume, or Vapour.

C H A P. XXXIII.

Of Liquid medicines for the eyes.

Collyrion, and Collurion, as much as to say Collurion, *Collyrium.* that is *Colobon ten Ouran*, or *Colobee Oura*, it is so called because it is like *mutisatæ caudæ*, in which forme although various medicines appointed for various uses, were heretofore prepared: yet at this day by the name Collyrics, are understood only externall medicines proper for the Eyes.

But medicines which are exhibited to the Eyes, and in generall have borrowed their name from those dry ones, *way of preparing.* are named Collyrics, and are commonly divided into dry and moist, dry ones are made when medicines pounded very small, are made fine in a Morter, and with a sufficient quantity of Whites of Eggs, or of some Muscellage, are made into the forme of a Pyramid, or Trochees, and are dryed in the shade when

when there is need of them, they are beaten againe, in a marble, or Stone Morter, some convenient Liquor being powred in, and the Liquor, afterwards, which is then prepared, is dropt into the eyes.

2. Moist Collyries are twofold, for either they are dropt into the Eyes, in the forme of a Liquor, which is made of juices, distilled waters, Decoctions, or many of these mixt, powders being added, and especially of those medicines which will dissolve in a moist body.

3. Or they are made in the forme of an unguent.

4. Lastly, convenient medicines also, are boyled in water, and the warme Vapour exhaling out of the pot, which is covered with a linnen cloath, is received into the eyes:

CH A P. XXXIV.

Of Oyles and Balsomes.

Oyles.

But as for what belongs to Medicines which are exhibited to the superficies of the body, the first amongst them are Oyles; whereof some are naturall, as Petroleum and common Oyle, which is made of ripe Olives, and Omphacine, which is drawne of unripe Olives; others are artificiall, which are made three manner of wayes.

How to
prepare
them.

1. For first; Unctuous juice is expressed, after which manner Oyle of sweet Almonds, Pistack-nuts, Nuts, seed of Flax, Gourds, Cucumbers, Henbane, Hempe, and Oyle of Poppy is prepared; by expression also, Oyle of Yolkes of Eggs is made,

2. Secondly, Oyles are prepared by Infusion many wayes, for somerimes simple medicines are boyled with Fountaine or distilled water, and Wine, or other convenient Liquor, in common Oyle, to the consumption of the moisture, or juice; somerimes the same simples by a gentle heate are macerated in the Sun, yet it seemes more convenient if dried Plants are steeped in Oyle, in *Balneo Marie*, twenty foure hours, afterwards the Oyle is expressed, and clarified by residence.

3. Thirdly

Thirdly, Oyles are prepared by distillation also, as is said before, amongst which some at this day are called Bal-
somes; examples whereof are to be had in the Institu-
tions.

CHAP. XXXV.

Of Linements and Oyntments.

A Linement, or Litus, with the Greeks *Crisma*, and *Syn-* **A Line-**
crisma, and that which takes away wearisomnesse, is **ment.**
called *Acopon*, that is, freed from labour, tis a liquid Mede-
cine, externally applied, thicker in consistence then oyle,
but more liquid then an unguent, or of a middle consistence
betwixt an oyle, and an unguent.

It consists of oyles, butter, wax, fat, tallow, marrow, gums,
juices, muscullages; for the most part they have no wax, or
if any be used, they take onely a drachm of wax to an ounce
of oyle, to these sometimes, flowers, powders, and rosin are
mixt.

They are prepared in this manner, The oyles, fats, or other **How pre-**
things here named, are taken: to these powders are added, **pared.**
Juices, and such like, of that proportion for the most part,
that to an ounce of oyl, three drachms of fat, or two drachms,
and one drachm of powders is taken, or that proportion is
observed, as may make the consistence onely a little thick-
er then oyle; and all are mingled either without fire and boi-
ling, or are dissolved at the fire as Gums, and Fats, or also
by some ebullition, namely, to the consumption of the Jui-
ces, or Vinegar, if any such thing be mingled with it.

Unguents which the Greeks call *Myra*, and *Alleimata*, from **Unguents.**
whence *Miropola* and *Alypta* were the names that the Anci-
ents first called them by, which for pleasantnesse were made
of odoriferous things, and were distinguished from oyles not
in thicknesse, but in pleasantnesse of smell. But those
things which are at this day called Unguents, are Emmota,
so called by the Greeks, and are made of the same things
whereof Linements are; But are somewhat thicker then
Linements, and those things which thicken, are taken in a
greater quantity in an Unguent, then in a Linement, but
as for the liquid and oily things, a lesse quantity is observed
in compounding them, this is the proportion for the most
part; that to an ounce of oyles a drachm of powder, two
drachms

How prepared.

drachms of wax may be taken, or a sufficient quantity, namely in those things where Unguents are made of oyles, powders, or mettals, or plants, and wax.

But they are prepared either with fire, or without fire, without fire they are prepared in this manner;

1. The powders being beaten, and sifted, are taken, which are sprinkled in the oyle, and a sufficient quantity of wax being added, are reduced into the forme of an Unguent.

2. Or usual Unguents are taken, and for the most part foure fold, or eight fold, the quantity of powders, and species are mixt with some convenient oyle.

3. Or fat, or marrow are taken alone, or with oyle in equall weight, double, or halfe so much again, a few powders being added with a sufficient quantity of wax, an Unguent is made,

4. With fire also, they are made many waies, for either the greafe, oyles, or gumms are melted, that the powders may the easier be mingled.

5. Or herbes, roots, seeds, are macerated, sometime in water, wine, juices, oyle, afterwards they are boiled almost to the consumption of the liquor: to the decoction when tis strained, the other things are added, and with some greafe and a sufficient quantity of wax, or a gum, an Unguent is made.

6. Or they are prepared without oyle, with greafe, namely, herbes, flowers, or fresh roots, are bruiscd with greafe, and wrought in a Morter, untill the herbes have imbibed the greafe, and then they are melred by the fire, and pressed out.

CHAP. XXXVI.

Of Cerots, and Emplaisters.

THe name of a Cerat, or Cerot, the Ancients used for a soft medicine, namely for that which consisting of oyle and wax is anointed.

But at this day tis taken for a medicine, like unto a plaister, yet is not so hard as a plaister in consistence, and tis so called from Cera, that is wax, because the greater part of it is wax: And tis compounded at this day of powders, oyles, gumms,

Gums, Pitch, Turpentine and Wax, and sometimes Lard, Marrow, and Muscellages are added.

But the proportion of the things that are mixt is various, neither can it easily be defined and comprehended by Rules, and the quantity of Wax to be mixed is left for the most part to the discretion of the Apothecary, who ascends by degrees, according to progress from a lesser quantity to a greater; yet for the most part the analogy of mixture useth to be desired, so that when they consist of Oyl, Wax, and Rosin, one part of Oyl is taken, half so much of Rosin, of Wax the third part: But when Pouders are added, the proportion of Oyles to Pouders is eight-fold, to Wax, two three, four or six-fold; and to Rosin; that it may stick the faster, they use to add twelfefold; a Cerot becomes the harder three ways, namely, by defect of Oyl and Grease, by boiling, and store of Pitch, Wax, or Pouders.

1. They are made in this manner, If the Cerot ought to be made of Pouders only, Oyl and Wax; the Oyl and Wax should be dissolved together at the fire, and the Pouders put in by degrees, and exactly mingled. *How made.*

2. If Lard, Gums, or other things to be melted by the fire are taken, they should be melted with the wax.

3. If Gums are to be dissolved in Vineger or Wine; first they must be dissolved in Oyl, and mingled with Wax, that the Vineger or Wine may be consumed with boiling, afterwards the Pouders may sprinkled in.

4. If you are to add Roots, Fruits, or Seeds, these are first to be boiled, and the Decoction to be boiled again with Oyl to the consumption of the moisture.

Lastly, the things melted and pounded are to be added, and all to be mixt together, and to be kept for use.

But when you may prescribe fresh things for present use, three Ounces and an a half may suffice for a great Cerot, for an indifferent one two Ounces, for a little one, one Ounce, & three or four Drachms of Pouders are sufficient for an indifferent Plaister: and such Cerots use to be put with an Aromatick Pouders sprinkled on them into a piece of Leather, or to be covered with fine Linnen; the quantity and figure, if it may be, should answer and be conformable to the parts to which they ought to be applied:

Plaisters.

Plaisters, from Emplattein, that is, from fashioning, and soft anointing is derived, because they may be extended, and spread on a Linnen cloath, or peice of Leather; they are medicines somewhat harder and more solid then Cerots, and are compounded of the same things whereof Cerots are, only that metalls, and mineralls, and for the most part, Litharge are added, which makes them of a more solid consistence.

How compounded.

For the most part this is the manner of compounding them; the wax for the most part is melted in Oyle, if the Litharge be in readinesse, that also should be boyled in Oyle. If Juices of herbs, or decoctions, Muscellages, Vinegar, Wine or any other Liquor be to be mixt, then that also is to be mixed with the rest, and being mixt, are to be boyled so long, untill the aqueous humidity be consumed; afterwards the Rosins, fat, thickned and concreate juices, and Gums, are to be put in sometimes, dissolved first, and strained, with Wine, Vinegar, and Oyle; lastly Turpentine is to be mixt, and all to be boyled to a due consistence, which when tis done, and taken from the fire, the powders must be put in by little and little, and continually stird about, that they may be brought into one masse, with the rest, of which being cooled, but before it growes hard, are to be fashioned, in the similitude of a Pyramid, or a long Rolle, or Rollers, and be kept for use, of the which when tis necessary, a part may be cut off, and if need be softned somewhat with convenient Oyle, spread on Linnen, and applyed to the skin.

The proportion of mixture, can scarce be defined exactly, and strictly, and if any error be committed, it may easily be corrected by boyling or mingling of more dry, or liquid things; but this proportion for the most part is observed, that to an ounce of dry things, there is taken of Oyle, Fat, or Honey, three Ounces, of Wax a pound, of Rosin eight Ounces: But if boyled, and pounded Herbs are added, a little handfull, requires an Ounce, or an Ounce and halfe of Oyle, or Grease, so that the proportion of Wax to Rosin is six-fold, to Oyle foure-fold, to Powders double: but if the quantity of Rosin be greater, there needs the lesse Wax.

Emplastic used.

Sometimes before the Emplastick masse be cooled a Lin-

100

nen cloath that is worne out by age is dipt in, and when tis bedaubed with the substance of the Plaister, tis taken out, extended, cooled, and kept for use; which kind of Plaisters, they called Emplastick Webbs of cloath, and *Spadrappum*, and applyed them for cleansing of Ulcers, Glutinating, Cicatrizing, and other uses.

And these are properly called Plaisters, yet some things are referred to Plaisters also, which are prepared without Wax, Pitch, and those Glutinous things, and without fire, and are compounded with Honey, Muscellages, and a certain thick juice, or Barme, or only with a little Wax, melted with Oyle; of which kind is the Plaister of Bay-berrie and *de Crusta panis*, and such like, which are as it were in the middle, betwixt Plaisters, and Cataplasmes.

CHAP. XXXVII.

Of Cataplasmes.

Cataplasmes, which the Ancients called Pultases, are Topical medicines soft, and having the consistence of Pultases, and are prepared to assuage paine, repell, mollify, discusse, to ripen, and other ends.

1. They are either prepared without fire and boyling, or with fire and boyling, from whence the one is called crude, the other boyled.

Without fire, greene Plants are pounded, and reduced into a Poulvice, or dry, reduced into Powder, are mingled with a sufficient quantity, namely double, or trebble, of Oyle, or a convenient Liquor.

2. They are made with fire, and boyling, if the plants being beaten, and pounded, are boyled in a sufficient quantity of water, till they are soft; afterwards strained through a seive, which neverthelesse, if they are well boyled, and bruised is not allwayes necessary, to these are added Muscellages, Flowre, and a sufficient quantity of Far, and Oyle, and are all boyled againe to the consistence of a Poulvice, sometimes plants also are immediatly boyled in Oyle.

A Cata-
plasma.How
made.

The Cataplasmes being prepared, and put on a peece of linnen are applied hot to the part.

CHAP. XXXVIII.

Of Medicines to take away Haire, Salves made of Mustard, Medicines causing Wheales, or Pustles in the body, and Vesicatories, or Medicines that cause Blisters.

A Dropax, or any thing to take away haire, a Synapisme, or a Salve made of Mustard, a Phanigne, a Medicine to cause Wheales, or Pustles, differ not from the forme of a Cataplasme, yet for some certaine peculiar effects which they produce, Authors have been pleased to separate them from other Cerots, Plaisters, and Cataplasmes.

A Dropax.

Its differences.

Dropax in Greek, with the Latines Picatio, is a Medicine composed in the forme of a Plaister, or Cataplasme, powerfully sticking to the skin, which heretofore was exhibited to extenuate and relax the Member, to heat and draw more store of blood, as is spoken before, *part 2. Sect. 2. Cap. 5.* or to dry moister bodies; It is two-fold, the one simple, which consists of Pitch and Oyle melted together, the other compound, which besides Pitch and Oyle, hath in it, Pepper, Castor, Pellitory, Bittony, Galbanum, Brimstone, Nitre, or the ashes of Vine-twiggs, and other things which are needfull; out of all which a Plaister is made with Oyle and Pitch, which is put in a peece of Leather, or linnen cloath, and applied to the member, being hot, the haire shaved before hand, and the part well rubbed, and before tis quite cold, is twitched off againe, and put to the fire againe, and applied to the part againe, and that is so often repeated, untill the part growes red, and is somewhat swelld.

A Synapisme.

Synapismes are Cataplasmes, or Plaisters, principally consisting of Mustard-seed, from whence they have their names, or other things are compounded, which are of the same nature with mustard-seed, and they are two-fold, the one

one more mild and gentle, which the Greeks call *Phoinigmon*, because it makes the skin look red, and is to draw out the matter which lies so deep hid in the body, to its superficies. The other is stronger which also raiseth blisters in the part to which it is applied, which they properly call *Vesicatories*. *A Vesicatory.*

The Ancients made Synapismes of Mustard-seed, or sheere-grasse, dry Figgs were macerated in warme water, the next day after Mustard-seed pounded was mixt with that pulpe, and if a stronger Synapisme were required, they would mingle two parts of Mustard with one of Figgs, but if weaker, one part of Mustard-seed, and two parts of Figgs, : If indifferent equall parts, being mixed they were applied to the part affected, and left there so long, till the skin run down with moisture, and looked red. *How to prepare Synapismes.*

Other Medicines also, both making red, and causing Blisters, are mentioned before, part the first, Sect. the first, Cap. 10. and are mingled with honey, Oxymell with Squills, Vinegar with Squills, Melle Anarcardino, Spirit of Wine, Turpentine, Soap, the crum of bread, and Gumme, with sharp things and Plaisters, and Cataplasmes are made of them, whether to cause the part to look red, and burn onely, or to raise blisters. The principall thing to raise blisters is a medicine compounded of Cantharides, and Leaven. When a blister is raised by a medicine, and is broken, tis not forthwith to be dried, but to be permitted to run, that the humour which we desire to evacuate, revell, or derive, may flow out, and therefore some fat unguent, or a Figg, or the leaves of Coleworts, are to be put to it. *How to make Vesicatories.*

CHAP XXXIX.

Of Epithems (which are somewhat moister then Plaisters) Medicines made of Vinegar and Roses, and of Medicines applied to the Temples, to stop fluxes of Reume from falling to the eyes.

Although all medicines which are externally adplied to the body may be called Epithems, yet by custome those onely are called so at this day which consist of distilled waters, decoctions, or juices mingled with species and powders, and are externally applied, principally to the region of the liver, *Epithems.*

Liver, Spleen, Heart, Stomach, fore-head, and joynts.

As for the matter whereof they are made, tis various according to their severall intentions: of distilled waters, Juices, Decoctions, Oyles, either alone, or mixt, Epithemes are applyed for the mitigation of heate, resisting of humours, that flow, strengthening the parts, and Liquors, or Powders that are appropriated to any part whatsoever, are to be applyed.

How prepared.

Epithemes are prepared two wayes, first of liquid things only, distilled waters or juices are taken convenient for the disease and proper for the part, to which sometimes, some Vinegar, or Wine for penetration sake is added: afterwards Species or Powders, beaten very fine a drachm and a halfe or two drachms, to a Pint, and sometimes more Powder is taken: the matter of the Epitheme is prescribed according to the magnitude of the part, from three Ounces to a pint, the mixture in the first place hath a linnen or wollen cloath Corten, or Spunge dipt in it, and stird about, when tis to be used least the Powder should settle in the bottome, and for the most part tis applyed warme, and as often as tis taken off, tis dipt into it againe, and applyed.

Sometimes certaine Powders are put in, but they are first macerated in fountaine water.

Epithemes for the fore-head.

To Epithemes belong Oxyrhodes, as they are called, which are Epithemes peculiar to the fore-head, prepar'd of Oyle of Roses, and Vinegar, to coole, and repell; The Ancients, tooke of Oyle of Roses three parts, and of Vinegar one part, and stird them well together, wherein they dipt a peice of leather, or skin and applyed it to the forehead: At this day also other Oyles, as of Violet, Myrtles, Nymphæa, or water Lillies, and sometimes distilled waters, and Powders are added Santalls, and other things.

Anacolle-mata.

To these are referred *anacolle-mata*, which are wont to be applyed for diseases of the Eyes, and Hemorrhodes of the nose, principally to the fore-head, so called for this reason, whether they consist of medicines that fill up, glutinate, and have an astringent quality, because they stop the violence of humours that flow into them, or because by their clamminesse, they adhere, and as it were stick like glue to the part to which they are applyed.

And they are prepared of Volatile or fine Flowre, Bole-*How pre-*
 armoniack, Dragons-blood, Acacia, mastick, Manna, Fran-*pared.*
 kincense, and such like, mixt with the white of an Egg.

2. Yet they are often prepared without the white of an
 Egge, to mitigate the paine of the head, or cause sleepe
 which are applyed, either with a Leather, or a skin dipt
 therein, or inclosed in a little bagg, and they are more pro-
 perly called Epithemes, or Frontells.

CHAP. XL

Of Medicines applyed Plaister-wayes to mitigate paine, and of little Bags.

Like unto Epithemes, are Fomentaes, so called, because *Fomenta-*
 they doe by their heate, as it were cherish the parts of *tions.*
 the body to which they are applyed, and they are exhibited
 either to heate the parts, or to cleanse, and discusse, or to
 mitigate paine, or soften that which is hard.

1. And they are two-fold, moist, and dry; the moist are *Differen-*
 made either of hot water, Oyle, Milke, or wine, or decoct-
 ions of Plants, made with water, wine, Vinegar, Milke, *ces of Fo-*
 whither a sponge, or linnen cloath, answerable, to the mag-
 nitnde of the part affected, is dipt whilst it is hot, and ap-
 plyed to the part, and when they begin to be luke-warme, *menta-*
 or to coole, they are changed for hot, or the same are heat *tions.*
 againe in the Liquor. *Moist.*

2. Sometimes, simples, included in Linnen baggs, are
 boyled in water, wine, or Milke, and are applyed hot to the
 part affected, for which purpose, tis convenient to prepare
 two Baggs, that when the one is cooled, the other may be
 applyed.

3. Sometimes, a Hoggs Bladder, or an Oxe his Bladder,
 is halfe filled with the Liquor of the decoction and applyed
 hot to the part affected.

4. Fomentations, are made also, of living Creatures
 dissected, and as yet warme, especially Pidgeons, as also of
 the parts of living Creatures newly slain, whilst they
 are hot, as the Lungs, Paunch, or Oyles made of the same.

Some-

5. Sometimes the steam onely of Waters, of Wine or Vineger boiled, is stirred up by the fire onely, or by casting in of stones or Irons burning into the Liqueur, or some of the Liqueur poured on them is applied to the part; the vapour is taken by a Pipe or Tunnel with a wide orifice, or it is put about the part with some covering, whereby the steam being detained and included, it may act the stronger on the part affected.

Dry. But dry Fomentations are made with Bags, the Bags are compounded of Herbs, Flowers, Barks, Roots, Seeds, Aromaticks, Gums, which are agreeable to the present intention, being cut and pounded proportionable to the figure and magnitude of the part affected, are put into a Bag, and applied to the part; for a cordial Bag an Ounce, or an Ounce and half may suffice, for the stomach a greater quantity is required.

The Bag is prepared either of Linnen or Silk, and being pricked through with a Needle is applied dry to the part, and sometimes it is wet in Wine or Vineger, and put on a hot stone or brick heated by the fire, it is applied to the part affected and makes it warm.

CHAP. XLI.

Of Embrocations, Lotions, and Bathes.

THe likest to Fomentations are Embrocations, or Waterings, Lotions, and Bathes, all which signifie rather a certain manner of using, than any Composition and Forme of Medicine, and they contain for the most part the same matter with moist Fomentations.

Embrocations.

Embrochee, is a certain distillation or dropping down of a moist humour from above like Rain: the dropping which is made on any part is performed, either by pouring water out of a vessel, with a long snout, or by dropping out of a Laver.

Tis applied principally to three parts; First, upon the Coronall Suture, in distempers of the braine, and the moisture runs no further, then the Sagittall suture. Secondly, from the beginning of the spinall marrow, in diseases of the Nerves and the moisture is terminated at the end of the spine. Thirdly,

ly, to heat or dry the stomach, and the matter is suffered to run over all the belly: if the guts also are weak, a Cerat with Santals is to be applied to the liver, if there be feare of inflaming it, the matter to be so distilled is common water, water of Bathes, decoctions, milk, oyle, according as the part affected requires it.

Some Lotions are exhibited to certain parts which are called particular Lotions, others to the inferiour parts of the body onely, which are commonly calted *Incessus*, and *Semicucium*, i. e. a Vessell that you may sit upright in, others are fit for the whole body, which are called Bathes.

Peculiar Lotions principally use to be administred to the head, hands, and feet, and are prepared as Fomentations of hearbs, or faire water, or boiled in a lee, Wine, or Oyle.

Incessus, which the Greeks call *Encabisma*, is a bath for the belly, and inferiour parts wherein the diseased must sit up to the Navell. and such bathing Vessels serve for severall uses, sometimes to mitigate paine, sometimes to soften and discuss wind, sometimes they are used to provoke courses.

A Bath is a washing of the whole body, and is administred either for cleansing and raking away the faults of the skin, or to relax the parts; or for some distemper of the whole.

Some bathes are naturall, others are made by art. Amongst the naturall bathes the plainest is that of Fountaine-water, which hath a power of heating and moistning, and therefore is convenient for such as are Hestick. Nature also affords bathes, for the imitation of bathes artificiall, and of naturall Bathes, the Physitian may prepare many things to supply the want of them.

C H A P. XLII.

Of Soapes.

Soap also, or Wash-balls are used to certaine parts of the body, which are prepared in this manner;

There is taken of Venice Soap made smooth, or of some other good and white Soap as much as is sufficient, to which is added six or eight times so much Powdery, and all of them are mingled in a sufficient quantity of a water that is proper, and

and reduced into one masse, from whence round Balls are made in the forme of an Apple.

They are exhibited principally to cleanse the body, or some parts thereof, and to give a pleasant sent to it.

CHAP. XLIII.

Of Cauteries.

Cauteries. **L**Astly, That we may speak something also of Potentiall Cauteries, their preparation is manifold, and there is no man, but here will somewhat boast: But the most profitable which will make an Escarre soonest without paine, and other Symptomes, is that which is thus prepared;

Take the Lee, whereof black Soap is made and put it into a Frying-pan, till it become almost as hard as a stone, and when it growes cold cut it into the forme of great Dice, and let it be kept in a glasse close shut, least it should melt, and it is commonly called the Corrasive stone; the use wherof is very frequent at this day; to quicken Ulcers, by the which humours may be diverted from the more noble parts, to the ignoble, and therefore they are called Issues, or Fontanells.

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Book I.

Of Fevers in General, and of an Ephemera, and of a Syn- nocha with Putrefaction.

CHAP. I.

Of the Nature of a Fever.

That which is called by the Latines a Fever, by the Greeks (from fire) is called the fiery distemper; *Hippocrates* plainly calls it fire, if it be very vehement, as being by the consent of all men a hot distemper; For although some Germans call it *Daskalte*, yet that appellation belongs not to every Fever, neither doth it express the nature of a Fever, but only signifieth Cold, An intermitting Fever may be so called.

*The name
of a Fever*

A Fever is a hot distemper of the whole body, arising from heat, kindled contrary to nature in the heart, and by the mediation of the Blood and Spirits, conveyed through the veins and arteries to all the parts, and hindring natural actions, unless it be prevented.

*Its defini-
tion and
nature.*

For a Fever is generated, when (as *Galen* 1. Aphor. 14. hath it.) The native heat is become fiery; For seeing that all the parts of the body have a certain temperature, and all of them are actually hot, every one according to its own degree, and thereby are rendered fit to perform natural actions; If

*Generati-
on of it,*

in

in the heart, from whence the vital heat is diffused over all the parts of the body, each part receiving its due temper from thence, a certain preter-natural heat be kindled and spread over the whole body, so that to the natural temperature of the parts some degrees of preter-natural heat are added, and that actual heat shall be increased; a certain excess of heat and a hot distemper is kindled in the whole body, which is called a Fever. Which distemper indeed *formaliter*, as some say, is contrary to nature, and is called a Fever; but *materialiter* 'tis not altogether contrary to nature, for unless there had been before some degrees of natural heat extant, the supervenient heat could not constitute this degree of heat.

Driness is no part of the Essence of a Fever.

And indeed a hot distemper only constitutes a Fever; for although all fevourish heat tend to driness, yet that driness is not sickness in all Fevers, neither is the body by fevourish heat rendred unfit to perform its natural actions, it is so by driness in every Fever that the natural actions are hindred; but although the fevourish heat always tend to driness, yet oftentimes the disposition of the body wherein that heat acteth, and moisture therewithal, hinders the production of a disease by driness.

The Subject.

The adequate Subject of a Fever is the whole body, or certainly most of its parts, but the principal is the heart, as being that wherein that heat is first kindled, and from thence communicated to all the other parts of the body, unless it be hindred; nor can a Fever be generated, unless the heart first become hot. Indeed the whole body is the Subject of a Fever in regard of the similiar parts, and as it is indued with actual heat, which is as it were kindled by the innate and influent heat; For this heat when it is changed and converted into a fiery heat from a temperate and moderate, a Fever is stirred up.

The proximate cause.

The immediate cause of a Fever is heat kindled in the heart contrary to nature, and diffused over all the body; For as the heart whilest it is well and according to nature, is the fountain of natural heat, and disperseth the same over all the body, so if it grow hot contrary to nature, it distributes that unnatural heat over all the parts. For although a Fever may be kindled by the inflammation of other parts likewise, yet that happens not unless that heat be first sent to the heart, and afterwards from thence to all the parts of the body, whence it comes to pass that in every Fever the Pulse is changed. Nevertheless every kind of heat in the heart is not sufficient to

cause

cause a Fever, but such a kind of heat it ought to be, as can cause such a hot disease as can hinder the performance of natural actions:

Whence 'tis manifest that a Fever is one thing, and a feavourish heat another thing. A Fever properly is that hot distemper which happens in the living parts of a body, and renders them unable to act; but the feavourish heat is also in the humors and spirits, and stirs up that hot distemper of the body, which constitutes the essence of a Fever.

A Fever and feavourish heat differ.

CHAP. II.

Of the causes of Fevers in general.

ALthough there is but one only cause of a hot distemper of the whole body, which constitutes the essence of a Fever, namely, præter-natural heat kindled in the heart, and thence distributed over all the body, yet the causes from whence that heat in the heart ariseth, are several, as *Galen* of the causes of diseases, cap. 2. and in the first book of differences of diseases, cap. 3. recites five, Motion, Putrefaction, Contact of some hot thing, Closure of the pores of the skin, or a Retention of a hot stream; and lastly Mixture with some hot thing: And of these causes, some by themselves, and some by accident stir up heat.

First from Motion, sithence the Spirits and humours of our bodies are hot, from the confluence of them into any part, according to the various motion of the body and mind, heat is increased, which if it be greater, and be either kindled in the heart, or communicated to the heart, a Fever ensueth.

Motion.

Secondly, Putrefaction excites heat. For since all things that do putrifie become hotter, and out of putred bodies are exalted many hot vapours; thence heat is conveyed to the heart by the veins and arteries, and from thence a Fever raised.

Putrefaction.

Thirdly, contact of a hot thing exciteth a Fever: As if the body wax hot by the Sun, Fire, Bath, or Medicine, and that heat be sent to the heart a Fever followeth.

Contact of a hot thing.

Fourthly, if the pores of the skin are closed, and a hot stream and hallitious excrements, which in concoction are generated in the body, and use to be sent out through the pores of the skin, be penn'd in, heat is thereby kindled, and a Fever bred.

Retention of a hot stream.

Lastly, when hot things are mingled with humours and spirits, as meat, drink, hot Medicines, all those communicate

Of the Symptomes of a Fever in general.

that heat which they contained in themselves to the Spirits and humours, which if they penetrate the heart, and from thence be distributed to the other parts of the body, a Fever is thereby kindled.

And indeed the fourth of these causes, or the retention of the hot *effluviu*m, is sufficient alone without the rest to cause a Fever: But the other causes without this can hardly do it. For although from Motion, Putrefaction, Contact, and Mixture with a hot thing, hot vapours are stirred up in the body; yet if the body freely ventilate, and that so much be daily evaporated and emitted of those vapours as are generated, a Fever is not easily occasioned, but when those vapours are detained, a Fever is soon kindled.

Disposition of a body to a Fever.

But although these causes if they be powerful, may raise a Fever in any body whatsoever, yet in bodies inclinable an ordinary power in the causes may suffice to beget a Fever. Now they are most inclinable to Fevers which abound with much heat, salt and sharp humours: For which reason Youths are more apt to Fevers, of which you may read, *Galen* 8 Of the Method of healing, cap. 8. where the whole order of Inclinations to Fevers are set down. 1. Hot and dry. 2. hot and moist. 3. hot only. 4. dry only. 5. temperate. 6. cold and dry. 7. cold only. 8. moist only. 9. cold and moist. Yet to another kind of Fevers other bodies are more inclinable.

CHAP. III.

Of the Symptomes of a Fever in general.

Symptomes of Fevers.

WHereas in a Fever the temper of a body is changed, and rendred hotter, hence certain Symptomes of Fevers must necessarily ensue: And first of all it is hence manifest, that those actions are especially hindered, which should be performed by the similar parts as they are such, and by the benefit of the temper of each such part, no organick part concurring. Such action since it is Nutrition, and those that are subservient thereunto, they are especially hurt in Fevers. Yet because the Instruments by which other actions are performed, consists of similar parts, that imperfection is derived to the hinderance of them, as of vital and animal actions. Indeed the vital actions are principally hurt in a Fever, because the fevourish heat is first kindled in the heart. Whence in all Fevers the Pulse becomes more frequent and swifter; for since the motion of Pulses in all Fevers may be increased, first

first, a thick Pulse, as being most facile of all; but if that frequency satisfies not the necessity, celerity happens, which if that be not sufficient, then magnitude follows: So that the strength be not debilitated: The animal actions also are often hurt. As for other Symptomes, preter-natural heat is observed to offend internally or externally. Also the excrements and qualities of a body are variously changed by reason of the hinderances of concoctions.

CHAP. IV.

Of the differences of Fevers in general.

THe differences of Fevers are taken from their essence, or from their accidents. *Hippocrat. 6. Epid. comment. text. 19.* propounds the differences taken from the heat it self of the Fever, that some Fevers are biting, namely, such as strike the hand of them that touch them, and by reason of that sharp vapour, which is stir'd up by putred matter, it doth as it were prick the hand; but a mild one is such as hath troublesome heat, but not so violent. Moreover the heat of some Fevers at the first touch is not sharp, and nipping, but if the hand be continued longer, afterwards it betrayes it self. On the contrary others are quick at first to the touch, but if the hand continue longer, it is overcome by the hands, and a little abated.

Differences.

But those are the most proper differences which are taken from inherence in the Subject, and the cause of inhering, which Fevers are divided into *Ephemeraes*, putred and hectic, the truest foundation of which division is, that one Fever is in habitude, the other in habit, for although the fevourish heat in every Fever possess the similar parts of the body; yet some are so inherent in the body, that they require no cause to cherish them, and although they are not fed by the kindling of humours and Spirits, nevertheless they will continue, which sort are called *Hecticks*. Another hot distemper is so inherent in the similar parts of the body, that unless it be cherished by the kindling of humours and Spirits it can no more subsist, which Fever is called a Fever in habitude, which in respect of the cause is twofold, an *Ephemera*, to which also a *Synocha* without putrefaction is referred; and a putrid.

There is another thing worth the noting, that one Fever is Primary, another Symptomatical, Primary is that which follows no former disease, but depends on its proper cause: Secondary

secondary or Symptomatical is that which ariseth from the inflammation of any member. See *Galen. 4. Aphor. 7.*

But of Symptomatical this is to be noted, that those which by the ancients were accounted Symptomatical, were indeed primary many of them, and inflammations of the parts, of the Membrane that covers the ribs, of the lungs or chopps, rather happened to those parts, then the Fever to take it's rise from them: Which Fevers may be called *Comitatae*, or such as accompany the Fever.

Fevers
accompanied.

CHAP. V.

Of the cure of Fevers in general.

Cure.

NOW to the cure. A Fever as it is a Fever being a hot distemper, indicates cooling things are to be used. *Galen. 8. Meth. Med. Cap. 1.*

But because there is no small difference amongst Fevers, and that a Fever is often joyned with it's cause, regard is to be had of the cause of the lame. Nay indeed because the cause often offends more then the Fever it self, the Fever is so to be cooled, as that the cause may not be cherished, and those things be detained in the body which ought to be evacuated.

And oftentimes error is committed in this, whilst regard is had only of the heat, cold things are administered, by which the cause of the Fever being detained, the Fever is prolonged: Whereas on the other side, heating things, as likewise either opening or sudocifick things, without cooling medicines, often with happy success cure the Fever; For the cause being taken away, the Fever it self ceaseth of it's own accord; Whereof more particularly hereafter.

CHAP. VI.

Of the Fever Ephemera.

Fevers
in habitude.

THERE are two sorts of Fevers whose heat are inherent in our bodies in habitude. For that the hot distemper of the parts is cherished either by the heat of the Spirits or humors; and the humors are inflamed either with or without putrefaction.

The name
Ephemeros.

Those Fevers which are sustained by the heat of the Spirits and humours without putrefaction, are called *Ephemera* and *Humorales* without putrefaction: Those which are kindled by putrifying humours are called putred Fevers.

That Fever which is cherished by the kindling of Spirits,

is called by the Greeks, *Puretos Ephemeros*, by the Latines, *Diaria* and *Ephemera*, by a name not taken from the nature of the disease, but from it's duration: In respect of the Essence thereof, it may be defined thus: It is a Fever arising from and depending on the heating and inflaming of the vital Spirits. *Definition*

The proximate cause of this Fever is the heat of the vital Spirits kindled contrary to nature, which being spread over the whole body through the arteries, heats the whole against nature. *The next cause.*

That heat is stir'd up from all those causes before mentioned in the second Chapter, only except from putrefaction; which sometimes immediately, sometimes remotely, by means of the natural and animal Spirits heat the vital; to wit, perturbations of the mind, sadness, fear, sollicitude, anger, over much watching, too much intentiveness of the mind; too much exercise of body, grief, hunger, thirst, hot meats and drinks, drunkenness, crudities in bodies choleric, heat of air, fire, hot Baths, retention of the hot Effluvium, inflammations of Kernels and Buboës, from the which heat alone without putred vapours is conveyed to the heart according to the vulgar opinion. Yet it seemeth not impossible but that those putred vapours by the veins and arteries next to the part affected, may be communicated to the heart. And so these Fevers should rather be Symptomatical than absolute, putred then *Ephemeral*. *Remote cause.*

Those that are hot and dry easily fall into this Fever, in whom many hot dry vapours are collected, which are easily inflamed by causes heating them more. *Disposition of body.*

Amongst the Signs by which this Fever is known and discerned from others, in the first place, *Galen. 1 de differ. Februm c. 7.* saith, it beginneth from some procatartick or evident cause; which indeed is an inseperable sign, but not a proper sign; for although a Fever that doth not arise from a manifest cause is not an *Ephemera*, yet every Fever which ariseth from a manifest cause is not therefore an *Ephemera*. 2. Moreover the Urine in substance, colour, and contents, is most like unto the Urine of healthy men, or at least recedes not much from them, which in an *Ephemera*, which proceeds from crudity, it useth to do, in which the Urine useth to appear more crude and whiter. 3. The Pulse is neerer to a natural one, then in any other Fever; only that it useth to be extended in magnitude, celerity, and frequency. Yet in regard of the cause which occasioned the Fever, some change

may be made in the Pulse. 4. The heat of this Fever is gentle and weak in respect of other Fevers. 5. Nay in the very state and height thereof it is somewhat more gentle and moderate. 6. This Fever invades without shakings, or tremblings; it's increase and augmentation in heat and pulse is free and equal. 7. The declination is performed by moisture, or moist evaporation, by sweat like theirs who are sound in health, which by a little exercise more then ordinary comes forth, and a perfect apurexic follows that moisture, so that after the declination no footing is left for the Fever, either discernable by Pulse or any other circumstances: And in case any footing be left, it is a sign that it will turn into another sort of Fever.

The causes are most perfectly to be known by the relation of the sick, which may instruct the Physician whether from passion of the mind, exercise of the body, or any other evident cause this disease hath been occasioned. These causes also affords some signs of themselves, which the Physician cannot be ignorant of.

Prognosticks.

These Fevers are the shortest of all others, and continue not above twenty four hours: There is no danger in them, unless some error be committed, and for the most part they are conquered by nature, wherefore Physicians are seldom called to their cures. Yet according to the diversity of their causes some are cured more easily, others with more difficulty. For those causes which are hardly taken away, and the humours are apt to corrupt, a Fever introduced from such, easily degenerates into a putred; which happeneth when it is extended above four and twenty hours, or no sweat appears, and pain in the head be present and persevere: And it degenerates either into a *Synocha* without putrefaction, if the body be youthful and plethoric; or into a putred, if the body be cacochymick; or into a *Hectick*, if the body be hot, dry, and lean. And the proper signs of those Fevers shew into what sort of them the transmutation will be made.

Indications.

Moreover sithence this Fever is a hot distemper of the whole depending on the heat of the Spirits inflamed: And seeing the heat of the Spirits, and the distemper thence introduced indicate cooling, yet if the cause exciting the same be still present, that also ought to be taken away.

The Cure.

These Fevers are cured by good dyet, so that there is seldome any need of strong medicines; the food therefore ought to be cooling and moistning, the meat of good juyce, and easie of concoction, principally cream of Barley, the rest may be mixed with

with lettuce, sorrel, juice of Citron or Lemmon, Vinegar. The drink should be barley-water, small beer or small white-wine: Yet if pain in the head be present, or that the Fever be occasioned by anger, or from a bubo, then wine is to be refrained. The Ancients most frequently used Baths of warm water, but at present, neither the same industry is used in preparation of them, neither are men in our age so accustomed and disposed to bathe.

In the first place diligent care is to be had of that Fever Ephemeral, which ariseth from the closure of the skin, or it's thickness, or crudity of the stomach, since they easily turn into putred Fevers. And an *Ephemera* which is caused by stoppage of the pores of the skin, since it comes to pass rather from plenty of blood, than ill habit of body, in that a vein is forthwith to be opened, that the blood may be diminished and cooled; but the thickness of the skin if occasioned by cold or astringent things is cured by those things that rarifie and open the same, by a bath of fair water luke-warm, soft rubbings, temperate and luke-warm oils, wherewith the body should be anointed. But if the thickness of the skin be occasioned by drying things, use moistening dyet, and the body should be anointed with temperate and moistening oils.

Lastly, if the *Ephemera* proceed from crudity, since that is twofold, the one called Acid, which proceeds from diminution of heat, the other Nitrous, which is caused by preter-natural heat: If from Acid crudity, which seldom happens, the *Ephemera* proceed, and that crudity be less, so that meat may be reduced into a better state, rest and sleep are to be occasioned, and before sleep meat of easie concoction in a small quantity is to be taken, and the stomach to be comforted with hot oyls; But if the crudity be great, then the meat is to be ejected by vomit, or if the sick be not apt to vomit, with a lenitive, he should provoke a stool; before it be distributed into the veins he must then abstain from meat, and the stomach both with internal and external medicines is to be comforted. But if the crudity be unfavoury or nitrous, 'tis to be corrected with cold things, wherewith if the concoction be not helped, the corrupt meat is either to be emitted by vomit, or to be purged by gentle medicines opening the first passages only, such as are good against cholera, and as corroborate the stomach.

Cure of an Ephemera from closure of the skin.

From crudity of the stomach.

CHAP. VII.

Of an Ephemera of more dayes, and of a Synocha without putrefaction.

An Ephemera of many dayes.

There remains another kind of Fever, called *Ephemera*, to which that appellation doth not belong, because it is extended more dayes: Yet it can be referr'd to no other sort of Fever then this more conveniently; therefore although *Ephemera* should signifie the essence of the Fever, *Ephemera* is so called though with the addition of more dayes.

Synocha without putrefaction.

Such Fevers are those which no wayes differ from *Ephemeral* Fevers newly described, unless in durability, the cause of which is obstruction of cutaneous vessels, which when they do continue stopped, an inflammation of the Spirits so long endureth until that cause cease. Moreover to these belong a *Synocha* without putrefaction, commonly called a Fever inflative, which is generated from the fervency of Spirits, and thinner blood without putrefaction.

Cause.

The cause of this Fever is the prohibition of the hot Effluvium, arising from obstructions or striction of the pores of the skin in a plethorick body.

This continues several dayes, namely, to the third or fourth day, neither can the plenty of vapours kindled, and exhaling, which proceed from the blood, be discussed in one day, nor can the obstruction or striction of the pores of the skin be opened in one day.

Diagnostick signs.

The Signs of a *Synocha* without putrefaction are the same with those of other *Ephemeraes*, only more evident: For the heat is somewhat greater then in the others; the skin is not dry but moist as it were, the Urine somewhat thicker and redder, the Pulse vehement, swift, frequent, full, great and equal; the face and whole body red and fresh, and as it were blown up; the veins swell and strut with blood, the head is heavy and respiration more difficult.

Prognosticks.

This Fever as the other *Ephemerals* is void of danger, and is dissolved by sweat or Hemeroids of the nose, within the fourth day, or if it be protracted longer, within the seventh day, so it be rightly handled. For unless it be rightly order'd 'twill degenerate into a *Synocha* with putrefaction, or into a Phrensie, Squincy, Plurisie, or some other perillous inflammation.

But when this Fever ariseth by the inflaming of the thinner blood

blood and Spirits in a plethorick body, occasioned by the prohibition of transpiration, the blood offending in quantity is to be abated, the heat to be cooled, and the closed pores to be opened. *Cure.*

Therefore presently a Clyster being first given, or a lenitive medicine, a vein is to be opened, that the blood may be abated, fanned, and cooled, and better governed by nature: And in that more plentifully then in any other Fever you may bleed, yet so, as that the strength may bear it.

As for things altering, *Galen* to cool the blood drinks cold water, and commands the sick to drink as much of it as they please, which may be permitted in those which are accustomed to small drinks, and in whom no danger is to be feared by drinking the same, whether by reason of thick juices which the drinking of cold water may hinder the dividing of, or by reason of some weakness in the bowels, by which they may be offended at the drinking of water: which unless seeing in our bodies we seldom need; we may rather use other coolers, such as are *Oxymel* with water, water of *Chicory*, *Endive*, decoct of barley, juice of Lemmon or Citron, *Oxysauharum*, Spirit of *Vitriol*, and *Salt*, and the like cooling and opening things. And that the appertion may the more happily be performed, you must abstain from syrups and conserves with much sugar in them, unless they are much watered. If obstruction of the pores of the skin be present, 'tis to be opened as I said before.

Their diet ought to be thin and little, such as hath force to cool and moisten, principally a Pusan, the meat should be savoured with juyce of Lemmon, Pomegranates, Goose-berries: Their drink should be barley-water or small beer.

Fernelius §. cap. of Fevers, makes mention of another sort of *Synocha*, which is made by the kindling of the Spirits and choleric humours without putrefaction, and which ariseth from the same causes as an *Ephemera*, if it happen in a choleric body, which opinion indeed may take place if it be meant of the thinner and subtiler part of the hotter blood, which sometimes useth to be called choler, but not if it be spoken of excrementitious cholar.

Dyes.

Synoch.
Bilios.
Fernal.

The end of the first Book.

BOOK II.

Of Putred Fevers.

CHAP. I.

Of Putred Fevers in General.

WHEREAS there is a two-fold sort of Fevers, whose heat is inherent in the parts according to habitude, whereof the one hath it's rise, and is continued by the kindling of the Spirits, and thinnest parts of the blood, without putred humours, the other hath it's original from vapours and putred humours; of the former kind 'tis already spoken; The next business is that we handle the putred Fevers.

Putred
Fevers.

That there are putred Fevers many things shew; For neither is it dissonant from the nature of humours, but that they may putrifie, since that may happen to every mixt body; and we see humours putrifie otherwise in mans body, as it happens in inflammations, wherein quitture is generated, as *Galen* in the 1st of the differences of Fevers, cap. 6. he compares the putridness whereby the humours putrifie in the brain, with that, by which Sanies is generated in the humours. And that they do actually putrify, sufficient reasons are given, which hereafter we shall propound, and the matter it self shews that humours do putrifie in the veins. For both blood which cometh forth from breathed veins, and those things which are evacuated by stool, Urine, sweat, sufficiently by their smell and otherwise, argue putridity of humours. And the way of cure proves the same, for 'tis not performed by things that alter, but evacuate humours, which is partly instituted by nature, partly by the Physician. For if humoral Fevers could be made without putrefaction, they might also be cured by altering things only. And indeed such Fevers are not only malignant as some think, but the same signs appear, and the same way of cure is exhibited to intermittent and continued, which are void of all malignity and pestilency.

What Pu-
trefaction
is.

Aristotle. 4. *Met.* c. 1. defineth putrefaction to be the corruption of the proper and natural heat in every moist body, by rea-
son

son of external ambient heat, but by *Galen* 11 Meth.med.c.8. without doubt not so much regarding the common and adequate subject of putrefaction, as to mans body, subject to medicinal consideration. It is (says he) a change of the whole substance of the body putrifying to corruption, by reason of extraneous heat; the ultimate end of putrefaction is the dissolution of the parts whereof the mixt body consists, and the corruption of the whole mixture.

That we may here pass by the tedious disputations which are extant amongst Philosophers and Physicians concerning putrefaction, this is to be taken notice of, that putrefaction in respect of the mixt body putrifying, the one, is according to the whole and perfect, whereby mixt bodies are plainly dissolved into Elements, out of which they are bred: The other is in some part, and imperfect, whereby these which are full of moisture, putrify. For seeing the moisture wherewith it aboundeth cannot wholly be drawn out, only some parts thereof, especially the thinner are. And such putrefaction, namely, according to parts, agrees to humors also; namely, when some particles of theirs are really corrupted, and they loose their form: Yet the whole humour must not necessarily loose it's form; thence it continues it's name, and those corrupted parts being evacuated, it returns to its former nature; unless the corruption have so far gone, that mutation is made into another kind. Which putrefaction, is putrefaction indeed, and not alteration only. For although the whole be not corrupted, yet some parts thereof are really corrupted.

Putrefaction in a body is caused by extraneous heat, and when the humours are no longer governed by the natural heat, but are destitute thereof, they are corrupted. Therefore all things whatsoever which may be an occasion to hinder the innate heat, so that it cannot in its due manner govern the humours, may be said to be the cause of putrefaction of the humours.

Putrefaction of humours though oftentimes it be caused by obstruction, and bowels, and prohibiting of free transpiration, since that, as *Galen*. 11. Meth. med. c. 4. writeth, things hot and moist, in a hot and moist place not being fanned and cooled by wine easily putrifie: Yet putrefaction may be occasioned without this, by the meeting with putred things, and other causes, which debilitate the native heat, and bring in an extraneous heat.

First, certain humours by reason of some internal defect, of their own accord tend to putrefaction, or at least are easily over-

come by small causes of putrefaction, and having gotten the least occasion fall into putrefaction: Such vice humours contract first from bad meats, of the which they are generated, whether they are such by nature, or any other wayes corrupted: Moreover by meats which are easily corrupted, such are fruits rare-ripe. Thirdly, from the ill dressing of meats, or ill concoction, or when they are taken in excess, or at unseasonable hours, or after a preposterous manner. Fourthly; by the default of the parts appointed for concoction, by reason whereof even the best aliment may be corrupted. Lastly by reason of other causes which either impede concoction, or retain excrements, as also the preposterous use of the six Non-naturals. Therefore by how much the more of such humours are cumulated in the body, by so much the more easily they putrify. For nature doth not defend excrementitious humours so carefully as those which are fit to nourish the body; whence they are easily corrupted and putrify. Blood also out of the veins, being out of it's natural place, and of a hot and moist nature easily is corrupted. But although such humours turn to putrefaction of their own accord; and being in a hot and moist place; yet it happens sooner if any other cause be added. Nay good humours also in a sound body if they are the cause in posse of putrefaction may become putred.

*Transpiration
hindred.*

Amongst all these causes the first and chiefest is the hinderance of transpiration and ventilation, whether it happen by straitnes of the pores of the skin, or by obstruction of vessels & passages in the more inward parts of the body. For hot and moist things in a hot place unless they are ventilated, easily putrify. Narrowness of pores is occasioned either by constriction from cold, or astringent things, or driness, as staying under the Sun-beams; or by Obstructions, which either plenty or viscosaty, or thickness of humours brings forth. Moreover the internal passages are stopped, either through store of blood overflowing in the body, or plenty of it contracted up and down in many parts, or by the thickness and viscosusness of humours.

Causæ calidiores.

Secondly, those things cause putrefaction, which can kindle preter-natural heat in humours, and call out the native heat; in which number is the Fever *Ephemera*, which for this cause is often changed into a putred in hot and moist bodies: Moreover the other causes heating, as hot air, a hot bath, too much exercise of body and mind

*Meetings
with putred
things.*

Lastly, the meeting with putred things, seeing that which is touched by what is putred, is defiled and putrifieth

From all which it is manifest, that a putred Fever is short, having

having it's rise from hot vapours stir'd up by putred humours, and heating the heart, and thence the whole body against nature.

C H A P. II.

Of the differences of putred Fevers.

Although there are many differences of Fevers, nevertheless those which are necessary to be known for the performance of their cure, are taken either from the matter putrifying, or the place putrified. The difference of putred humours.

For first either solid parts putrify, or humours, or even the Spirits themselves; concerning which it is controverted as in it's own place shall be shewn. Humours that putrify are as well natural as preter-natural: And those of every kind, blood, Phlegm, choller, melancholy; which both the variety of those things which are evacuated by stool, vomit and sweats, and the difference of Symptomes which happen in Fevers doth shew, moreover the diversity of causes which went before it, whereof some generate this, some that humour, and moreover some afford matter for this, other for that humour. And the humours either simply putrify, or a malignant venemous quality and contagion is joyned with it. Furthermore the place wherein the humours putrefie is not always the same; For sometimes the humours putrefie within the veins and arteries, sometimes without them. And that putrefaction which is within the vessels, is either equally in all the vessels, or in the greatest, or in certain parts of a vein.

Whence these differences of Fevers do arise. First, some Fevers are simply putred, without any malignity or contagion, others malignant, pestilent, contagious. Moreover some Fevers are continual, others intermitent, according as the putred vapour which is the cause containing of putred Fevers, or heat stir'd up by putred humours either continually heats the heart, and from thence is diffus'd over all the body, or by certain intervals.

Of either of which kinds of Fevers there are again many differences; For either the putrefaction is kindled in the common vessels, and not in private passages, whence arise continued Fevers, called Primary: Or the putredity comes by the inflammation of some peculiar part, and from thence putred vapours are continually communicated to the heart, which Fevers are called Symptomatical.

Primary continued again are two-fold, for some have no augmentation,

mentation, nor remission, which they call Fevers containing, or fiery *Synochaes*.

Others are continued, yet there is some increase of heat, and sometimes remission, which are called *Synochaes*, and by the general name of continual Fevers.

The continual for the time of their increase and decrease of heat, some are called tertian, others quotidian, others quartan, according as the heat is exasperated, daily, each other day, or the fourth day likewise.

Intermitting also according to the time of their invading, some are called, tertian, others quotidian, others quartan. Nay it is observed that there are Fevers that have a longer distance between the Paroxismes.

CHAP. III.

Of the signs of putred Fevers in general.

The Diag-
nosticks.

A Putred Fever is known. 1. From it's heat, which is more gnawing and acrid, then of any other Fever, and that in the increase and state. For in the beginning of fits, the heat doth not at the first touch of the Pulse discover it's acrimony, but if the hand be continued longer it may be perceived, which proceeds from fuliginous vapours which exhale out of putred humours. 2. Because it begins without any manifest cause. Which indeed is a proper sign, but not an inseparable one, for as often as any Fever is kindled without any manifest cause, you may well determine it to be a putred Fever: Yet sometimes humours are so disposed to putrefaction, that upon any light occasion they'll become putred. 3. Urines in putred Fevers either are crude or else at least afford but obscure notes of concoction, unless an *Ephemeral* be degenerated into a putred Fever, otherwise there is no putred Fever wherein the Urine in the beginning doth not appear crude or obscurely concocted. 4. The pulse is more changed then in other Fevers. 5. Putred Fevers begin with a cold shaking. Which is a proper, but not an inseparable sign. 'Tis a proper sign because neither Diaries nor Hecticks do ever begin with cold shaking; yet it is not inseparable, because all putred Fevers do not begin with a cold fit, as a putred *Synocha*. 6. It is the property of putred Fevers to return by fits and Paroxismes; and no other Fever hath fits. Yet this is not an inseparable sign, because it doth not agree with all putred Fevers. 7. Lastly, if any sign be present which is proper to any sort of putred Fevers, 'tis a sign it may admit of the general appellation of a putred Fever.

Concerning

Concerning the event of putred Fevers in general not much can be spoken, since there is great variety and difference of putred Fevers, and the event various: Only this, that the event is best to be known by comparing the magnitude of the disease with the strength of the Patient; For if the patient be very strong, there is much hope of a good end of it, if the party be weak, there is great danger.

The Prognostick:

CHAP. IV.

Of the cure of putred Fevers in general.

NOW seeing a putred Fever is cherished by the cause containing, Indications in putred Fevers are taken some from the Fever itself, others from the cause thereof. Nor indeed ought vital indications to be neglected. First, a Fever as it is a Fever, indicates cooling things; Moreover as that heat of the whole depends on a hot putred vapour, as on the cause containing, the removal of that is also indicated; but because putred vapours depend on putred matter, they cannot be removed, unless the matter putrified be taken away; putrefaction cannot be taken away except its cause be removed, as we said before. First, all evident causes which are present are to be removed; the antecedent causes and whatsoever is in the body, either of superfluous blood or peccant humours, they are to be prepared, and if occasion require, to be evacuated, streightness of passages if it be external or interal in the bowels, they are to be opened and free ventilation and respiration for the humours is to be procured, Putrefaction is to be resisted, and the putred humours are to be cooled and dryed; the generation of peccant humours, by ablation of their cause is to be prevented. Yet nevertheless seeing that these indications are often contrary, and that those medicines which are administered for the cause, may make the Fever worse, and the contrary. We must be careful how to perform these intentions. And for the most part, since the Fever comes last, the cause is to be taken away first, since the cause hath more power then the disease, and the cause of a putred Fever being taken away, the Fever of necessity ceaseth.

Indications in putred Fevers.

Yet if the greatness of the Fever inforce, 'tis necessary to have regard of the Fever first; and afterwards to the taking away of the cause; or certainly if we may first go to the taking away of the cause, we should be very careful that by those things by which we take away the cause, we increase not the Fever. But those

things are never to be used for the cure of the Fever, which increaseth its cause, since that for the most part that is of greatest force.

CHAP. V.

Of breathing of a vein.

Letting
blood.

Whether,
when, and
why to be
done in a
putred Fe-
ver.

NOW for the cure to be performed by these intentions, 'and first concerning Phlebotomy. *Galen 11. meth. medendi. cap. 15.* gives this rule. It is most wholesome he sayes in all Fevers to open a vein, not only in continued, but also in all others which the putrifying humour stirreth up, especially when neither age nor want of strength prohiberes it. And he addeth this reason; For nature which rules our bodies being enlightned, and unburthened of that by which as with a pack it was oppressed, what remains, it will overcome without difficulty, and therefore not being forgetful of its proper office, will both concoct what can be concocted, and cast out what may be emitted. Yet this precept of *Galen* is to be rightly understood and explained. For although there are many occasions for opening a vein, and Authors cannot agree about the reason why *Galen* commands Phlebotomy in putred Fevers: Yet 'tis clear he did it, that by evacuation of the blood, nature might be enlightned and freed from the greatest part of her burthen, for when blood abounds, the opening of a vein, and purging of Cacochymy are the best remedies; furthermore when it is a plethorick body, without doubt we should open a vein. In some measure the breathing of a vein, doth take away the cacochymy contained in the veins, and mixed with the blood, since the vein being opened, the vitious humours go out with the blood, especially because purgation which can take away foul humours out of the veins, is not so safe as the breathing of a vein to be appointed at the beginning of a Fever. For although Phlebotomy cannot take away all the ill humours out of the veins, yet nature is lessned some part of her burthen, and therefore can concoct and master the remainder the more easily, for it may be that the plenty of blood, which before the sickness was no trouble to the party, now being sick and weakened with a Fever, may become burthenfom unto him. And although some good blood be emitted therewith, yet that hurts not the sick, but rather helps, as is said: As we also see by critical Hemorrhodes, that nature sends out no small quantity of good blood together. Yet nature for the most part useth to drive

drive no small part of peccant humours to the extrem and subcutaneous parts; thence and in the first place most commonly the worst blood comes first out. Whence it is manifest especially in continual Fevers, in those who abound with blood, or have peccant humours mixt with their blood, that bleeding is proper, and that at the beginning, that nature may be unladen of part of her burthen, but if vitious humours are not intermingled with the blood in the greater veins, the breathing of a vein for evacuation thereof is not to be used.

Cooling and fanning the blood is performed by letting blood: but they are only to be done when bleeding will not cool it alone.

We are not only to observe whether bleeding be needful, but also whether the party be strong enough to suffer it; when the strength of the vital faculty is principally to be required, so that the strength do not languish by too great store of blood suffocating the Spirits, Age, Habit of body, and condition of the ambient air shew the strength.

Rules attending Phlebotomy.

But how much blood is to be taken away, first by the plenty of blood, then by comparing the strength of the Patient with the greatness of the disease, will be manifest; for greater quantity requires larger emission, lesler, less; robustious bodies require larger breathings of veins, weaker require less. The strength varies according to temperament, habit of body, age, sex, season of the year, the condition of the Heavens, and the Region, as also in regard of certain Symptomes, which use to be accompanied with Fevers, as of watchings, pain, and such like.

The quantity that may be taken.

As for the time for letting blood, 'tis to be done when 'tis indicated, and no way prohibited; which is in the beginning, and by how much the more the disease hastens to increase, so much the sooner blood is to be taken away, but if the concoctions are more dull and slow, Phlebotomy may be deferr'd longer.

The time.

The place.

Veins that are opened for evacuation are best in the middle of the arm; yet if the sick be weak, and that also revulsion is to be made from the head, the veins in the foot are to be opened to the greatest benefit of the sick.

CHAP. VI.

Of Purging.

But because all putred Fevers have their original from foul Purgation humours: Now we are to consider by what means they may

be evacuated, but seeing those things which evacuate them are twofold, Lenitives and Purges, properly so called: Lenitives are safely to be administered in the beginning of all putred Fevers, because there are scarce any bodies wherein the stomach, guts, and Mesaraick veins contain not some of the peccant humours.

Clysters.

These evacuations are to be caused by Clysters, called loosening medicines, and by vomit. The Clysters are made of Mallows, Marsha-mallows, Violets, Pellitory, Beares-breech, Mercury, common Oil, or mixt with Violets, brown Sugar, Cassia, Elect Lenitive, Diacatholicon Hieta, and such like.

Lenitives.

Or those lenitive medicines may be given which are at this day in use: Syrrup of Roses solutive, of Violets solutive, Honey of Roses solutive, Tamarinds, Cassia, Manna, the lenitive Electuary simple, Cream of Tartar.

You must use such medicines at the times of remisness and intermittings, when the Fever least offendeth, whether it be early in the morning or in the evening.

Sometimes also in the beginning of Fevers you may administer a vomit; when great store of matter is contained in the stomach and adjacent parts, whereof no concoction can be expected, the which useth to corrupt and putrifie in the body, and oftentimes that is easily vomited out, which with great difficulty is purged out.

Vomits.

The Vomits are set down in the fifth Book of the *Institutions* part. 1. Sect. 1. cap. 12. Some give at this day the roots of *Asarabacca*, from half a drachm to a drachm. The Chymists use white Vitriol, Salt of Vitriol, Medicines prepared of Antimony; which do not open only the first passages, but stir the whole body: These are to be used with much caution, and as *Hippoc. 1 Aphor. 24.* Not without skilful advice.

Purging medicines.

Concerning Purgers at what time they are to be used, there is great controversie; for although vitious humours at any time during the disease, shew that they ought to be taken away; Yet they ought not to be evacuated at any time, but instead of an Oracle, *Galen* admonisheth four of preservation of health, 6. 5. the Aphorisme of *Hippocrates* is to be had in esteem, 22. Sect. 1. Such as are concocted and ripe, ought to be purged and removed, not crude; neither in the beginnings, unless the matter trouble much, which seldom cometh to pass. But although some interpret this Aphorism otherwise, yet if it be diligently considered, 'twill be manifest, that *Hippocrates* meant to speak only of putred Fevers, and of no other disease, and by crude humours intends those that by reason of their putrefaction in putred Fevers ought

ought not to be purged, being unfit; by concocted he intends such as are fitting to be purged: The words crudity and concoction, being translated from their proper signification of crudity and concoction to excrementitious humours.

Although there are certain other preparations of humours for purgation both in Fevers and out of Fevers: Yet the name of concoction belongs not to them, and we must distinguish betwixt concoction and preparation of humours. Concoction, whereof *Hippocrates* speaketh, is a reducing of the putred humours into a better condition, and less obnoxious to the body, and a separation of them from good blood, that they may the more profitably be evacuated out of the body; hence concoction belongs only to humours, which are contained in the Veins, and mixed with the blood, but those that are in other places, and not mixed with the blood, may be purged at any time. For these humours unless they are reduced to a certain mediocrity as they are capable of, and are separated from laudable blood, the Physician in vain, and with much detriment to the sick, endeavours to expell them by purging. For neither will the humours follow the foregoing medicine, neither hath the Physician nature for his assistant, since the matter is only stir'd and troubled, and various Symptomes arise; either the strength is weakened by the violence of a strong medicine, or the native heat is consumed and weakened.

Yet flatulent humours may be purged without concoction; For although these are not as yet concocted, yet because there is not only danger lest they should fall upon some principal part, but also because being thin, and already in motion, they easily follow their leading medicine; and the Physician hath nature to assist him, which alone sometimes expells such humours at the beginning, to the great advantage of the sick. But by flatulent humours here, we are not to understand only those which hitherto are moved to no determinate part, but also those which although they rush into some part, yet they are still moveable, and so disposed, that they'll easily remove into another part, and according to their manner, are hitherto wandring, but have not any fixed seat any where.

Concoction, whereof we here speak, is the work of nature only, which when 'tis strong, gives what perfection they are capable of receiving, even to the vitious humours, as may be seen in the generation of quirture; and this concoction is made only in putred Fevers. For whilest the humours ferment in the veins, like new wine, and the good and bad are mixt together,

*Concoction
of humours.*

*Flatulent
humours.*

and cannot easily be separated: They are called crude, but when the humours are appeas'd and cooled, and the good may easily be separated from the evil, they are said to be concocted.

CHAP. VII.

Of Concoction and Separation of humours.

Although the concoction of humours be the work of nature only. Yet a Physician may help her by his medicines, which may either cherish and strengthen the native heat, or take away impediments which may hinder nature in concocting, and reduce the excess of qualities to mediocrity. And medicines of the latter of these two kinds are called Digestives and Concoctives, namely, such as cool the hot humours, heat the cold, moisten the dry, attenuate the thick, incrassate the thin, and if there are any other excesses of qualities, reduce them to mediocrity.

*Digestive
medicines.*

*Concocters
of chole-
rick hu-
mours.*

So Cholerick humours because they are hot to be allayed, and tempered with cold medicines, and their tenuity if too much, to be reduced to mediocrity, and its power of inflaming to be prohibited. These perform this, Chichory, Endive, Sowthistle, Garden-Endive, Sorrell, Burrage, Bugloss, Violets, Barley; the greater and lesser cooling seeds, the juice of Lemmon Pomegranates, Goose-berries, Vinegar, Spirit of the salt of Vitriol, and medicines prepared of these.

*Phlegma-
tick.*

Phlegmatick humours because they are thick and dull, require attenuating, and cutting medicines; such are the opening roots, Hylop, Bittony, Agrimony, Venus-hair, Vinegar, also Spirit of Vitriol.

Melancholy.

In a Melancholly humour, attenuating medicines are also useful, but such as moisten withial: Such as are Burrage, Bugloss, Polypody, Cæterach or Spleen-wort, and such like.

*Resisting
of putre-
faction.*

But because in all these Fevers, corruption of humours is present, those things which resist putrefaction are also necessary, such are Vinegar, Juice of Lemmon, Citron, Pomegranates, Sorrel, Spirit of Salt of Vitriol.

And those things which are spoken about concoction and cruddity of humours, principally take place in continued and acute Fevers, which is manifest from *Hippocrates*, who 1. *Apb.* 24. adjoynes, In acute diseases seldom, and about the beginnings, purging is to be used, and that with diligent premeditation, and 2. *Apb.* 29. In the beginning of diseases if ought be

be to be moved, move it; but when it flourishes 'tis best to be quiet, namely, if the matter swell big in acute diseases, presently at the beginning 'tis to be evacuated, but if not, a concoction is to be expected, which nature alone performing, very often useth to expell vicious humours, which if it be not done, the Physician useth to do it: The same crudity and concoction is required in intermitting Fevers, for since their causes are scituated in the Mesaraick veins, and the Mesaraick veins contain and elaborate blood of their own accord, if peccant humours be any where mingled with that blood, and begin to putrefie, crudity is said to be present: But when those humours are so conquer'd by nature, that they may easily be seperated, concoction is performed,

Although in intermitting Fevers in every fit some of the peccant matter be evacuated, yet notwithstanding the humour, which is the fuel of such Fevers, is not first taken away before the concoction be performed, and the bad are seperated from the good: That which in quartanes useth to be long in doing; For although each Paroxysm some may be expelled, yet as *Galen. 2. of the difference of Fevers. cap.* the last teacheth, superfluities in the part wherein the fewel feeding the Fever is contained being left behind, cause new fits, and purgation is appointed in vain before the humour be concocted and rendred fit to be purged, whereof shall be spoken amongst the intermitting Fevers.

But besides this concoction and preparation of humours, there is yet need of other things, which when the humours are concocted, are to be exhibited: For considering purgation that it may be happily used, the passages ought to be open and the humours fluid, if the passages are obstructed, and thick sluggish humours be present, the ways through which the humours ought to pass are to be opened, and the humours to be cut and taken away,

*Preparing
of humours.*

CHAP. VIII.

Of Sudorificks and Diureticks.

But because nature for the most part expells the concocted matter by sweats, so that almost no Fever without them ceaseth and is well cured. The Physician ought to imitate nature, and the body being evacuated, to discuss the remainders by sweats: The Sudorifiques that at this day are in use, are,

*Causing
sweat.*

Carduus benedictus, Scabions, Fumetary, Tormentill, Zedoarie, Harts-horn, Elder, Bezoar-stone, Methridate, and such like, but no sudoriferous medicine ought to be administered, if any Crisis by stool, vomit, or Hemorrhodes at the nose be extant, lest nature should be disturbed in it's work. They are most conveniently exhibited at that time, when nature her self useth to remove humours, which happens either before any paroxysm, or at the end thereof.

Urine pro-
voked.

By Urine also sometimes part of the feavourish matter is evacuated, and therefore Diureticks after other evacuations are to be appointed, and the most temperate amongst them are to be chosen, which together attenuate the humours, and free the passages from obstructions, as Maiden-hair, Sparagus, Agrimony, &c. But those things which are cold, may timely be used also, since they correct the hot distemper of the humours and parts.

CHAP. IX.

Of Diet in putred Fevers.

Dyet.

I Amly concerning dyet, and first, of meat and drink, not only regarding the use of them, for the comfort and refreshment of our strength, but in respect of what is to be permitted, and what prohibited; for when nature is most busied in concoction and evacuation of matter, she ought not to be called from that work to the concoction of meat, hence Hippo. 1. Aphor. 8. When the violence of the disease is great, dyet is to be used most sparingly, and *ibid.* Aphor. 11. In the Paroxysm it self, food is to be taken away; for it affords mischief: and when by circuit the Fever returns in the fits we ought to abstain.

Form of
Diet.

In the administration of dyet in Fevers, we are to observe form, quantity, quality, and time. The form of dyet is threefold, thick, indifferent, and thin. Which of these are most proper for every one, is to be collected by comparing the strength of the sick with the morbifique cause; neither ought we to give more meat then the strength can concoct: and we ought to consider whether the strength do more require food, or the disease forbid it, or the contrary: for by how much the busier nature is in oppugning the morbifique cause, by so much the less she ought to be burthened with food: She is by so much the more busied in opposing the disease, by how much the paroxysm is nearer at hand, hence Hippocrates 1. Aphor. 8. When the disease is in it's vigour, then 'tis necessary to use the thinnest,
food;

food, and *1. Aph. 7.* When the disease is peracute, there are extream labourings; and at height, the thinnest nutriment is to be taken. But when 'tis not at height, and that we may use more nourishing things, by so much is to varied from the thinness of all, by how much the disease is remitted and abated, and *ibid. 10.* Those who expect the vigour forthwith to come, ought presently to take a little nourishment. They who expect it afterwards much, and should both in the vigour of it, and a little before it, abstain. But before-hand the sick should be more plentifully nourished, that he might be the better able to endure the disease. But how dyet is to be moderated according to the strength, *Hippocrates* teacheth, *1 Aphor. 9.* We ought to conjecture by the sick, whether he can hold out to the vigour of the disease by the prescribed dyet or not, or whether he will first faint, and being insufficient with such food, shall dye before the disease depart and be overcome. And *1. Aphor. 13.* Old men that are not decrepid easily endure to fast, according to these, middle aged men, young men less, children least of all; and amongst them especially such as are endued with the choicest and most acute wits: Custom also and course of life is to be considered in prescribing of dyet.

The quantity of meat also is to be considered by comparing of the disease with the strength of the sick: For since that we must never give more food then can be concocted at the time when nature is most busied in opposing the morbidique cause, the least quantity of food is to be taken, which is in the height thereof.

Quantity.

Concerning the quality of meat, since it is to be considered either as it is meat, or as it is medicinal meat, in the former respect those meats are to be chosen that are of easiest concoction, full of good juyce, facile to be distributed, and which hath the least excrements: But if it be considered as Medicinal, First, it ought to be contrary to the Fever, and therefore it should be cold and moist, *1. Aphor. 16.* moreover it should be repugnant to the causes, and all excess of qualities in them.

Quality.

The time for food is most proper when 'tis indicated, when the body requires nourishment, which is when the former meat is concocted, and no sign is present, which may prohibit the taking of it, to wit, no combate betwixt nature and the disease; therefore during the fits, we ought to abstain. *1. Aphor. 11.* unless the strength be much decayed and spent.

Time.

Care also is to be taken what drink is fittest in Fevers, for although it be easier concocted then meat, and by it's cooling it

Drink.
mitigates

mitigates the heat, and the driness is hindered: Yet we are to be careful that nature be not burthened with it, and the concoction of matter hindered by it, and therefore in intermitting Fevers during the Paroxysm, we should abstain from drink as near as we can: But in continued Fevers, when heat, thirst, and debility of strength do require, you may give more drink; but sithence drink is to be considered, not as drink only; but as medicinal, hence it comes to pass, that at certain times, certain drinks are to be chosen. Drink considered as drink, ought to be given according to the rules for meat: But as it is considered as altering, by how much the dry heat is more intense, by so much the more, hotter drinks are to be avoided; and the colder to be chosen. Yet regard is to be taken of the cause, and oftentimes there will be need of attenuating and absterging drinks, and not of cooling only; and the matter being deeper fastened in the part, admits not cooling drink. The drinking of cold water is only useful in acute Fevers, 'tis never proper in intermitent. Fair water is often altered with barley, which is called a decoction, and barley-water. Instead of drink, Juleps are also exhibited, water mixed with Honey, Oxymel, Emulsions, Whey, strong beer, wine. But seeing certain drinks for certain Fevers are most convenient, we may more properly handle them severally amongst the different kinds of Fevers, of which sorts are peculiar for such a particular Fever then in general to treat thereof.

Air.

The air in all Fevers ought to be pure, cold rather than hot, yet so temper'd, that the drawing in thereof may rather allay the feyourish heat, than meeting with a naked body, cause it to shut its own pores, which hinders the discussion of vapours and sweats, and therefore the sick is to be covered with outward garments, but such as are light, that so the heat may be drawn to the outmost parts of the body.

Sleep, rest.
Excre-
ments, pas-
sions of the
mind.

Sleep ought to be moderate. Rest in putred Fevers is most advantagious: Excrements ought not to be retained beyond measure, but to be ejected in due time. The passions of the mind ought to be at peace, and sadness, and anger are to be avoi-

CHAP. X.

Of the differences of putred Fevers.

Hitherto we have spoken of putred Fevers in general, it remains that now we speak of them particularly. First their differences are a little more clearly to be explained. And they are taken chiefly from the matter putrifying, and the place of putrefaction.

As for the matter, Fevers arise either from choller, or phlegm, blood or melancholly: To which not without reason is added a serous humour, especially that Ichor, which is very evil, easily obnoxious to putrefaction, and cauleth the blood and other humours to putrefie more easily. Whence some are of opinion that Ephemeral Fevers, which commonly are said to arise from Spirits kindled, do all proceed from the ebullition of the serous part of the venous or arterious blood: And much more a *Synocha* without putrefaction; although the vital Spirits being heat may first allure the heat to the serous humour. The same shew that all *Synoches* or Fevers containing, as they are called, which have no periods, as well putred as not putred, do arise from the same aqueous and serous humour, whether putrefying or not putrefying; whereof the Tract of Fevers may be seen.

Those Fevers which proceed from blood do all keep a certain continuity and equality; and are neither exasperated daily, nor each other day, nor the fourth day, but those which do arise from Phlegmatick, chollerick, or melancholy humours, all have their periods, whether they are continued or intermittent. Besides these there are other Fevers, which although they are exasperated, yet have no certain periods, such are those which arise from inflammation, putrefaction, worms, corrupted milk; as in Infants, blood out of the Vessels, chyle, and blood imperfect, putrefying in the Mesaraicks.

The matter whereof putred vapours are bred in Fevers, is either contained within the vessels or without. The vessels which carry the perfect blood, as the vena cava, and the arteries, or the more imperfect, as the Mesaraick veins. Whilst blood putrifies in the vena cava, there arise continued Fevers, whereof some are called *Synoches*, or containing Fevers, others continued instead of a genus and periodick continued. If excrementitious humours putrefie in the Mesaraicks, intermittent Fevers are stirred up, but if imperfect blood putrifie in the Mesaraick veins,

The differences of putred Fevers.

From the matter.

A serous humour.

From blood.

Phlegm.

Choller.

Melancholly.

From other causes.

From the place.

within the vessels.

Without the vessels. veins, continued Fevers are raised, but calm ones. Putrifying matter without the vessels, sending putred vapours to the veins and arteries, kindles continued Fevers. Such are first Symptomatical, which proceed from inflammations of certain parts. Moreover calmer Fevers, which proceed from the stubbornness of the guts and their obstructions. Thirdly, those that are caused by an Ulcer, Fistula, and all putrefaction. Fourthly, from corrupt milk, as in Infants, from blood putrefying without the vessels, also the matter of Catarrhs, whence they are called Catarrhal Fevers.

Fevers accompanied. Lastly, there are Fevers called *Comitata*, or Companions, which are occasioned from matter putrefying in the veins, part whereof when nature either expells out of the body, which happens in a Diarrhæa, Dysentery, and a Catarrh, or protrudeth into some part, which happens in the Meazles, Small Pox, Stragling pains, Quinsy, Peripneumonie, Phrensie, Erisipelas, oftentimes. Another disease then accompanies the Fever.

CHAP. XI.

Of a continued putred primary Fever, and first of a Synocha in particular.

A primary continued Fever.

NOW concerning putred Fevers in particular, and first we will handle a primary continued Fever: A primary continued Fever is that which comes not to apurexie before it be plainly taken away; and hath its rise from putred humours contained in the greater branches of the vena cava and arterie. For since that thence putred vapours are continually sent to the heart, a continued heat is also caused, thence until it fully be cured there is no absence of fire, neither doth it return by intervalls, with tremblings and shaking fits.

Primary continued Fevers are two-fold, Some without any remission or exacerbation of the heat, continue from the beginning to the end: But there are others, wherein the heat before the Fever be thoroughly cured, doth never totally depart, yet at certain periods is increased. The former are called fiery *Synochæ*, and Fevers containing; the other are called *Synoches*, or continued, instead of a genus.

A Putred Synocha.

The Fever *Synocha* putred, is a Fever, which without any slackening or increasing afflicteth from the beginning to the end, arising from putrefaction of the blood in the greater branches of

the vena cava. Although continued Fevers may arise out of vessels of determinate parts, yet such are Symptomatical: And if they are true Synochaes, which have their original from the default of any part, as from the womb offending: Yet that part only affords an occasion, the polluted, putredity being communicated, that the blood in the greater vessels might corrupt. But there are Fevers risen from determinate parts, for the most part continued Periodicks.

So sometimes peccant matter in the first passages collected in the first concoction, which useth to go to some of the humours, which at certain Periods are moved, and hath not as yet received its limits for motion, it useth then to corrupt the humours, and communicate putrefaction to the vena cava, which Fevers for the most part are malignast.

A putred *Synocha* hath its original for the most part from *The cause.* transpiration hindered, and want of ventilation of the blood, and hot fuliginous retentions, by reason of obstruction of veins, as well in the skin, as also in the internal parts. And the blood appointed to nourish the body putrifies in these *Synochaes*, and putrefying, continually sends hot vapours to the heart. For when preter-natural heat is so kindled in the veins, that nature can no longer rule it, it becomes putred and is corrupted. Nor is there any need that the putred blood should be turned into another humour presently. For blood of its own nature is apt to putrefaction, and in inflammations we see it changed to quitture, not into cholier; though nothing hinder it in the veins but that it might: And especially the Ichor or thin watery part of the blood is apt to turn to putrefaction, and by reason of the Ichor the blood in the first place is corrupted, which happens, when the vapours which ought to transpire, are retained in the veins. Yet the whole blood doth not putrifie, but some parts thereof, which so long as they are not seperated from the good blood, crudity is said to be present, which afterwards by concoction are seperated from the good blood, which being done, Nature appoints evacuation, by which the blood returns to its former purity again.

A *Synocha* is three-fold, *Acmaestick*, i. e. when it remains always in the same state, namely, when so much of the humour daily putrifies as is discussed, this is called also *Homoronos*. *Epacmaestick* or *Anabaticos* is when the heat continually increaseth, and more of the matter is kindled then can be discussed. *Paracmaestick* is when there is more discussed then corrupted, and thence the heat always decreaseth. Furthermore if blood which
Differen-
ces.
 putrifies

purifies be temperate absolute, 'tis called a sanguinous *Synocha* in particular: But if it be hotter, which useth to be called choleric, the disease is then called *Synocha biliosa*.

Diagno-
stick signs.

The Fever is known first by this, that it continues from the beginning to the end without any exasperation and mutation. Moreover because the Pulse is great, vehement, swift, frequent, unequal and inordinate. And in a *Synocha* proceeding from temperate blood the signs of Plethory are present: The blood to him that toucheth seems much and full of vapours, and is not so troublesome and sharp as in other Fevers, and other signs are present which are observed in a *Synocha* that is not putred. A putred *Synocha* is distinguished from a non-putred by certain signs. The heat in a putred is sharper then in a non-putred. In a putred the urine is red, thick and troubled, without any sediment, and crude, or a little concocted in the beginning; the Pulse affords signes of putrefaction, and all the Symptomes are greater then in a Fever that is not putred.

A *Synocha biliosa* happens to those that are troubled with choleric blood, and the heat is sharper then in a *Synocha* proceeding from temperate blood, thirst is more troublesome, the urine thinner and sharper, and other signes which are usual in choleric Fevers are discerned.

Prognos-
ticks.

This Fever is the most simple amongst the putred, and easiest to be cured. And being pure, seldom passeth seven dayes, but the spurious is extended to the fourteenth day, and is terminated sooner or later, as the signes of concoction appear sooner or later. A white urine in a *Synocha* is evil. The least dangerous of all is that which is called *Synochos Paracrafticos*, next to that *Acrafticos*: But that is most dangerous which continually increaseth, and is called *Eparcrafticos*, which easily degenerates into a disease called *Causus*. And by how much the fewer the evil Symptomes are, by so much the better hopes; the more they are, the more danger is shewn.

Indicati-
ous.

The whole cure consists in taking away the cause, and altering the fevourish heat. Blood therefore as abounding in plenty is to be lessened, the pores of the skin to be opened, the causes of obstructions being taken away. The fevourish heat is to be tempered and allayed, if there be strength, as for the most part there is, thin diet is to be used.

Breathing
of a vein.

Therefore a vein is forthwith to be opened in the right arm, a Clyster or lenitive medicine being given first, if occasion require, and to take away as much blood as the strength will permit. and you may more boldly take away blood in this, then in any other sort of Fever.

Blood

Blood being evacuated, that the concoction may be made *Medicines*. more facile, we are to use those things which allay the heat, free from obstructions, and resist putrefaction; namely, the juice of Sorrel, Lemmons, Citrons, and Syrrups and Conserves prepared of them, Syrrup of Sorrel simple, Oxymel simple, Oxysaurharum simple, Spirit of Vitriol, and the four cold seeds with cooling waters are to be administered.

Principally we ought to endeavour that the pores of the skin may be freed from obstruction, which for the most part is the cause of this disease, which thing Oxymel and wine mingled with honey, and the honey dissolved, will conveniently perform, since they are easily carried to the outmost parts of the body, and attenuate dull thick humours, and simple Oxymel resists putrefaction.

Concoction being perfected, the Ancients used to drink cold water, and gave so much of it to drink, as might not only extinguish the fevourish heat, but that the matter concocted might be evacuated by stool, vomit or sweats. But in our countries, sick people are not so accustomed to drink cold water, and many inconveniences are to be feared by the use thereof. So likewise swimming in cold water, which was usual with the Ancients, doth not agree with our bodies.

The concoction being perfected, nature useth for the most part critically to evacuate the corrupted matter, which if it be not done, it ought to be performed by the Physician with purging medicines.

Diet in this Fever ought to be thin, because both that blood *Diet.* aboundeth, and the disease is short; It should be cooling and moistening, and also to have power of attenuating thick humours, and deterging viscid ones.

CHAP. XII.

Of a *Causus*, or *Burning Fever*.

WHereas amongst continued Fevers there is often mention made of a *Causus*, we are also here to say something of it: But a *Causus* is not any difference of a Fever, but rather a measure expressing the quality of fevourish heat. The word *Causus* is sometimes taken generally, and not so properly, sometimes *specialiter*, and more properly: Generally for any sort of Fever whose heat is vehement, in particular for a Fever which hath two Pathognomonicks, great heat, extream and
uncertain

unextinguishable thirst. A *Causus* properly and in specie so called, is again twofold, legitimate and spurious: legitimate is that which hath alwayes, and that evidently, those two signes joyned with it: an illegitimate is that wherein those two signes are not so evident.

Burning
Fever.

Whence it is manifest that burning Fevers, and such as properly and in specie are so called, are continued Fevers, and arise from choller. And so a *Causus* or burning Fever properly so called, is a Fever continued, Bilions, and indeed either *Synocha biliosa*, which we have newly handled, or a continued tertian, whereof we are to speak next.

Diagno-
sticks.

The Pathognomonick signes as we said before, are two, vehement and burning heat, and unquenchable thirst, although the sick shall drink; and the more legitimate the *Causus* is, by so much these signes are greater, yet the thirst is sometimes resisted if a little cough happen, which may draw humors from the neighbouring parts.

Concurrent signes there are many, as a dry tongue, rough, black, watching, giddiness of the brain, difficulty of breathing, thick and great, and the sick continually blow, opening their mouth, that the hot spirits may the easier exhale.

Progn-
sticks.

These Fevers if they are pure, never continue long. For nature cannot long endure such burning and vehement heat; and the Symptomes which accompany it with their vehemency. And for the most part they are terminated the seventh day, sometimes the ninth, eleventh, fourteenth: but the spurious are protracted longer, and all of them are dangerous according to *Hippocrates 4. Aphor. 43.* Fevers of what kind soever that have no intermission by the third day, are the stronger, and fuller of danger. Yet some are more dangerous then others, according to the violence of the heat, and of the Symptomes, and force of the strength, and by how much the greater digression is made from the natural state, by so much the more dangerous is the Fever. Hence if an old man be troubled with a burning Fever, which seldom happens, 'tis deadly, as *Galen* hath it, *1. Aphor. 14.* They lye down in no less danger who are exceedingly burnt in cold air: Who if they have not great strength, neither the signes of concoction appear, it can not be that they should escape, as the same *Galen 11. Met. med. cap. 9.* writeth. To whom if vehement Symptomes happen, by so much the more dangerous the disease shall be, whether they are Pathognomonick or supervenient, yet if by the other signes, it be manifest to be a burning Fever, and that thirst be wanting, this also is dangerous, for

it shews the sick either to be in a Delirium, or that the desiring faculty of the stomach faileth.

Black urines are also evil, as also thin, crude, and such as have other ill tokens in them.

But it is good if the sick can easily endure his sickness, the Symptoms being not without vehemency, if he can easily fetch breath; if he complain of pain in no internal part, if he sleep; if he find benefit by his sleep; if the body be equally hot and soft, if the tongue be not too dry, if the urine be good. But if when the signes of concoction appear, and that there is much strength, in a critical day there happen large Hemorrhodes, or bleeding at the nose, without doubt the sick escapeth: For it is proper if there be any other of the pure burning Fevers, that they should be cured by bleeding. Yet sometimes they are determined by Sweats, looseness of the belly, vomits, and imposthums. But there are many Prognosticks of burning Fevers in Hippocrates in *Prognosticis*, *Porrheticus*, and *Choacis prænotionibus*, and there are many expounded in the *Institutions*, lib. 3. part. 3.

But by what means burning Fevers are to be cured, appears by what hath been spoken of a *Synocha biliosa* with putrefactions, and those things that shall be said of the cure of the continued Tertian shall make manifest.

CHAP. XIII.

Of continued Periodick Fevers in general, and of a continued Tertian.

A Nother kind of continued putred Fevers which they call in particular continued, comprehends those Fevers, which indeed continually remain, and have no remission before they are plainly dissolved, yet at certain periods they are exasperated, whence they are called continued periodick and proportionated Fevers.

But as Fevers containing have their original from the blood appointed for nourishing the body; so continued Periodicks, as also intermittents proceed from an excrementitious humour and Cacoehymie. Therefore continued Periodicks agree in this with Fevers containing, that both their causes are contained in the vena cava, but with intermittents in this that both proceed from excrementitious humours. But they differ from Fevers containing, in that they proceed from alimentary blood; these from an excrementitious humour; From intermittent because the

their
causes;

matter which is the cause of continued Periodicks is generated in the second concoction, and contained in the vena cava: But that matter which is the cause of intermitting Fevers is contained in the first concoction, or certainly in those parts which are about the liver, which are not appointed for perfect sanguification. Namely, the matter of continued Periodick Fevers is generated in the Organs of the second concoction, if for any cause whatsoever it be not rightly performed. For then the peccant humours generated in the second concoction are sent with the blood into the veins, which there stirreth up these continued periodick Fevers.

The reason of its continuity. Which matter since it is not only confused with the blood, as in intermitting Fevers, but from the very first original is mixed therewith throughly. Nature also cannot expell it before concoction, and therefore the Fever from the beginning continually lasteth. Yet these Fevers have exasperations at set times, because that from the instruments of the second concoction, fresh matter which is the cause of these periods is afforded, and indeed for the most part from the liver: Whence also continued Tertians are most frequent.

Signs. These Fevers are generally known because they never come to apurexie, yet at certain periods they are increased and remitted. Neither doth cold, trembling, nor shaking fits precede their exasperation, neither doth sweat follow their remission.

There are three kinds of these Fevers.

Differences. For some are exasperated each other days, and proceed from Cholera, and are called Tertians continued. Others every day which are caused by Phlegm, and are called continued quotidian. Others the fourth day, which arise from Melancholy, and are called Quartans continued.

A Tertian continued. First a tertian continued is a putred Fever, arising from blood with ill juyce and cholera putrefying in the vena cava, indeed continued, but afflicting most the third day.

The cause. The causes of this Fever are all things which can increase store of choleric Cacochymy in the veins, and being cumulated there can introduce putrefaction; such as are before propounded.

Signs. This Fever is thus known, in that it is continued, and the third day it is exasperated. Yet there are present other signes and Symptomes of continued and burning Fevers.

Prognosticks. But what is to be hoped concerning their event, is manifest from things which are spoken of the Prognosticks of burning Fevers.

Cure. Concerning the indications for cure, this Fever if it be pure, since

Since it is exceeding hot and burning, and the cause thereof hot and dry, it requires extraordinary cooling and moistening, and indeed more then any other Fever.

The humour it self indicates evacuation; but crudity for the most part forbids it: but if the Fever be spurious, regard is to be had to the humour which is mixed with choller; if the Symptomes need it they are to be resisted likewise.

Therefore a vein is to be opened so that the strength will permit it, by which means both some part of the peccant humour may be evacuated, and the blood cooled and revell'd from the more noble parts. And nature her self sometimes useth to make evacuation by the nose in the beginning of these Fevers, whereby the Fever is wont to be abated; but the vein should be opened in the cubit forthwith in the beginning, or certainly in the augmentation, and blood is to be taken in such plenty as the strength of the patient requires.

Opening a vein.

But you are not to appoint purgation unless the matter be turgid. Yet 'tis very necessary that the belly and first passages be evacuated before a vein be opened, but the medicines which perform that, ought to be cold and moist not hot; or if they are hot, they should be tempered with the mingling of cold.

Lenitives.

Afterwards altering, namely, cooling and moistening medicines are to be exhibited, both which prepare the humour appointed by nature for concoction, such as are, Syrrup of Sorrel simple, Oxymel simple, compound, Oxysauharum simple, Syrrup of Sorrel, Wood-sorrel, the juice of Lemmon, Pomegranate, the acidity of Endive, Cichory, Violets, Gooseberries, the four greater cold seeds, Purcelane, Lettice, the flowers of Water-lillies, Santalum, Water of barley, Sorrel, Endive, Cichory, Strawberries, Water-lillies, Purcelane, spec. Diamargariti frigidi, and such like, to which for the resisting of putrefaction and hindring inflammation may be added, Spirit of Vitriol and Salt, Nitre prepared is also commended: If Phlegm be mixed, opening and attenuating things are to be added; such as the roots of Fennel, Sparagus graminis, and medicines prepared of them,

Alteratives.

In a leek colour'd æruginous choller, *John Langius*. l. 3. epist. r. c. 4. commends Chrystal.

Topical medicines are also profitable to mitigate the heat, as Epithems, Oyles, and Unguents, made of cooling things, which should be applied to the heart, liver, or back. Yet you must be careful that you close not the pores of the skin thereby, and hinder transpiration, and therefore before the height they

Topicks.

are seldom used, unless it be when the heat is equally distributed through the whole body, and it is more commodious if they are applied hot then cold.

The matter being concocted, that nature might be strengthened, and stimulated to expulsion, and that the matter might be expelled either by stool or sweat, the Ancients used great quantities of cold drinks; as *Galen* teacheth 9. meth. cap. 5. and 4. de rat. vict. in acut. 12.

Purgation But if so be that after concoction nature do not institute evacuation, it is to be done by the Physician, with Syrrup of Roses and Violets solutive, the pulp of Tamarindes, Manna, Rubarb, Trypheta Persica, such as have Scamony in them are not to be admitted; yet sometimes some of Electuarii rosati, Mesua, de psyllio and of juice of Roses may be given.

Diureticks For causing Urine in these Fevers an emulsion is profitable, prepared of the four great cold seeds, with the whey of Goats milk, or barley and strawberry water, or with a decoction of the roots of Parsley.

Sydorificks Sweats also ought to be provoked with medicines proper for that purpose, which hereafter shall be mentioned amongst malignant Fevers.

Diet. Diet ought to be thin; but according as the height of the disease is neerer or farther off, it ought to be thicker or thinner. The meat and drink ought to be cooling and moistening, whence a Pisan is profitable in these Fevers, the rest should be seasoned with juice of Lemmon and Pomgranates: The drink should be barley water, or water boiled with the juice of Lemmon or Pomegranates, and saggur or small beer. The air should be cold, and if it be not so by nature, it should be prepared by art.

If Phlegm be mingled with choller, and the Fever be a continued Tertian or burning Notha, blood is to be taken away more sparingly: In the preparation of humours, those things are to be added which attenuate Phlegm. Agarick is to be mixed with the Purgers.

CHAP. XIV.

Of a continued Quotidian.

A continued Quotidian. **A** Continued Quotidian vulgarly called Latica, because it hath a certain hidden and obscure heat, is indeed a Fever continually lasting, yet having every day exasperations arising from indigested phlegmatick humours in the vena cavae.

The

The cause of this Fever is Phlegm mixed with blood in the *Cause.*
vena cava, and there putrifying, and therefore those fall into
 these Fevers which are of such an age and nature as that their bo-
 dies are moister, as children and infants, as also old men and
 such as have grosser bodies, and are given to their bellies and
 to idleness, and dwell in moist places, but not young men and
 such as are choleric.

The signs of continued periodick Fevers are also manifest in
 this Fever, only the violence is most about the evening. The *Signs.*
 heat first is gentle, a little afterwards more sharp, and some-
 times seems to abate, and sometimes to increase, by reason of
 the thickness of the phlegm which putrifieth. The pulses are
 not so thick and frequent, the urine is not so fiery and red as in
 other Fevers but thicker, nor are the other Symptomes so vhe-
 ment as in other Fevers.

Concerning the event. 1. This Fever by reason of the thick-
 ness of the humour is long, and hard to be cured, and there-
 fore dangerous. And by how much the thicker the phlegm is *Prognos-*
 by so much the more violent and durable, so that it is not ended *ticks.*
 before the fiftieth or sixtieth day, and the beginning is scarce
 past before the twentieth. 2. It continueth lesser time where
 many evacuations happen. That which is pure is also longer
 then that which is mixed with choller, and by how much the
 worser Symptomes are present, and the strength weaker, by so
 much the greater danger there is, which if they are not, health
 is to be hoped for. 3. By reason of the duration of the Fever,
 and weakness of the Liver, the sick for the most part fall into
 Cachexy and Dropsie.

As to the cure this Fever is more dangerous in respect of the *Cure.*
 cause, then of its heat; and therefore since it depends on phlegm
 that is to be heat, attenuated, cut, and afterwards being con-
 cocted and prepared, evacuated, and regard is to be had of the
 strength, principally of the stomach and Liver.

Therefore in the beginning the stomach and first ways are to *Lenitives,*
 be opened and evacuated by Clusters and lenitive medicines, or
 else the matter inherent in the stomach is to be ejected by vomit, *Opening a*

But although the cause of this Fever be cold, yet because it is *vein.*
 mixed with blood and putrifieth, some blood may be taken a-
 way by opening of a vein, in case that the urine be thick and
 red, and that the strength will bear it and the age, that nature
 may be eased of some part of her burthen.

Afterwards preparation & concoction of the matter is to be en- *Preparing*
 deavored with attenuating things which do not heat much; there- *and alter-*
 fore ing.

fore in the beginning use Syrrup of Sorrel simple, with honey of roses; Oxymel simple, Syrrup of Hysop, Bittony, with the water or decoction of Maiden-hair, Sparagus, Grasse, Fennel, Hysop, and medicines prepared of those plants; also Spirit of Vitriol and Salt:

Purging.

When any signs of concoction have appeared you may exhibit some gentle Purger of phlegm, of Agarick, the leaves of Senna and such like: Hence you must come to stronger preparing and purging things, and so the matter which cannot be evacuated at once, is to be prepared, concocted, and evacuated at several times. And because a pure continued Quotidian seldom happens, but that either choller or melancholy is intermixed, we are to look to these humours also, and to adde Cichory, Burrage, Fumitory, Rubarb, and the leaves of Senna.

*Provoke
urine and
sweat.*

After the greatest part of the matter is evacuated, the remainder is to be emitted by urine and sweat using such medicines as occasion the same.

*Strengthening
Medicines.*

But since that by reason of the duration of the disease the stomach and liver are especially offended, things that corroborate these parts are to be administered, troches of Wormwood, of Rubarb, of Roses, with the powders of aromatici rosati and diaxyaloes.

Dyet.

The Diet ought to be attenuating, cutting, and cleansing, the meats therefore ought to be of good juice, easie of concoction, and affording little excrement. Fish are not proper in this Fever, the flesh should be seasoned with Parsley, Fennel, Time, Hysop, Savory, Rosemary, Cinamon. In the beginning nourish somewhat more plentifully, that the sick may endure to the height of the disease, but when 'tis near the state abate aliment by degrees. Yet if crudities be in the stomach and first passages by sparing dyet the three first days they may be abated and consumed, afterwards such a dyet as we have mentioned may be observed. In the beginning the sick should abstain from wine, and in its stead use water and honey; yet if by custom it be required, give it small and mixed with water. Small beer is also convenient, when concoction appears, wine is more safely administered, whereby the concoction is assisted, the stomach strengthened, and the humours driven out by urine.

Of the Fever *Epiala*.

*The Fever
Epiala.*

THe Fever called the *Epiala* is referred to continued putred Fevers, which it self is indeed continued and quotidian,

yet

yet differs from the other Quotidians in this, that the sick at the same time endure heat and cold, and the heat and cold together are dispersed through the smallest particles of the whole body, as *Galen* teacheth *de inaq. intemperie. cap. 8. and 2. de diff. Febr. c. 6.*

Galen in the place newly quoted, draws this Fever from acid and vitrious phlegm putrefying; yet in his book of an unequal distemper, cap. 8. he addeth bitter choller, whence he infers that since heat and cold are perceived together in one place, it argues mixture of phlegm and choller; in another place he determines it to arise from vitreous phlegm, part whereof putrifying, excite heat, the other not putrifying causeth trembling and cold. Yet *Platerus* refers them to intermitting Fevers, and says that *Epialae* are generated when intermitting Fevers happen together in one and the same day, and the cold of the one beginneth before the heat of the other be ended, or moreover when intermitting Fevers concur with continued, and the heat of the continued always remains, but the intermittent Fever coming, a trembling and cold fit is occasioned.

The cure of this Fever differs not much from the cure of other Fevers arising from phlegm, only that it requires stronger attenuating and cutting medicines, because there is greater frigidity and crudity in this than in the rest; also though the humour it self seem to require stronger Purgers, yet the weak cannot bear them, and therefore evacuation by degrees is to be appointed.

Of the Syncopal Fever.

Moreover to these Fevers belongs a Syncopal Fever, commonly called a humorous Fever, in which there is more of pituitous and crude humours than in other Fevers that are phlegmatick; and moreover a debility of the orifice of the stomach is adjoyned, whence the sick easily fall into a Syncope, especially when the Fever begins.

This Fever is hard to be cured, since the sick by reason of their extreme weakness and danger of continual soundings, cannot endure necessary evacuations, and especially if the pulse be weak, small and unequal, the Fever is exceeding dangerous.

But evacuations are most properly occasioned by frictions, as *Galen* teacheth in his twelfth of the method of curing, cap. 3. Clysters and Lenitives also with medicines opening the first passages only and causing no commotion of the other humours.

The first passages being opened and cleansed, we come to preparing and evacuating humours, as in other Fevers petuitous, and medicines to prevent the sounding fits are also to be administered.

The meats should be not much, thin as to substance, easie of concoction, and generating as little phlegm as may be, and they are to be taken often. The drink should be wine which hath power to nourish, heat and attenuate, and doth not increase phlegm. Hydromel is also good wherein Hysop hath been boiled.

Diet.

CHAP. XV.

Of a continued Quartane.

A continued quartan.

Lastly a continued Quartane is a Fever, whose heat is indeed continued, yet the fourth day 'tis exasperated, it proceeds from melancholy mixed with blood putrifying in the vena cava.

The cause.

The cause is a melancholy humour putrefying in the vena cava, hence all things that can generate melancholy and crowd it into the vena cava, and putrefie, are the causes of this Fever.

the Diagnostics.

It is known by its continued heat, raging the fourth day, without trembling fear or shaking fits going before, or sweats following afterwards, the pulse in the beginning is small and slow, afterwards great, full, and swifter then in an intermitting Fever, wherein 'tis most intended in the height.

Prognosticks.

This is the rarest of all Fevers, but dangerous and far more desperate then a continued Quartane, and debilitates nature exceedingly; it lasteth till the fourtieth day oftentimes, and beyond it.

Cure.

Most part of the cure is the same with that of a continued Quartane, and because the humour, the cause of the Fever is contained in the vena cava, and there mixed with the blood in the beginning, those things that open the first passages being first exhibited, a vein is to be opened, afterwards phlegm is to be concocted and evacuated. Yet you should heat and attenuate more sparingly then in intermitting Fevers, but to moisten more and adde those things which may allay the heat of the putrifying humours, such as are in other cases convenient against choller.

The humour being prepared, purging is to be used, and a purge should be given the next day after the fit, which at first should

should be given the next day after the fit; which at first should be gentle, but if nature order no Crisis, stronger may afterwards be given; Diureticks and Sudorifiques may also be given after concoction, but such as are not so hot, and those given in inter-mittent Fevers; and when the strength is much debilitated confortatives are to be exhibited, prepared of Burrage, Bugloss, Balm, flowers of Rosemary, Gilliflowers, Confection of Alkermes, and such like.

Such Diet is to be appointed as in inter-mittent Quartanes, yet the diet should be thinner and cool more then in inter-mittent Fevers, since that the heat is greater and the height neerer the use of the smaller sort of wine, although it may be allowed, yet it must be taken more sparingly then in inter-mittents, and if the heat be greater, wholly abstain from wine.

Diet.

CHAP. XVI.

Of Symptomatical Fevers.

BESIDES these continued primary Fevers which have hitherto been explained, there are yet other continued Fevers called Symptomatical and accidental, which happen upon some other disease which hath gone before, and which follows as a Symptome the disease, and is taken away at the cure of the disease, and so these Fevers follow other diseases which being taken away, they cease. Whence the Ancients, also as Galen teacheth, 4. Aphor. 73. said those only were fevourish, which were sick without an inflammation or other distemper, but those that did febricitate by reason of an inflammation of the side, lungs or any other part, they did not call them fevourish, but Pleuretick, Peripneumoniack, Hepatick, or other such like names.

Symptomatical Fevers.

But there is not only one sort of these Fevers, yet the principal and most usual is that which follows an inflammation of some internal part near the heart, or which hath consent with the heart, when from blood powred into the inflamed part and putrifying, vapours are communicated to the heart, and heat it; which in a Pleurisie, Peripneumony and Angina happens as we are commonly taught. But although it cannot be denied but that from the inflammation of these and other such like parts Symptomatical Fevers may arise, and that the Fevers ensuing the inflammations in accidental wounds do prove it; yet if we diligently consider it, all those Fevers which are commonly called Symptomatical are not such but primary.

Differences.

For

For first putrefaction is kindled in the vena cava, whence a continued primary Fever is stirred up; but because nature is burthened with the weight of those peccant humours, she useth to force them as much as it could out of those greater vessels, and from a publique and Kingly seat as it were into lesser veins and smaller parts of the body, the blood with those vitious humours being diffused into those lesser parts causeth inflammation. And it is manifest by this, because a Fever for the most part precedes inflammation it doth not follow it, and oftentimes the matter passeth from one part to another, whence changes of diseases are made. Hence these Fevers are properly called by *Platerus Comitata* rather than Symptomatical, and such *Febres Comitata* are not only those which have an inflammation of any part accompanied with them, but also those, to which other evils are annexed, namely a Diarrhea, a Dysentery, Spots, Measles, the small Pox, wandring pains, the Gout of the joynts, or running Gout, Catarrhs. For all these evils do arise when nature being oppressed with the weight of its burthen of peccant humours, it protrudes some part of them out of the vessels.

Erysipelas
or *Rose*.

A Fever of this kind is also accompanied, which is an *Erysipelas*, called by the Germans *Rose*; for this Fever doth not proceed from an inflammation of an external part, but this evil accompanies the Fever; for when the thinner and hotter blood burneth in the vessels by what means soever, putrifies, and is corrupted, and acquires a vitious quality, which principally is caused by anger, and fear, nature being stimulated protrudes the same to some external part of the body, whence this evil invadeth with a trembling and quaking, and whilest the matter striving to go outwards, ceaseth on the Glandules under the Arm-pits, and about the groin; some of the humour that is stirred up, sticks there, and pain and swellings are there perceived, till at length it manifests it self in the leg or some other external part which may be known by the heat, pain, and rose colour.

But we do not assent unto *Platerus* in that he says that all those Fevers are simple and pure continued, and are without any putrefaction.

The Urines, that we may pass by other things, do manifestly shew putrefaction, which hath the same tokens of crudity and concoction as in other putred Fevers, and nature sometimes critically, sometimes Symptomatically, expells the matter offensive to it; for it doth not only expel by insensible transpiration, and by a moist steam, which useth to be in Ephemeraes and Synochaes which are without putrefaction.

Some

Some of these Fevers whether they arise from an inflammation of the parts, or whether they have that as a companion, are called *Phlegmonides*, which principally proceed from blood; but those which arise from *Erysipelas* or inflammation, are called *Erysipolarodes*, and inflame fires.

To these belong the Fever that leaves fire as it were behind it, which burneth so exceedingly, that all the interals are as it were burnt, but the external parts grow cold, and that during the whole course of the disease; and this Fever ariseth from an *Erysipelas* or inflammation of any internal part, but principally of the stomach, and from blood and Spirits meeting in the part inflamed.

The second kind of Symptomatical Fevers which is called *Lenta*, proceeds not from any inflammation of the bowels, but from some obstruction and hidden putrefaction, that is, from matter without the vessels, spread over the substance of any of the interals, or at least impacted, and putrifying in the capillar veins dispersed near the substance of the interals, and hath its rise from the substance of the interal decaying; whence there is so great quantity as that when the matter is gotten into larger and wider vessels, vapours cannot be transmitted to the heart, and so a *Febris Lenta* is stirred up, which therefore is unequal and keeps no certain order.

This Fever is the gentlest of all, and molesteth not the sick with any grievous Symptome, so that the sick oftentimes thinks himself well. In the mean while the strength decays, that the sick can scarce go forward, and the body is no ways refreshed by aliment, but wasteth by degrees, whence sometimes this Fever is accounted with an *Hectick*, and therefore when there is any suspicion of this Fever, in the first place we must diligently search the *Hypocondries* and *Hypogastries*, to try whether any tumor be to be discerned in any of them; some signs of putrefaction also will appear in the urine, and discover themselves in the Pulse.

This Fever is more durable, and goes beyond the terms of other Fevers, and often endeth not in fourty days, nor is it gone until the humour fastened to the interal be consumed.

The third sort of Symptomatical Fevers is, that which ariseth from the putrefaction of any interal, from whence putred vapours through the veins inferred might be sent to the heart, heat that, and might stir up a continued Fever, whereby the body by degrees might be extenuated and wither. And this Fever is sometimes more violent, sometimes more mild, according

ing as the putrefaction is more or less. This often happens in putrefaction of the lungs in such as are Phthical; so 'tis found that the Caul or Kell, Mesentery, Womb, and other parts are corrupted, and thence a Fever kindled. In like manner from Fistulae penetrating into the internal parts a *Febris lenta* being stirred up, it is observed, that some do consume and waste.

From corrupt milk. The fourth kind of Symptomatical Fevers is when either from corrupt milk, which often happens in Infants, or from blood putrifying somewhere without the vessels, or from worms, putrid vapours are communicated to the heart, that is heated, and a Fever irritated.

Putrified blood,
Worms.

To these may be referred that Fever which ariseth from crudity, which is familiar amongst little children from their eating of sweet things, which hath with it a tumor and inflammation of the Hypochondries, which the Germans call *Das Herngespam*, from the abundance of crude humours collected in the stomach and neighbouring parts, which begin to putrefie and are turned into wind.

Diagnosick signs: Symptomatical Fevers properly so called, are known by this, that they come after diseases of private parts, and the first sort of these Fevers is known from hence, because it follows an inflammation of some certain part: as on the contrary, Fevers called *Comitata*, first appear and invade with rigor and trembling, to which afterwards a Fever happens:

But those *Lenta* or slow Fevers are known by their slow heat; wherewith notes of putrefaction in the urine and pulse appear, the sick are weak scarce able to go, the body wasteth by little and little, and the Fever is lengthened for the most part beyond forty days; they are tormented by the use of purging: But when the cause of these Fevers is hidden, 'tis very hardly to be distinguished, and therefore the Hypochondries and other internal parts are to be observed with great diligence, and we are to enquire whether any tumor or pain be to be found there.

But those which arise from the putrefaction of any part are more easily known, nor indeed can the corruption of the part be hidden, unless it be ignoble.

So that Fever which proceeds from corrupt milk or blood is easily known by its signs; as also that which ariseth from crudity is manifest from their loathing things blowing up and swelling of the Hypochondries.

The Prognosick. Although these Fevers in respect of themselves for the most part are not dangerous because they are mild, yet in regard of their causes, on which they depend, we ought to doubt whether they

they are dangerous or not, as also whether they are long or short; for those which follow an inflammation of any part are short; since that the inflammation it self cannot be long, but the danger of them depends on the inflammation.

The *Febres Lentæ* are for the most part long, and often continue more then fourty days. And although not by their violence yet by their duration they debilitate the strength; they are cured also with difficulty, because their cause pertinaciously inheres in some interal.

Those Fevers are very dangerous and seldom curable which come from the corruption and putrefaction of any part; because the part can seldom be cured.

But those Fevers which proceed from corrupted milk and blood, worms or crudity, are often acute and dangerous, and bring with them grievous Symptomes, as Epilepsies, Convulsions; yet they last not long, neither are they hard to be cured, but the cause being taken away they cease.

The way of cure ought to be aimed at by striking at the cause whereon it depends. If therefore a Symptomatical Fever depend on an inflammation of any part, the cure is to be directed to the inflammation it self, which being cured, the Fever ceaseth. And therefore most remedies which are convenient to assuage inflammations are here useful. Yet in regard of the part affected, the way of cure sometimes differs, the part affected is diligently to be weighed: Whereof it shall be spoken in the cure of particular affects.

The Cure

The *Febres Lentæ* since they proceed from extraordinary obstructions of the bowels, require opening, attenuating, and deterging medicines. And such are to be chosen as are appropriated to each part, and such as strengthen the tone of the interals, which for the most part is debilitated, yet by intervalls gentle purgation may be used. Neither are Diureticks to be omitted in their season. Externally also if the part affected will bear it, Emollients and Discutients are to be applied.

If the Symptomatical Fever proceed from the corruption and putrefaction of any part, that cure is to be instituted which agreeth to Ulcers and Fistulaes of the internal parts.

If it be occasioned by corrupt milk or blood, Worms, or crude and corrupt meats, we are to endeavour that those causes be taken away conveniently, either by vomit or cleansing and evacuating medicines, and together to resist putrefaction and feavourish heat.

In the cure of accompanied Fevers, we are to look no less to the

The cure
of accom-
panied Fe-
vers.

the Fever then that conjunction^{mc} disease or companion, and the motion of nature is not to be impeded, least the peccant humour retained in the body should cause more danger; and therefore although it be not profitable to hinder an inflammation when 'tis beginning: Yet the humour that is the cause of that evil is also to be evacuated, which is most conveniently done for the most part by breathing of a vein, which together affords evacuation and revulsion: Yet it shall be profitable also to empty the first passages, since that oftentimes the matter is gather'd together in them; and since the matter for the most part is thin, and often makes toward the extremities of the body, and is often full of malignity, 'tis conveniently expelled by sweat.

CHAP. XVII.

Of intermitting Fevers in general.

Intermit-
ting Fe-
vers.

After continued Fevers, intermitting are to be explained. But although the Ancients did extend the name of intermitting Fevers more largely, and attributed the same to all Fevers which admit of some change of heat, and are sometimes exasperated, sometimes remitted, and so to continued periodicks: yet afterwards we brought it to pass that those Fevers only were called intermitting, which sometimes cease and come to that apurexy or want of fire.

Their prox-
imate
cause.

The proximate cause of an intermitting Fever is a putred vapour, elevated from the putrefaction of excrementitious humours, not continually as in continued Fevers, but by certain intervalls sent to the heart, and heating the same contrary to nature.

The fire
place of
intermit-
ting Fe-
vers.

But how it comes to pass, that the putred vapour is not continually sent to the heart but at certain times is very obscure. For the explanation whereof since the knowledge of the place wherein putrefaction ariseth, doth not a little conduce, and whence the putred vapours are communicated to the heart, which Galen calls the Furnace and Chimney in his 2. of the differences of Fevers, cap. the last, and in his 15. of the method of curing. cap. the fourth, that therefore is first to be explained. But since 'tis beyond the bounds of our Breviary of Institutions to reckon up the various and different opinions of Physicians concerning it, we will here set down that opinion which we think truest. The Chimney or Furnace and place wherein the matter the cause of intermitting Fevers is generated, are the Mesaraick veins

veins, wherein the matter which sufficeth to irritate each single Paroxysm, is generated during the time of its interval. And that many things which happen about intermitting Fevers do prove; namely Loathing, Vomitting, Dolor of the heart, Extension and pain of the Midriff, Intumescence about the Ventricle, Bitterness about the mouth, Belching, and such like; for in the beginning of intermitting Fevers pure choller is often ejected by vomit in great abundance, which out of the more remote veins could not be evacuated in that manner, and about the cava of the Liver. *Fernelius* says he hath found the quantity of a pound by weight after the death of a Patient.

This choler being cast out the Fever is often cured, which is a sign that it is the cause of the Fever, and that it is collected in those first ways or passages. Which Fomentations also used to the Hypochondries at the beginning of a Paroxysm shews by the mitigation of the trembling and shaking.

This matter is gather'd together in the Mesaraick veins a long time before it brings forth a Fever, but when it begins to putrefie, grow hot, and be changed, its heat being diffused over the whole body it exciteh a Fever; which when it is dispersed, the fevourish heat and Paroxysm ceaseth, and the Fever leaveth so long as till new matter which in like manner putrifieth in its due time, is generated.

But although the matter which is the cause of intermitting Fevers be generated in the Mesaraick veins and first passages: Yet the whole doth not reside and continue included in them, but is sent to the vena cava and arteries, both during the fit and out of the same. Nor is it here necessary to seek for occult and blind passages, through which the putred vapours should be sent to the heart during the Paroxysm, since there are manifest passages enough; for the branches of the Gate-vein are inserted into the substance of the Liver, and the mouths of these have communion with the vena cava, and the arteries going from the heart are joynd in the stomach, guts, spleen and other parts to the Mesaraick veins. Yet 'tis probable that the fevourish matter may be communicated to the veins not principally and only in the Paroxysm, but moreover some part thereof by that passage which is from the Mesaraick veins to the Liver continually may be carried to them; whence both by *Galen. 1. de cris. cap. 7.* and other Physicians a Fever is called a passion of a venomous nature. And that is first manifest from the urines, which shew evident notes of crudity and concoction in Intermitments. Hence also it comes to pass that urines during the Paroxysms are laudable

the cause
of inter-
mitting
Fever
conceined
in the ve-
na cava.

ble and like to theirs who are well, since that the peccant humor is then protruded by nature out of the veins towards the circumference of the body, and so the blood in the veins is become purer, which again in the intervals of fits is polluted by the vitious humour proceeding from the chimney of the Fever. The same is manifest out of those things which happen at the beginning of a fit, and at that time which the Greeks call Epilemasian; for then spontaneous lassitudes, stretching, compression of pulses, and other things happen which indicate that the matter which is to stir the Fever begins to be moved and as it were to swell in those common vessels, veins and arteries.

That vitious humour accumulated partly in the Mesaraick veins, partly in the vena cava when in time it putrifieth, nature stimulated and irritated oftentimes strives several ways, first by vomit and stool, afterwards by sweats and urine sensibly to evacuate the same, as also through the pores of the skin, and by insensible transpiration it may discuss the same being resolved into vapours and steam. For since that peccant humour is not exactly mingled with the blood but confusedly, nature may easily separate the same from the good blood, and may shake it off each single fit; which being discussed, since putred vapours cannot any more be communicated to the heart, the Fever also ceaseth and apurexie ensueth.

*Causes of
the return
of fits.*

But because that as long as the Fever continueth some seeds and sparks are left in the granary and chimney, and seeing that there is imbecillity in the part, 'tis necessary that the humour flowing to it, although it be good, should be defiled with that pollution and excrement which was left as it were with leaven, and through the debility of the part be corrupted, and so new matter of a future Paroxysm be generated. And these fits continue, and so often return, until that those seeds, that putrefaction, and those sparks are fully taken away from thence, and the weakness of that part restored. Yet it seems probable that the whole matter which is the cause of a Fever doth not putrifie together in the first Paroxysm, but that part which is apt to putrefaction, in the other fits the rest, until the whole be putrified and consumed.

*Cause of
fits.*

By these things it is manifest both where the matter that is the cause of putred Fevers is generated, how it causeth a fit, by what ways it is evacuated, and how the matter which is the cause of a new Paroxysm is generated, and so the cause of Paroxysms and the recourse of intermitting Fevers is explained. But what the reason is why these Fevers return at set times, some sooner, some later,

later, is now another question, and that most intricate, which is easier to ask than answer? But that we may here forbear to recite the opinions of others, which are very many, we will mention only that which seems most probable to us, so far as in this humane dimness of our understanding in so obscure a business we are able to discover. And first, that Fevers keep such certain periods, experience doth manifest; whereby it appeareth, that some Fevers return the third, some the fourth day, and that oftentimes it observes not only the same hour, but minute of invasion, although the fits may sometimes anticipate, sometimes retard for certain reasons. But the cause why paroxysms return at certain times, we conceive is to be sought from the diversity of humours: For those effects, as *Valleriola* saith, in any one sort of things, which perpetually agree to the things; and are made in the like manner, into what body, and at what time soever they happen to come, these are to be referred to the proper substance of that of the which they are made; but to make return through certain days; and to irritate accessions, both agrees perpetually to humours and the recourses in this manner, -alwaies at equal intervals (unless a perverting of the order of periods happen from else-where) are made: Therefore it shall be from such or such a nature of humours that the recourse shall be made in the same sort; namely, the causes of periods and intermitting Fevers, are excrementitious humours. *Choler*, *Melancholy*, *Flegme*; and those Fevers which return the third day, proceed from a *Cholerick* humour; those on the fourth from *Melancholy*; those that come every day, so that they are not double *Tertians*, proceed from *Flegme*.

Yet the cause of periods cannot be drawn simply from humours, but as they acquire a peculiar quality from putrefaction or corruption, by reason whereof at a certain time, they wax hot and begin to be moved. For sithence this effect is definite and determinate, which carries it self alike in all individuals, 'tis necessary that it have a certain definite and determinate cause in all individuals that are alike; which since that neither disposition of parts, nor quantity of humours (for we see that although the store of matter decreaseth, and the fits are become shorter, nevertheless they do return at their usual time) nor manifest quality of humour, thickness, visciduity, tenuity, or some such like, which useth to vary, can be a quality; we must needs fly to a peculiar and proper quality and nature of a humour; which also when it is changed, the form of the Fever it self is changed; for when *Choler* is turned into *Melancholy*, the Fe-

ver which used to come the third day, cometh on the fourth; and this quality also may afterwards remain in the humour, when the putrefaction ceaseth, and the Fever depending thereon. Whence, as *Fernelius* in his 10 of Fevers witnesseth, the torments of the Cholick, Pains of the Joynts, and such like diseases arising after long continued Tertians and Quartans; do likewise keep certain periods, by reason of that disposition which they have received from the corruption or putrefaction of the humours.

Order of
the fits

Yet if any one be willing to determine that the said occult propriety is derived, not from corruption only, but that celestial causes do also concur to its generation, I will not much contend with him; for we see that principally about the Solstices and *Aequinoctials*, such Fevers, especially the most durable of them, do begin and end.

But although Fevers keep certain periods, yet there is a certain difference in them also; for sometimes the fit returns just at the expected time: sometimes the following paroxysme returns sooner than the former; which form is called *proleptick*: sometimes the following fit comes later than the former, and that form is called *Hysterick*; and indeed sometimes through the whole course of the disease, such a form is observed, and oftentimes from the beginning of a Fever, until the end of the same the paroxysmes anticipate, or come after the expected time: but sometimes in some there is anticipation, in some post position, otherwise the fits comes at the same time.

The cause
of antici-
pation and
coming
late.

For the most part they say, that anticipation happens when the humours by some error in diet are augmented, or are moved by medicines, anger, exercise, and such like causes. But the fits return slower, when the matter is diminished, or thickned: Which indeed when the accustomed paroxysme is changed, that it may be so, as we do not deny; so when the Fever keeps always some certain form, either *proleptick* or *hysterick*, the cause rather seems to be taken from the diversity of the humour; for although *Choler*, according to its manner, being corrupted, is the cause of a *Tertian*, *Melancholy* of a *Quartan*; yet *Choler* and *Melancholy*, according to the diversity of Bodies and Temperaments, do oftentimes vary something; Hence also it happens, that although that putred leaven, or occult quality introduced by *choler*, be the cause of the circuit of a *Tertian*, *Melancholy* being brought in of a *Quartan*: yet according to the difference of a humour, it may happen so, that the effervescence, or fervency of humours, may come sooner or later by some hours.

Concerning

Concerning the longitude or brevity of some Paroxisms that depends on the paucity or plenty of matter, disposition of the humours and body: For a plentiful quantity of humours is the cause of a longer fit then a small; so a thick humour causeth a longer then a thin, since it cannot be so soon discuss'd as a thin. If the strength of the body be great, which can more easily discuss what is offensive, then theirs who are weak; the shorter fit followeth: Also a thinner constitution of body, as being more apt for the discussing of the matter, is the cause of a shorter fit; a thicker, of a longer. And when all the causes which occasion a short paroxism concur, a very short fit is raised: But when all those that produce a long are present, the paroxism is extremely long. When certain causes are present which make a short fit, and some are wanting of them, an indifferent betwixt both happens.

The cause of the length of Fits.

And so much of the nature, place, and motion of the proximate cause, which exciteth intermitting Fevers; But the more remote causes, and those things which conduce to the generation and corruption of that matter in the Meseraick veins, are meat and drink of evil juice, but yeilding matter for peccant humours answering to their own nature; and an ill disposition of stomach, whereof meats turn into choler, or become sour; an intemperate constitution of Ayr; for although divers humours are generated in different bodies naturally, yet if there be great vehemency of manifest causes, even in bodies of different constitutions, they may produce the same humours and diseases depending on them.

The more remote causes of intermitting Fevers.

As for the difference of intermitting Fevers, they proceed from the diversity of humours; for there are so many sorts of intermitting Fevers, as there are of humours by which they are produced; for there are according to the vulgar opinion, three sorts of excrementitious humours, *Choler*, *Flegme*, and *Melancholy*, and so three kinds of intermitting Fevers, *Bilious*, *Pituitous*, and *Melancholy*; which differences we usually call a Tertian intermitting, a quotidian intermitting, and a quartane intermitting. And in case those humours are sincere, pure Fevers are generated; if they are mixed, spurious. And that Fever which proceeds from pure Choler, is called a pure Tertian, but that which ariseth from yellow Choler mixt with some other humour, is called a Bastard Tertian.

Difference.

But concerning a quotidian intermitting, the matter is not so plain: For *Fernelius* accounts this the rarest of all other, and scarce one of them happens amongst six hundred; and that those intermitting Fevers which daylie afflict, for the most part he rather be-

Of a quotidian, whether any

accounts them double Tertians : But *Platerus* flatly denies a Quotidian Fever, and wholly agreeth with *Galen* 8. *Meth. med. cap. 5.* where he appoints only a twofold crudity; the one nitrous, the other acid : and they only seem to afford matter for two sorts of Fevers; Cholerick and Melancholy. For although Flegme also, according to prehemency; and most principally, be called a crude humour; yet since it is exceeding cold; it can scarcely putrifie and excite a Fever.

Whether
there are
Quintan
Fever.

But whether there are more circuits of Fevers, and whether besides Tertians, Quartans, and if there be any such thing as Quotidians, there are also other Fevers which are extended beyond the fifth circuit, is doubtful. *Galen* saw no such; *Nevertheless Hippocrates*, and other Physitians, observed Fevers which returned the fifth, sixth, seventh, eighth, ninth day : But what the cause of this course is, is very obscure. Some seek the cause of such fits out of the diverse constitution of Choler and Melancholy; and *Andreas Casalpinus Art. Med. lib. 2. cap. 15.* refers Quintans to Choler, Septanes to Melancholy; and determines such slower returns of Fits to be a kind of renewing of one or more simple accessions; and the Quintan to be a kind of Tertian, wherein the third day is without a paroxysm; and a Septan to be a sort of Quartan, renewing the accession of the fourth day. But most derive the reason of these circuits from the various mixture of Melancholy humours with others. But although it be probable that all these Fevers, as keeping longer periods, proceed from a Melancholy humour; yet a mixture of that humour seems not necessary : Because no humour can be appointed to be mixed with a Melancholy, which can be a cause of a slower period than it self : for those humours, both Cholerick and Melancholy, are not alwaies of the same sort; and moreover, the corruption also which they suffer, is not alwaies the same; so that it is no wonder that the effect also varies, which proceeding from them is not alwaies the same : And as in epidemical diseases, sometimes rare and wonderful corruptions of humours happen, so in Intermittents, that some such thing may likewise happen, is not altogether absurd.

Diagno-
stick signs.

Intermitting Fevers are easily known; for they come to Apur-
rexie, and at certain times; and indeed, as *Galen* 1. *ad Glaucon. cap. 5. 2. de crisib. cap. 3. & 2. de diff. Febr. cap. 3.* teacheth, they return with shaking, horror, or cold, For although that sometimes Fevers do occur which seem intermitting, and invade without any rigour, trembling, or cold; yet really they are not such, but only slow and obscure continued ones; or in case they
are

are really intermittent, they are not pure; whose Idea *Galen* propounds but spurious.

But these Fevers are less dangerous than continued; and self-*Prognostome*, unless the strength be decayed, or in regard of age, or *sicks*. Some other cause, or some error committed in diet, are mortal, since it may be convenient during the apurexie to gather strength, and administer necessary medicines.

Concerning the cure of these Fevers in general: Since their cause is collected and generated in the meseraick veins, there purifies, and thence is diffused over all the body, and at length is dissolved by insensible transpiration or sweats: But the cause of the recourse of the Fever, as *Galen* teacheth, 2. *de Febr. cap.* the last is a twofold vitious disposition in a body, the one a certain pollution or putrification left after the former paroxysme; the other imbecility of the member or part, generating excrementitious humours; what therefore is to be done in each sort of Fever, easily appears from hence.

For since the beginning of generation and corruption of humours producing a Fever, is in the first passages, we are to endeavour to purge out that peccant humour, before it corrupts the rest of the blood, and brings weakness, and a vitious disposition to the parts; but we must proceed warily in those evacuations, since there is not the same reason of all intermitting Fevers: For when that vitious and excrementitious humour, the cause of a Fever, in the meseraicks is mixed with blood, crudity also, and concoction, according to their manner are necessary; whereby the vitious humours may be separated from the good, and rendered fit for evacuation: and that often happens in a short time in Fevers full of Cholera, and the choleric humour is otherwise apt enough to motion: But in a Quartan the humour is more stubborn, and moreover according to *Galen* 1. *ad Glau. cap. 11.* no strong medicine is easily to be admitted at the beginning.

And Sudorifiques are not at all (or altogether) to be used, unless evacuations have preceded; for if many vitious and excrementitious humours do hitherto abide in the first ways, it may easily come to pass that by reason of hydroticks untimely exhibited, they may be detrudd thence to the more noble parts, and may become the cause of various and grievous evils, and such as may bring more danger than the Fever itself.

As for breathing of a vein, 'tis not indicated from the primary cause of intermitting Fevers, which is generated in the meseraick veins, where the greatest part abideth: Yet because that

sometimes blood also abounds, which may easily be corrupted and polluted by the vitious humours, and so if it be too plentiful, cannot be well governed by nature when it is weakened by a Fever; and in the progress of the disease, from thence some of the peccant matter passeth into the vena-cava, and is mixed with the blood, it is sometimes needful to open a vein, which nevertheless is not to be appointed presently in the beginning, before the evacuation of the primary passages.

If the Fever be not cured by these evacuations, we are to endeavour that the causes of the returns of fits may be taken away, and moreover two things remain to be done; namely, that that disposition and weakness of the part generating vitious humours, may be taken away, which is performed by altering medicines, which together correct the fault of the humour, and discuss that pollution, and those seeds which were left out of the putrifaction of humours: and indeed that paroxisms depend on that pollution, and that when it is taken away the Fever ceaseth, appeareth from hence, That whilst that is driven by nature to the circumference of the body, out of the veins, and that Pustules are raised about the lips, nose, and other parts of the face, the Fever ceaseth.

Man der Mundt oder die Nase auß schiaget.

But 'tis principally taken away by Sudorifiques; yet there are also certain other medicines known both to Physicians and to the vulgar, which take away fevish fits, and therefore are called *Febrilla*, *Purcatoga*, and such as specifically cause, and are called The flight of a Fever, or *Febrifuga*, which nevertheless cause no sweat; but without doubt some other way take away that seed, and by consequence the paroxism, such as commonly are accounted the powder of burnt shells of Cockles or Snails or of the Pearl bearing shells, or mother of pearl calcined, of River Crabs, and principally their eyes, which are so called prepared, and such like: But how they perform this, is not explained by Authors. That I may speak my own opinion, such like medicines seem by a certain precipitation to take away that force of heating and stirring up a paroxism which is in the humours, to which Opiats seem to belong: yet such like cannot be given safely, unless the vitious humours, and those things which may afford the reason of the antecedent cause be first taken away; for otherwise those things which may be expell'd by nature when it is irritated in a paroxisme, are left in the body, and afterwards may become the cause of a Chachexie, Dropsie, Jaundies, Cholick pains, and of other grievous evils.

Externally also are applied certain medicines to cure intermitting Fevers, of Cobwebs, oyl of Spiders, and certain vesicatories, which without doubt; that which they do, is performed by drawing out, and evacuating of that Feverish corruption and pollution.

Topical Medicines.

CHAP. XVIII.

Of Intermittent Fevers in particular, and first of an Intermittent Tertian.

After we have handled intermitting Fevers in general, we will now go through them in particular; amongst them the most frequent is a Tertian intermitting, which ariseth from Cholera putrifying in the meseraick veins.

An intermitting Tertian.

But there is a certain difference of these Fevers; for first, Cholera it self out of which these Fevers are generated, is not of the same kind; for sometimes the cholera is like to that natural cholera which afterwards is collected in the Galls bladder; sometimes it is preternatural green and æruginous, such as sometimes by those that are Feverish, is evacuated by vomit or stool. Moreover, Cholera either putrifies alone, or else hath some other humour mixt with it; Flegme or Melancholy that causeth a pure, this a bastard Tertian. They differ also in respect of duration; for if the fits are not extended beyond twelve hours, they are wont to be called pure tertians; but in case the Fit be extended above twelve hours, they are no more called exquisite and pure tertians, but either simply tertians, or spurious tertians; and when the paroxysm is extended above twenty four hours, they are called extensive tertians; but this is occasioned either by the thinness or thickness, plenty or paucity of the humour. For by how much the Cholera is thinner or lesser, by so much the sooner 'tis dissolved, but by how much the thicker, or more mixed with thick humours, or the more plentiful, by so much the longer the paroxysm continueth.

Its difference.

The causes of this Fever are all those things which can generate excrementitious cholera, namely a hot and dry distemper; hot constitution of ayr, eating of hot meats, and drinking of hot drinks, using of hot medicines, watching, fasting, labour, and too much exercise: For although that in the Liver also yellow cholera may be generated, yet it is very often generated by the error of the first concoction, and fault of the meseraick vein; therefore whether much cholera be generated in the stomach by reason

The causes generating Cholera signs of a true Tertian.

son of meats, or by default of the stomach, and is carried to the meseraick veins with the chyle, and there is heaped up, and at length putrifieth, a Fever is kindled.

If the causes generating Flegme and Melancholy be annexed to those that generate choler, spurious tertians are bred.

*A pure
Tertian;*

This Fever presently invadeth, if it be pure, with a shaking fit, as it were pricking the flesh; afterwards when the cold fit ceaseth, presently much heat followeth, sharp and biting, and in its vigour is extended equally over the body, whence the sick draw their breath much, and are troubled with thirst. The pulses in the beginning of a fit are little, weak, slow, and thin; but the fit increasing, they become vehement, swift, frequent, and in some measure hard, and void of all inequalities besides Feverish. When the fit comes to the height, and the sick drinks, many vapours are sent through the skin, vomiting of choler followeth, which oftentimes useth to happen after the cold fit also, the belly is loosened, choler is pissed out, or sometimes more then these happen. Afterwards a sweating out of hot vapours ensueth over the whole body, and the pulse is swift, great, vehement, such as theirs use to be who are over-heated by exercise. The Urine is of a light red, or deep yellow, and afterwards hath a white cloud or suspension. The fit lasteth not above twelve hours, and the causes which generate melancholy, have either gone before, or are then present.

*A spurious
Tertian.*

A bastard tertian is known from the causes which do not generate pure choler, but to gather Flegm or Melancholy: The heat is not so sharp as in a pure tertian, but more mild, neither is it presently diffused over the whole body. Neither is this Fever dissolved by vomiting of yellow choler, or by sweat, but certain vapours go out in the declination, and if any sweats come forth, they either are not universal, or if they are universal, they cure not the Fever. The Urine is not so fiery as in a pure tertian, and the signs of concoction do not appear so soon in it. The pulse in the beginning is hard, and that hardness increaseth daylie, until the seventh paroxysm, then by degrees it becomes softer, and the Urines also appear more concocted. The paroxysm is often extended to eighteen hours and more: yet sometimes, to wit if the matter be less, and Nature strong, it is likewise terminated in twelve hours. It endeth not in seven fits, but often endureth till it comes to fourteen, and sometimes to twenty.

Prognosticks:

But these Fevers are least dangerous amongst all the putred ones 4. *Apher.* 43. and such as are pure, do not long continue, but

but at seven fits they are accounted at the height, 4. *Aphor.* 59. Sometimes they are terminated at the third or fourth fit; but spurious tertians, as they are more frequent, so they continue longer: for although if the matter be little, and necessary medicines are timely exhibited, they sometimes cease at the fifth or seventh paroxysm, yet for the most part they scarce end at fourteen fits, and are often lengthned out to the fortieth day; sometimes they continue six moneths, and end with some disease of the Liver or Spleen, or else are also cherished by them:

Although Tertians for the most part are not dangerous, yet sometimes they become pernicious. First, If any error be committed by the sick, or the Physitian. Secondly, If the humour which Nature endeavours to expel, should fall upon any principal part. Thirdly, If the humour be exceeding thin, putred, or filthy. Fourthly, If a thin humour have a thick one mixed with it, and stir the same, and enflame it. Fifthly, If a thick humour poured out by heat, either fall down into some principal part, or cause a dangerous Catarrh, or Asthma, or the Gout, or draw the womb into consent. Sixthly, If the humour acquire a malignant quality.

But in the cure of this Fever, as also in others, regard must be had of the Fever, the cause and nature of it; the Fever indicates cooling and moistning things, the same Cholera also, as being the cause requireth, which also ought to be evacuated: yet if another humour be mixed with it, altering preparing and evacuating medicines, which that humour requires, are to be mixed; and because the abundance of the matter is in the meseraick veins, the vitious humour is to be purged out of them, and if need be, prepared before it infect the good blood: afterwards also it is to be altered, and the disposition of the part generating peccant humours to be corrected. Lastly, We must endeavour that the pollution and putrefaction may be dissolved by Sudorifiques.

First therefore, the first passages are to be cleansed, either by *Purgers.* Clysters, or lenitive Medicines exhibited of the Syrup of Roses solutive, Manna, Cassia, to which also we may add Rhubarb, Agarick, the leaves of Senna, according as the quality of the peccant humour requires. Vomits also convenient may be given, especially if the sick be troubled with pain in the heart, loathing, and a desire to vomit: And since the matter consists in the meseraick veins, and that nature her self at the beginning of the paroxysm strives to expel it either by vomit or stool, the Physitian ought to be observant to it, and to eject the matter, if Nature endea-

Indications and Cure.

endeavour to expel it by stool or vomit; and because the matter for the most part in the first passages is either more abundant, or hath thick humours mixed therewith, there is need not only of lenitives, but those medicines also which we lately mentioned; nay, sometimes of some of the Electuary of Fleawort or Fleabane, of the juice of Roses, Rosati Mesuræ: Yet care must be taken that we do not draw the humours out of the veins into the first passages.

Opening a vein.

Concerning the opening of a vein, although Choler residing in the meseraick veins do not require it, yet if there be store of blood, and the peccant humour out of the first region of the body have penetrated the vena cava, which may be discerned by the thickness and redness of the Urine, and if the party be strong, a vein may be bled; and moreover note, that not at the first invading, but afterwards, Phlebotomy is to be used: Yet regard of the Fever is to be had; for if it be a pure Tertian, which useth to be shorter, a vein is to be opened more timely, if it be required, because if it be referred till after the third fit, the disease comes to its height; but if it be a bastard tertian, you may defer it till after the third paroxysm, namely, because more of the morbid matter is then mixed with the blood in the vena cava; but blood is to be taken away in less quantity in a pure Tertian; because as in continued Fevers that is not the primary indicant, and the strength cannot bear the taking away of a greater quantity, blood may be taken away more safely, and in greater abundance in a spurious tertian: But the opening of a vein is most conveniently appointed during the intermission.

Preparatives.

Afterwards those medicines are to be exhibited which both correct the qualities of the cholerick humour exceeding, whereby it is troublesome to nature, and also the vicious disposition in the part generating excrementitious humours, and such as are contrary to that pollution which remains after putrefaction; such are cooling and moistning things, which together have a power of purging the first ways, and of resisting putrefaction; such are Cichory, Sowthistle, Endive, Sorrel, Barley, the four great, and four small cold seeds, the juice of Citron or Limon, and medicines prepared out of these, Syrup of Sorrel, Acetosa simplex, Oxysauharum, Syrup of Cichory, Endive de acitocitate citri, with waters and decoctions of the same, to which in spurious tertians we may add those things which are proper for Flegme and Melancholy, the roots of Fennel, grass, asparogus, asarabacca, polypodie, cardus benedictus, centurie the lesser, wormwood, scolopendrium, betony, the spirit of vitriol and salt is profitable, cream of Tartar, Tartar vitriolated.

But amongst those medicines there are some which by a certain peculiar force are said to oppugne Tertians; amongst which notwithstanding for the most part manifest causes may be rendered for it: such are Sowthistle, Camomil, Centary the lesser, Plantane, Divels bit. *Specificks.*

Altering medicines being given, if the Fever be more pertinacious, sometimes purging and vomiting are convenient, which for the most part are to be administered on the intermitting day; but if it be advertised that the matter during the paroxysm doth encline towards the stomach, or tend downwards, it is lawful even when the fit is present to administer vomits, or a gentle purge, yet so that before the beginning of the paroxysm the operation may be past, in case a purge be given. *Purgers.*

Amongst the vomits, Asarabacca and Broom are principally commended; amongst the purges, Rhubarb; to those that are stronger, the Electuary or Fleawort or Fleabane, Elect. Rosatem, Meſne, and of the juice of Roses may be given in spurious Tertians; Agarick or Senna may be added, in whom it is also necessary to repeat preparatives and purgations.

The body being sufficiently purged, the remainder is to be taken away by Diureticks: In a pure Tertian an Emulsion of the four great cold seeds is profitable, made with the whey of Goats milk, or the water of Barley, Strawberries, Cichory. In a spurious, a decoction of the roots of Grass, Sparagus, Fennel, Maidenhair, red Parsnips, Bindweed, flowers of Camomil and Wormwood are convenient. *Medicines causing of Urine.*

But principally the Physician ought to imitate nature, which at the end of the paroxysme useth to move sweats; and should discuss the Reliques of the vitious humours by sudoriferous medicines given either before or after the paroxysm; and indeed in pure Tertians, wherein nature usually causes sweat in the end of the fit, it often sufficeth that the sick drink only Barley water, or the water of Sorrel, or Carduus benedictus may be given with the Syrup of the juice of Citron or Limmon. In spurious, hotter medicines are to be used, such as hereafter shall be mentioned amongst malignant Fevers, which being given some hours before the paroxysm, often prevents or cures the same. *Sweats:*

If the Fever be not cured with these remedies, and that there be any signe of viscos matter, and that the Liver and Spleen are likewise affected, regard thereunto must also be had; and since the Liver for the most part in bastard Tertians is obstructed by thick choler, or choler mixed with thick humours, which pollutes the blood, those things which cleanse the body from choler are *Corolordatives.*

Of Intermisting Fevers.

are to be used, to which purpose Wormwood is very good to be used, which hath a force of detarging choler, and bringing away the same by stool and urine, as also hath century the lesser, Troches also of Wormwood, of Rhubarb, Gentian and such like are also profitable; care also must be taken of the Spleen and Stomack, if they are debilitated.

Febrifuga.

There are certain other medicines given somtimes, which are called Febrifuga, of which 'tis spoken in the fore-going chapter.

Topical Medicines.

And besides these, there are yet others, which are externally applied to the body to cure Fevers; namely, a plaister of cobwebs, with unguento populio, the leaves of Shepherds pouch, nettles, crowfoot, and other vesicatories.

Diet.

Concerning Diet, in a pure intermitting Tertian, the same diet useth to be kept for the most part as in a continued Tertian, they are to abstain from honey, sweet things, and all those things which ingender choler, wine is not to be drunk before concoction: but when the notes of concoction have appeared, you may use it, so it be thin and watry; meat is to be given when the paroxysm is past, unless Syncope imminent perswade the contrary, *Galen 10. Meth. Med. c. 5.*

In bastard Tertians two things are principally to be observed concerning diet; first, that the disease by too plentiful a diet may not be increased. Secondly, that the strength by too slender a diet may not be debilitated, which should hold out most in a long disease; and therefore the magnitude of the disease, and the greatness of the strength are to be compared one with another; and in case the strength be greater, and the matter harder to be concocted, the thinner diet is to be used, but the larger diet, if the strength be weak, and the matter easier to be concocted. The drink should not only cool and moisten, but also cut, and therefore it may be mixed with Hysop and wilde Marjerom, and if water sweetned with honey be exhibited, Vinegar being thereunto added, that Choler may be thereby corrected.

CHAP. XIX.

Of a Quotidian Intermittent.

THe second sort of intermitting Fevers is that which proceeds from Flegm, which because it takes them every day, is called a quotidian. *Fernelius* writes that this is the rarest of all Fevers, and that which scarce happens once amongst six hundred: Nay there are some who plainly deny it: and although many are affected every day, yet they are sick of a double Tertian, or treble Quartan.

A Quotidian Fever

The cause of this Fever since it is Flegm putrifying in the meseraick veins, all those things may be causes of this Fever, which conduce to the generation of Flegm, namely, weakness of the bowels, especially of the stomach, heat, cold and moist aliment, and too great plenty of them.

The cause

This Fever is known by the causes generating Flegm which went before, and also by the signs of Flegm abounding in the body, explained in *lib. 3. of Institutions part. 2. cap. 2.* This Fever chiefly comes to invade in the night, only with coldness of the extreme parts, and trembling: The heat after refrigeration slowly invades, so that sometimes heat, sometimes cold is perceived; and the heat at the first doth not seem sharp, but habituous; yet if the hand put thereunto continue some time, it appears a little sharp, and when it is diffused over the whole body, it doth not burn much, so that the sick do not breath extraordinarily, neither are they very thirsty: The face is not very red, but for the most part yellowish, or a little puffed up; the eyes in the beginning are white, thin, and crude; afterwards when the matter is concocted, they become thick, troubled, and oftentimes also red. In the first paroxysms also they sweat not, but in the progress of the disease they sweat a little; the Pulse also is exceeding little, thin, and more then in Quartans, but equally slow; the paroxysm is extended to eighteen hours, and the interval, which is six hours, is seldome pure and free; nay 'tis often extended to four and twenty hours.

Diagnostick signs.

But how long this Fever shall continue, may be conjectured by the signs of concoction appearing sooner or later in the Urine, and by the longitude and brevity of the paroxysm; for if nature timely aim at some evacuation, it affords hopes of shortness of the disease: But this Fever as being that which ariseth from a pertinacious humour is long, and continueth unto forty days

Prognosticks.

three months or more, and is not without danger; and when the Stomack and Liver are much affected with it, the sick are often cast into a Dropie and Cachexy.

The Cure

The cure for the most part is the same with a Quotidian continued; for the pituitous humour is to be prepared and evacuated, to wit, the first passages are to be opened with Clifters accommodated to the pituitous humour; breathing a vein is scarce used, but a Vomir is more useful then in any other sort of Fever, because the stomach is principally affected, but 'tis to be occasioned by seed of Radish, Orach, of Dill, flowers of Broom, in those that are strong, with Spurge, and others that are every where known.

Preparers.

The Flegmatick humour is to be prepared with convenient medicines; the opening roots, Hyssop, wilde Marjoram, Betony, Mayden hair, Agrimony, Groundpine, Camomil, and other things convenient for Flegm, Syrup of Sorrel simple and compound, Syrup of the two and of the five Roots, Honey of Roses, Syrup Byzant, simple and compound, of Hyssop, Oxymel simple and compound with Squills, Spirit of Salt and Vitriol.

Purgers.

The matter in the first place being prepared, it should be evacuated with Agarick, Mechoachan, Turbith, Troches of Alhandal, Elect. Indo Diaphænico, Diacarthamo, pills of Hieca, with Agarick, and such like.

Movers of Urine and sweat.

Sweat and Urine also should be provoked with medicines made of Fennel, Cardus Benedictus, Salia Parilla, wood of Sassafras, Treacle, and Mithridate; and lastly the Bowels, but especially the Stomack and Liver are to be strengthened.

C H A P. X X.

Of an Intermitting Quartan.

A Quartan.

THe third sort of intermitting Fevers which ariseth from a Melancholy humour putrifying in the mēseraick veins, and seizeth on the fourth day also, whence it is called a Quartan.

The cause

The proximate cause of a Quartan Fever is a melancholy humour collected in the mēseraick veins about the spleen and adjacent Bowels, and there putrifying, and that sometimes natural by its own nature cold and dry, and sometimes it participates with some adustion; But the more remote causes are, all those things which conduce to the generation of black and melancholy humours, namely meats and drinks apt to generate this humour; amongst the which is vinegar, of the which *Hypocrates* 3; *vich.*

rat. in acut. t. 38. writeth, it attenuateth melancholy humours, raiseth them, and frames many visions in the mind: For Vinegar is a Leader or stirrer of Melancholy. The time is principally in Autumn, especially if a hot Summer have preceded.

This Fever is known by its quartane circuit, and signs of melancholy abounding in the body, and it invadeth with a certain unequal disturbance of the body, the which a cold shaking fit followeth, which at the first is little, or at leastwise instead thereof there is at the first refrigeration and horreur, in the progress of the disease the cold paroxysm is alwaies greater, and at length most vehement with pain, causing the bones to knock together. The heat is kindled by degrees, neither is it burning, but somewhat milde. The pulse is thin and slow, and although in the vigour of the paroxysm it become swift and frequent, yet in comparison of Tertians it is thin and slow. The Urines at first are thin and white, but in the progress of time higher coloured and thicker. Sweats in the beginning are not frequent, but in the progress of the disease plentiful.

And thus things are in a pure quartan, but in a bastard one tokens of some humour mixed do appear, and heat, thirst, watchings, and other symptomes are more grievous.

This Fever continueth the longest of all other, and oftentimes is not only extended to some moneths, but years; and if it be not gone by the next solstice or æquinoctial, after it was first taken, it lasteth for the most part till the next after, and for the most part goes away in the Spring. 'Tis safe and without danger, if it be legitimate, and without any disease of any of the bowels: But that which is joyned with black choler is more dangerous, as also that which is with some grievous distemper of some of the intrals, and casteth the sick into a dropic, the scurvie, or a consumption.

As concerning the cure, if this Fever proceed from a pure melancholy humour, that since 'tis cold, dry, thick, 'tis to be moistened and attenuated, or if it be also adust, it is in some measure to be cooled, afterwards to be purged with convenient medicines.

The causes generating are to be removed, and in case other humours are mixed, regard must be had of them. The Fever it self indicateth cooling and moistning; yet regard of the strength must be had, least by the duration of the disease that be impaired, as also of the stomach, spleen, and liver, least they are offended.

This Fever is to be handled gently at the first, neither are
Cure strong

strong medicines to be used at the beginning of cure, since the melancholy humour may be exasperated by the use of them; and out of a simple Quartan, a double or treble may easily be raised; Galen 1. ad Glauco. cap. 11. yet there is least danger in Vomits:

Opening
a vein.

The first passages of the Body therefore are first to be evacuated with clifters, lenitive medicines, and vomits also; afterwards in case blood abound therewith, a vein is to be opened; and in case it issue forth black and thick, the greater quantity is to be taken, that by this means both the plenty of blood may be diminished, and that part of the melancholy humour which is poured out into the vena cava may be evacuated; but if the blood coming forth appear to be thin and yellow, 'tis forthwith to be stopped: And indeed where there is store of blood (the first passages being cleansed) a vein may be opened; but if this Fever begin without store of blood, a vein is not to be breathed presently at the beginning, but when some of the peccant humour is drawn into the veins, and mingled with the blood: The Basilick or median vein either may be opened, most commend the opening of the Salvatella; yet they have not as yet rendered any sufficient reason why that should be preferred before others.

Preparers.

The blood being evacuated, the peccant matter must be prepared and concocted, and likewise that disposition of the body to generate vitious humours is to be corrected: And indeed, in case a Quartan Fever proceed only from natural melancholy, moistning things are to be first used, but heating things should be more moderate; but if adust humours are mixed, there will be use of things moderately cooling; but in the progress of the disease, there will be need of cutting and attenuating medicines: If the pituitous humour be mixed therewith, in the beginning there will be need also of attenuating and cutting things, and it may be more safe to heat a little: Hence are to be administered, Borage, Bugloss, Violets, Maidenhair, Cichory, Fumitory, Ceterach, Hearts-tongue, Germander, Ground-pine, Carduus Benedictus, the Roots of Marsh-mallows, Licoras, Chichory, the opening roots, Polipody, Gentian, Fern, the barks of Tamarisk, Capparium, Roots of Walnut Trees, Flowers and seed of Broom, of the Vine, Ash, Citron, juice of Apples, and compounds of these, and sometimes this or that may be chosen or mixed according as the nature of the peccant humour requireth.

Purging
Medicines

The concoction and evacuation of the matter must be by intervals repealed, and when the matter is in some measure prepared, purging medicines are to be prepared of Polipody, Epithy-num, leaves of Senna, roots of Jalop, black Hellebore, lapidis Lazuli,

Lazuli, and compounds of these Syrup of Apples, Regis Sapor, Electuary called Diacatholicon, Confection of Hameck, with the compound powder of Senna and Diasenna, Tartarious pills, or pills evacuating melancholy of lapis Lazuli, Armoniack, beginning with the more milde or gentle ones.

A Vomit also is convenient, by which oftentimes pertinacious Quarrans are cured: So *Galen* of Treacle *ad Pisonem*, cap. 15. the day before the fit, after Supper he gives a vomit, the next day after early, the juice or dilution of Wormwood, and two hours before the paroxism, Treacle; the gentler Vomits are of the decoction of Dill and Radish with Oxymel; the stronger are Asarabacca, and Gratiola, or Hedge-hylop; The strongest were made by the Ancients of black Hellebore; at this day such medicines are made of Antimony.

Vomits

If the Hemorrhodes can be opened, there will be much good expected thereby; seeing that the flowing of these, preserves and frees a man from many diseases arising from adust and melancholy humours. The opening and preparing things before mentioned, may also cause Urine.

Hemorrhodes.

Moreover, for the discussing the reliques of the matter after purging, and that the matter is concocted, sudorifiques are to be exhibited an hour or two before the paroxism. *Galen* hath two medicines in use for this purpose; the one ex succo Cyranjaco, and Treacle, which is also in use at this day. 'Tis profitable to use the use of Gentian, Carduus benedictus, Antidotus Saxonica so called, and such like.

Sudorifics.

To these belong those medicines also which may help by a certain propriety, or hidden quality, whereof notwithstanding a reason may be given for the most part; to wit, such as may discuss and consume the reliques of the humour, and strengthen the bowels; such are the juice of Wormwood, Vervain, Roots of Masterwort, Plantane. Others also commend other medicines, which for the most part provoke sweat likewise, and may safely be exhibited in due season.

Appropriated medicines.

But Opiates, and such like, which only have power to check the fit, are not alwaies safely to be administrated, because they only stupifie the expulsive faculty, and dull it, and prohibite the endeavours of nature; and hinder the motion of the matter, and the humours offending being detained in the body, may cause other evils. Furthermore above the wrists, and where the pulses beat, may be applied those things which we have mentioned before amongst the Terrians.

Hindring the fits.

In the mean time we should alwaies be careful of the intervals and

and endeavour that they may be strengthened, and that the spleen may not be obstructed, swell, or become scirrous and hardened, which often useth to come to pass.

*Mitigati-
of cold fits.*

Amongst other symptoms, for the most part cold shaking fits are most troublesome to the patient, which may be mitigated by the giving of Treacle or Mithridate before the paroxysm, and anointing of the spine of the back with oyl of Camomil, Dill, Costus, Rue, Pepper, Bayes, with Treacle and Mithridate.

*Topical
things.*

Also there should be applied to those parts that principally cherish the Fever, and which are especially troubled with pain during the time of the fit, plaisters, fomentations, and unguents, especially to the spleen, and those to be made of Marsh mallows, Tamarisk, Broom, Dill, Camomil, Armoniack, Bdelium.

Diet.

As concerning diet, it should be meat of good concoction, and easie digestion, and no ways apt to generate melancholy humours, but rather such as may hinder the increase of them. The meat therefore should be moistning and heating in melancholy, and if an adust humour be mixed therewith, it should be somewhat cooling, yet so, that it may not be destitute of power and force to attenuate that which is thick; the meats also mixed with Burrage, Bugloss, Fennel, Parsly, Capers, Cinamon, Saffron, and such like. Meats affording thick and viscous juices must wholly be refrained. If a Quartan arise of it self without any preceding disease, at first a little thinner diet is proper, then diet somewhat thicker is to be used, and at last towards the height, a little thinner is to be again administered: But if a Quartan succeed another disease, at first diet a little thicker is to be taken, and afterwards by degrees towards the height, somewhat to be detracted from that: And in case the sick will endure it, let him fast that day his fit cometh, or at least six hours before the paroxysm, let him eat nothing, according to *Hypocrat. 1. Aphor. 11. and 19.* For meats then given, afford not any nourishment to the body, but to the disease: And many Quartans, as also Tertians are prolonged, not by their own nature, but by errors in diet, especially because the sick either in the fit, or newly before it comes, do not abstain from meat and drink.

Their drink should be white wine, thin, mature, and not austere, or Beer that hath worked well, and is not flatulent; and the wine and beer may be mixed with herbs good against the melancholy humour above-named.

*Quintan
Fievers.*

Fievers which have longer periods, and return on the fifth or seventh day, or afterwards, since they all proceed from a melancholy humour, or melancholy declining into a black and adust humour

humour, or have a black humour mixed, as is manifest from the duration, and other symptoms, there is also the same reason of curing them as of Quartans: yet what the nature of the humour is, ought diligently to be observed.

CHAP. XXI.

Of Compound Fevers, and Semi-Tertians.

BESIDES these simple Fevers hitherto mentioned; there are yet *Fevers compound-
ed.* Compound Fevers, which is, when one Fever is complicated with another. They are divided into confused and explicit.

They are commonly called confused; when two Fevers begin and end at the same time, so that they can scarcely be discerned; *Confused* namely, when several humours confused amongst themselves, putrify in the same place, and each or every of them preserves its own proper nature; which nevertheless how it might be done, scarce seems possible: But *Implicit* are those that are so joyned together, as that the nature and symptoms of either of them severally and peculiarly may be known.

That complication happens many ways; for first, a non-putred is joyned with a putred, as a hec tick with a putred; moreover a putred with a putred, and that several ways; for first, continued are mixed with continued, and intermittent with intermittent; and that either of the same sort, whence there are double Tertians, double and treble Quartans; or different, but that is rarer, as a Tertian intermitting with a Quotidian intermitting, and a Tertian intermitting with a Quartan intermitting, continued Tertians with intermitting, when a Tertian intermitting with continued Quotidian, or an intermitting Quotidian with a continued Tertian is mixed, which Fevers are called Semi-Tertians.

There are three ways of composition of Fevers, and three differences of compounded Fevers; *Three ways
of composition
of Fevers.* Subintrante, Coalternate, and Communicant.

Subintrante are, when the fit of the one Fever begins before the termination of the other: Coalternate, when one paroxysm being ended, by and by after a short interval, another begins: Communicant are such whereof the paroxysme of the one doth begin forthwith after the end of the other, there being no interval.

Compound Fevers are known by the signs of simple Fevers;

*Signs of
Compound
Fever.*

and principally by the returns of cold tremblings and shakings after rest; and in case a cold fit happens, and sweat do not follow afterwards, or that one sweat happen after many fits. The pulse also if in a continued Fever it be often contracted, motion of new matter, and of a new paroxysm, and so 'tis a token of a compound Fever.

Prognosticks.

But these Fevers are for the most part more dangerous than others, since that they more afflict the patient than simple, and a set time for their paroxysms is for the most part wanting, and especially in case the compound Fevers consist of several humours, and they are more difficult to be cured, seeing those things that are accommodated to one humour, are not fit for another.

Cure

But their cure depends on the manner of cure of their simples, and to every humour and Fever that is kindled, thereby are to be exhibited their opposite remedies.

But that we may say something of compound Fevers, we will add somewhat concerning a double and treble Tertian and Quartan, and likewise of a Semitertian

*A double
Tertian.*

A double or triple Tertian is caused by choler putrifying in two or three places in the meseraick yeins; and indeed, if choler putrifie in two places, a double Tertian is made, which afflicteth either every day once, or in one day twice, that the next day after the sick may be free from the fit: But in case it putrifie in three places, a treble Tertian ariseth, which in the space of two days afflicteth thrice, one day once, the other day twice. Nay choler may putrifie in four or five places, and more, and so many, or such Tertians then will ensue.

*A double
Quotidian.*

A double Quotidian is caused by Flegme putrifying in two places, and invadeth the sick twice in the space of four and twenty hours.

*A double
Quartan*

A double Quartan is caused by a melancholy humour putrifying in two places; and those that are troubled therewith, are one day free from a Fever, and the two next are troubled with it. But such as are troubled with a treble Quartan, are Feverish every day; Nay, 'tis not impossible but that those that are troubled with a compound Quartan, should be affected twice in one day.

*A treble
Quartan*

And indeed a double Tertian is often such from the beginning, but a double or triple Quartan for the most part from the untimely use of medicines, especially of hot sodorifiques, 'tis become such, because the crude matter is only stirred up, but not dissolved, but dispersed over more parts.

Cure

A compound Tertian and Quartan is cured as other Tertians and

and Quartans are: yet this is to be taken notice of, that the meats or medicines may be used at fit times in regard of the paroxifme.

As for a Semitertian which by the Greeks is called a Semiter- *Semiterti-*
 tian fire, 'tis compounded of a Tertian and a Quotidian, the *an.*
 one continued, the other intermitting, and indeed principally
 of an-intermitting Tertian, and continued Quotidian, and hath
 its continuity from Flegm, its horour from intermitting, as
 commonly 'tis taught; whence these are also called horrid Fe-
 vers. But although I should not deny that humours putrifie to-
 gether in the vena cava, and the meserick veins, and that from
 thence there may arise complicate Fevers, which have various
 exacerbations and mutations in their symptomes; yet it seems
 not absurd to call those Fevers also Semitertians, which by their
 nature are indeed intermitting Tertians, yet when 'tis joyned
 with an inflammation of any Intral, a symptomatical continu-
 ed Fever is stirred up; for when the Feverish part of the matter
 is thrust out with the blood into the Guts, Stomack, Liver, and
 parts adjacent, an inflammation is caused, and thence a conti-
 nued symptomatical Fever, which being complicate with an in-
 termitting Tertian, constitutes a Semitertian, which in respect
 of the intermitting Fever is horrid, in regard of the sympto-
 matical continued. That which Physitians observations teach
 us, by whom 'tis found out, by the dissected bodies of such as
 have died in Semitertians, that there are inflammations about
 the hollow parts of the Liver, as also in the Stomack, Guts,
 Mesentery, Kell or Cawl, Spleen; Whence 'tis easie to give a
 reason of a trembling or shaking fit in this Fever; for it happens
 sometimes ordinately, according to the nature of the intermit-
 tent Fever; sometimes inordinately, when the inflammation
 seizeth on some new part, or when quirture or purulent matter is
 made; according to *Hippocrates, 2. Aphorism. 4. 7.* Some-
 times malignity happens to be joyned with these Fevers, and then
 for the most part they are popular, and there are many affected
 therewith.

This Fever is known, and if it be according as it is common- *Signs:*
 ly described, compounded of a continued Quotidian, and an
 intermitting Tertian, by the signs of each Fever; for a conti-
 nued Fever on the one humour, daylie brings a paroxifm, but
 the other every third day, and so in one day there will be two
 fits, in the other but one. See *Galen. 2. de diff. Febr. cap. 7.*
 But if it proceed from an inflammation of any Intral adjoyned,
 signs of an inflammation are present, and together therewith

the intermitting Fever keeps its likeness; malignity, if it be present, is known by its signs.

Prognosticks.

This Fever is altogether dangerous, both in regard of its continuity, and of its symptoms, as also of its inflammation or malignity.

Cure.

The cure thereof depends either on the cure of an intermitting Tertian, or a continued Quotidian, or on the cure of a single or double intermitting Fever, and of an inflammation of Internals.

The

The Third Book.

Of a Hectick Fever.

CHAP. I.

Of the Nature of a Hectick Fever.

AND so these things of putred Fevers are handled, and consequently the first sort of Fevers, whose heat according to inclination, disposition, or habitude, is in the living parts of the body; It still remains that we speak of Hecticks, wherein the Feverish distemper becomes as it were habitual, and so possesseth the living parts of the body, that although it be fostered by no cause, yet nevertheless it can subsist without it. *A Hectick Fever.*

There are two things necessary for the generation of this Fever, aptness of the subject to receive and entertain preternatural heat, and a continual and vehement action of causes heating and introducing Fevers. An apt habit of body to take this Fever, is a hot and dry body, whether it be natural, or from what cause soever it proceed. *Causes*

These Fevers are generated two ways; for either they follow other Fevers, whether burning or lasting, when their heat is vehement; or being durable, it possesseth all the parts, and consumes their moisture; or they arise from themselves, and from evident causes, which if they are weaker or lighter, they produce Ephemeræes; if stronger, they bring forth Hecticks. *Manner of generation.*

But there are certain degrees of a Hectick Fever: The first is, when the rorid humidity is dried. The second, when the fleshy and fatty substance perisheth. The third is, when the heat likewise invadeth the fibrous parts: And indeed when the rorid humidity only grows hot, and is not as yet consumed, 'tis called a Hectick without a Consumption; but when that humidity is consumed and dried up, 'tis called a Hectick with wasting or marasmodes. *Differences.*

A Hectick also is sometimes simple and alone, sometimes 'tis joyned with putrification.

C H A P. II.

Of the ſigns of a Heſtick Fever.

Diagno-
ſtick ſigns.

A Heſtick Fever is known by its continual heat, cauſing no pain, as being equal; and Heſtick which indeed at the firſt touch is weak, afterwards it appears ſharper: It is perceived more in the Arteries than the other parts: And moreover, the heat after taking food, within an hour or two is increaſed, and the Pulse either is changed, as to greatneſs or ſwiftness, yet ſo, that its aſcending appears ſtrong and free, and none of thoſe things precede which forego the fits of putred Fevers moſt commonly; and this mutation of pulse and heat, endures until the aliment be diſtributed. The pulse alſo in this Fever is little, frequent, and moderately ſwift; and by how much the more the ſtrength receiveth this Fever, by ſo much the more the body is conſumed, and the ſtrength debilitated, ſo that the ſick can ſcarce liſt up the eye-lids, and together with it in the ſecond place, fatneſs in Urine ſwims like cobwebs. Laſtly, The ſame things which appear in an hippocratical face, as 'tis deſcribed by Hippocrates, are alſo diſcerned in a maraſmodes or Heſtick, with waſting.

Signs of
differen-
ces.

Signs of a
Heſtick
with a Pu-
trid.

A Heſtick with a Putred, and an Intermittent conjunct, is known from hence; That the fit declining, the heat nevertheless, although remiſs, ſome is left thereof, and there is great languiſhing of the ſtrength, and all the other parts are more temperate, only the parts where the arteries are become hotter, and the pulse loſeth not its ſwiftness and frequency, and the ſick takes food, but is not ſtrengthened thereby. A Heſtick joyned with a continued putrid Fever, is difficult to be known; yet it may be known from hence, namely, becauſe the dry calidity remains after the end of the declination, or of the whole Fever, or its periods; and the body is more extenuated than otherwiſe it uſeth to be, the Urine alſo becomes oylie, as may appear.

Progno-
ſtick.

It is hard to know a Heſtick in the beginning of it; 'tis not ſo difficult to cure at the firſt: but that which is neerer to waſting, or a conſumption, is eaſily known, but hardly cured, and at the laſt it becomes plainly incurable.

CHAP. III.

Of the Cure of a Heftick Fever.

L Affly concerning the cure: The hot and dry diftemper indicates cooling and moistning, the strength requires preservation, and whatsoever of the humid and solid parts is consumed and dried, is to be restored with moistning things; and indeed moistning things are more safe; but in giving cooling things we must be cautious, lest that the native heat already being weak, should by that means be extinguished. But if a Heftick Fever have a Putred one joynd therewith, the Heftick cannot be cured, unless the other Fever be first taken away.

Indications and Cure.

Medicines cooling and moistning are, Violets, Burrage, Bugloss, Waterlillies, Roses, Endive, Succory, Mallows the four greater cold seeds, Poppy. Out of which several medicines for present use may be prepared.

Medicines

Externally, A Bath of fair water may be used most profitably, of which *Galen 10. Meth. Medend. cap. 10.* Which that it may moisten the more, Mallows, Violets, Bearsbreech may be added: 'tis convenient also to use a Bath of warm milk. After the Bath, let the body be anointed, but principally the spine of the back, with oyl of Violets, sweet Almonds, Water lillies, Roses; Cooling and moistning medicines may be also applyed both to the Breast and Liver, as also to the Reins.

External things,

But the greatest hope of cure consisteth in Diet: The Ayr should be temperate, or moderately cold: Meats should be cooling and moistning, easie of concoction, and of good juice, having in them few excrements, and such as is not presently dispersed. In the first place Milk is profitable, which as *Galen 4. de Simp. Medic. Facult. cap. 17.* teacheth, 'tis cold and moist, easie of concoction, of the best nourishment, and hath great power of moistning and refreshing the substance of our bodies; Which lest it should be coagulated in the stomach, some Sugar or Salt should be mixed therewith; and it should only be taken in such a quantity as may well be concocted by the stomach. Strengthening and Restorative Broths are also profitable, of which 'tis spoken else-where, as also food of Almonds, Pine, and Pistack nuts, the four greater cold seeds, and of white Poppy.

Diet.

But meats in such as are sick in Hefticks, should be given in small quantity, but often, by reason of the imbecility of their strength. Their drink in our Countries should be Ale or Beer,

Beer,

Cure of a Hectick Fever.

Beer, or Water and Wine, white and sweet. Their sleep should be somewhat longer. If a Putred be joyned with a Hectick, we must endeavour that the Putred Fever may be first taken away, yet the Hectick not to be neglected, lest that whilst we use remedies only for the Putred Fever, the Hectick may be increased; if we use means only to cure the Hectick, the Putred may be increased.

The

The Fourth Book.

Of the Plague, and of Pestilential and Malignant Fevers.

CHAP. I.

Of the Nature of the Pestilence.

Hitherto we have finished the essential differences of Fevers; it remains that we now should speak of the accidental. Amongst which, the principal and most necessary to be known, are those that enfold the Pestilence, pestilential Fevers and malignant.

And indeed concerning the Plague, with which, although not always, yet most commonly a Fever is joyned; That name is most noted to be attributed to the most pernicious and destructive of all others: But what the nature of that disease is, amongst Authors is much controverted. For first of all, sithence various and several kinds of diseases and symptoms may appear in the Plague: Yet because they are also often perceived without the plague, the nature of the plague is not to be placed in so many diseases and symptoms differing in specie, but in some peculiar sort: Nor doth the being epidemical or contagious, constitute the nature of the pestilence, since other diseases also may be universal and contagious.

But since that this is granted by all, that the Plague spreads most, when many are infected together with the same disease, and they die, and others are infected: Hence it may easily appear, that the plague is primarily a disease of that part on the which life depends chiefly, and the which being hurt, a man is in very great danger of his life, namely the heart, the fountain of life, and store-house of vital heat: For although the humour wherein the venome inhereth may subsist in divers parts (whence the same diseases and symptoms in every pestilence are not the same to appearance) yet in what place soever it subsisteth, it hath

*What the
Plague is.*

*The plague
a disease of
the heart*

a peculiar antipathy with the heart, and thereby destroyeth a man so suddenly.

Whether
the nature
of the
plague con-
sist in pu-
trification.

But from whence that force and quality so mischievous and inimicous to the heart, hath its original, and dependeth, of that there is a very great controversie amongst Physitians; and indeed, some do conceive that the Pestilence only consisteth of putrifaction, and conclude, that by putrifaction the nature of the Pestilence may be consumed. But because they themselves acknowledge that all putred Fevers are not pestilential, they strive variously to determine it in putrifaction, and that they divers ways strive to explain, but all in vain. Whatsoever therefore putrifaction is concluded to be, it sufficeth not to constitute the pestilence; for there are measures and degrees of putrifaction also whatsoever they are, since that they differ only according to *magis* and *minus*, they differ not in their kind, neither do they separate the plague from the rest of the putred Fevers. Moreover the Plague hurteth in another kind then a putred Fever doth; for it spreads it self for the most part in a moment, and brings forth pernicious effects, it diffuseth it self in an astonishing manner, and into whatsoever it enters, a very little of the pestilient venome may lie hidden any where a long time, and remain whole, and afterwards be taken into the body, and on a sudden produce such grievous symptoms, and brings forth such effects as are not in the power of the primary qualities, on which the ground of putrifaction depends: Moreover, if the plague should proceed from putrifaction only, a Fever also would never be without the pestilence: yet since it is observed that a Fever is without the plague, as out of *Hippocrates 3. epid. comm. 4. 25. 55. Galen. de simp. med. facult. de terra Armenia. Fac. de partib. in 1: quarti Avicen. cap. de Febre Pestilent. Alex. Bénédicto, Fr. Valleriola loc. comm lib. 3. c. 18.* and out of others it is manifest. Lastly, the way of cure is far different from that of other putred Fevers, and the pestilient poyson indicates and requires alexipharmall means, which in other putred Fevers are neither indicated nor have any place.

Therefore we have determined that the plague doth consist in a hidden quality, and in its nature wholly adverse to the heart, and that the pestilential poyson is endued with such a quality, which by the effects of it, as we lately said, beyond the primary qualities doth prove.

Contagion is joyned with the pestilence, and pestilential poysons have always contagion joyned with them as a proper accident, because it belongs to all plagues, but not only to the plague.

Therefore

Therefore we define the pestilence to be a venomous disease of the heart, from venomous matter, and in its whole substance peculiarly adverse to the heart, and gotten by infection, and therefore is of it self infectious, and suddenly and joyntly hurting all the actions of the heart, very acut, deadly, introducing destructive symptomes of all sorts. Definition of it.

But what the specifike nature of this venome is, and what its differences are in divers constitutions pestilential, no man can easily explain. To me it seems probable to be the highest degree of corruption, which indeed the humours in our bodies can possibly receive; to which through many alterations, mutations, and fermentations it comes, and into which diseases which went before, at length degenerate: Whence it comes to pass, that when the Plague reigns, other sporadick diseases that come not by ordinary means, and all benigne diseases for the most part are silent, and those epidemical diseases that reigned before cease.

C H A P. II.

Of the causes of the Pestilence.

CONCERNING the causes of the Pestilence, or this great corruption, they are twofold; some of them generating the Pestilence, others propagating the same, which are comprehended under the name of contagion. In the former rank are Ayr, Stars, course of Diet, Poylons, imagination and terror. A cause

For first, Ayr sometimes contains in it the seeds of the pestilence, which when by drawing in the ayr by our breath, men draw in that therewith, and so the pestilence is stirred up in them, and that when it happens, most grievous pestilential constitutions are occasioned, and is far more pernicious then to those to whom the contagion of the plague is only transferred. Ayr becomes pestilential, when there is in it excess of heat and moisture, which dispose bodies to putrifaction; such a constitution of ayr Hippocrates describeth 3. *epid. comm.* 3. yet the Plague may be bred also without such a constitution of ayr, and that very corruption it self is not terminated in the primary qualities; but 'tis necessary that certain occult qualities, and that somewhat divine, mentioned by Hippocrates should concur, but it takes its venomosity and pestilential quality first from heaven, whilst that the ayr by a peculiar influence from the stars, whether it be so disposed in the first qualities, that it should putrifie and be corrupted, or in an occult manner also it be so disposed and affected, Ayr.
that

that in it poysonous seeds are generated, which in their whole substance are adverse to man.

To which thing Astrologers teach, that *Saturn* doth principally act his part. Moreover the Ayr may receive its pestilential seeds from the caverns of the earth, whilst from thence venomous steams exhale, being generated in the ayr long pend up before; to which purpose Earthquakes much conduce, which move venomous steams in that manner, and open ways for their evaporation; so out of a chest which hath been long shut, being opened, the plague cometh forth, as *Julius Capitolinus* hath noted in *Verò*: The same may happen in standing pools and lakes, and corrupted waters in Wells. Lastly, Histories inform us, that the ayr hath been infected by the carcasses of such as have been slain, and by the corruption of multitudes of dead locusts.

Secondly, although the stars by corrupting of the ayr may be the cause of the pestilence whilst they so corrupt it, as that that pestilence which is contained in it, the seeds or sparks being communicated to man, they excite the plague in him: yet by it self also, by affecting of mans very body, they may cause the plague, whilst either they dispose the ayr so, that whether by manifest or occult qualities, 'tis rendred not fit for the preservation of mankind, but corrupteth the humours therein, so that they become of a pestilential nature; or also proximately and immediately by occult influencies, they corrupt mans body, and principally the humours and spirits contained therein; concerning which thing Astrologers are to be advised with.

*Common
Diet.*

Thirdly, Pestilential venome may be generated from common Diet. That which often happens in a long dearth of provision, in Camps and Sieges, where men are compelled to make use of corrupt and unwholsome meat; by reason whereof ill humours are generated; which being detained in the body, are more corrupted, and at length become pestilential; as Histories sufficiently testify.

*Poysonous
things.*

Fourthly Unguents and venomous powders being spread abroad may cause the plague, being that which by mischievous persons hath been done and committed, as histories again inform us: yet if any one would refer this kind of cause to contagion or infection, we will not contend with him.

*Imagina-
tion.*

Fifthly, The cause is imagination, terror, and fear; and experience hath taught us, that some whilst they have beheld those that were infected with the plague, or dead of it, or seeing some go out of a house that was then infected, by reason of too much

terror and fear, have fallen sick of the plague: I have observed the same to proceed from anger.

CHAP. III.

Of Contagion.

AND these are the causes, by means whereof the pestilent poyson may be generated in the ayr, or in mans body; yet it often comes to pals, that neither the ayr, nor evil diet, nor any of the rest of these causes have stirred up the pestilence, but otherwise from elsewhere being brought into some place by contagion, and afterwards by contagion also it is diffused into more places. For although there are other diseases contagious also, yet the plague is the most infectious of all others. Infection.

Contagion is a production of the like diseased or sickly affect in another body, by pollution sent out from a diseased body, but there are three things required to perfect contagion: A contagious body it self that may infect others, a disease or an affect contrary to nature, which is communicated to another, and the body which is infected.

First, a contagious body is that which whilst 'tis sick of any disease, diffuseth not the disease it self (for the accident goes not out of the subject) but some of the morbifique cause out of it self, and communicates it to another, and so in this manner excites the same disease in it. For that which is communicated to another from out of a contagious body, is not the disease it self, but a certain body flying out of the diseased body, and received into another, having power of stirring up the same in it. The Greeks call it *Noseras apocriseis*; and *aportoiar*; and *miasmata*: The Latines, the pollutions and seeds of contagion; and since that we see that such seeds have not only hurtful qualities in the smallest quantities, and that they easily insinuate themselves into the body, but also they endure a long time, and retain their strength entire, and they are most exactly mixed, and are some way spirituous, and 'tis necessary they should lose their store of strength by some occult quality. Infection
how many
ways it is
spread.

But contagion is not scattered after one manner, for sometimes it goes out by breathing, sometimes through the pores of the skin, or in the form of vapours, or of sweat and filth adhering to the skin, and is communicated to other bodies. And this seed goeth out most plentifully from an infected body, when the poyson is too strong for nature, and overcomes it, which happens in those that are dying. The

The seeds of contagion are communicated either by immediate contact, or by some medium and vehicle. This vehicle is twofold; ayr, and some fewel, as they call it: Ayr, when it receives the seeds of contagion from infected bodies, it can carry them to places nigh, yea and somtimes more remote places. That hath the nature of fewel in it, which can receive the seeds of contagion, and communicate the same to another; which kind of bodies are thin and porous, as Flax, Cotton, Feathers, the hairy skins of animals, and garments made of them, feathers also of birds, and birds themselves; and it is found out for a truth; that those pestilential sparks have often lain hid in the cinders or ashes; and it may come to pass, that any one may carry the sparks of it about him in his garments, and not be infected, and yet they being moved and shaken, may infect another.

But the seed of a contagious pestilence when 'tis received into a body, it brings in that disposition with it wherewith that body from out of which it came was afflicted, and that for the most part suddenly, yet somtimes it is found to lie hid some days in the body before it denudates it self.

Thirdly, Concerning the body that receives the pestilent treasury, although no man can promise to himself immunity from the pestilent venome, yet it is certain some are more easily, some more hardly infected. The cause whereof without all doubt consisteth in some peculiar occult quality of the heart, by the power whereof it hath or hath not strength to resist the venomous pestilence; yet because the venomous quality is not transferred without a subject out of the infected body into another, it will more powerfully insinuate it self if it be received into a body proportionable and like unto that wherein it was generated: whence kinsmen are sooner affected then others. Yet there are also other things that occasion the more facile reception of the pestilence; for such as breath stronger, and such as have wide and open pores of their bodies, easier take in the seeds of the plague, inhering in the Ayr, or any place apt to retain it.

CHAP. III.

Of the signs of the Plague.

Moreover concerning the signs, that I may say nothing of approaching signs, desiring brevity, but only by what means it may be known we will speak. Indeed the plague when many have been infected, may easily be known; but before many have been overspread thereby, there is scarce any pathognomick signe by which it can certainly be known, that one or a few being affected are sick of the plague; afterwards when more are visited, it is not so difficult to be known, especially when all sporadick diseases for the most part are silent: For first, the plague seizeth on many, and the most it kills. Secondly, 'Tis contagious, and easily given to others, and 'tis more contagious than any other disease. Thirdly, by its violence it destroys the strength, and principally the vital spirits. Whence fourthly, when little, frequent, and unequal pulses are made, palpitation of the heart happens, lipothymic, syncope, and great anguish and perplexity altogether. Fifthly, If the disease be protracted, and the venome corrupt the humours, evils and symptoms happen of all kinds, and the whole order of the body is disturbed; Fevers happen, divers wheals or pustules, buboes, carbuncles; yet if there are no pushes, bubo, or carbuncle appear, we must not therefore conclude that the sick hath not the plague; for it often happens that before they come out, and can be driven out by reason of the debility of nature, the sick die with the violence of the disease. There happens likewise other symptoms of all sorts; for when the strength of the body is debilitated by the vehemency of the poyson, the humours and spirits are corrupted, the excrements are changed, and the urine either becomes crude, or fully corrupted, the sweats are stinking and untimely, filthy, foetid; ill coloured excrements proceed from the belly, the qualities of the body are variously changed, and there is nothing at all in burning and malignant Fevers, which may not appear likewise in the pestilence: But there is no disease at all to which the Aphorism of Hippocrat. 19. sect. 2. doth more agree: for oftentimes when the plague flatters most, it brings unexpected death; and on the contrary, those that have seemed desperate, often recover when past hope.

But there is the more hopes when tumors come forth suddenly in a place that is not dangerous, and after their coming forth the symptoms

Diagno-
stick signs:

Prognos-
ticks

Of Preservation from the Pestilence.

symptomes abate, also if the wheals are of a good colour, and with remission of symptomes; if medicines, meat and drink are not vomited up again, if sweats come out with lightfomness to the sick, and other signs are discerned, which use to be present in salutary Fevers.

But the greatest danger is, when tumors come not enough out, and carbuncles draw near to the heart, or vanish again; if gidiness in the head, watchings, a coma, or convulsion fits are present, if the sick shall say every thing stinketh, if trembling of the heart, fainting of the spirits be present, if all things are thrown up by vomiting, if the extremities of the body wax cold, if the sweat be cold, if the excrements are of divers colours, black, and stinking, and if the other ill symptomes of malignant Fevers be present.

CHAP. V.

Of preservation from the Pestilence.

Preservatives.

BUT because 'tis safer to prevent the Plague, then being present to expel it out of the body, we should therefore be careful first to prevent it. The way of preservation (with Gods assistance, which we ought to seek by prayers) consists in two things.

The first is, That all those causes that may occasion the sickness may be avoided.

Furthermore, that the force of those causes when they cannot be avoided, may be broken, and our bodies rendred less apt to entertain them, and more able to resist them.

First therefore if the Plague reign any where, all commerce with the infected is to be avoided, and if any one be certainly infected, he should be separated from the rest with all his household-stuff, indeed for many weeks, and the house infected (as hereafter shall be shewed) cleansed; and in case it be doubtful whether any one be sick of it or no, 'tis better to be too cautious then careless.

But if the pestilence be now sown in any place, 'tis safest to remove from thence, according to that common verse,

Mox longe tarde, cede recederedi.

Forthwith far from it go,

Returning come back slow.

The reasons of which do not prove that he should change his place, the assistance of God being implored, he should often use medicines

medicines against poyson, and fortifie the body with those things that resist contagion, as also he should endeavour that his body should be free from all excrements, and preserved in its natural state.

And that we may begin *a posteriore*, the body is not to be *Purging.* rashly weakned with strong medicines; yet if any vitious humour shall be in the body, lest that the force of the Alexipharmical medicines should be debilitated, or the venomous poyson should easily take root in the body, it is to be purged by little and little with lenitives; to which purpose the most profitable are pills of Ruffi, so called from the authors name, and by custome called Pestilential pills; out of which also is made the Elixir proprietatis, oyl of Vitriol being thereunto added: Syrup of Roses solutive is also profitable, and Rhubarb, Agarick, and medicines compounded with them, which are every where extant. If blood abound, it may be abated by opening of a vein.

The Diet ought to be such, whereby vitious humours may *Diet.* not be cumulated; and with meats and drinks most principally things good against poyson should be mixed; and also, if as it may easily happen, any of the vitious humours be cumulated, let them be purged by the said medicines.

And forasmuch as Fontanels take away excrementitious humours by little and little, and hence take away the provision for the plague, they also in pestilential times are profitable.

Mediocrity also is to be kept in exercise and rest, sleeping and waking, and the passions of the mind, and principally as much as 'tis possible, intentive thoughts of the plague, and fear of the same is to be shaken out of our minds.

Besides these, two things more are yet necessary for our preservation from the plague: First to take heed that none of the pestilential seed be attracted; Furthermore, if that happen, we being ignorant thereof, our bodies should be fortified against it.

First therefore we should endeavour that the *Ayr* wherein we *The Ayr* live be pure; and therefore first publike places are to be cleansed *how to be* from all filth, and the ayr should be purified with fire, principally *purified.* of the wood of Juniper, Oak, Pine, Bays, and odoriferous plants being kindled; furthermore, every one should avoid company, and therefore solemn and frequent meetings are justly forbid by the Magistrate. The windows likewise towards places infected should be kept shut, and the ayr (as I newly said) with burnt woods, or with vinegar bezoarted, being poured upon hot bricks, or with suffumigations, or with pyrrion powder kindled, should be purified.

How every man ought to fortifie himself against the Plague. No man should go abroad until the Sun be an hour or two high, neither fasting, nor unarmed with alexipharmaceutical things, therefore balls of Amber, Nodules, sweet Liments mixed with Treacle, oyl of Rue, Zuzedoarie, Angelica, Citron, Juniper, and such like should be held to the nostrils, and under the tongue convenient troches should be held, cordial bags should be applied to the region of the heart.

Amulets

Amulets likewise of poysonous things are commended by many, as Arsnick, powder of a Toad, Quicksilver and such like being prepared, descriptions whereof are every where extant: which whatsoever they do, without question they perform in such manner, that they draw the venomous poyson to themselves, by the similitude of their own substance, and turn it from the heart; as those that are wounded with a Scorpion, with the oyl thereof being externally anointed, are forthwith healed: yet you must take heed that those bags, or mass of such things be not heated by motion, lest the strength of the poyson should be communicated to the heart through the pores of the skin.

Alexipharnicks.

But the greatest hope of health and security, is in medicines that resist poyson, out of which those are to be selected which by long experience have been approved; The samples are, Angelica, Valerian, Tormentil, Carduus Benedictus, Sorrel, Dittany of Crete and white, Rue, Swallow-wort, Scordium, Scabicon, Devils-bit, Burnet, Osmicium, Fluellin, Vipers-grass, Marigolds, Wormwood, Tanfic, Zedoary, Masterwort, Gentian, Juniper berries, Walnuts, Hartshorn, Bolcalmanick, Terra sigillata, an Emerald, a Hyacinth.

Out of which are various compounds; amongst which those that excel, and are approved by long use, are Mithridate, Treacle and Confectio Liberantis, as also that antidote which is ascribed to King *Mithridates*, of which *Pliny lib. 23. cap. 8.* as also *Theriaca Diatesiaron*, to which the moderns have added many more, as the Electuary of Saffron, or of an Egg, as 'tis called, *Dioscordium*, *Tracastory*, *Antidotus Saxonica*, *Antidotus Guidonis de Cauliaco*, *Pulvis Cæsaris rubeus*, and *Gryseus Electuarium Camphoratum Kigleri*, and many more, which the Tracts of divers Authors concerning the pestilence afford such as are profitable, as well for preservation from the Plague, as for the cure thereof; so that it becomes us to be more solicitous about the choice of them, than the store of them here: And amongst so great plenty, 'tis more safe nevertheless to depend on those that have been approved by long use and experience, than such as are newly invented, what colour or pretence soever they afford themselves.

selves. But because those strong and hot medicines are not proper for women with child, nor children, they should have medicines of Harts-horn, the bone of the heart of a Stag (or Deer) the roots of Tormentil, Pearl, Bole Almenick, Coral, Bezor, and precious stones: And since that there is no small difference amongst Alexipharmal Medicines according to the qualities they have besides their occult ones, every one of them doth not agree with every age and season: for in a hotter Ayr, medicines that are not so hot are to be used; which must also be observed in those which in regard of their age or constitution of body are hotter, lest that humour should be kindled, and a Fever from thence arise afterwards; or if some are hotter, they should be prepared with Vinegar, or taken with Syrup acetos. Citri, Sorrel great or small, Pomgranates.

For there is no depending upon one medicine against poison, but they are to be varied, lest that nature should be accustomed to it, and thereby can receive little benefit by it.

CHAP. VI.

Of the Cure of the Pestilence.

IF in any disease in the world, certainly in this an exact way of cure is to be used, since that the smallest fault being committed by any, may become an irreparable damage: But because the right reason of Cure depends on indications, and seeing that the Plague is an occult disease, and its nature consists in an occult quality, which by its peculiar force is mischievous to the heart, and is very contagious; but that is introduced by a cause endued with the same quality; Hence 'tis manifest, that that occult quality indicates a medicine alexipharmal contrary to it, and shews that the cause in the body, whether taken by breathing in, or contact, or by what means soever contracted, should be removed and eradicated; But how that ought to be done, is controverted amongst Physicians.

For first, since that neither Phlebotomy, nor Purgation are indicated by the pestilence, quatenus 'tis the pestilence, whether they are to be used or not is controverted.

First, Concerning the opening of a Vein, since that it neither cures the disease, nor takes away the venome, nor the cause, 'tis rarely to be used, and in that Pestilence which is occasioned by evil Diet, 'tis wholly to be omitted, as also in that which ariseth from a pestilential constitution of Ayr, unless there be very

great

great store of blood which must be diminished, and its heat mitigated: But if the Plague come by infection, and there be that plenty of blood as may cause us to fear lest that a putred Fever should happen, which may become no less dangerous to the sick than the Plague it self, or that it be observed that the blood flows violently to inconvenient places, and that the strength is rather oppressed by its plenty, than dissipated, you may breach a Vein, yet only bleed what the strength can well bear with; and that should be in the beginning, for when twelve hours or more are passed away, 'tis safer to omit bleeding, because the strength being debilitated with the violence of the poyson, it cannot well bear it. Concerning the place for breathing of a Vein, such a place is to be chosen, as may help the motion of Nature, not hinder it, and may together divert the pestilent matter from a noble part; Therefore if a Parotid break out behind the ears, or a Bubo under the Arm-pits, or a Carbuncle in the superiour parts, a Vein should be opened in the Arm on the same side; but if a Bubo come in the Groyn, a Vein should be opened in the foot on the same side. But if a Carbuncle should arise in either of the Legs, seeing that useth to cause an inflammation, and great pain, by which the strength is weakned, 'tis convenient to open a Vein in the contrary leg; for neither is the motion of nature hindred by this means, but the matter is drawn from the superiour parts towards the inferiour, and a great flux to the part affected, and the increase of the inflammation is hereby prevented.

Purgation. Moreover Purgation also is not indicated by the pestilence, nor can the seeds of the Plague be eradicated by any purging medicine, unless perhaps a great disturbance of nature being made, which must then be joyned with danger: and for as much as Nature for the most part expels the pestilent venome to the out-parts of the body, this motion of Nature by Purgation is hindred, and the pestilent venome is drawn into the internal parts, and is more mixed with the humours, and the motion of humours being stirred up, most dangerous, nay deadly vomits and fluxes are occasioned: And therefore not in purging, but in medicines that resist poyson, principally, and next under God the hope of health and safety is to be placed.

Use of Aloxiphars. Wherefore it will be safest for any one that shall think himself to be infected with the Plague, having first implored the assistance of almighty God, to fly to those medicines resisting venome, mentioned in the fifth chapter before, and to take some one experienced and approved medicine; and in case it be vomited up

at the first, then 'tis best to take of it again forthwith; nay, in case it be retained, it will not suffice to take of it but once, but the Alexipharmical medicine should be repeated thrice in the space of four and twenty hours, and so to continue for two days, until that the force of the poyson shall be broken. The medicine being taken, the sick should forthwith compose themselves to sweat, especially the second time after taking, they should keep out the cold Ayr, and if the strength will bear it, they should continue their sweat for two hours space: The sick should by no means sleep, until he hath sweat twice, and between the sweats should be refreshed with Conserve and Syrup of Roses, Sorrel, acetos. Citri, of Pomgranates, red Gooseberries, with cordial and odoriferous waters applyed to the Nostrils, and sprinkled about the Bed-chamber: It shall be profitable also to take warm bread out of the oven, and fill a hollow part of it with Treacle, and apply it to the Navel, or to the Arm-pits, that it may draw the venome to it; The sweat being ended, the body should be rubbed and dried with clean warm linnen clothes, being careful that no cold ayr be admitted, and the sheets and coverings of the beds should be changed. After the sweat, the sick should be nourished with meats that afford good juice, and easie of concoction, yet taken but in a small quantity.

When the sick hath sweat once, if there be need of opening a vein, let it be done in that manner as is already heretofore expressed: And when the Alexipharmicks have been taken of two days by the sick, and the body is Caco-chymick, or the Plague depend upon some internal default of humours, and that great danger of a Fever be to be feared, it will be convenient to administer a purge, that some part of the matter putrifying and increasing, the Fever may be abated; so that Nature may overcome the rest more easily: they should be gentle, as Syrup of Roses solutive Tamarinds, Rhubarb, Agarick, Pestilential Pills, Tryphera Persica, Syr. Diafercos.

Afterwards if it be not needful to cause sweat (which nevertheless ought not to be hindred if it come on a critical day) such medicines are to be continued as hinder putrifaction, resist a malignant Fever, and extinguish the flames in the bowels and humours.

And then we must be wary how we use Treacle, or any of the other hot medicines, without any respect of the disease, nature, age, and other circumstances; wherefore when the Fever hath set upon the body, such things are not to be exhibited, unless they are mixed with cold things, or else cold things alone may be

given, such as Syrup, acetos. Citri, of Sorrel, Pomgranates, red Gooseberries, rubildæi, as also Pearl, Coral, precious stones, Bezoar;

*Cure of
Buboes;*

But since that Nature for the most part useth to send the most venomous part of the matter to the out-parts of the body, and occasions Buboes and Carbuncles: If the venome perfectly, or most part of it be driven out into a Bubo, which may be known by the remission of the Fever and Symptomes, we must expect ripening, although not perfectly, as in other tumors, yet it must be helped by all means; for if either a Bubo come not enough out, or be encreased oyer-much, and still the Fever and symptomes abate not, and the sick no ways mends, we must endeavour that a way may be opened for the letting out the venome.

Therefore either vesicatories must be applyed, or the skin must be scarrified, that the poyson may freely expire, and the pestilent humours fly out; a young chicken also, or pigeon, the feathers about the rump being pull d off, should to the great advantage of the sick be applyed to it, although no incision be made, and that should be often repeated; or a dryed Toad being moistned with wine, should be applyed: afterwards we must endeavour that the rest of the matter may be brought to maturity by proper medicines described every where up and down; into the place opened by Incision, convenient digestives should be put; and if the incision be not made deep enough, and the quittance be still therein detained, the tumour must be opened with an Incision knife, and the Ulcer mundified with proper medicines, and it must not be healed up, until all the venome be come out.

*Cure of
Carbuncles*

But Carbuncles are forthwith to be scarrified, and that deep enough, that the pestilent and corrupt humour may come forth, afterwards some convenient plaister must be applyed, such as may be of the foot of a chimney, and others; described up and down in Authors; Some apply the plaister de Magnete Arsenicali, 'tis proper to apply a dryed Toad also, being first powd'ed, in wine, to the places adjacent, lest the venome should return to the internal parts; some desensitive of cooling, drying, and binding things must be applyed; some make a circle with a Saphire stone about the Carbuncle, lest the poyson should creep farther, and thereby extinguish the same; and if the Carbuncle be too much encreased, and cause great pain, a vein should be opened under the same, that so the corrupt blood may be evacuated, and to abate the heat, a plaister of Houndstongue is to be applyed.

When an Escar shall be generated, it must be taken away with a convenient Unguent, and the Ulcer must be mundified and cured

cured in due manner; but during the whole time of the cure, twice every seven days a potion of the temperate medicines that resist venome should be drunk, lest any of the malignity should remain in the Body.

CHAP. VII.

Of the Nature of a Pestilent and Malignant Fever, and of the difference of them from the Plague.

FOrasmuch as the highest degree of corruption of humours is in the Pestilence, we must as it were ascend to it by the malignant and pestilent Fevers: of them therefore we will now speak, in what respect these three, the Pestilence, a pestilent and malignant Fever differ.

That the pestilence consists in a certain occult quality merely adverse to mankind, and that it is infectious, and that a Fever is not of the same essence therewith. but yet commonly accompanies it, is already shewed: And therefore the Plague it self also, when it hath a Fever joyned with it, may not without cause in some measure be called a pestilential Fever: yet other Fevers also are called pestilent without the plague, wherein the corruption of humours hath not yet attained that high degree which may constitute the nature of venomous pestilence, yet they contain in them somewhat like to that venomous and malignant pestilence, and moreover either are not pernicious, or contagious as the plague, if they are both of them, yet they are less destructive then the plague; for the difference of a pestilential Fever, so called in particular, and of the venomous pestilence (since the nature of them both is unknown) betrays it self in this, by the vehemency and contagiousness of it, which is perceived to be less, not only in sporadick Fevers, but in epidemical pestilentials, then in the plague it self: But concerning malignant Fevers, although they by a general name signifie truly pestilentials, yet in particular these are called malignant, wherein there is a less degree of corruption then in those that are truly pestilential, and wherein the humours which kindle the Fever contain in them some occult quality tending to venosity; whence there is less destruction and infection, sometimes there is none.

The plague pestilent and malignant Fevers, how they differ:

And that the matter may be handled in few words, if it appear by the symptoms in any Fever, that besides putrefaction there is also some occult and maligne quality, and yet but few die thereof, whether they are epidemical Fevers, or sporadick, or contagious,

contagious, or not contagious; this is the first degree of corruption, and such a Fever in particular is called malignant; but in case many die, and yet others are not infected, or although there be some contagion, and some destruction, and yet neither the contagion nor destructive power have attained to the highest degree, and many continue well in health, 'tis a pestilent Fever in particular. Lastly, if so be many which begin to be visited die, and that most every where are infected, and that the contagion be spread over remote places, 'tis the plague.

CHAP. VIII.

To what kind of Fevers Pestilent and Malignant ones pertain.

To what kind of Fevers pestilent and malignant ones belong.

Moreover since there are three kinds of Fevers, Ephemeral, Putred, and Hectick, and again of putred Fevers, there are some differences: 'tis now enquired to what kind of Fevers malignant and pestilent do belong, or whether malignancy and pestilency belong to all Fevers, or to some certain kind only:

But we have already determined that there are no Ephemerals nor Hecticks pestilent and malignant, because that in all pestilent and malignant Fevers, there are manifest tokens of corruption or putrefaction of humours, although that malignant and pestilent humour have likewise a manifest antipathy with the spirits, and may stir up a dangerous Fever.

But all putred pestilential Fevers are continued, since the force of the venomous putrefaction is such, as that it can easily diffuse it self into all the veins and arteries, and may easily corrupt the humours.

But malignant Fevers in particular so called, may also be intermittent, as experience sheweth: Neither is it impossible, that even in the first passages of the body, the putrifying humours may acquire some malignity; and seeing that in such Fevers the force of the venome is not so great, nothing hinders but that Nature may appoint certain excretions at appointed periods.

Continued pestilent and malignant Fevers, are particularly addicted to no sort of them, but according as putrefaction happens into this or that sickly preparation, so this or that continued Fever is stirred up, sometimes a Synocha, sometimes a periodick; whence various symptoms likewise do arise, according to the sickly provision.

Moreover

Moreover concerning the differences of malignant and pestilential Fevers, since that in every such Fever there are found two things, the putrefaction it self, from whence the Fever ariseth, and malignity; in respect of these also, do the Fevers differ For sometimes equally from putrefaction and malignity, is at hand; which Fevers, if the putrefaction and malignity be great, are exceeding dangerous; but if neither the malignancy nor putrefaction be much, the Fevers are not dangerous. Sometimes there is more putrefaction, but the malignancy is not much; and then the Fever comes neerer to the nature of other putred Fevers; but sometimes the putrefaction is not much, but the malignant quality vehement, and such Fevers seem to be milde but they are most fraudulent and dangerous.

Concerning the nature of Pestilency and Malignity, although it be occult, yet from its effects we may apprehend a certain variety, whilst sometimes spots, sometimes Measles, sometimes wheals come forth; sometimes too great sweats, sometimes Catarrhs, Pleurishes and other evils, according to the antipathy which the venome hath with this or that particular part.

CHAP. IX.

Of the causes of a Pestilent and Malignant Fever.

AS for the causes of these Fevers, because their malignancy is less then theirs of the pestilence, and through this, as it were by degrees, we ascend to the Pestilence, those which are the causes of the Plague, for the most part, are the same with those of malignant and pestilent Fevers; but more mild, as principally ayr, heaven, course of diet, and contagion.

Namely malignant Fevers in the first place do arise from a sickly provision of the body; for it ariseth from meat that is bad, fit for corruption, and very obnoxious to putrefaction, whereof Galen may be seen, in his book of Meats affording good and bad juice, and the humours may be so corrupted in our bodies, as that they become venomous, of which I have spoken in the Institutions in the second book, part 2. cap. 12. Furthermore from common causes likewise, namely unprofitable constitution of Ayr, as also from the influence of Stars.

But pestilent Fevers so called in particular, have the same causes, but more grievous, which at length if they are increased, produce the pestilence; whence Fevers malignant and pestilent long continuing, at length turn to the plague.

C H A P. X.

Of the Signs of Malignant and Pefilent Fevers.

*The Dia-
nostick
signs of
pefilent
Fevers.*

IN the same manner is it about the Diagnostick signs: for in a peffilential Fever peculiarly fo called, the same signs almost appear as in the plague, only fewer, or more gentle; and such Fevers are not fo dangerous nor fo infectious as the Plague it self.

But as to the signs of their differences, if both malignity and putrifaction be very much, the strength will be much weakned, and grievous, nay the most dangerous symptomes appear: If the putrifaction be very great, the malignancy little, the feverish symptomes which accompany putrifaction are vehement enough, but the strength is not fo much debilitated. But if the putrifaction be not great, but the malignant quality vehement, the symptomes which accompany the Fever are gentle enough, but the strength is exceedingly weakned.

If the humours only are affected, there appear Buboës, Carbuncles, Imposthumes, Spots, Pushees, and other tokens of putred Fevers, if the spirits are much infected, these signes are wanting, neither is the heat great, the strength suddenly languisheth, and the sick are troubled with faintings, the pulles are unequal, weak, and languishing, and the Fever it self in one two or three days space is terminated by health or death. Lastly, if the heart be much infected, great defect of the strength is present, and the sick do not complain of any great heat.

*Of mali-
gnant.*

As concerning Malignant Fevers, they are very difficult to be known at the first, because the malignity often lies hid, and shews not it self, unless when it take strength; wherefore all signs are diligently to be weighed, and if any thing be suspected, it must be seriously pondered; but all the signs of a malignant Fever are greater then those of a Fever; and the symptomes which appear, are more vehement then those which can proceed from a Fever, namely weakness of strength, unquietness, more anxiety then the feverish heat would occasion; the pulse is frequent, little, weak, or if it seem to be natural, other evil symptomes are present, the Urine somtimes is like unto those who are in health; somtimes thin and crude, having in it no sediment, or in case it have any, 'tis more like an excrement then a sediment; somtimes 'tis thick, discoloured, troubled, muddy, having a red and troubled sediment; the heat is more milde then the nature of the disease

disease, and symptoms seem to afford: the face or countenance is much changed from its lively and natural state; and therefore by these signs pestilential and malignant fevers may be easily known: yet there are other things happen, heaviness to sleep, watchings, deliriums, pains of the head, noises and deafness of the ears, loathing or vomiting, flux of the belly, hemorrhoids of the nose, tumors arise behind the ears, under the arm-pits, and about the groin, also divers specks, and almost no evil which can be observed in other perillous Fevers but may here be discerned.

Concerning the prognosticks, and first of pestilential Fevers, *Prognosticks.* there is the same with them for the most part as of the pestilence; for by how much the more grievous the symptoms are, and the strength more debilitated, by so much the more danger is portended; but by how much the milder the symptoms are, and the strength firmer, by so much is there the more hope of health.

There is the same reason in malignant Fevers for the most part, and what is to be hoped concerning the event in every such Fever, is manifest out of those things which are spoken in the Institutions, Book 3. part 3. chap. 4, 5, 6, 7, 8.

CHAP. XI.

*Of the Cure of Malignant and Pestilential Fevers
in general.*

Concerning the cure of pestilential and malignant Fevers, since there are two things in these Fevers contrary to nature, venome, or malignity, and the Fever; by what means the Fever may be resisted, is manifest from those things that have been said hitherto concerning Fevers: how malignity also may be resisted out of those things which are already spoken concerning the pestilence, is plainly shewed.

The greatest difficulty here is in this, to which of them we must have an eye first, and which last, and how the malignity may be taken away without increasing the Fever, and on the contrary, the Fever may be regarded without increasing the malignity. Which that it may rightly be done, the pestilential venome and malignity, and the putrefaction and Fever are to be considered and poised together amongst themselves, and regard to be taken whence the greatest danger may arise; and in the first place look to that, yet so, as that the other may not totally be neglected.

Where-

*The Cure
of the
plague in
particular.
Sudorificks
Bleeding*

Wherefore in a pestilential Fever, as being that wherein malignity most troubleth, presently we should fly to Alexipharmicks and Sudorifiques; yet those are to be rather chosen which are the more temperate, such as were formerly proposed against the pestilence; afterward if need be, a vein should be opened, and that timely, and scarce after the fourth day, before all things shall be disturbed in the body, and the strength be weakned, namely, when blood doth either abound in quantity, so that it distendeth the vessels, or it is a burthen to the strength, or is stirred by some motion, that it may be feared lest it should be carried to some principal part; but if the disease have made some progress, and the strength now labours, the breathing of a vein is more safely omitted then untimely appointed; but in case the strength will not suffer a vein to be opened, cupping with scarrifying is fit to be used to the inferiour parts.

Purging.

But purging at the beginning of these Fevers is not convenient, unless such as may purge only the first ways without any manifest agitation of the rest of the humours; but stronger are not convenient, because they stir the humours, and mix the venome with them the more, and often cause dangerous fluxes of the paunch.

Vomits.

If the matter tend upwards, and there be any nauseausness, vomit is to be provoked by the weaker sort of medicines causing them.

Hence we are to come again to the Alexipharmical medicines, which notwithstanding should be such, as that the humours should not thereby be increased: Therefore those are to be exhibited that are more temperate, and together do resist putrifaction; such are Sorrel, Citrons, Pomgranates, Cinquefoyl, Tormentil, Hartshorn, the bone of a Harts heart, Bezoar stonie, Bolealmenack, Terra Sigillata, and such like, and medicines prepared of these, but principally Bezoar water is often to be administred, as being that which doth forthwith penetrate, which may be so tempered, as that it may resist the Fever and putrifaction; and therefore with such medicines, Syrup of Sorrel, Limmon, Pomgranates, Sorrel, and young Sorrel, and such like are to be mixed.

*Vesicato-
ries.*

The matter being diminished, vesicatories may be applied to the Legs and Wrists, to the advantage of the sick, since that they draw the venomous matter from the interiour parts to the exteriour, without any trouble or weakning of the strength.

*Cure of a
malignant
Fever in
particular.
Purging,*

But if it be a malignant Fever in particular so called, and the putrifaction more then the malignity, the first passages are first to be purged, and not only with lenitive Clifters, but lenitives

also are to be given, as Syrup of Roies solutive, Manna, Cassia, Tamarinds, Agarick, Rhubarb, Tryphera Perfica, especially if the matter swell: But we must wholly abstain from the strongest, as Scammony, Coloquintida, Turbith, and such like. And indeed, if the putrefaction presently increaseth, and a more vehement Fever is thereby kindled, and especially if the humours swell, presently that is to be done, and that before the third day.

But these things in general cannot sufficiently determine; these tracts in particular of these Fevers, shew the way more clearly; for such pestilential and malignant Fevers are sometimes propagated by infection, when it is most safe that the pollution in what manner soever taken, should be expell'd by Sudorifiques and Alexipharmicks out of the body, and afterwards, if occasion do require, to appoint purgation and Phlebotomie; sometimes likewise nature it self expells the matter to the circumference of the body, as it useth to happen in the Measles and small Pox; but then Nature is also troubled in her work, and the matter which is thrust out to the exterior parts of the body, ought not to be called in again by purging, but 'tis rather to be helped by Sudorifiques and Alexipharmicks in its work; but sometimes the Fever is occasioned by vitious preparation of the humours, or is cherished thereby, and the peccant matter in the Stomack, near the Midriff and first passages, manifesteth it self by vomit, pain, heat, bitterness of the mouth, anxiety, and other tokens, which necessarily should be avoided by vomit or purgation.

The first passages being opened, and the body evacuated, presently the opening of a vein is to be appointed, if it be needful, and that before the fourth day. *Bleeding.*

After purging the body and opening a vein, if occasion require, 'tis convenient to use some Sudorifique, but such as may not increase the Fever, such as we have already proposed; and although sweat doth not always follow, yet such medicines are to be continued and exhibited daylie, that so the body may by degrees be apt to sweat, and that nature at length of its own accord, in its own time, may expel peccant humours by sweat; but the stronger Sudorifiques at the first, debilitate Nature's strength; and since the humours in these Fevers are not alwaies so disposed that they can be discussed by sweats, yet the thinner are dispersed, and the thicker remains behind. Wherefore preparation and alteration of the humours is to be ordered by those medicines which open, and if occasion require, may cut those humours, and may resist ebullition and putrefaction, extinguish
the

*Sudorifiques.**Altering preparing medicines.*

the heat of the Fever, and resist malignity, and may by degrees dispose nature to sweats; such are Sorrel, Scordium, Carduus Benedictus, Scorzoneca; the seed of Citron, Roots of Tormentil, Cinquefoyl, juice of Citron, Pomgranates, and Syrups of these, Spirit of Vitriol: when the humours are sufficiently prepared, unless Nature expel alone, they are to be evacuated by a convenient passage, but then also lenitive medicines must be used, and purgation scarce to be ordered before the fourteenth day.

*Causing
Urine.*

If Nature tend to evacuation by urine, it is to be helped by an emulsion of the seeds of Melons, Citron or Limmon, Carduus benedictus, with the water of Sorrel, Mayden-hair, and such like.

*Topical
things.*

But during the whole time of the sickness, as well in malignant as in pestilent Fevers, medicines are to be applied to the Pulses and heart, such as strengthen the heart, and resist malignity, which are very where extant; Symptomes also, if any urge and debilitate the strength, are to be taken away and mitigated, as in their own place shall be shewed.

Diet.

Concerning Diet; the meat should be of good juice, and of easie digestion; and to beware that when the strength languisheth Nature be not over-burthened; the meats also should be mixed with such things as resist this Fever, we must abstain from wine, unless swooning fits happen; but 'tis more convenient to use small beer, a decoction also of Harts-horn may well be given, with such a quantity of Spirit of Vitriol as may render it grateful to the taste, to which also some Juleps of Roses and Violets may be added: It allays thirst, likewise opens obstructions-drives away putrifaction, and resisteth malignancy; of *Aegyptii*, as *Prosper Alpinus* in his fourth book of Medicines *Ægypt.* chap. the fourth. Pulp. of Tamarinds and Barberries, the fruits being dryed, with the seeds of Fennel or Limmon, they pour them into abundance of fair water, and so prepare a Drink, which they administer to the sick during the whole time of the disease in malignant and pestilent Fevers, and confide much in the use of this Drink, since that it is found that Tamarinds and the fruit of Barberries do exceedingly resist putrifaction in Fevers.

CHAP. XII.

Of a Malignant Fever, with the Measles and Small Pox.

ALthough the nature of malignity, from whence malignant Fevers are denominated be occult, and therefore much cannot be spoken of the differences of these Fevers, yet there is not one reason only even of the same, but some variety shews it self by the effects and symptoms, whence also certain differences of malignant Fevers are appointed, of which we will now speak in particular.

*Small Pox
and Mea-
sles.*

First, there happen Feavers wherein pushes or eminent tubercles break forth, and sometimes certain spots shew themselves: the Greeks call them *Exanthemata*, and *Ectymata* the Latines *Papulas* and *Pustulas*, and at this day they are called the Measles and Small Pox; which names, although they are not used in the same manner by all, yet the most at this day call *variolas*, *parvos varos*, little spots or Measles, and they give this name to those pushes full of humours, which for the most part suppurate, which the Germans call *die Witterne* and *Wotten*; but they call those *Mobillos*, which are spots only in the skin, or rather small tubercles in the skin, which the Germans call *die Wasserne*.

Variola are pustules breaking forth in the skin and parts adjacent, with a continued Fever occasioned by the fervency of the blood, and sent forth by the expulsive faculty; but *Morbilli* are little red spots or tubercles coming out in the skin with a continued Fever, bred by the ebullition of the blood, and sent out by the expulsive faculty.

Definition

Of both kinds there are some differences; for of *Variola*, some are greater, some less; some white, others yellow, or of some other colour; some break out forth with, and rise high, and are ripened and encompassed with a red circle, and come forth without any grievous symptoms, and are not dangerous; others are yellow, come forth slowly, and presently pitch again, and have a livid circle about them, and are dangerous.

To the *Variolas* belong those pustules also which break out of the body, and are about the bigness of Lupines, and shining like Chrystal, out of which a certain waterish substance

*Differen-
ces.*

issueth; which some therefore call Chrystals, the Germans call them *Shaffsblattern*, oder *Windboeten*, which are less dangerous, and without any manifest Fever for the most part they do appear.

Moreover to the *Variolae* belong those tubercles coming out here and there in places, and are free from quittance; which the Germans call *Steinboeten*, and are for the most part the least of all the kinds of *Variol.* and freeest from danger, which befalls children often without a Fever, and are presently healed; so that Infants seldom take their beds for them,

To the Poxes or Measles certain small red tubercles do belong, which invade with heat, and a cough and other symptoms of the Pox, yet less dangerous then the pox; the Germans call them *die Ritteln*, or *die Boteln*, because they are red; sometimes they come alone, sometimes are mixed with the Pox, and sometimes come after the Pox is healed; which disease *Halyaabas* calls *Rubeolam*, *lib. 8. Theoric. cap. 14.* Moreover there are other breakings out which seem to be referr'd to Poxes, which the Neapolitans call *Rossioniam* and *Rossaliam*, as *Johannes Philippus Ingrastiat* of tumours speaks; by others they are called Purples, and Eruthemata, yet some call the red spots or Patechii, purples: They are red, and as it were fiery spots, because scarce worthy to be called tumours, coming out over all the body, as it were certain small Erysipelaes at the beginning of the sickness, or on the fourth or fifth day: In the progress of the disease it spreads over all the body, as if it were on fire, or as if one were sick of an universal Erysipelas, which colour, as in the beginning, so in the declination, is turned into spots, which again on the seventh or ninth day vanish, falling away from the skin like scales of Fishes.

Subjeet.

The subject of spots and pushes is the skin, and other parts answering to the skin in proportion; for it hath been found in dead bodies, that the superficies of the Intrals, and on their skin without side the Pox have been settled.

Cause.

Concerning the cause of these, there is difficult and great controversie amongst Physicians; The Arabicks, and those which follow them, attribute the cause of the small Pox and Measles to the uncleanness of the blood, contracted from the menstruous blood in the womb, by the Infant which was there nourished with it; for they say, that this filth being left in the body, doth lie still, like unto leaven, until stirred; so that
the

the whole blood, boy's like new wine, and so whatsoever is in it of impurity, is separated and sent to the out-side of the body; and they therefore say so, because they observed that almost all men at some time are troubled with the Pox or Measles; and those which have had them once or twice, for the most part are free from them ever after.

Others are against this opinion, and say, that it proceeds from some occult celestial cause, whose impression, children being more infirm, are apter to take, than those that are strong and in years; neither do they think it probable, that Infants are nourished in the womb with unclean blood, or that this impurity can lie hidden so long in mans body, since 'tis known that not only Infants, but youths, nay such as are well in years, and old men also, some times fall sick of the Small Pox, which formerly have been sick of Fevers, and troubled with scabs, in whom (in case any impurity had been in the blood, it ought to have been then taken away.

But in regard both opinions contain difficulties in them, and both seem to be held up with probable arguments; let us joyn them together; or if the Pox and Measles are epidemical and infectious, 'tis not to be denied but that they then arise from a certain peculiar malignant disposition of ayr. Then Infants, as being more tender, sooner are infected; although it cannot be denied, that from an external cause, an infirmity lying hidden within, may be brought forth into action, yet if the power of the malignity be greater, those of ripe years may sometimes be afflicted: But if the Pox or Measles come forth scattered here and there, 'tis probable that they proceed from the impurity of the womb, whereby a vitious disposition of the body is contracted by the party in the infancy, especially if there be no fault in the Ayr; for although an infant in the womb be nourished with the purest blood of the mother, yet when it becomes bigger, and wanteth more nourishment, it cannot be but that it must draw some of the depraved humours which are cumulated in the womb with it. Whence it is known, that Infants have been born sick of the Small Pox; or had them come forth presently after they come into the world: Yet 'tis not impossible but that from ill Diet the same vitiousness may be contracted, as from the menstruous blood in the womb; and that may happen to those that have had the Small Pox twice or thrice, although it may likewise happen by reason of the first pollution.

*Whether
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tion and defilement, of which some reliques were left.

The small Pox and Measles alwaies come forth with a Fever; for they are stirred up by a certain crisis, and that ebullition not only happens to the subcutanial veins, but also to the greater; whence heat is communicated to the heart, and a Fever is kindled, and that Fever is made a putred Synocha, as may appear by the equal heat, and the matter contained in the Pox; and that which is gentle, often vanisheth within a few days, neither is it regarded by Infants, nor the standers by; but that which is more vehement, if the disease be to determine with safety, will abate when the Pox comes forth; somtimes these Fevers become pestilential, and then many Infants are extinguished.

And thus the small Pox and Measles are generated from internal causes; yet external causes likewise do often concur, as humours corrupting in this manner, or lying hidden, have force of moving: The first is Ayr, by reason of the influence of Stars, or causes otherwise so disposed, as that they may corrupt the humours in this manner. Moreover contagion, when a certain sickly effluviu or steam from bodies diseased of the small Pox or Measles, is communicated to another body, and causeth the same disease therein.

But of Poxes and pushes there is certain differences, as hath been said, in substance, quantity, and quality. According to substance, some consist of this, some of that humour; according to quantity, some are big and many, others small and few: according to quality, some are white, others red, yellow, livid, violet colour, &c. Some come out suddenly, others slowly; some are presently healed and vanish, others continue long; some afflict only the external parts of the body, some the internal also.

*Diagno-
stick signs.*

But when the Pox or Measles are coming, there is present pain in the head, eyes, and throat, an itching of the nostrils, sneezing, terror in sleep, fits like epileptical ones, pain on the back, burning and pricking in the skin, difficulty of breathing, a dry cough, trembling of the feet, yawning, retching, palpation of the heart, which actions so hurt, proceeds from the ebullition of the blood, and fuliginous vapours sent from the heart, and dispersed over all the body. Their Urine is often like unto theirs who are in health, the peccant matter being thrust out to the extremities of the body; yet somtimes 'tis troubled by reason of the great ebullition of humours, the he-
morrhodes

hemorrhodes of the Nose are frequent, tears use to fall from the eyes of their own accord, or the eyes shew as if they were ready to weep; somtimes vomiting happens, the face and eyes are red, the skin rough, the voice hoarie, and lastly, a Fever by the ebullition of humours is kindled; If these signs therefore for the most part are present, and are increased on the third or fourth day, and certain red spots appear in the skin, 'tis a sign that the Pox or Measles are at hand; and this suspicion is increased if the Pox reign thereabouts. A little afterwards those specks are exalted like grains of Meller, and afterwards changed into pustules full of quitture, and are become Pox, or are extended abroad, and small tubercles are made, and the Measles are produced.

The nature of humours is principally known by the colour, for if the pox proceed from a cholerick humour mixt with blood, they are more red, and do itch more; from Flegm, they are whiter, from melancholy blacker: somtimes likewise they are of violet colour, green, lead colour, and with greater corruption of humours: If they possess not only the skin, but also the internal parts, the Fever is greater, thence comes great difficulty of breathing, straitness of the breast, a greater cough, pain in the stomack and guts, most vehement.

Signs of Causes, and of the part affected.

Small Pox and Measles are numbred amongst acute diseases, and are terminated within fourteen days; they come forth commonly about the fourth day, they increase till the seventh, the height is manifest the eleventh, and from thence to the fourteenth is the declination; but the drying of them continueth till the twentieth day somtimes.

Prognosticks.

The Fever adjoyned, the magnitude of symptomes, the manner of the Pox, and the strength or the sick shew the event. For if the Fever and all the other symptomes after the coming out of them do abate, if large hemorrhodes of the nose have preceded, if the pustules are great, white and red, soft, eminent, not alike, come forth quickly, and are soon ripened, a good event is to be hoped for.

On the contrary, the Fever if it be great, and be not mitigated after the coming out of the Pox, and the tubercles are violet colour, green, livid, hard, contiguous, come forth and ripen slowly, and the symptomes which use to be in malignant Fevers be more grievous, the strength weaker, they portend danger, and either bring death, or some great evils in the eyes, nose, chops, gullet, lungs, guts, liver, reins, and leave filthy pits and scars in the skin.

There is in a manner the same reason of the Measles, which the more milde the Fever and symptoms are, the less danger; but by how much the greater, the more danger is adjoynd with them; they are sooner discerned, neither are they so lothsome to the sight; red ones likewise, and those that soon appear are more mild, but those that are green, violet colour, black and come forth slowly are worst.

But the worst is, when the Pox or Measles come not throughly out, or do vanish again, for then by the matter left within, or returning in, a greater Fever is kindled, symptoms become greater, and the sick, for the most part, perish.

Indications and Cure.

The chief scope of the cure must be, that since Nature strives to expel the matter to the remote parts of the body to assist it: the second is, That the pravity of the matter may be corrected: The third, That the strength may be fortified: And lastly, To take care that no part of the body receive any detriment.

The endeavours of Nature are furthered if the humours are driven out to the circumference of the body, and the impediments that may disturb the matter in its coming forth, whether it be store of matter, or pravity of it, or obstruction of the bowels must be taken away.

Bleeding.

But because this evil principally invades Infants, breathing of a vein is not necessary, since their age will not tolerate it, but if it happen in an age that will bear it, and the abundance of blood require evacuation, presently at the beginning before the becoming out of them, a vein is to be opened, that nature being eased of part of its burthen, may the easier expel the remainder.

Strong Purges are not to be used, lest nature should be hindered in its endeavour, or a dangerous looseness should be occasioned; yet if the body be bound, it may be relaxed by a lenitive Medicine or Clister, which together allays the heat of the humours, and strengthens the internal parts.

Expelling things.

Moreover we must observe whether Nature do its office in expelling; for then there is no need to help it with many medicines, especially heating ones.

But if the Pox come out slowly, Nature should be helped with expelling Medicines; yet such things should be mixed therewith, as may strengthen the internal parts, mitigate the heat of the humours, and resist malignity.

The expelling Medicines are, Roots and Seeds of Fennel, Turnip,

Turnip, Carduus benedictus, Columbine, Limmon, the Roots of white Dittany, Burnet, Maidenhair, Marigold flowers, decoction of red Parsnips, Scordium, Scabions, Myrrhe, Figs, Lentiles, and other things that resist malignity.

These things cool and resist malignity, Sorrel, young Sorrel, Lettice, Waterlilies, Purcelane, Barley, Tormentil, Endive, Cichory, Juice of Limmons, Oxylaucharum, Rob of Currans; In giving of which, regard must be had to the malignity and Fever together, and according as need shall require, the medicines must be chosen or mixed.

Cooling things.

Medicines of Figs, Lentiles, Lacca, and Tragacanth were, in use amongst the Arabians, which were likewise used by later Physicians; yet if the malignity be great, you may try to more exquisite resistors of poyson.

But principally we must endeavour to beware that the sick take not the fresh ayr, but be rather placed in a hot place, that the pores of the skin may be kept open, and that nothing may hinder Nature in expelling,

And we must be careful also, that the eyes, nostrils, and internal parts may not be hurt; and therefore the Lungs are to be fortified and strengthened with medicines of Poppy, Lentiles, Violets, Tragacanth Roses, the guts with strengthners, and moderate binders, the eyes, and nose with such like, as their infirmities do shew they have need of. The mouth and chops should be washed with decoction of Plantane, red Roses, flowers of Pomgranates, Prunellas, Syrup of Pomgranates, and such like.

How the parts are to be defended.

Whilst the wheals are ripening, there will be much itching, but beware of scratching, lest you thereby cause scars in the skin; if the quittance be white, and the pustules not too great, 'tis best to commit the whole business to nature; but if they are great, or many of them joynd together, when by their whiteness, softness, and freeness from pain they shall appear to be ripe enough, they may be opened with a silver or golden needle best.

Concerning Diet, the sick by all means must be kept from the cold ayr, neither must he be kept too hot, lest it make him faint: The manner of Diet as in other acute Fevers, is to be appointed, namely thin; yet to Infants, if their stomachs will bear it, some meat may be given, because their bodies are not diaphoretick, and by reason of their store of innate heat, cannot so well endure fasting: from meats that are salt, acrid,

Diet.

flat, which may increase an ebullition of humours, we must refrain, and those that moderately cool and bind, and allay the heat of the blood, must be administered. Wine at the first is not convenient, but rather small Beer, or Barley water, but in the progress of the disease, when the symptoms slacken, to those that are accustomed to it, a little of the smallest wine may be granted.

There ought to be temperate moderation of the other non-naturals likewise, watchings and sleep, the sick should sleep moderately: In the beginning of the Pox or Measles, there should be gentle frictions of the legs and arms used, whereby the humours might be called out to the circumference of the body. 'Tis in use to put a red cloth to the bed in the sight of the sick, to cause motion of humours to the exterior parts. The Belly should be kept open with a gentle Clyster, if need require: Lastly, all vehement perturbations of the mind must be avoided, especially anger and fear.

CHAP. XIII

Of the Spotted Fever.

Moreover, another sort of malignant Fever is, when certain spots like the biting of gnats appear in the skin; There are of divers colours, but principally red, called by Authors *Puncticula*, *Peticula*, and *Patechia*, whence the Fevers are also called *Peticulares*, *Patechiales*, *Lenticulares*.

These spots are without all itching, extuberancies, and ulceration, as in *Poxes*; and these spots in these Fevers appear principally in the back, arms, legs, and breasts, namely in places through which the most eminent veins and arteries do pass, but in the face they do seldom appear, because it is always obvious to the external Ayr.

These spots have their original from the thinner parts of the putred and corrupt humour, whence they suddenly come out and vanish; but although they are made by the expulsive faculty, driving this part of the corrupt humour to the extremities of the body; yet that seldom happens critically, because they come out for the most part at the beginning, the matter being not as yet concocted, neither is there any notable evacuation of the matter made by them, nor the sick are not the better for them, but for the most part by how much the more plentifully they come forth, by so much the greater store of corrupt matter is indicated, which notwithstanding as is said already, is not sufficiently evacuated by those spots.

There are of those spots several differences; for first, they differ in colour, some are red, arising from the more temperate blood putrified; others yellow & green, when choler is putrified; others, Pomgranet colour and black, when melancholy, putrifieth. Moreover they differ in quantity, for some come out more plentifully, others more sparingly; some are greater, others less, according to the quantity and thickness of the humour, and strength or weakness of nature; some come out at the beginning, others in the progress of the disease.

This Fever is known by the signs of Malignant Fevers in general already set down; and when the spots joyn together, they shew malignity more plainly.

But what event of these Fevers may be hoped for, is manifest

*Pregno-
sticks.*

fest by the prognosticks of malignant Fevers in general. Concerning the spots themselves, although it be good that the peccant matter be carried to the extremities of the body, yet by these spots they cannot sufficiently be evacuated; therefore although if they are plentiful, they shew that store of matter is present; yet they shake it not off, and therefore they portend danger rather than health: Neither is their paucity always good, and although it signify no store of matter, yet it also denotes debility of nature: These spots (if they lie hidden) are evil signs; because they shew that the matter which before was coming to the outside of the body, does now tend inwards, and go to the head, heart, or some internal part. Red spots are most safe, yellow and green worse, and pomgranate colour and black most dangerous. Although such as come out at the first appear symptomatical, yet those that break forth the seventh day, or thereabouts, are critical; yet unless other good signs are present, put no confidence in them, because they do not sufficiently evacuate the matter; but if they come out slowly, 'tis evil; for that happens either by reason of the thickness of the matter, into which if the malignity fall, 'tis not easily overcome, or else by reason of density of the skin, which hindreth free transpiration.

Cure.

Lastly concerning the cure, those things that are spoken about the cure of malignant Fevers, are here also convenient, namely, the belly is to be loosned either by Clister or lenitive medicine; or if the matter tend upward, and the sick be inclinable to vomit, a Vomit must be given.

Bleeding.

Then if occasion require, a vein is to be opened before the fourth day, or else afterwards to be omitted; but whether the spots now coming forth do hinder the breathing of a vein, is shewed in the *Institutions lib. 5. part. 2. sect. 1. cap. 17.*

Sweats

But since nature it self strives to protrude the matter we see at the extremities of the body, and 'tis profitable in all malignant diseases to drive out the matter from the greater to the lesser vessels, and to free the bowels from vitious humours, the endeavours of nature is here to be assisted, and the matter tending to the outmost parts of the body, is by it to be evacuated; because that otherwise that which is malignant will admit of no concoction.

Therefore let the sick be kept in a place moderately hot, and forthwith some Sudorifique medicine, and which also may resist malignity given, such as are before propounded for the plague

plague and malignant Fevers in general, and for the Measles and small Pox; yet those are to be selected amongst them that may not increase the feverish heat; and the Fever and the malignity are to be weighed together, and of that which most requires it, regard must be taken.

Sometimes a looseness happens in this Fever, which unless it be too great, should not be stopped, but the business should be committed to nature, and in the interim, only with altering medicines, and such as resist malignity, the morbifique cause must be resisted.

Afterwards to fortifie nature, Pearls, Coral, Hartshorn, juice of Pomgranates, Citron, Confectio de Hyacintho, Alkermes, and such like are to be exhibited.

Externally likewise medicines are to be applied to the region of the heart, and to the pulses, which draw venome from the heart, and resist malignity, and some use an unction ex Hydræolo, and niter to relax the skin, and draw out humours.

Neither is it unprofitable to apply vesicatories to the arms, especially if the external parts are cold, and the internal burn, and that pains in the head, deliriums, a lethargy, and other symptoms in the head are present; for so both the humours are called from within outwards, and are likewise refelled from the head.

When a looseness comes, what must be done.

Topical medicines.

Vesicatories.

CHAP. XIV.

*Of the English Sweat.**The English sweat*

THere was a kind of Fever malignant, which began in *England* in the year 1486. and thence it took the name of the *English Sweat*, and it reigned there about forty years, and killed almost an infinite number of *Englishmen*: Hence being spread through the *Netherlands*, *Germany*, the *Low Countries*, *Holland*, *Zeland*, *Brabant* in *Belgia*, *Flanders*, *Dane*, *Norway*, *France*, it continued until the year 1530.

The same Fever was accompanied with *Sweats*, and was called the *Sudatory Fever*; for those which were troubled with this Fever, abounded with *Sweat*, without *Bubo*, *Carbuncle*, or *puttings forth*; the sweat perpetually and in great abundance coming out, until the dissolution of the disease, which hapned within twenty four hours space: Together the sick languished, deficient in mind, with *unquietness*, troubled at heart, pain in the head, and also with *palpitation* of the heart, and they had a pulse, thick, frequent, swift, and unequal; and the palpitation of the heart accompanied those that escaped, oftentimes some years, sometimes till death.

The cause

But the cause of this disease was inherent in the most subtle parts of the blood and spirits, which were together affected, which the shortness of the disease argues, and without doubt the blood and spirits contracted this malignity from some evil disposition of *Ayr*, and other corruption; whence also this disease in many places in the *Low Countries* with cloudy ayr, suddenly invaded men, and the birds also were found dead under the *Trees*, and 'twas observed that they had *pustules* under their wings like *Vetches* or *Tares*: But what manner of corruption of the *Ayr* it was, can scarce be explained.

Prognosticks.

For this was a most cruel disease, and within the space of twenty four hours, it either killed men, or left them senseless: and indeed at the first when this disease did invade any *City*, it troubled them fifty or sixty times, but it scarce troubled them the hundredth time.

Cure.

But the chief business of the cure consisted in the promotion of sweat, and weakning venome, which nature of its own accord endeavoured; for all those that did not further the sweats, nor

nor use cordials, and took fresh ayr, died within four and twenty hours.

In occasioning Sweats, the strength must be regarded, which in case it be weak, the sweat must so be moderated, that thereby it may not be debilitated more, and dejected: for 'tis observed, that by too much causing sweat, and whilst the sick beyond their power to suffer, are cover'd in their beds, abundance of men have been stifled: During sweating, the sick should be hindred from sleep.

They used to occasion sweat, and infringe the malignity, water of Sorrel, Scabious, Terra Sigillata, Bolearmenick, Dittany, Carduus benedictus, Zedoarie, Tormentil, Waterlillies, Burrage; Species liberantis is also proper, and such like, which use to be applied in malignant Fevers, and the Pox. During the Sweats, the sick should be refreshed with the juice of the Syrup of Citron, Pomgranates, Sorrel, and other things before mentioned about the plague. Odoraments should also be applied to the Nose. When the sick hath sweat enough, some of the weight of the clothes should be abated by degrees, and the sweat at last diligently wiped off and cleansed.

CHA P. XV.

Of the Ungarick Disease.

*Of the
Hungari-
an disease.*

AMongst the malignant Fevers, there is also a disease call-
led the Ungarick, because it was first known in Hun-
gary in the year 1556. and thence 'tis thought 'twas
spread almost over all Europe; Indeed some think the patechial
Fever, and the Ungarick Disease are the same; and 'tis true
that spots often happen in that, but not alwaies is it so; and
the name of a patechial Fever is extended larger then the Un-
garick disease; for this is a certain kind of malignant Fever,
or if it have spots, and is patechial; yet this disease is bred in
Camps by reason of evil Diet, whence we think it to be pro-
perly called the Military disease, or the Disease of the Camps,
because that not only in former times in Hungary, but else-
where, it wandred up and down in the Camps hitherto, and
thence is disperfed up and down. But there is a malignant
and infectious Fever called *Morbis Ungaricus*; 'tis continu-
ed, and hath great store of vitious humours about the stomach
and first passages joynd therewith.

The causes.

The proximate cause of this Fever is putrefaction, the
causes and malignant corruption of the humors in the vena
cava. But they are cumulated and corrupted by errors of
Diet, and first by default of the Ayr, which in Hungary is
extream thick and in the night filled with clouds; or if they
are discuffed, 'tis very thin and in the Summer time most
hot; and otherwise, likewise in the Camps 'tis not most
profitable; because that in them it is most common to lie un-
der the open canopy, and to draw the vapours which come
from the ayr and the rain, and when their clothes are wet,
cannot change them, and in winter time are often penn'd up
in little hot-houses. Moreover bad diet may be a cause of this
disease, wherewith Souldiers (for want of better) are forced to
make shift with, and those for the most part which are accu-
stomed to fare better; hence because good chyle cannot be ge-
nerated by evil diet, and the errors of the first concoction
cannot be corrected in the second, many filthy humours are
collected within the first passages, which with the chyle are
carried to the Liver, and thence into the veins, and from that
evil chyle bad blood is generated; which even voluntarily tends

to corruption and putrefaction, and at length an unprofitable disposition of ayr coming; it doth not only putrifie, but becomes malignant. Whence not only a putred continued Fever, but also a malignant is stirred up, and one that is also infectious, which may also infect those that have no ill humours in their bodies, whence the symptomes do something differ. And as according to Diet, scituation, and other circumstances, the matter occasioning a disease is not alwaies the same, so there happens differences in the symptomes joynd with the Fever. Nay in the Fever it self there ariseth certain differences in regard of the peccant humour, whence from some arise putred Synochas, from others burning choleric Fevers: But although great store of peccant matter, as hath been said, occasioned by evil diet, be collected for the most part in the stomach and first passages, yet that is not the containing cause of the Fever, but only symptomatical, stir'd up by the Feverish heat, especially in the beginning of the disease, that it causeth pain in the heart, anxiety, burning about the midriff, and vomiting, and increaseth and cherisheth the Fever it self.

*Nature of
the Ungha-
rick dis-
ease.*

And all other symptomes which appear in other malignant Fevers, may here also be present, and for the most part spots and specks appear; but amongst other things, the pain of the head for the most part is exceeding troublesome; thence this disease amongst the vulgar took its name *die hauptcrantzheit*. Most that take this disease from ill diet, do complain of pain in the stomach, and under the pointed gristle, where a certain retention and hardness is likewise observed. There is great thirst presently at the beginning, and the tongue dry and rough, a little after they are troubled with deliriums, which are gone again when the matter falls down to the ears, and then deafness ensueth.

*Diagno-
stick signs.*

'Tis an acute disease, and is terminated at most in about fourteen days commonly, yet in some not until twenty days. But what event of this disease may be hoped for, is manifest by what hath been already said concerning malignant Fevers in general; namely, by how much the strength is the greater, and the symptomes lesser, by so much is there the more hopes of recovery; on the contrary, by how much the symptomes are the greater and more, and the strength weaker, by so much the more danger; with some when a loosens happens, 'tis a good crisis, but to most when the matter ascends to the head, and thence down to the ears, and deafness followeth, 'tis an argument of health.

*Prognos-
ticks*

But

But as in other malignant Fevers, so likewise in this, the curing must be performed by taking away what feeds it, and resisting the malignant quality, yet the symptoms are not to be neglected.

Purging.

And first concerning the Fever, and its cause in those that have contracted this disease from ill diet, or in the camps, this thing happens that the vitious humours are not only contained in the vena cava, as in other Synochas and burning Fevers, but there is great store of humours lies hidden in the stomach, and about the first passages, which is known by the antecedent diet, pain in the stomach, anxiety, heat about the midriff, and vomiting; for then that matter is forthwith to be evacuated, as being such as doth severally exist, separated from the other humours, it will not come to any concoction, but corrupts both meat and medicines being taken; and Sudorifiques and other medicines which are taken, are carried into the more destructive parts of the body, and it increaseth the Fever.

Purging

But this may be done by purging, amongst the medicines Agarick is principally commended, then also Vomits, by which oftentimes great store of Flegmatick and Cholerick humours, of all kinds are evacuated, which lay hidden about the stomach: But for those which took the disease only by infection, and in whom peccant humours are not collected in the stomach by reason of ill Diet, there is no need of Vomits or Purgation, but 'tis sufficient only to evacuate the first passages by lenitives.

Bleeding

When the first passages shall be freed from peccant humours, forthwith the first or second day a vein must be opened, if it be necessary, and the strength of the sick will bear it; but in case some days are slipt over, and the strength be weakened, and the party be troubled with vomiting, or have a looseness, the breathing of a vein is to be omitted. The vein should be opened in the arm, or if the party be weak, in the ankle, which likewise conveniently refels the matter from the head, and in this disease is very profitable.

Sudorifiques.

Nature being thus eased of its burthen, forthwith Sudorifiques, and such medicines as resist malignity are to be given, yet they are so to be temper'd, as that they may not increase the heat of the humours, nor augment the Fever. Here Harts-horn prepared, Bezoar stone, Antimonium, Diaphoreticum, Bœzardicum minerale, Terra Sigillata, Pulvis Cæsaris

Faris rubeus, Montaynanæ, Species liberantis, and other such like before mentioned about malignant and pestilent Fevers in general is manifest. If we may use Mithridate, Treacle, and such like, that are hot, by reason of the vehemency of the malignity, lest the heat should be increased, they are to be allayed with cold waters and vinegar, to which there may conveniently be added spirit of Vitriol and Tartar, but 'tis not sufficient once only to use such medicines to provoke sweat, or twice, but again and daylie to corroborate the spirits, resist malignity and putrefaction, yet in a lesser quantity then usual, and moreover species Elect. de Gemmis, temperate Cordials, Diamargarit. Frigid. Confectio de Hyacintho, Sper. Vitriol and Tartar, Bezoar water, and other things before mentioned in the cure of the Plague, and other malignant Fevers.

Externally likewise to the heart is to be applied, and to the Pulses Medicines, as also the spirits are to be preserved with odoraments, and the malignity to be resisted; which were also mentioned before in the cure of the Plague, and other malignant Fevers. *External things.*

Lastly, the Diet should be the same as in malignant Fevers is expressed, and indeed the aliment to resist putrefaction should be dry; to abate the Fever, cold, and mixed with Cordials, or have cordial qualities: Wine in this Fever is hurtful, and for the most part those that refrain it not, die. *Diet.*

CHAP. XVI.

Of a Malignant Fever with the Cramp.

A malignant Fever with the Cramp.

THere are likewise other malignant Fevers, which had accompanied with them certain other diseases, namely the Cramp; Catarhs, a Cough, and the Squincy; for in the year 1596, and 1597. in the Bishoprick of *Collen, Westphalia, the County Waldestein, Wittenstein, and Hassia,* there reigned a disease joynd with a Fever, which they then called *die Kriebelcranchheit, Kriempstucht, oder Wschende Senche.*

It seized upon men with a twitching and kind of benumbedness in the hands and feet, sometimes on one side, sometimes on the other, and sometimes on both: Hence a Convulsion invaded men on a sudden when they were about their daylie employments, and first the fingers and toes were troubled, which Convulsion afterwards came to the arms, knees, shoulders, hips, and indeed the whole body, until the sick would lie down, and roul up their bodies round like a Ball, or else stretch out themselves straight at length: Terrible pains accompanied this evil, and great clamours and schrietchings did the sick make; some vomited when it first took them. This disease sometimes continued some days or weeks in the limbs, before it seized on the head, although fitting medicines were administred; which if they were neglected, the head was then presently troubled, and some had Epilepsies, after which fits some lay as it were dead six or eight hours, others were troubled with drowsiness, others with giddiness, which continued till the fourth day, and beyond with some, which either blindness or deafness ensued, or the Palsie: When the fit left them, men were exceeding hungry contrary to nature; afterwards for the most part a looseness followed, and in the most, the hands and feet swell'd or broke out with swellings full of waterish humours, but sweat never ensued. This disease was infectious, and the infection would continue in the body being taken once, six, seven, or twelve months.

The cause

This disease had its original from pestilential thin humours first invading the brain and all the nerves; but those malignant humours proceeded from bad diet when there was scarcity of provision.

This

This disease was grievous, dangerous, and hard to be cured, for such as were stricken with an Epilepsie, were scarce totally cured at all, but at intervals would have some fits, and such as were troubled with deliriums, became stupid. Others every year in the month of *December* and *January*, would be troubled with it.

The Cure consisted in evacuating of the peccant humors, and corroborating of the Nerves. First, therefore the vitious humors are to be purged out of the first passages with *Hermoadactils*, *Turbith*, *Spurge* prepared, *Diagrydium Electuary*, called *Diaphenicum*, of the juyce of *Roses*, there being added *Caster*, *Costus*, seed of *Rue* and *Commin*.

CURE.

Afterwards Medicines against the Convulsion, were given of *Piony*, *Birdlyme* of the *Oak*, *Caster*, *Sage*, *Mans skull* adding thereto medicines resisting malignity, with the root of *Swallow-wort*, *Divels bit*, *Treacle*, *Mithridate*; and so purging and altering medicines are to be taken by turns, and continued: The external parts were anointed and fomented with those medicines which were proper for other Convulsions.

CHAP

CHAP. XVII.

Of a malignant Fever, with a Catarrh, and a Cough, and the Squincy.

A malignant Fever with a Catarrh and a Cough.

Sometimes an Epidemical Catarrh and Cough accompany Malignant Fevers; such a Fever in the year 1510, 1557, 1580, and 1591, and especially in the year 1580, spread over most parts of Europe under the Northern Equinoctial. And that disease was then called, a Feverish Catarrh, and a Catarrhish Fever, also a suffocating Fever, *der Wien und Schafstussen, Schafterantheit und hus Perwoche.*

This Fever came with heaviness in sleep, pain of the head, a dry cough, pain of the breasts, hoarseness, pain of the stomach, difficulty of breathing, which even when the cough ceased would continue till the fourteenth day.

The causes.

This Fever proceeded from the moistness of the foregoing years; for when peccant humours were cumulated in the body, by reason of that irregularity of the ayr, and at length became putred, and malignant, and adverse to the head and breast; thence a continued Fever was kindled, and with part of the peccant humours gotten into the brain and breasts, a catarrh and cough was generated.

This disease, although most men had it, yet it was not mortal; for almost all men had it, and scarce one of a thousand died therewith.

Cure.

This Fever was cured as other malignant Fevers, also by regarding the putrification and malignity, and lastly, in having respect to the head and breast, which were principally troubled with this Catarrh and Cough.

Breathing a vein was not then proper, and it was found by experience, that for the most part they all died that were let blood.

But lenitive purgers were proper, because the matter did reside in the first ways; afterwards there was administered such things as might alter the matter in the head and breast, as use to be given for a Catarrh and a Cough, and those things that resisted malignity were not to be neglected.

A malignant fever with a Squincy.

Lastly, sometimes a Squincy, Pleurisie, Peripneumonia, is joyned with a malignant Fever, and spreads over many places, as it hapned in the year 1348: as *Fracastorius* relates, and in the

the year 1557. as Dodonaus in chap. 21. of his observations witnesseth, and in the year 1564. likewise.

Which Fevers for the most part did arise from the contrariety of ayr, and principally from its over-moist constitution, even as epidemial dysenteries arose from precedent driness of the ayr, such as hapned in the year 1583. and 1626.

Those Fevers were cured as others that were malignant. But this is to be noted besides, that regard must be taken of that part wherein the force of the disease or symptome joyned therewith resides most, and the disease and symptome which accompany the malignant Fever should be cured in the same manner as is propounded in the cure of particular diseases.

Cure.

CHAP.

CHAP. XVIII.

*Of the Cure of Symptomatical Fevers.**Symptomae
of Fevers.*

LAstly, there often happens in Fevers various symptoms which are no less troublesome to the sick than the Fevers themselves, and therefore they require cure by themselves, and should be taken away, or abated. Such are first pain of the head, too much watching, profound sleep, deliriums, convulsions, epilepsies, driness of the tongue, thirst, pain of the heart, looseness, faintings and swoonings: All which proceed from the humour that was the cause of the Fever, or from vapours and fumes proceeding from it, and so molesteth this or that part either with its plenty, excess of primary qualities or malignancy.

Universal Purgers first used, those symptoms are taken away by revelling, repelling, dissipating that matter from the part affected, to the more remote parts; as need shall require that excess of qualities wherewith they are most troubled, to be altered and corrected, or even the malignity, if there be any, must be oppugned with contrary remedies, and the parts, if occasion require, strengthened; or the symptoms themselves must be resisted with proper remedies. All which how to be performed, in particular to explain, is beyond the purpose of our Institutions, but practical books should be advised with concerning it, and especially the cause of each symptom must be diligently sought out; because the same symptoms often proceeds from divers causes; and moreover cannot always be cured with the same Medicine.

Glory and Thanksgiving be to God.

FINIS.

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