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THE

WORKS

OF

ARISTOTLE,

THE FAMOUS PHILOSOPHER.

IN FOUR PARTS.

CONTAINING:

- I. His COMPLETE MASTER PIECE ; displaying the Secrets of Nature in the Generation of MAN. To which is added, The FAMILY PHYSICIAN : Being APPROVED REMEDIES for the several DISTEMPERS incident to the Human Body.
- II. His EXPERIENCED MIDWIFE ; absolutely necessary for Surgeons, Midwives, Nurses, and Child-bearing Women.
- III. His BOOK OF PROBLEMS ; containing various Questions and Answers relative to the State of Man's Body.
- IV. His LAST LEGACY ; unfolding the Secrets of Nature respecting the Generation of MAN.

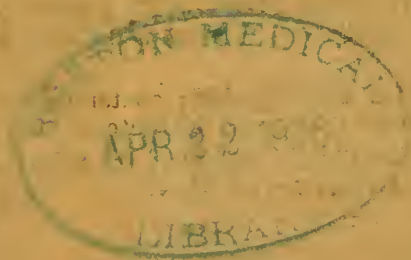
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TO THE READER.

TO say that Aristotle, the learned author of the following sheets, was reported to be the most learned philosopher in the world, is no more than what every intelligent person already knows: nor can any think otherwise, who will give themselves time to consider that he was the scholar of Plato (the wisest philosopher of his time) and under whom Aristotle profited so much, that he was chosen by king Philip of Macedonia as the most worthy and proper person in his dominions to be tutor of his son Alexander, by whose wise precepts and instructions Alexander became so great in wisdom, judgment, prowess, and magnanimity, that he justly obtained the title of the Great. Alexander himself was so sensible of the advantage he received from the instructions of so great a Stagirite (for so Aristotle was called from the country of Stagira, where he was born), that he often declared he was more beholden to his tutor Aristotle for the cultivation of his mind, than to his father Philip for the kingdom of Macedon.

Though Aristotle applied himself to the investigation of the secrets of nature, yet he was pleased to bring into a fuller and more true light those secrets with respect to the generation of man. This he stiled his MASTER PIECE, and in this he has made so thorough a search, that he has as it were turned nature inside out.

The divine records assure us, that the secrets of nature have been the study of divers illustrious persons, equally renowned for wisdom and goodness; the first of whom, Job, has made it sufficiently evident by that excellent philosophical account he gives of the generation of man, in the tenth chapter of the book which bears his name, where he says, "Thine hands have made me and fashioned me together round about: Thou hast poured me out as milk, and curdled me like cheese: Thou hast clothed me with skin and flesh, and hast fenced me with bones and sinews." David, one of the greatest kings of Israel, whose piety was superior to his power, being peculiarly stiled a man after God's own heart, says, in his divine soliloquies to his Creator, "Thou hast covered me in my mother's womb; I will praise thee, for I am fearfully and wonderfully made: Marvellous are thy works,

and that my soul knoweth right well. My substance was not hid from thee when I was in secret, and curiously wrought in the lowest parts of the earth: Thine eye did see my substance, yet being imperfect; and in thy book all my members were written, which in continuance were fashioned, when as yet there was none of them."

Let the words of holy Job and those of David be put together, and I will not scruple to affirm, that they make the most accurate system of philosophy respecting the generation of man that has ever yet been penned; therefore why should not the mysteries of nature be inquired into without censure, since, from this inquiry, so much praise resounds to the God of nature! For, the more we know of his works, the more our hearts will be inclined to praise him, as we see in the instance of David above mentioned.

That the knowledge of the secrets of nature is too often abused by many persons, I readily grant; and think it very unfortunate that there should be a generation of such profligate persons in the world; but at the same time do aver that this is no objection to the work.

Having said thus much of the wonderful works of nature in the generation of man, I shall next proceed to give the reader, the best translation possible of the renowned Aristotle, which he was pleased to style his MASTER PIECE.

I cannot help observing, that having met with a collection of approved receipts by the great Hippocrates, and thinking they would be very acceptable to my readers, I have added the same by way of supplement, at the end of the Master Piece.

Aristotle's Master Piece.

PART I.

THE SECRETS OF NATURE DISPLAYED:

INTRODUCTION.

IT is strange to see how things are slighted only because they are common, though in themselves worthy of the most serious consideration: this is the very case of the subject I am now treating of. What is more common than the begetting of children? and what is more wonderful than the plastic power of nature, by which children are formed. For though there is radicated in the very nature of all creatures, a propensity which leads them to produce the image of themselves, yet how these images are produced after those propensities are satisfied, is only known to those who trace the secret meanders of nature in her private chambers, to those dark recesses of the womb, where this embryo receives formation. The original of which proceeds from the divine command, *Increase and multiply*. The natural inclination and propensity of both sexes to each other, with the plastic power of nature, is only the energy of the first blessing, which to this day upholds the species of mankind in the world.

Now since philosophy informs us, that *Nosco te ipsum*, is one of the first lessons a man ought to learn: it cannot surely be accounted an useless piece of knowledge for a man to be acquainted with the cause of his own being, or by what secret power of nature it was, that coagulated milk (as a divine author calls it) came to be substantiated into a human body. The explanation of this mystery, and the unfolding the plastic power of nature, in the secret workings of generation and the formation of the seed in the womb, is the subject of the following treatise; a subject so necessary to be known to the female sex, that many for want of this knowledge have perished, with the fruit of their womb also; who,

had they but understood the secrets of generation, which are displayed in this treatise, might have been still living. For the sake of such, I have compiled this work, which I have divided into two parts, in the following manner:

1st. I will shew that nature need not be ashamed of her work; and give a particular description of the parts or organs of generation in man, and afterwards in woman; and then shew the use of these parts in the act of coition; and how positively nature has adapted them to the end for which she ordained them.

2dly. I will point out the prohibition or restriction, that the Creator of all things and Lord of nature has put upon man by the institution of marriage, with the advantage it brings to mankind.

3dly. I will shew when either sex may enter into a married state, and be fit to answer the end of their creation, &c.

4thly. I shall discourse of virginity, and therein shew what it is, how it is known, and by what means it may be lost, and how a person may know that it is so, &c.

In the second part, which chiefly relates to married women, and the preservation of the fruit of the womb, for the propagation of mankind in the world, I shall shew,

1st. What conception is: what is pre-requisite thereunto: how a woman may know when she hath conceived, and whether a boy or girl.

2dly. Shew how a woman that hath conceived, ought to order herself.

3dly. Shew what a woman ought to do, that is near the time of her delivery, and how she ought to be assisted.

4thly. I shall shew what are the obstructions of conception, and therein discourse largely about barrenness, and shew what are the causes and cure thereof, both in men and women.

5thly. Direct mid-wives how they should assist women in the time of their lying-in, bringing several other material matters, proper to be spoken of under each of these several heads; which will sufficiently render this book what Aristotle designed it, his *Complete Master Piece*.

CHAP. I.

A particular Description of the Parts and Instruments of Generation, both in Men and Women.

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Of the instruments of generation in men, with a particular description thereof.

THOUGH the instruments or parts of generation in all creatures, with respect to their outward form, are not perhaps the most comely: yet, in compensation of that, nature has put upon them a more abundant and far greater honor than on other parts, in ordaining them to be the means by which every species of being is continued from one generation to another. And therefore, though a man or woman were, through the bounty of nature, endowed with angelic countenances, and the most exact symmetry and proportion of parts that concurred together to the making up of the most perfect beauty, yet, if they were defective in the instruments of generation, they would not for all their beauty be acceptable to either of the other sex; because they would be thereby rendered incapable of satisfying the natural propensities which every one finds in himself. And, therefore, since it is our duty to be acquainted with ourselves, and to search out the wonders of God in nature, I need not make any apology for anatomizing the secret parts of generation.

The organ of generation in man, nature has placed obvious to the sight, and is called the yard; and because hanging without the belly, is called the penis *a pendendo*. It is in form, long, round, and on the upper side flattish, and consists of skin, tendons, veins, arteries, and sinews, being seated under the Ossa Pubis, and ordained by nature for a two-fold work, viz. for the evacuating of urine, and conveying the seed into the matrix. The urine which it evacuates is brought to it through the neck of the Vesica Urinariæ, and the seed which it conveys into the matrix, is brought into it from the Vesiculæ Seminales. But to be more particular.

Besides the common parts, as the cuticle, the skin and the Membrana Carnosa, it has several internal parts proper to it, of which number there are seven, viz.

The two nervous bodies; the Septum; the Urethra; the Glands; the Muscles; and the Vessels: of each of these distinctly, in the order I have placed them: and first, of

The two nervous bodies. These are called so from their being surrounded with a thick, white, nervous membrane, though their inward substance is spongy, as consisting prin-

cipally of veins, arteries and nervous fibres, interwoven like a net. And nature has so ordered it, that when the nerves are filled with animal spirits, and the arteries with hot and spirituous blood, then the yard is distended, and becomes erect; when the flux of the spirit ceases, then the blood and the remaining spirits are absorbed, or sucked up by the veins, and so the Penis becomes limber and flaggy.

2. The second internal part is the Septum Lucidum, and this is in substance white and nervous or sinewy, and its office is to uphold the two lateral or side ligaments and the Urethra.

3. The third is the Urethra, which is only the channel by which both the seed and urine are conveyed out; it is in substance soft and loose, thick and sinewy, like that of the side ligaments. It begins at the neck of the bladder, but springs not from thence, only is joined to it, and so proceeds to the glands. It has three holes in the beginning, the largest whereof is in the midst, which receives the urine into it. The other two are smaller, receiving the seed from each seminal vessel.

4. The fourth is the Glans, which is at the end of the Penis, covered with a very thin membrane, by reason of a Præputium or foreskin, which in some covers the top of the yard quite close, in others not; and by its moving up and down in the act of copulation brings pleasure both to the man and woman. The extreme part of this cover, which I call Præputium, and which is so called *a præputando*, from cutting off, as the Jews were commanded to cut it off on the eighth day. The ligament, by which it is fastened to the Glans is called *frænum*, or *the bridle*.

5. The fifth thing is the Muscles, and these are four in number, two being placed on each side. These muscles (which are instruments of voluntary motion, and without which no part of the body can move itself) consist of fibrous flesh to make up their body; of nerves for the sense; of veins for their vital heat; and of a membrane or skin to knit them together, and to distinguish one muscle from the other, and all of them from the flesh. I have already said there are two of them on each side; and I now will add, that one on each side is shorter and thicker, and that their use is to erect the yard, from whence they have obtained the name of erectors. And having told you that two of them are thicker and shorter than the other, I need not tell you that the other two are longer and thinner; only I take notice, that the office of the two last is to dilate, or (if you will) open the lower parts of the Urethra, both for making water, and voiding the seed, and therefore is called *accelerators*.

6. The sixth and last things are the vessels, which consist of veins, nerves and arteries; of which some pass by the skin,

and are visible to the eye, and others pass more inwardly. For indeed the arteries are dispersed through the body of the yard, much more than the veins, and the dispersion is contrariwise, the right artery being dispersed to the left side, and the left to the right : as for the two nerves, the greater is bestowed upon the muscles and the body of the yard, and the less upon the skin.

What I have hitherto said relates to the yard, properly so called ; but, because there are some appendices belonging thereto, which, when wanted, render the yard of no use in the act of generation, it will also be necessary before I conclude the section, to say something of them ; I mean the stones, or testicles, so called because they testify the person to be a man : their number and place is obvious ; and as to their use, in them the blood brought thither by the spermatic arteries is elaborated into seed. They have coats or coverings of two sorts, proper and common : the common are two, and invest both the testes : the outermost of the common coats, consists of the cuticula, or true skin, called *Scrotum*, hanging out of the abdomen, like a purse : the *membrana carnosa* is the innermost. The proper coats are also two : the outer called *elithroidis* or *vaginalis*, the inner *albuginea* : into the outer are inserted the *cremesters* : to the upper part of the testes are fixed the *epidermis* or *prostatae*, from whence arise the *vasa deferentia* or *ejaculatoria* ; which, when they approach near the neck of the bladder, deposit the seed into the *vesicula seminalis*, which are each or two or three of them like a bunch of grapes, and emit the seed into the urethra in the act of copulation. Near these are the *prostatae*, which are about the bigness of a walnut, and join to the neck of the bladder. These afford an oily, slippery, and salt humor, to besmear the urethra, and therefore defend it from the acrimony of the seed and urine. Besides these vessels, by which the blood is conveyed to the testes, and of which the seed is made, and the *arteriæ spermaticæ*, there are also two others ; so likewise are there veins, which carry out the remaining blood, and are called *venæ spermaticæ*.

And thus man's nobler parts we see,
 For such the parts of generation be ;
 And they that carefully survey, will find
 Each part is fitted for the use design'd :
 The purest blood, we find, if well we heed,
 Is in the testicles turn'd into seed,
 Which, by most proper channels, is transmitted
 Into the place by nature for it fitted ;
 With highest sense of pleasure to excite
 In amorous combatants the more delight ;

For in this work dame nature doth design,
Profit and pleasure in one act to join.

SECTION II.

Of the Secret Parts in Women.

WOMAN, next to man, the noblest piece of this creation, is *bone of his bone, and flesh of his flesh*; a sort of second self: and, in a married state, are accounted but one: As the poet says,

Man and wife are but one right,
Canonical hermaphrodite.

It is therefore the secret parts of that curious piece of Nature that we are to lay open, which we will do with as much modesty as will consist with speaking intelligibly.

The external parts, commonly called *pu'denda*, (from the shamefacedness that is in women to have them seen) are the lips of the great orifice, which are visible to the eye: and in those that are grown are covered with hair, and have pretty store of spungy fat; their use being to keep the internal part from all annoyance by outward accidents.

Within these are the *nymphæ* or *wings*, which present themselves to the eye when the lips are severed, and consist of soft and spungy flesh and the doubling of the skin placed at the sides of the neck: they compass the clitoris, and both in form and color resemble the comb of a cock, looking fresh and red, and in the act of coition receive the penis or yard between them; besides which they give passage both to the birth and urine. The use of the wings and knobs like myrtle berries, shutting the orifice and neck of the bladder, and by the swelling up, cause titulation and delight in those parts, and also to obstruct the involuntary passage of the urine.

The next thing is the *clitoris*, which is a sinewy and hard part of the womb, replete with spungy and black matter within, in the same manner as the side ligaments of the yard, and indeed resembles it in form; suffers erection and falling in the same manner, and both stirs up lust, and gives delight in copulation; for without this, the fair sex neither desire nuptial embraces, nor have pleasure in them, nor conceive by them; and according to the greatness or smallness of this part, they are more or less fond of men's embraces; so that it may properly be styled the seat of lust,

Blowing the coals of those amorous fires,

Which youth and beauty to be quench'd requires.

And it may well be styled so; for it is like a yard in situation, substance, composition, and erection, growing sometimes out of the body two inches, but that happens not but upon some

extraordinary accident. It consists, as I have said, of two spungy and skinny bodies, which being a distinct original from the *os pubis*, the head of it being covered with a tender skin, having a hole like the yard of a man, but not through, in which, and the bigness of it, it only differs.

The next thing is *the passage of the urine*, which is under the clitoris, and above the neck of the womb, so that the urine of the woman comes not through the neck of the womb, neither is the passage common as in men, but particular and by itself. This passage opens itself into the fissures to evacuate the urine; for the securing of which from cold or any other inconvenience, there is one of the four caruncles or fleshy knobs placed before it, which shuts up the passage. For these knobs, which are in number four, and in resemblance like myrtle berries, are placed behind the wings before spoken of, quadrangularly one against the other. These are round in virgins, but hang flapping when virginity is lost.—'Tis the uppermost of these that nature has placed for the securing the urinary passage from cold, and which is therefore the largest, and forked for that purpose.

The *lips of the womb* that next appear cover the neck thereof but being separated disclose it; and then two things are to be observed, and these are the neck itself, and the *hymen*, more properly called the *claustrum virginale*, which I shall treat of more at large when I come to shew what virginity is. The neck of the womb (called the channel) is between the forementioned knobs, and the inner bone of the womb, which receives the man's yard like a sheath; and that it may be dilated with the more ease and pleasure in the act of coition, it is sinewy and a little spungy; and there being in this cavity divers folds or orbicular plaits made by tunicles which are wrinkled, it forms an expanded rose that may be seen in virgins; but in those that have used copulation it comes by degrees to be extinguished; so that the inner side of the neck of the womb appears smooth, and in old women it becomes more hard and grisly. But though this channel be sinking down, wreathed, and crooked, yet it is otherwise in the time of copulation: as also when women are under the monthly purgation, or in labour, being then very much extended, which is a great cause of their pains.

The *claustrum virginale*, commonly called the *hymen*, is that which closes the neck of the womb; for between the duplicity of the two tunicles which constitute the neck of the womb, there are many veins and arteries running along, that arise from the vessels of both sides of the thighs, and so pass into the neck of the womb, being very large, and the reason thereof is, because the neck of the womb requires to be filled

with abundance of spirits to be dilated thereby, that it may the better take hold of the penis, such motions requiring great heat, which being more intense by the act of friction, consumes a great deal of moisture, in the supplying whereof, large vessels are very necessary; hence it is that the neck of the womb in women of reasonable stature is eight inches in length. But there is also another cause of the largeness of these vessels, because their monthly purgations make their way through them; and, for this reason, women, though with child, often continue them; for though the womb be shut up, yet the passage in the neck of the womb, through which the vessels pass, is open, and therefore, as soon as you penetrate the *pudendum*, there may be seen two little pits or holes, and in which are contained an humor, which, by being pressed out in the time of coition, does greatly delight the fair sex.

I shall, in the next place, proceed to a description of the *womb*, which is the field of generation, without which nothing can be done. The parts we have been speaking of being ordained by nature to convey the seed to the womb, which being impregnated therewith by virtue of the plastic power of nature, produces its own likeness.

The womb is situated in the lower part of the *hypogastrion*, being joined to its neck, and is placed between the bladder and the strait gut, so that it is kept from swaying or rolling; yet hath its liberty to stretch and dilate itself, and also to contract itself, according as nature in that case disposes it. It is of a round figure, somewhat like a gourd; lessening and growing more acute towards one end, being knit together by its proper ligaments, and its neck joined by its own substance, and certain membranes that fasten it to the *os sacrum*, and the share bone. It is very different with respect to its largeness in women, especially between such as have had children, and those that have had none. It is so thick in substance that it exceeds a thumb's breadth; and after conception augments to a greater proportion; and to strengthen it yet more, it is interwoven with fibres overthwart, both strait and winding; and its proper vessels are veins, arteries, and nerves; amongst which there are two little veins which pass from the spermatic vessels to the bottom of the womb, and two bigger from the *hypogastrics*, touching both the bottom and the neck, the mouth of these veins piercing so far as the inward concavity.

The womb, besides what I have already mentioned, hath two arteries on both sides the spermatic vessels and the *hypogastrics*, which still accompany the veins with sundry little nerves, knit and interwoven in the form of a net, which are also extended throughout, even from the bottom to the *pu-*

denda themselves, being so placed chiefly for the sense of pleasure, sympathetically moving from the head and womb.

Here the reader ought to observe, that two ligaments hanging on either side of the womb from the share bone, piercing through the *peritonæum*, and joining to the bone itself, causes the womb to be moveable, which upon divers occasions either falls low, or rises; the neck of the womb is of a more exquisite sense, so that if it be at any time disordered, either with a schirrosity, too much hot moisture, or relaxation, the womb is made subject to barrenness. In those that are near their delivery, there usually stays a most glutinous matter in the entrance, to facilitate the birth; for at that time the mouth of the womb is opened to such a wideness, as is in roportion to the largeness of the child.

Under the parts belonging to generation in women, are also comprehended the preparatory or spermatic vessels; the preparatory vessels differ not in number from those in men; for they are likewise four, two vessels and two arteries; their rise and original is the same as in men, and on the side of them are two arteries which grow from them, differing only in their size and manner of insertion; the right vein issuing from the trunk of the hollow vein, and the left from the emulgent vein; and on the side of them are two arteries which grow from the *arcuta*. These preparatory vessels are shorter in women than in men, because they have a shorter passage, and the stones of a woman lying within the belly, but those of a man without; but to make amends for their shortness, they have far more writhings to and fro, in and out, than they have in men, that so the substance they carry may be the better prepared; neither are they united as they are in men, before they come to the stones, but are divided into two branches, whereof the greater only passeth to the stones, but the lesser to the fœcundated egg, and this is properly called *Conception*. And then, secondly, to cherish and nourish it, till nature has formed the child, and brought it to perfection. Thirdly, it strongly operates in sending forth the birth, when its appointed time is accomplished, there dilating itself in an extraordinary manner; and so aptly removed from their senses, that no injury accrues to it from thence, retaining itself a strength and power to operate and cast forth the birth.

The use of the preparatory vessels is to convey the blood to the testicles, of which a part is spent in the nourishment of them, and the production of those little bladders in all things resembling eggs, through which the *vasa præparentia* run and are obliterated in them. This conveyance of blood

is by the arteries, but as for the veins, their office is to bring back what blood remains from the forementioned use.

The vessels of this kind are much shorter in women than men, by reason of their nearness to the testicles; and yet that defect is more than made good by the many intricate windings to which they are subject; for in the middle way, they divide themselves into two branches of different magnitude; for one of them being bigger than the other, passes to the testicles.

The testicles in women are very useful; for where they are defective, generation work is quite spoiled; for though these little bladders which are on their outward superficies contain nothing of the seed, as the followers of Galen, &c. erroneously imagine, yet they contain several eggs, (about the number of 20 in each testicle,) one of which being impregnated by the most spiritous part of the man's seed in the act of coition, descends through the oviducts into the womb, where it is cherished till it becomes a live child. The figure of these *ova* or *eggs*, is not altogether round, but a little flat and depressed on the sides, and in their lower part oval: but where the blood vessels enter them, that is, in the upper part, they are more plain, having but one membrane about them, that the heat may have more easy access to the womb, both to the nourishment of itself and of the infant therein. Let me further add, these spermatic veins receive the arteries as they pass by the side of the womb, and thereby make a mixture of the vital and natural blood, that their work may be more perfect. The *deferentia*, or carrying vessels, spring from the lower part of the stones, and are in colour white, substance sinewy, and pass not to the womb straight, but wreathed: they proceed from the womb in two parts, resembling horns, whence they are called *the horns of the womb*.

The *stones* of women are another part belonging to the instruments of generation: for such things they also have as well as men, but they are also indifferently placed; neither is their bigness, temperament, substance, form, or covering the same. As to their place it is the hollowness of the abdomen, resting upon the muscles of the loins, and not so pendulous as in men. And that they are so placed is, that by contracting the heat they may be the more fruitful, their office being to contain the *ovum* or *egg*, which being impregnated by the seed of the man, is THAT from which the embryo is engendered. These stones differ also from men's in their form; for though they are smooth in men, they are uneven in women; being also depressed or flattish in them, though in men their form is more round and oval. They have also in women but one skin, whereas in men they have four;

nature having wisely contrived to fortify these more against the injuries of the air that are most exposed to it ; the stones of women being within, but those of men without the belly: They differ also in their substance, being much more soft than those of men, and not so well compacted ; their bigness and temperature differ, in that they are less and colder than those of men. Some indeed will have their use to be the same as in men, but that is for want of judgment ; for Aristotle and Scotus both affirm, that the women have no seed, and that their stones differ also in their use from those of men ; their use being, as I have already said, to contain the egg which is to be impregnated by the seed of man.

It now only remains, that I say something of the *ejaculatory vessels*, which have two obscure passages, one on either side, which in substance differ nothing from the spermatic veins. They rise in one part from the bottom of the womb, but not reaching from the other extremity either to the stones or any other part, are shut up and incapable ; adhering to the womb as the colon doth to the blind gut, and winding half way about : though the stones are remote from them, and touch them not, yet they are tied to them by certain membranes resembling the wings of a bat, through which certain veins and arteries passing from the end of the stones, may be said here to have their passages proceeding from the corners of the womb to the testicles, and are accounted the proper ligaments by which the testicles and the womb are united and knit together.

Thus the women's secrets I've survey'd,
 And let them see how curiously they're made.
 And that, tho' they of different sexes be,
 Yet in the whole they are the same as we.
 For those that have the strictest searchers been,
 Find women are but men turn'd outside in ;
 And men, if they but cast their eyes about,
 May find they're women with their inside out.

SECTION III.

Of the Use and Action of the several Parts in Women appropriated to Generation.

I SHALL next take a survey of the parts of generation both in men and women, and shew the use or action of those parts in the work of generation, which will excellently inform us that nature has made nothing in vain.

The external parts in women's privities, or that which is most obvious to the eye at first, commonly called *pudendum*, are designed by nature to cover the great orifice ; nature in-

tending that orifice to receive the *penis*, or *yard*, in the act of coition, and also give passage to the urine; and, at the time of birth, to the child. The use of the wings or knobs, like myrtle berries, are for the security of the internal part, by shutting up the orifice and neck of the bladder, also for delight and pleasure: for, by their swelling up, they cause titillation and delight in those parts, being pressed by the man's yard. Their use is likewise to obstruct the involuntary passage of the urine.

The use and action of the *clitoris* in women, is like that of the *penis*, or *yard*, in men; that is, erection; its extreme end being like that of the glans in the man, the seat of the greatest pleasure in the act of copulation, so is that of the *clitoris* in women, and therefore called the sweetness of love and the fury of venery.

The action and use of the neck of the womb is the same with that of the *penis*, that is, erection, which is occasioned sundry ways: For, first, In copulation it is erected and made strait, for the passage of the *penis* to the womb. Secondly, Whilst the passage is replete with spirits and vital blood, it becomes more strait for embracing the *penis*. And for the necessity of erection, there is a two-fold reason: one is, that if the neck of the womb was not erected, the yard would have no convenient passage to the womb. The other is, that it hinders any hurt or damage that might ensue through the violent concussion of the yard, during the time of copulation.

Then as to the vessels that pass through the neck of the womb, their office is to replenish it with blood and spirits, that so as the moisture consumes through the heat contracted in copulation, it may still by these vessels be renewed. But their chief business is to convey nutriment to the womb.

Thus nature nothing does in vain produce,
 But fits each part for what's its proper use;
 And though of different sexes form'd we be,
 Yet betwixt these there is that utility,
 That we in nothing can a greater find,
 Unless the soul that's to the body join'd;
 And sure in this dame nature's in the right,
 The strictest union yields the most delight.

CHAP. II.

Of the Restriction laid upon Men in the Use of carnal Copulation, by the Institution of Marriage, with the Advantage that it brings to Mankind, and the proper Time for it.

SECTION I.

Embraces lawful only by Marriage.

THOUGH the great Architect of the world has been pleased to form us of different sexes, and for the propagation and continuance of mankind has indulged us in the mutual embraces of each other, the desire whereof, by a powerful and secret instinct, is become natural to us, yet he would leave them to the law of the Creator, who has ordained, that every man shall have his own wife; and though, since man, by sinning against his Creator, hath fallen from his primitive purity, and has multiplied wives and concubines, by which the first institution is violated, and the grossest affront given to the divine Lawgiver: for the holy Jesus has told us, *That in the beginning it was so*; the marriage of one man to one woman:—so that, as these conjugal delights cannot be enjoyed but in a married state, so neither, in that state, can they lawfully be participated of with more than one wife. And it is the breaking of this order that has filled the world with confusion and debauchery, has brought diseases on the body, consumption on estates, and eternal ruin on the soul, if not repented of. Let all those, therefore, of either sex, that have a desire to enjoy the delights of mutual embraces, take care that they do it in a married state, with their own wives and husbands, or else it will become a curse to them instead of a blessing. And, to that end, let them consider what is due to the transgressors of his law, who hath said, *Thou shalt not commit adultery*. Whatever is spoken of the venereal pleasures, is spoken to those who have, or may have, a right thereunto, by being in a married state. For,

Who to forbidden pleasures are inclin'd,
Will find at last they leave a sting behind.

SECTION II.

Of the Happiness of the Married State.

MATRIMONY, in the present age, is looked upon as a most insupportable yoke:—wives and husbands are accounted the greatest clogs and burdens to those who give up

the reins to their unbridled appetites. Notwithstanding the present mode of thinking is against me, I doubt not of making it appear, that a married state is the most happy condition (where persons are equally yoked) that is to be enjoyed on this side heaven.

The author and institutor of marriage, and who first brought man and woman together, was no other than HE that made them—even the great Lord of the Universe; whose wisdom being infinite, could not but know what condition was good for us; and his goodness being equal to his wisdom, sufficiently shews the end of this institution was the happiness of the creature he had made; and indeed man could not be happy without it; for he saw that *it was not good that man should be alone*, and therefore made a woman to complete his happiness, which was not perfect, whilst he wanted such a help mate for him.

The time of the institution is also very remarkable: for it was whilst Adam and his new made bride were clothed with all that virgin purity and innocence with which they were created, before they had entertained the least converse with the tempter, or had given way to one disordered thought, and yet could curiously survey the several incomparable beauties and perfections of each other without sin, and knew not what it was to lust. It was at this time that the Creator united Adam in the holy bands of wedlock.

'Twas in Paradise where the first match was made; and which could scarcely have been Paradise without it; for Paradise is known to be a place of pleasure, wherein they were surrounded with the quintessence of all delights; where there was nothing wanting that might please the eye, charm the ear, or gratify the taste; and yet Adam was not happy with all these pleasing sweets till he enjoyed his Eve; so that it was a married state that completed his happiness, and which was a Paradise of Paradise itself.

What an addition to happiness a good wife makes! Such an one is the best companion in prosperity, and in adversity the surest friend; the greatest assistance in business, the only lawful and comfortable means by which he can have issue, and the great remedy against incontinence; and, if we believe king Solomon, the greatest honour unto him that has her. For he it is that tells us, *She is a crown to her husband*. Surely these are not small advantages!

If married persons would be careful to do their respective duties, there would be but little complaining; nor would any condition in life be so agreeable as the married state. How much more satisfaction does a man receive in the embraces of a loving wife, than in the wanton dalliances of a deceitful harlot!

Thus does this section unto all relate,
 The pleasures that attend the married state!
 And shews it doth with innocence consist;
 And that so many have those pleasures miss'd,
 It's their own fault, they will no wiser be,
 As in this mirror they may plainly see.

SECTION III.

Shewing at what Age young Men and Virgins are capable of carnal Copulation, and why they so much desire it.

I SHALL, in the present section, make it my business to shew at what age young men and virgins are capable of the marriage-bed, which, because so many desire before they attain to it, it will be likewise necessary to shew the causes of their impetuous desires.

The inclinations of virgins to marriage is to be known by many symptoms; for when they arrive to ripe age, which is about fourteen or fifteen, their natural purgations begin to flow; and then the blood, which no longer serves for the increase of their bodies, does, by its abounding, stir up their minds to venery: to which also external causes may incite them. For their spirits are brisk and inflamed when they arrive at this age, and their bodies are often more heated by their eating sharp and salt things, and by spices, by which their desire of venereal embraces becomes very great, and at some critical junctures almost insupportable. The use of those so much desired enjoyments being denied to virgins, is often followed by very dangerous, and sometimes dismal consequences, precipitating them into those follies that may bring an indelible stain on their families, or bring on themselves the *Green Sickness*, or other diseases. But when they are married, and those desires satisfied by their husbands, these distempers vanish, and their beauty returns more gay and lively than before. And this strong inclination of theirs may be known by their too eager gazing at men, and wishing their company, which sufficiently demonstrates that nature excites them to desire coition. Nor is this the case with virgins only, but the same may be observed in young widows, who cannot be satisfied without that *due benevolence* which they were wont to receive from their husbands.

At fourteen years of age the menses commonly begin to flow in virgins; at which time they are capable of conceiving, and therefore fit for marriage; though it would be much better, both for themselves and their children, if they would not marry till eighteen or twenty. If they are healthy, of a strong

body, and use themselves to temperance, they may continue bearing till upwards of fifty: for the menses flow a longer time in some than in others; but when they cease, they cease bearing. And therefore Sarah bearing Isaac, *after it had ceased to be with her according to the custom of women*, may be well termed miraculous.

As for male youth, when they arrive at sixteen, or between that and seventeen, having much vital strength, they may be capable of getting children: which ability, by the force and heat of procreating matter, constantly increases till forty-five, fifty-five, sixty-five, and then begins to flag, the seed by degrees becoming unfruitful, the natural spirits being extinguished, and the heat dried up. Thus it is with them for the most part, but many times it falls out otherwise, in particular instances: as once, in Sweden, a man was married at an hundred years old to a bride at thirty, and had many children by her; but he was a man of so good a constitution, and carried his age so well, that strangers would not have guessed him at above sixty. And in Campania, where the air is clear and temperate, it is usual for men of eighty years old to marry young virgins, and have children by them: which shews, that age in men hinders not procreation, unless they be exhausted in their youth, and their yards shrivelled up.

If any ask, why a woman is sooner barren than a man? let such know, that the natural heat, which is the cause of generation, is more predominant in men than women, for the monthly purgations of women shew them to be more moist than men, and so does also the softness of their bodies. And the man exceeding her in native heat, concocts the humors into proper aliment, by the benefit whereof they are elaborated into seed: but women, though of a finer make, yet not being so strong as men, their faculties are thereby hindered in their operations.

Thus nature to her children is so kind,
 That early they those inclinations find,
 Which prompts them on to propagate mankind.
 Hence 'tis a virgin her desires can't smother,
 But restless is till she be made a mother.

CHAP. III.

Of Virginity ; what it is ; how it may be known ; by what Means it may be lost ; and how a Person may know that it is so.

SECTION I.

Of Virginity, and wherein it consists.

HAVING treated of the desire young men and virgins have to mutual embraces, and at what age they are fit for them ; I have also shewn, that these pleasures are only lawful to be enjoyed in a married state ; and have also acquainted my reader with the advantage of such a condition. But since the desires of many after mutual embraces are so impetuous, that not having an opportunity to enter into a married state, they have anticipated the pleasures of matrimony, and lost their virginity before hand ; and yet, perhaps, have afterwards pretended to bring their virginity to a marriage bed, by which means many an honest man has been deceived, and meretricious women escaped with impunity ; and, on the other hand, some virtuous young virgins, that have indeed come such to their husbands beds, have been accused by the ignorance and incredulity of their husbands, to have lost their virginity before hand, when there has been no such matter : therefore, to do right in this case to both parties, my design in this chapter is, to shew what virginity is, and wherein it consists ; how many ways it may be lost ; and how a man may know whether it be lost or not ; that so women may not be wrongfully censured, or men imposed upon.

Virginity, untouched and taintless, is the boast and pride of the fair sex : but they generally commend it to put it off. For, good as it is, they care not how soon they are honestly rid of it. And I think they are in the right of it, for if kept, it grows useless, or at least looses so much of its value ; a stale virgin (if such a thing there be) being looked upon like an old almanack out of date.—But to speak to the purpose ; virginity is the chief, the best, the prime of any thing, and is properly the integrity of a woman's privities, not violated by a man, or not known by him ; it being the distinguished characteristic of a virgin, that she has not known man.

To make this more plain, I must here observe that there is in maids, in the neck of the womb, a membranous production called the *hymen*, which is like the bud of a rose half-blown, and this is broken in the first act of copulation with man : and hence comes the word *defloro*, to deflower ; whence the taking of virginity is called *the deflowering of a virgin* :

for when the rose bud is expanded, virginity is lost. Certain it is, there is in the first act of copulation something that causes pain and bleeding; which is an evident sign of virginity. But what this is, authors are not agreed on. Some say it is a nervous membrane, or thin skin with small veins, that bleeds at the first penetration of the yard. Others say it is the four caruncles, knobs, or little buds like myrtle berries, which are plump and full in virgins, but hang loose or flaggy in those who have used copulation, being pressed by the yard. Some have observed a fleshy circle about the *nymphæ*, or *neck of the womb*, with little obscure veins, which make the membrane not to be nervous but fleshy. But setting aside conjectures, the *hymen*, or *claustrum virginale*, is a thin membrane interwoven with fleshy fibres, and endowed with many little arteries and veins, spread across the passage of the *vagina*, behind the insertion of the bladder, with a hole in the midst for the menses to flow, so big, that it will admit of the top of one's little finger. This is that which is called the *zone*, or *girdle of chastity*: and, where it is found in the form described, it is a certain note of virginity; but in the first act of copulation, it is necessarily violated; and then it is generally accompanied with an effusion of blood, which blood is called *the flower of virginity*; and when once it is broken, it never closes again.

SECTION II.

How Virginity may be lost.

IN the former section, I have endeavoured to shew in what virginity consists, and that it is lost by the first penetration of the yard, which may be easily known by its being attended with an effusion of blood upon the rupture of the *hymenean* membrane, or *claustrum virginale*: but I must do the fair sex this justice, and let the world know, that although, wherever this is found, it is an undoubted token of virginity, yet it will not follow, that where this token is wanting, virginity is deflowered and lost: for the *hymen* may be corroded by acrimonious and fretting humors flowing through it with the menses, or it may be violated by the inversion or falling out of the *uterus*, or of the *vagina*, or *sheath*, which sometimes happens even to virgins; or (which I would have all virgins to be aware of, for the preservation of their credit, and preventing of all causes of suspicion) perhaps the indiscreet or unwary bride had her *menses* but a day or two before; in which case, both the *hymen* and the inner wrinkled membranes of the *vagina* are flaggy, weak, and relaxed, so that no such rupture, and, in consequence, no such effusion would happen. It were better, therefore, upon this account, that

when virgins are about to marry, they would fix the wedding-day at least six or seven days after their menses have done flowing.

But further : To some nature hath given greater desire after enjoyment than to others, and to such, though they abstain from enjoyment, yet so great is their lust and desire after it, that they may break the *hymen*, or *claustrum virginale* : and sometimes it itches to that degree, that they put in their finger, and so break it. Sometimes the midwives break it in the birth, and sometimes it is done by the stoppage of the urine, coughing, violent straining, or sneezing : so that if there be no bleeding at the first penetration of the husband, it is not always a sign of unchastity, or that another has been there before him, seeing that the *hymenean* membrane may be broke in so many other ways ; but where bleeding does follow, it is an evident and undeniable token that the person was a virgin, and had never known man before. And indeed, though the *hymen* (or membrane so called) may be broken all these ways I have mentioned, yet it so rarely happens to be broken any other way, that Leo Africanus makes mention of it as a general custom of the Africans at their weddings, that, after the marriage ceremony is over, the bride and bridegroom are shut up in a chamber, while the wedding dinner is preparing ; an ancient woman stands at the door, to receive from the bridegroom a sheet, having the bloody tokens of his wife's virginity, which she shews in triumph to all the guests, and then they feast with joy ; but if there is no blood seen, the bride is sent home again to her friends with disgrace, and the disappointed guests go home without their dinner.

There are others that make the straitness of the privities a sign of virginity, but this is a very uncertain rule ; for this depends much upon age, habit of body, and other circumstances. But though it must indeed be granted, that women who have used carnal copulation are not so strait as virgins, yet this cannot be a certain argument of virginity, because, after repeated acts of venery, the privities may be made so strait by the use of astringent medicines, that they who trust to this sign may sometimes take a whore instead of a virgin. And I have heard of a courtesan, who, though she had been married, gave herself out to be a virgin. and by the help of a bath of comfrey roots, deceived those with whom she had to do.

Others take upon them to be judges of lost virginity by milk in the breast ; but such, perhaps, are ignorant, that there is a two-fold milk ; the one of virgins, the other of such as have conceived, or brought forth children ; that of virgins is a malady contrary to nature, but the other is natural. The

first is made of blood from the womb, and so goes to the breasts, being nothing but a superfluous nourishment that is turned into milk by the faculty of the breasts, without the knowledge of man; the other is only where there is a child either in the womb or born. Yet the milk differs very much, both in respect to the blood, and diversity of veins that bring it to the breasts; and though both are white, yet that of virgins is thinner and less in quantity, neither is it so sweet. Therefore, if virgins happen to have such milk, they are not for that reason to be accounted unchaste.

Upon the whole matter, the sum of what I have now said upon the head of virginity terminates in this; that when a man is married, and finds the tokens of his wife's virginity upon the first act of copulation, he has all the reason in the world to believe her such, and to rest satisfied that he has married a virgin: but if, on the contrary, he finds them not, then he has no reason to think her devirginated, if he finds her otherwise sober and modest: seeing the *hymen*, or *claustrum virginale* may be broken so many other ways, and yet the woman be both chaste and virtuous. Only let me caution virgins to take all imaginable care to keep their *virgin zone* entire, that so, when they marry, they may be such as the great Cæsar wished his wife to be, that is, not only without fault, but without suspicion also.

Thus have I virgin innocence survey'd,
 And shew'd the difference 'twixt wife and maid;
 And that their chastity they need not fear,
 Whose virgin tokens plainly do appear.
 Nor censure those in whom they do not so,
 Unless the contrary they plainly know;
 For they may yet unspotted virgins be,
 Although their virgin tokens none can see.

tired to make the conception; and then the veins of the breasts are more clearly seen than they were before. The tops of the nipples look redder than formerly; the body is weakened, and the face discolored: the belly waxeth very fat, because the womb closeth itself together to nourish and cherish the seed. If she drinks cold water, a coldness is felt in the breast; she has also loss of appetite, sour belchings, and exceeding weakness of the stomach: the breasts begin to swell and wax hard, not without pain or soreness; wringing and griping pains like the cramp happen in the belly above the navel; also divers appetites and longings are engendered. The veins of the eyes are also clearly seen, and the eyes seem somewhat discolored, as a looking-glass will shew. The excrements of the guts are voided painfully, because the womb swelling thrusteth the right gut together; likewise let her take a green nettle, and put it into her urine, cover it closely, and let it remain all night; if she is with child, it will be full of red spots the next morning, if she is not with child it will be blackish.

By these experiments, some of which never fail, a woman may know whether she hath conceived or not, and so regulate herself accordingly. For

When women once with child conceived are,
They of themselves should take especial care.

SECTION V.

How to know whether a Woman be conceived of a Male or Female Child.

IN the present section, I shall endeavor to gratify the curiosity of many persons, who are very desirous to know whether they have conceived of a male or female. For the satisfaction of such, I shall give the signs of a male child being conceived; and the reverse thereof that of a female.

It is then a sign of a male child when a woman feels it first on the right side; for male children lie always on that side of the womb; the woman also, when rising from her chair, doth sooner stay herself upon the right hand than upon the left. Also the belly lies rounder and higher than when it is a female. The color of the woman is not so swarthy, but more clear than when it is a girl. The right side is likewise more plump and harder than the left; the right nipple redder. She likewise breeds a boy easier, and with less pain than a girl, and carries her burden not so heavily, but is more nimble and stirring.

I will only, as to this, add the following experiments, which I never knew to fail. If the circle under the woman's eyes, which is of a wan blue color, be more apparent under the

right eye, and that most discolored, she is with child of a boy; if the mark be most apparent in her left eye, she is with child of a girl.—The other is, let her drop a little of her milk into a bason of fair water, if it sinks to the bottom as it drops in, round in a drop, it is a girl she is with child of; but if it be a boy, it will spread, and swim at the top. This I have often tried, and it never failed.

For whether male or female child it be
You have conceived, by these rules you'll see.

CHAP. II.

SECTION I.

How a Woman should conduct herself in order to Conception.

I AM very well satisfied, that many women desire copulation, not from any delight or satisfaction they take therein, more than as it is the means appointed by Him that bids us *increase and multiply*, for the obtaining of children, and the propagation of mankind. And though many make use of coition to obtain that end, yet we find, by experience, that in some it does not succeed, because they order not themselves as they ought to do; for though it must be granted, that all our endeavors depend upon the divine blessing, yet, if we are wanting in any thing to ourselves, how can we expect that blessing to succeed our endeavours? My business, therefore, in this section, shall be to shew, how women that desire to have children should order themselves.

First, Women that are desirous to have children must, in order thereunto, give themselves to moderate exercise, for idleness and want of exercise are very great enemies to the work of generation, and indeed are enemies both to soul and body. Those that do give themselves the trouble to observe it, will find those city dames that live high, and do nothing, seldom have children; or if they have, they seldom live: whereas, those poor women that accustom themselves to labor, have many children, and those strong and lusty. Nor need we wonder at it, if we consider the benefit that comes by moderate exercise and labor; for it opens the pores, quickens the spirits, stirs up the natural heat, strengthens the body, senses and spirits, comforts the limbs, and helps nature in all her exercises, of which procreation of children is none of the least.

Secondly, Women, in order to conception, should avoid all manner of discontent, and the occasion of it; for discontent is a great enemy to conception, and so dispirits either

man or woman, that it hinders them from putting forth that vigor which ought to be exerted in the act of coition. When, on the contrary, content and satisfaction of mind dilate the heart and arteries, whereby the vital blood and spirits are freely distributed throughout the body; and thence arise such affections as please, recreate, and refresh the nature of man; as hope, joy, love, gladness, and mirth. Nor does it only comfort and strengthen the body, but also the operation and imagination of the mind; which is so much the more necessary: insomuch as the imagination of the mother works forcibly upon the conception of the child. Women, therefore, ought to take great care that their imagination be pure and clear, that their child may be well formed.

Thirdly, Women ought to take care to keep the womb in good order; and to see that the menses come down as they ought to do; for if they are discolored, they are out of order. But if the blood comes down pure, then the woman will be very prone to conceive with child, especially if they use copulation in two or three days after their monthly terms are stayed.

Fourthly, A woman that would conceive, should observe that she does not use the act of coition too often; for satiety gluts the womb, and renders it unfit for its service. There are two things that demonstrate this:—One is, that common whores (who often use copulation) have never, or very rarely, any children; for the grass seldom grows in a path that is commonly trodden on. The other is, that women whose husbands have been long absent, do; after copulation with them again, conceive very quickly.

Fifthly, Care should be taken that the time of copulation be convenient, that there may be no fear of surprise: for fear hinders conception. And then it were best also that the desire of copulation should be natural, and not stirred up by provocation: and if it be natural, the greater the woman's desire of copulation is, the more likely she is to conceive.

I will add no more, but what some authors report, that a loadstone carried about the woman, not only causeth *conception*, but *concord*, between man and wife; if it be true, I would have no married woman go without one, both for her own and her husband's quiet.

Let all the fair, who would have children from
 Their soft embraces, read what's here laid down;
 Those that to exercise themselves incline,
 And in their love to be content design,
 Who have their monthly terms in order flow,
 And regulate them if they do not so;

That love's embraces moderately use,
 And to enjoy them a fit season chuse:
 These may content with what they've done remain,
 And need not fear their wishes to obtain.

SECTION II.

What a Woman ought to observe after Conception.

AFTER a woman hath conceived, or has reason to think so, she ought to be very careful of herself, lest she should do any thing that might hinder nature in her operation. For in the first two months after conception women are very subject to miscarriage, because then the ligaments are weak, and soon broken. To prevent this, let the woman every morning drink a draught of sage ale, and it will do her abundance of good. And if signs of abortion or miscarriage appear, let her lay a toast dipped in tent (in case muscadel cannot be gotten) to the navel, for this is very good; and let her take a little garden tansy, and having bruised it, sprinkle it with muscadel, and apply it to the navel, and she will find it much better. Also tea infused in ale, like sage ale, and a draught drank every morning, is most excellent for such women as are subject to miscarriages. Also take juice of tansy, clarify it, and boil it up into a syrup, with twice its weight of sugar, and let a spoonful or two be taken in such cases, and it will be an excellent preservative against miscarriages. Also if she can, let her be where the air is temperate. Let her sleep be moderate; let her also avoid all watching and immoderate exercise, as also disturbing passions, loud clamors, and filthy smells; and let her abstain from all things which may provoke either urine or the courses; and also from all sharp and windy meats; and let a moderate diet be observed. If the excrements of the guts be retained, lenify the belly with clysters made of the decoction of mallows and violets, with sugar and common oil; or make broth of borage, bugloss, beets, mallows, and take therein a little manna; but, on the contrary, if she be troubled with a looseness of the belly, let it not be stopped without the judgment of a physician; for observe, that all uterine fluxes have a malignant quality, and must be evacuated and removed before the flux be stayed.

CHAP. III.

How a Child lieth, and how it groweth up in the Womb of the Mother after Conception.

SECTION I.

How the Child is formed in the Womb after Conception.

AS to the formation of the child, it is to be noted, that after coition the seed lies warm in the womb for six days without any visible alteration, only the womb closes up itself to prevent its issuing forth again, and for the securing it from the cold; and all this time it looks like butter, or coagulated milk: and it would be very necessary for her who has conceived to forbear the embraces of her husband all the time, lest the conception should be spoiled. In three days after it is altered from the quality of thick milk or butter, and it becomes blood, or at least resembles it in color, nature having now begun to work upon it. In the next six days following, that blood begins to be united into one body, grows hard, and becomes a little quantity, and to appear a round lump. And as in the first creation, *the earth was void and without form*, so in the creating work of divine power in the womb, this shapeless embryo lies like the first mass. But in two days after, the principle members are formed by the plastic power of nature, and these principle members are four in number, viz. the heart, the brain, the liver, and the testicles or stones. Three days after the other members are formed, and are distinguished from the shoulders to the knees; and the heart, liver, and stones, with their appurtenances, grow bigger and bigger. Four days after that, the several members of the whole body appear, and, as nature requires, they conjointly and separately do receive their perfection. And so in the appointed time, the whole creation hath that essence which it ought to have in the perfection of it, receiving from God a living soul, therewith *breathing into its nostrils the breath of life*. Thus have I shewn the whole operations of nature in the formation of the child in the womb, according to the energy given it by the divine Creator, Maker, and Up-holder of all things both in heaven and earth.

By some others more briefly, but to the same purpose, the forming of the child in the womb of its mother is thus described: three days in the milk, three in the blood, twelve days form the flesh, and eighteen the members, and forty days afterwards the child is inspired with life, being endowed with an immortal living soul.

SECTION II.

Of the Manner of the Child's lying in the Womb from the Conception to the Birth.

I COME now to shew, in the course of this section, in what manner the child lies in the womb of its mother, whilst it is confined in the dark recesses; first giving the reader the testimony of two or three of the most learned on that head.

The learned Hippocrates affirms, that the child, as he is placed in the womb, hath his hands upon his knees, and his head bent to his feet; so that he lies round together, his hands upon his knees, and his face between them; so that each eye touches each thumb, and his nose betwixt his knees. Of the same opinion in this matter was Bartholinus the younger. Columbus is of opinion that the figure of the child in the womb is round, the right arm bowed, the fingers thereof under the ear and above the neck, the head bowed, so that the chin toucheth the breast, the left arm bowed above both breast and face, and propped up by the bending of the right elbow: the legs are lifted upwards, the right of which is so lifted up that the thigh toucheth the belly, the knees the navel, the heel soucheth the left buttock, and the foot is turned back and covereth the secrets; the left thigh toucheth the belly, and the leg lifted up to the breast, the back lying outwards.

Thus the reader may see how authors differ herein: but this ought to be noted, that the different positions which the child has been seen in hath given occasion to different opinions of authors. For when the woman is young with child, the embryo is always found of a round figure, a little oblong, having the spine moderately turned inwards, the thighs folded and a little raised, to which the legs are joined; that the heels touch the buttocks, the arms bending, and the hands placed upon the knees, towards which the head is inclined forward; so that the chin touches the breast; the spine of the back is at that time, placed toward's the mother's, the head uppermost, the hands forwards, and the feet downwards, and proportionably to its growth it extends its members by little add little, which were exactly formed in the first month. In this posture it usually keeps till the seventh or eighth month, and then the head is turned downwards towards the inward orifice of the womb, so that the feet are uppermost, and the face towards the mother's great gut. And this turning of the infant in this manner, with its head downwards, towards the latter end of a woman's reckoning, is so ordered of nature, that it may be the better disposed for the birth. The knowledge of these things being so essential to the practice of a midwife, I could not by any means omit them.

CHAP. IV.

Of the Obstruction of Conception ; with the Cause and Cure of Barrenness, and the Signs of Insufficiency both in Men and Women.

BEFORE I proceed any farther, it is highly necessary that I treat of the obstructions of conception : which naturally leads me to treat of Barrenness, the grand obstruction of conception.

SECTION I.

Of Barrenness.

BARRENNESS is a natural or accidental defect, which hinders conception : for that which hinders conception causeth barrenness. There are several causes why conception may be hindered ; as too much heat or cold dries up the seed, and makes it corrupt ; *this* extinguishing the life of the seed, and *that* making it waterish, and unfit for generation. It may be caused also by the stoppage or overflowing of the courses, and by swellings, ulcers, or inflammations of the womb, or by an excrescence of flesh growing about the mouth of the matrix, whereby the seed is hindered from being injected into the womb ; and want of love in the persons copulating may also hinder conception, as is apparent from those women that are deflowered against their will ; no conception following any forced copulation.

And here let me caution parents against one thing that often causeth barrenness, which might easily be prevented ; and that is, against letting virgins blood in the arm before their courses come down : these come down in virgins usually in the fourteenth year of their age, seldom before the thirteenth, but never before the twelfth. Now, because usually young virgins are out of order before they first break down, the mother goes with her to the doctor, who finding that fulness of blood is the occasion of her illness, orders her to be let blood in the arm ; upon which she becomes well for a time, the superfluous blood being taken away : and this remedy, which is worse than the disease, being repeated four or five times, the blood comes not down at all to the womb, as it doth in other women, but dries up, and is for ever barren ; whereas, had she been let blood in the foot, it would have brought the blood downwards, and so have provoked the terms, and prevented mischief.

Another cause of barrenness is for want of convenient moderate equality, which the woman ought to have with the man : as if he be hot, she must be cold ; if he be dry, she

moist: but if they both are dry, or both of a moist constitution, they cannot propagate, though in this case neither of them may be barren, singly considered; for he or she, though now as barren as the *barren fig-tree*, yet joined with an apt constitution, may become as *fruitful as the vine*.

Another cause of barrenness may be the disuse of copulation, for some there are of that frigid constitution, that they either use not the means at all, or else perform it with so much languor and coldness, that it is not likely it should prove efficacious: for the act of coition should be performed with the greatest ardor and intenseness of desire imaginable, or else they may as well let it alone; a frigid disposition being the effect of a cold distemper, and must be cured by such things as heat and nourish. For

Without good drink and feeding high,
Desire to Venus soon will die.

Such therefore ought to feed upon cock-stones, lamb-stones, sparrows, partridges, quails and pheasants eggs, for it is an infallible aphorism in physic, that whatsoever any creature is extremely addicted to, they operate to the same end, by their mutual virtue, in the person who eats them. Therefore partridges, quails, sparrows, &c. being extremely addicted to venery, they work the same effect in those who eat them: and this likewise is worthy to be noted, that in what part of the body the faculty that you would strengthen lies, take the same part of another creature, in whom that faculty is strong, as a medicine; therefore cock-stones, &c. are medicinal in this distemper. Let such persons also eat such food as is very nourishing, as parsnips, alisanders, skirrets, and pine nuts: and let them take a dram of diatrion as an electuary every morning. The stones of a fox dried to a powder, a dram taken every morning in tent, is also very good in this case: and so also is a dram of satyrion roots, taken in like manner.

SECTION II.

Of the Signs of Insufficiency in Men, and Barrenness in Women.

AFTER married people have lived long together, and both seem likely, and yet have no children, there often arises discontent between them, and both are troubled because they know not on which side the fault is. And though authors have left several ways to know whether the man or the woman be defective, yet because I cannot coincide in their judgments, I shall pass by them in silence, and rather lay down a few rules that may be depended upon, than many that are uncertain. But I must premise, that women are subject to so

many infirmities more than men, that the cause of barrenness is oftener on their side than on the man's. For if the man has the instruments of generation perfect, being in health, and keeping a regular and temperate diet and exercise, I know no accidental cause of barrenness in him; whereas the cause of barrenness in a woman lies in her womb, and the infirmities incident thereunto; some of which are stopping of the *menstrua*, or their overflowing: as also the falling out thereof, and the inflammation, windiness, heat and dryness thereof, for each of which we shall prescribe proper cures. But to be more particular.

If a man or woman, in whom the instruments of generation appear no ways defective, would know whether the cause of barrenness be in themselves or their bed-fellow, let them take a handful of barley, or of any other corn that will grow quickly, and steep half of it in the urine of the man, and the other in the urine of the woman, during the space of twenty-four hours. Then take it out, and set it, the man's by itself, and the woman's by itself, in a flower-pot, or something else, where you may keep them dry. Then water the man's every morning with his own urine, and the woman's with her's; and that which grows is most fruitful: and that which does not grow denotes the person barren. Nor let any despise this trial; for seeing physicians will, by urine, undertake to tell a person of his or her diseases, why should not urine also shew whether a person be fruitful or not? But if in a man the instrument of generation is not perfect, it will be obvious to the sight; and if the yard be so feeble that it will not admit of erection, it can never convey the seed into the womb, nor can there be in such a case any conception. But this is so plain and easily discerned, that it needs must be obvious to both parties, and this man who finds himself so debilitated ought not to marry.

The case cannot be so bad with the woman, though she be barren, but that her husband may make use of her, unless she be impenetrable, which (though it sometimes does) yet but very rarely happens; and therefore the man is the most inexcusable if he transgress.

Besides what I have already mentioned, signs of barrenness in women are—if she be of an over hot constitution, of a dry body, subject to anger, hath black hair, and a quick pulse, her purgations flow but little, and that with pain, and yet has a violent desire to coition; but if she be of a cold constitution, then are the signs contrary to those recited. If barrenness be caused through an evil quality of the womb, it may be known by making suffumigation of red storax, myrrh, cassia wood, nutmeg, cinnamon, and letting her receive the

fume of it into her womb, covering her very close. If the odour passes through the body up into the mouth and nostrils, she is fruitful. But if she feel not the fume in her mouth and nose, it denotes barrenness one of these ways, viz. That the seed is either through cold extinguished, or through heat dissipated. And if a woman be suspected to be unfruitful, cast natural brimstone, such as is digged out of the mine, into her urine, and if worms breed therein she is fruitful. But this shall suffice to be said of the causes and signs of barrenness; as it is now time to proceed to the cure.

SECTION III.

Of the Cure of Barrenness.

IN the cure of barrenness respect must be had to the cause; for the cause must be first removed, and then the womb strengthened, and also the spirit of the seed enlivened by corroborating applications.

If barrenness proceeds from over much heat, let her use inwardly, succory, endive, violets, water-lillies, sorrel, and lettuce, with syrups and conserves made thereof, thus:

Take conserve of borage, violets, succory, water-lillies, of each an ounce; half an ounce of conserve of roses; diamargarition frigid, diatrion, fencalon, of each half a dram; with syrup of violets, or juice of citron, make an electury.

Let her also take endive, water-lillies, borage flowers, of each an handful, rhubarb, myrabolans, of each three drams, with water make a decoction; add to the straining the syrup laxative of violets one ounce, syrup of cassia half an ounce, manna three drams; make all into a potion. Take of the syrup of mugwort an ounce, syrup of maiden-hair two ounces, pulv. elect. trionsat, make all up into a julep. Apply to the reins and privities fomentations of the juice of lettuce, violets, roses, mallows, vine leaves, and night-shade; let her anoint her secret parts with the cooling ointment of galls. Baths are good for her to sit in. Let the air be clear, her garments thin, her food lettuce, endive, succory, and barley: but let her have no hot meats, nor strong wines, except it be waterish and thin. Rest is good for her, both in body and mind; she must use but little copulation, but may sleep as much as she will.

If barrenness be occasioned by the predominance of cold, extinguishing the power of the seed, which may be known by her desiring venery, and receiving no pleasure in the act of copulation, even while the man is spending his seed; her terms are phlegmatic, thick, slimy, and flow not rightly: in this case, let her take syrup of calamint, mugwort, betony, of each an ounce; water of pennyroyal, feverfew, hysop,

sage, of each two ounces; and make a julep. Let her take every morning two spoonfuls of cinnamon water, with one scruple of mithridate. Also let her take oil of anniseed a scruple and a half; jessamine, diachylon, and dinoschi dianglang, of each one dram; sugar four ounces; with water of cinnamon make lozenges, and take of them a dram and a half twice a day, two hours before meals. Let her also fasten cupping-glasses to her hips and belly, and let her take storax calamint one ounce; mastich, cloves, cinnamon, nutmeg, lignum, aloes, frankincense, of each half an ounce, musk ten grains, ambergrease half a scruple, with rose water make a confection; divide it into four parts, of one make a pomum odoratum to smell to, if she be not hysterical: of the second make a mass of pills, and let her take three every night; of a third make a pessary, and put it up; of the fourth make a suffumigation for the womb.

If barrenness arises from the faculties of the womb being weakened, and the life of the seed suffocated by over much humidity flowing on those parts, let her take of betony; marjoram, mugwort, pennyroyal, balm, of each one handful; root of onrum, fennel, elecampane, of each two drams; anniseed, cumminseed, of each a dram, with sugar and water a sufficient quantity, of which make a syrup, take three ounces every other morning. Then purge with these pills following: take of pil. ext. two scruples; diagridion two grains, species de castor one scruple; make them up into nine pills, with syrup of mugwort. Also take spec. diagma, diamoschi diambra, of each one dram; cinnamon one dram and a half; mace, cloves, nutmegs, of each half a dram; sugar six ounces, with feverfew; make lozenges to be taken every morning. Likewise let her take of the decoction of sarsaparilla and viga aurea, with a good quantity of sage, which is an herb of that virtue, that Cornelius Agrippa honoured it with the title of *sacra herba*, a holy herb; and Dodonæus, in his History of Plants, reports, that after a great plague had happened in Egypt, which had almost depopulated the country, the surviving women were commanded to drink the juice of sage, that they might multiply the faster. Let her also anoint her genitals with the oil of anniseed and spikenard. Trochicks to smooth the womb are also very good. To make which let her take mace, nutmeg, cinnamon, storax, amber, of each one dram; cloyes, laden, of each half a dram; turpentine a sufficient quantity. Lastly, take the roots of valerian and elecampane, of each one pound; of galangal three ounces; organ, lavender, marjoram, betony, mugwort, bayleaves, calamint, of each three handfuls; with water make an infusion. But to proceed.

If barrenness be caused by the dryness of the womb consuming the matter of the seed, let her take every day almond milk and goats milk extracted with honey; eat often of the root satyrion candied, and of the electuary of diasatyrion. Let her also take three sheeps heads, and boil them till the flesh comes from the bones, then take of melilot, violets, camomile, mercury, orchies, with the roots of each, one pound; fenugreek, lintseed, valerian roots, of each a handful; let all these be decocted in the aforesaid broth, and let the woman sit in the decoction up to the navel. Also take of deers suet half an ounce; cows marrow, styracis liquidæ, of each a dram; oil of sweet almonds two ounces; with silk or cotton make a pessary, and make injections only of fresh butter and oil of sweet almonds.

It sometimes happens that barrenness is caused by remissness in the manner of the act of coition; and though there be no impediment on either side, yet if both sexes meet not in that act with equal vigor, no conception follows; for many times the man is too quick for the woman, or rather the woman too slow for the man, and is not prepared to receive the seed with that delight she ought, when it is emitted by the man; and those who follow the opinion of the ancients, that the woman contributes seed in the formation of the child as well as the man, are of opinion that there ought to be a joint emission both of the man and woman at the same instant, which administering to both a very great delight, perfects the work of conception. But if in this case the woman be slack, it will be proper for the man to follow the advice given in Chap. III. sect. 2, where both sexes are shewn how to manage themselves in the act of coition, that so, by stirring up in the woman a desire to venery, she may meet his embraces with the greatest ardor. If this should prove ineffectual, let her before the act of coition, foment the privities with the decoction of betony, sage, hyssop, and calamint, anoint the mouth and head of the womb with musk and civet: and the cause of barrenness being removed, let the womb be corroborated by the following applications.

Take of bay berries, mastich, nutmeg, frankincense, cypress nuts, zadani, galbani, of each one dram; styracis liquidæ, two scruples; cloves half a scruple; ambergrease two grains; musk six grains; then with oil of spikenard make a pessary. Also take red roses, with frankincense, lapidis hæmatatis, of each half an ounce; sanguis draconis, fine bole mastich, of each two drams; nutmegs, cloves, of each one dram; spikenard half a scruple, and with oil of wormwood make a plaster for the lower part of the belly. Also let her eat of eringo roots candied, and make an injection of the

juice of the roots of satyrión; and then let her use copulation soon after the menses are ceased, conception being most apt to follow; for then the womb is thirsty and dry, and aptest both to draw the seed and to retain it by the roughness of the inward superficies. A woman should be careful to avoid excess in all things, as being the greatest enemy to conception. For, should a woman conceive under care, study, &c. the child will probably be foolish, because the animal faculties of the parent were confused.

CHAP. V.

How Women ought to govern themselves during their Pregnancy.

SECTION I.

Rules for Women when Pregnant.

FIRST, Let a woman that is with child chuse a temperate air, not infected with fogs, and for that reason not near any marshy grounds, rivers, &c. But this cannot be avoided by some, their habitation happening to be in such places. But those who can live where they please ought to avoid such places: likewise the going abroad in too hot or cold weather; also when the south wind blows hard, for that often proves hurtful to women with child, and sometimes causes abortion.

Secondly, She ought also to be very cautious in the nature of her diet, chusing only those meats that create wholesome nourishment, and such as are moderately dry; and let her take care to prevent and avoid immoderate fasting, for that will weaken the infant, and render it of a sickly constitution, and sometimes causes abortion. And as all excesses are to be avoided, so she must take care not only of avoiding immoderate fasting, but also of immoderate eating too, which will not only be apt to stuff up the child, but to swell it up to that degree, that it will endanger the life of itself and the mother in its birth. Let it suffice, that, in general, she avoid all meats which are too hot, or too cold and moist; such as hot meats, sallads, and spices, which often cause the child to be born before its time, and sometimes without nails, which foreshews a short life. And therefore, in this case, the most wholesome food is pigeons, partridges, pheasants, larks, veal, mutton, or any meat that yields a good juice, and contributes kindly nourishment; as also such fruits as are sweet, and of easy digestion, as cherries, pears, damsons, and the like. But let her avoid, as pernicious, all such things as cause and create wind.

Care ought also to be taken with respect to her exercise, which ought to be moderate; for violent motion, either in walking or working, is hurtful and disturbing to the womb, especially riding in a coach upon the stones, or any other uneven place; and in the like manner all extraordinary sounds and noises should be avoided, especially the ringing of bells, and the discharging of great guns; neither ought she to give way to either immoderate laughing or weeping, or to anger, or any other passion, for that may be prejudicial to her.

SECTION II.

Further Rules for Women to observe during their Pregnancy.

THOUGH the act of coition is that without which conception cannot be, yet the immoderate use of it hinders the chief end for which it was designed. In the first four months after conception she ought not to lie with her husband, at least sparingly, lest, by shaking the womb in that action, the courses should again be forced down. In the fifth and sixth months she ought also to abstain; but in the seventh, eighth, and ninth, it may freely be permitted, by reason it opens the passage, and facilitates the birth. To contribute the better towards which, the woman should be careful to keep her body soluble; syrups and other opening things being very helpful to nature in those operations. Let her not lace too strait, lest the child be thereby hindered from coming to its full growth.

To prevent any disorder that may happen to her breasts by too much blood, which will cause curdled milk, let her wear a necklace of gold about her neck, or rather a small ingot of steel between her breasts, fomenting them a quarter of an hour every morning with water distilled from ground-ivy, periwinkle, and sage, being blood-warm.

When her belly is swelling, and the motion is great, which will be about the fourth month, she may swathe it with a band anointed with pomatum, or any other thing of that kind, to keep it smooth and free from wrinkles. For which end it is best to take of the caul of a kid and of a sow, of each three ounces; capon-grease and goose-grease, of each an ounce and a half: and having melted them all together, put thereto a quarter of a pint of water; after which strain them through a linen cloth into fair water; casting it to and fro therein till it be white; at which time add to it the marrow of a red deer one ounce, and lay it in red rose water for twelve hours. After the expiration of which time you may use it, anointing the swathe and belly.

But if these ingredients are not to be had, you may make use of the following liniment, which will do almost as well as the other: take of mutton suet (that which grows about the kidneys is best) and of dogs-grease, of each two ounces, whale oil one ounce, and oil of sweet almonds the same quantity; wash them well, after they are melted together, in the water of germander, or new white wine, anoint the belly and swathe therewith. Those that care not to anoint their bellies, may make use of the following bath or decoction; take of all sorts of mallows, and of motherwort, of each two handfuls; white lilly roots three ounces; melilot and camomile, of each two handfuls; lime seeds, quince seeds, and fenugreek seeds, three ounces; boil them well in spring water, and bathe therewith. If the woman, after her quickening, finds but little motion of the infant in her womb, let her make a quilt, in the manner following, and bind it upon the navel, and it will much strengthen and comfort the infant; take the powder of roses, red coral, and jelly-flowers, of each two ounces; mastich a dram, angelica seeds two drams, ambergrease two grains, and musk two grains; all which being well beaten, put them into a linen bag, spread them abroad, and quilt it, that they may be in every part of it, placing it upon the navel, and it will have the desired effect. These things are sufficient to be observed during the time of pregnancy, that neither child nor mother may miscarry, but be brought to the birth at the appointed time.

CHAP. VI.

Directions for Midwives how to assist Women in the Time of their Labour; and how Child-bearing Women should be ordered in the Time of their Lying-in.

SECTION I.

How a Midwife ought to be qualified.

A MIDWIFE ought to be of a middle-age, neither too old nor too young, and of a good habit of body, not subject to diseases, fears, and sudden frights: nor are the qualifications assigned to a good surgeon improper for a midwife, viz. a lady's hand, a hawk's eye, and a lion's heart; to which may be added, activity of body, and a convenient strength, with caution and diligence, not subject to drowsiness, nor apt to be impatient. She ought to be sober and affable, not subject to passion, but bountiful and compassionate, and her temper cheerful and pleasant, that she may the

better comfort her patients in their sorrow. Nor must she be very hasty, though her business may perhaps require her in another place, lest she should make more haste than good speed. But above all, she ought to be qualified with *the fear of God*, which is the principle thing in every state and condition, and will furnish her on all occasions both with knowledge and discretion. But now I proceed to more particular directions.

SECTION II.

What must be done when the Woman's Time of Labour is come.

WHEN the time of birth draws near, and the good woman finds her travailing pains begin to come upon her, let her send for a midwife in time, better too soon than too late, and get those things ready which are proper on such occasions. When the midwife is come, let the first thing she does be to find whether the true time of the birth be come. The want of observing this hath spoiled many a child, and endangered the life of the mother, or at least put her to twice as much pain as she needed: for unskilful midwives, not minding this, have given things to force down the child, and thereby disturbed the natural course of her labour: whereas nature works best in her own time and way. I do confess it is sometimes difficult to know the true time of some women's labour, they being troubled with pains so long before their true labour comes; in some, weeks before: the reason of which is the heat of the reins, which is manifest by the swelling of the legs. And therefore when women with child find their legs do swell much, they may be assured their reins are too hot. Wherefore, my advice to such women is, to cool their reins before the time of their labour, which may be effectually done by anointing the reins of the back with the oil of poppies and violets, or water-lilies, and thus they may avoid that hard labour which they usually undergo whose reins are hot: which, that they may the better prevent, let me recommend to them the decoction of plaintain leaves and roots, which is thus made: make a strong decoction of them in water, and then, having strained and clarified it with the white of an egg, boil it into a syrup with an equal weight of sugar, and keep it for use. But since it is so necessary for midwives to know the true time of a woman's labour, the following section will rightly inform them.

SECTION III.

Signs by which the Time of a Woman's Labour may be known.

WHEN women draw near the time of their reckoning, especially with the first child, and perceive any extraordinary pains in their belly, they immediately send for their midwife, as taking it for their labour; though perhaps those pains which are so often mistaken for labour are only caused by the cholic, and proceed from wind; which pains, though they come and go, griping the whole belly, are without any forcing downward into the womb, as is done by those that go before labour. But these cholic pains may be removed by warm clothes laid upon the belly; and the application of a clyster or two by which those pains that precede a true labour are rather furthered than hindered. There are also other pains incident to women in that condition from the flux of the belly, which are easily known by the frequent stools that follow them.

But to speak more distinctly of the matter: the signs of labour some few days before are, that the woman's belly, which before lay high, sinks down, and hinders her from walking so easily as she used to do; also there flows from the womb slimy humors, which nature has appointed to moisten and make smooth the passage, that its inward orifice may be the more easily dilated when there is occasion, which beginning to open at that time, suffers the slime to flow away, which proceeds from the glands, called *prestatæ*. These are signs preceding labour.

But when she is presently falling into labour, the signs are great pains about the reins and loins, which coming and retreating at intervals, answer in the bottom of the belly by congruous throws; and sometimes the face is red and inflamed, the blood being much heated by the endeavours a woman makes to bring forth the child: and likewise, because during the strong throws her perspiration is intercepted, which causes the blood to have recourse to her face: her privy parts are also swelled by the infant's head lying in the birth, which, by often thrusting, causes those parts to distend outward. She is likewise much subject to vomiting, which is also a sign of good labour and speedy delivery, though by a great many ignorant women thought otherwise: for good pains are thereby excited and redoubled: which vomiting is occasioned by the sympathy there is between the womb and the stomach. Also when the birth is near, most women are troubled with a trembling of the thighs and legs: not with cold, like the beginning of an ague fit, but with the heat of the whole body;

though this indeed does not always happen. Also, if the humors, which then flow from the womb, are discolored with blood, (which is what the midwife calls *sheaws*) it is an infallible mark of the birth's being near: and then if the midwife puts her finger up the neck of the womb, she will find the inner orifice dilated: at the opening of which, the membranes of the infant, containing the waters, present themselves, and are strongly forced downwards with each pain she hath: at which time one may perceive them sometimes to resist the finger; and then again to press forwards, being more or less hard and extended, according as the pains are stronger or weaker. These membranes, with the water in them, when they are before the head of the child, which the midwives call *the gathering of the womb*, resembles to the touch of the fingers those eggs which have yet no shell, but are covered only by a single membrane. After this the pains still redoubling, the membranes are broken by the strong impression of the waters, which presently flow away, and then the head of the infant is next felt naked, and presents itself at the inward orifice of the womb. When those waters come thus away, then the midwife may be assured the birth is very near, this being the most certain sign that can be; for the *amnion* and *allantois* being broken (which contain those waters) by the pressing forward of the birth, the child is no more able to subsist in the womb afterwards, than a naked man in a heap of snow. Now these waters, if the child come presently after them, facilitate the labour, by making the passage slippery; and therefore, let no midwife use means to force away the water; for nature knows best when the true time of the birth is, and therefore retains the waters till that time; but if by accident the waters break away too long before the birth, then such things as will hasten it may be safely administered.

SECTION IV.

What is to be done at the Time of Labour.

WHEN the midwife is satisfied that it is the true time of labour, she must take care to get all things ready that are necessary to comfort the travailing woman in that time; and the better to do it, let her see that she be not strait laced. She may also give her a pretty strong clyster, if she finds there is occasion for it; but with this proviso, that it be done at the beginning, and before the child be too forward; for otherwise it will be difficult for her to receive it. The advantage of which clyster is, that the gut thereby will be excited to discharge itself of its excrements, and the *rectum* being emptied, there will be more space for the dilating of the passage;

likewise to cause the pains to bear more downwards, through the endeavors she makes; when other necessary things for her labour are put in order, both for the mother and the child.

As to the manner of the delivery, various midwives use different ways; some are delivered sitting on a midwife's stool. But, for my own part, I think that a pallet-bed, girded and placed near the fire, that the good woman may come on each side, and be the more readily assisted, is much the best way.

And if the labouring woman abounds with blood, it may not be improper to let her bleed a little; for by that means she will breathe the better, and have her breath more at liberty, and likewise more strength to bear down her pains: and this may be done without danger, because the child being now ready to be born, needs not the mother's blood for its nourishment any longer; and not only so, but this evacuation does many times prevent her having a fever after delivery. Also, if her strength will permit, let her walk up and down her chamber; and the better to enable her thereto, let her take some good strengthening things; such as new laid eggs, jelly, broth, some spoonfuls of burnt wine; and encourage her to hold off her pains, bearing them down when they take her all that she can. And let the midwife often touch the inward orifice with the finger, that she may better know whether the waters are going to break, and whether the birth will follow soon after; for generally the birth follows in two hours after the afflux of the waters. And to help it afterwards, let her anoint the woman's privities with emollient oil, hogs grease, and fresh butter; especially if she finds them too hard to be dilated.

Let the midwife also be near the labouring woman all the while, and diligently observe her gestures, pains, and complaints; for by this she may guess pretty well how her labour goes forward; for when she changes her groans into loud cries, it is a great sign the birth is near; at which time her pains are greater and more frequent. Let her also sometimes rest herself on her bed to renew her strength, but not too long at a time, for to lie too long at a time will retard her labour, and therefore it is better for her to walk about her chamber as much as she can; which, that she may the better do, let some persons support her under her arms if it be necessary; for by walking, the weight of the child causes the inward orifice of the womb to dilate much sooner than it would do if she lay upon her bed: besides, by walking, her pains will be stronger and more frequent, consequently her labour will not be near so long. If she finds any sick qualms, let her not be discouraged: and if she finds any motions to vomit, let her not suppress them, but rather give way to them; for it

will (however uneasy and irksome they are for the present) be much for her benefit, because they further the pains and provoke downwards.

SECTION V.

To provide the Birth, and cause speedy Delivery.

WHEN the birth is long deferred after the coming down of the waters, let her hasten the birth by drinking a good draught of wine, wherein dittany, red coral, juniper berries, betony, penny-royal, and feverfew have been boiled; the juice of feverfew taken in its prime (which is in May) and clarified, and boiled to a syrup, with twice its weight of sugar, is very good upon this occasion. Also mugwort, used in like manner, works the same effect. And so also does a dram of cinnamon in powder, given inwardly, or tansy bruised, and applied to the privities. Likewise the stone etites, held to the privities, does in a little time draw forth the child and the after-burden; but great care must be taken to remove it gently, or else it will draw forth the womb and all, so great is its magnetic virtue. Also a decoction of savory made with white wine, and drank, gives a woman speedy delivery. Also wild tansy or silver weed bruised, and applied to the woman's nostrils is very good. So also are date stones beaten to powder; and half a dram of them taken in white wine: parsley is of excellent use on this occasion: for if you bruise it and press out the juice, and then dip a linnen cloth in it, and put it up (being so dipped) into the mouth of the womb, it will presently cause the child to come away, though it be dead, and will bring away the after-burden also. The juice of parsley being of great virtue, especially the stone parsley, and drank by a woman with child, it cleareth not only the womb, but also the child in the womb, of all gross humors. A scruple of castorum, in powder, in any convenient liquor, is very good to be taken in such a case, and so also are two or three drops of spirit of castorum in any convenient liquor. Eight or nine drops of the spirit of myrrh, given in a convenient liquor, have the same effect. Or give a woman in travail another woman's milk to drink, it will cause speedy delivery. Also the juice of leeks, being drank with warm water, hath a mighty operation, causing speedy delivery. Take pionyseeds, beat them to powder, and mix the powder with oil, with which oil anoint the loins and privities of the woman with child; it gives her deliverance very speedily, and with less pain than can be imagined. And this may be noted for a general rule, that all those things that move the terms are good for making the delivery easy. There are several other things efficacious in this case; but I need not heap

medicines unnecessarily, those I have already named being sufficient.

When any of the forenamed medicines have hastened the birth, let the midwife lay the woman in a posture for delivery. And first, let the woman be conducted to the pallet-bed, placed at a convenient distance from the fire, according to the season of the year; and let there be a quilt laid upon the pallet bedstead, which is better than a feather bed, and let it have thereon a linen cloth in many folds, with such other things as are necessary, which may be changed according as the occasion requires it; that so the woman may not be incommoded with the blood, waters, and other filth which are voided in labour. Then let her lay the woman upon her back, having her head a little raised by the help of a pillow, having the like help to support her reins and buttocks, that her rump may lie high: for if she lie low she cannot very well be delivered. Then let her keep her knees and thighs as far asunder as she can, her legs being bowed towards her buttocks, and let her feet be stayed against a log or some other firm thing, and let two women hold her two shoulders, that she may strain out the birth with the more advantage, holding in her breath, and forcing herself as much as possible, in like manner as when she goes to stool; for by such straining the diaphragm, or midriff, being strongly thrust downwards, necessarily forces down the womb, and the child in it. In the mean-time, let the midwife encourage her all she can, and take care that she have no rings on her hand when she anoints the parts; then with her fingers let her gently dilate the inward orifice of the womb, and putting her fingers in the entry thereof, stretch them from one another when her pains take her, by this means endeavour to help forward the child, and thrusting by little and little the sides of the orifice towards the hinder part of the child's head, anointing those parts with fresh butter in case it be necessary. And when the head of the infant is somewhat advanced into the inward orifice, it is usual among midwives to say *it is crowned*, because it both girds and surrounds it like a crown; but when it is gone so far, and the extremities begin to appear without the privy parts, they then say, *the child is in the passage*; and at this time the woman feels herself as if she was scratched or pricked with pins, and is ready to think that the midwife hurts her; whereas in truth it is only occasioned by the violent distention of those parts, which sometimes even suffer laceration by the bigness of the child's head. When things are come to this posture, let the midwife seat herself conveniently to receive the child, which will now come very quickly; and with her finger-ends, which she ought also to be sure to keep pared,

let her endeavour to thrust the crowning of the womb back over the head of the child. As soon as it is advanced as far as the ears, or thereabouts, let her take hold of the two sides with her two hands, and wait till the good pain comes, and then quickly draw forth the child, taking care that the navel-string be not entangled about the child's neck, or any other part, as sometimes it is, lest thereby the after-burden be pulled with violence, and perhaps the womb also, to which it is fastened, and so either cause her to flood, or else break the string, both which are of bad consequence to the woman, and render her delivery the more difficult. Great care must be taken that the head be not drawn forth straight, but shake it a little, from one side to the other, that the shoulders may the sooner and easier take its place, immediately after it is past; which must be done without loosing any time. lest the head being passed, the child stops there by the largeness of the shoulders, and so be in danger of being suffocated in the passage, as has sometimes happened for want of care therein. When the head is come, she may slide in her fingers under the armpits, and the rest of the body will follow without difficulty. As soon as the midwife hath in this manner drawn forth the child, let her lay it on one side, lest the blood and water which follow it immediately should do it an injury, by running into its mouth and nose, as it would do if it lay on its back, and so endanger the choking of it. The child being thus drawn forth, the next thing requisite is to bring away the after-burden; but, before that, let the midwife be very careful to examine whether there be any more children in the womb: for sometimes a woman may have twins; of which the midwife may satisfy herself both by the continuance of the woman's throws, and the bigness of her belly. But this is not so certain as to put her hand up the entry of the womb, and there feel, whether another child in not presenting to the passage; and if so, she must have a care how she goes about the after-birth, till the woman be delivered. The first string must be cut and tied with a thread three or four double, and the ends fastened with a string to the woman's thigh, to prevent the inconvenience it may cause by hanging between her thighs.

SECTION VII.

Of the After-Burden.

UNTIL the after-burden is brought away, which sometimes is more difficult to do than the child, and altogether as dangerous, if it be not speedily done, the woman cannot properly be said to be safely delivered, though the child be born.

Therefore, as soon as the child is born, before the midwife either ties or cuts the navel-string, lest the womb should close, let her, having taken the string, wind it once or twice about one or two of the fingers of her left hand joined together, the better to hold it, with which she may take single hold of it above the left, near the privities, drawing likewise with that very gently, resting a while, with the fore-finger of the same hand extending and stretching along the string towards the entry of the *vagina*, always observing, for the more facility, to draw it from the side to which the burden least inclines, for in so doing the rest will separate the better; and extraordinary care must be taken, that it be not drawn forth with too much violence, lest by breaking the string near the burden, the midwife be obliged to put her whole hand into the womb to deliver the woman; and she had need to take care in this matter, that so the womb itself, to which sometimes this burden is fastened very strongly, be not drawn away with it, which has sometimes happened. It is therefore necessary to assist nature with proper remedies, which are in general whatever has been before mentioned, to cause a speedy delivery; for whatever has magnetic virtue to bring away the birth, has the same to bring away the after-birth. Besides which, the midwife ought to consider, that the good woman cannot but be much spent by the fatigue she has already undergone in bringing forth the infant, and therefore should be sure to take care to give her something to comfort her. To which purpose some good jelly broths, and a little wine with a toast in it, and other comforting things will be necessary. Sneezing being conducive to bring away the after-burden, let her take a little white helebore in powder to cause her to sneeze. Tansy and the stone erites, applied as before directed, is very efficacious also. The smoke of marygold flowers, received up a woman's privities by a funnel, will bring away the after birth, though the midwife has lost her hold. Or if you boil mugwort in water till it be very soft, and then take it out and apply it like a poultice to the navel of the woman in travail, it instantly brings away both the birth and after-birth; but as soon as they are come forth, it must be instantly taken away, lest it should bring away the womb also.

SECTION VIII.

How to cut the Child's Navel-string.

AFTER the birth and after-birth are safely brought away, the midwife ought to take care to cut the navel-string, which though it be by some esteemed a thing of small moment, yet it requires none of the least skill of a midwife to do it with

that care and prudence which it ought, and therefore to instruct the industrious midwife a little therein, as soon as the child is come into the world, let her consider whether it be weak or strong: if it be weak, let her gently put back part of the vital and natural blood into the body of the child, by the navel, for that recruits a weak child, the vital and natural spirits being communicated by the mother to the child by its navel-string. But if the child be strong there is no need of it. Only it will not be amiss to let the midwife know, that many children that are born seemingly dead may be brought to life again, if she squeeze six or seven drops of blood out of that part of the navel-string which is cut off, and give it the child inwardly.

As to the cutting it short or long, authors can scarcely agree about it, nor midwives neither; some prescribe it to be cut at four fingers breadth, which is at best but an uncertain rule, unless all fingers were of one size. It is a received opinion, that the parts adapted to generation are either contracted or dilated, according to the cutting of the navel-string; which is the reason that midwives are generally so kind to their own sex, that they leave a longer part of the navel-string to a male than a female, because they would have the male well provided for the encounters of Venus. And the reason they give why they cut those shorter is, because they believe it makes them modest, and their parts narrower, which makes them more acceptable to their husbands. But whether this is so or not, (which yet some of the greatest searchers into the secrets of human nature affirm for a truth,) yet certain it is that great care ought to be used about cutting of the navel-string; and especially, that after it is cut, it be not suffered to touch the ground, for if it be, the child will never be able to hold its water, but be subject all its life-time to a diabetes, as experience often confirms: but as to the manner of cutting the navel-string, let the midwife take a brown thread, three or four times double, of an ell long or thereabouts, tied with a single knot at each of the ends, to prevent their entangling; and with this thread, so accommodated, (which the midwife ought to have in readiness before the woman's labour, as also a good pair of scissars, so that no time may be lost,) let her tie the string within an inch of the belly, with a double knot, and turning about the ends of the thread, let her tie two or more on the side of the string, reiterating it again, if it be necessary: then let her cut off the navel-string another inch below the ligature towards the after-birth, so that there only remains but two inches of the string, in the midst of which will be the knot spoken of, which must be so strait knit as not to suffer a drop of blood to squeeze out of the

vessels; but yet care must be taken not to knit it so strait as to cut it in two; and therefore the thread must be pretty thick, and pretty strait knit, it being better too strait than too loose. Some children have miserably lost their lives, before it hath been discovered that the navel-string was not well tied. Therefore great care must be taken that no blood squeeze through, for if there do, new knots must be made with the rest of the string. You need not fear to bind the navel-string very hard, because it is void of sense; and that part of it which you leave on, falls off of its own accord in a few days, ordinarily six or seven, and sometimes in less time; but it is very rare that it carries longer than the eighth or ninth day.

As soon as the navel-string is cut off, apply a little cotton or lint to the place to keep it warm, lest the cold enter into the body of the child, which it will unavoidably do in case it be not bound hard enough; and if the lint or cotton you apply to it be dipped in oil of roses, it will be the better: then having put another rag, three or four times double, upon the belly of the child, above the navel-string, so wrapped upon it that it may touch the naked belly.

Upon the top of all put another small bolster; and then swathe it in a linen swathe, four fingers broad, to keep it steady, lest by rolling too much, or being continually stirred from side to side, it comes to fall off before the navel-string, which you left remaining, is fallen off. It is the usual custom of midwives to put a piece of burnt rag to it; but I would advise them to put a small quantity of bole ammoniac, because of its drying quality. Thus much may suffice, as to cutting the navel-string and delivery of a woman in labour, where the labour is natural, and no ill accident happens. But it sometimes so falls out, that the labour is not only hard and difficult, but unnatural also, in which the midwife must take other measures.

CHAP. VII.

What Unnatural Labour is; from whence it proceeds; and what the Midwife ought to do in such Cases.

SECTION I.

What Unnatural Labour is.

IT will be necessary to acquaint my readers, that there are three sorts of bad labour, all painful and difficult, but not all properly unnatural, which are as follows:

The first is properly styled hard labour, and it is that wherein the mother and child do suffer very much by extreme pain.

The second is difficult labour, which is thus different from the former, that besides those extreme pains, it is generally attended with some unhappy accident, which, by retarding the birth, makes it very difficult. Neither of those, though hard and difficult, can be called unnatural; because, for women to *bring forth children in pain and sorrow* is natural.

It is therefore the third sort of labour which I call unnatural; and that is, when the child essays to come into the world in a contrary position to that which nature ordained.

To explain this, the reader must know, that there is but one right and natural way or posture in which children come to the birth; and that is, when the head comes first, and the body follows after in a straight line. If, instead of this, the child comes with its feet foremost, or with the side across, it is quite contrary to nature, or, to speak more plainly, unnatural.

SECTION II.

Whence Hard, Difficult, and Unnatural Labour proceeds.

THE true physical reason why women in general bring forth their children with so much pain, is, that the sense of feeling being distributed to the whole body by the nerves, and the mouth of the womb being so strait, that it must of necessity be dilated at the time of her delivery; the dilating thereof stretcheth the nerves, and from thence cometh the pain; some women having more pain in their labour than others, proceeds from their having the mouth of the matrix more full of nerves than others.

Hard and difficult labour may proceed either from the mother or child, or from both; it may proceed from the mother by reason of a general indisposition of her body; from the indisposition of some particular part only, and that principally of the womb, which may be affected with such a weakness as renders the mother unable to expel her burden. It may be also because she is too young, or she may be too old, and so have the passage too strait; and then, if it be her first child, the parts may be too dry and hard, and cannot easily be dilated. The cholic does also cause labour to be hard and difficult, because it hinders the true pain that should accelerate it; by which means, or which reason rather, all great and acute pains render a woman's labour very difficult; as when the woman is taken with a violent fever, frequent convulsions, or a great flooding, or any other violent distemper,

especially when the membranes are thick, and the orifice is too strait, or the neck of the womb not sufficiently opened.

Hard labour may also proceed from the child: and this is either when it happens to stick to a mole, or is so weak that it cannot break the membranes; also when it is too big, either all over, or its head only; or if the navel vessels should be twisted about its neck, or when it proves monstrous, or comes into the birth in an unnatural posture. Sometimes it proceeds from the ignorance of the midwife, who may hinder nature in her work.

SECTION III.

How the Midwife must proceed in order to the Delivery of a Woman, in Case of Hard Labour and Great Extrémity.

IN case the midwife finds a woman in difficult labour, she must endeavour to know the particular obstruction or cause thereof, that so she may apply a suitable remedy. When hard labour is caused by a woman's being too young and too strait, the passages may be anointed with oil, hogs lard, or fresh butter, to relax and dilate them the easier. But if a woman be in years, and has hard labour, being her first child, let her lower parts be anointed to mollify the inward orifice, which in such cases (being more hard and callous) does not easily yield to the distention of labour; and indeed this is the true cause why such women are longer in labour, and why their children in the birth are more subject to bruises than others. Those who are very lean, and have hard labour from that cause, let them moisten their parts with oil, and ointments, to make them more smooth and slippery, that the head of the infant in the womb may not be compressed and bruised by the hardness of the mother's bones in its passage. But if the cause be weakness, she ought to be strengthened, the better to enable her to support her pains. Since difficult labour proceeds from divers causes, the midwife must make use of different remedies to women in hard or difficult labours, which must be adapted to the causes from whence they proceed.

I need not tell the judicious midwife, that in cases of extremity, when the labour is not only hard, but difficult and dangerous, far greater care must be had than at other times. In such cases, the situation of the womb must be minded; and accordingly her posture of lying must be regulated; which will be best across the bed, being held by those that are of good strength, to prevent her slipping down, or moving herself, during the time of the operation. Then let her

thighs be put asunder as far as may be, and held so while her legs are bent backwards towards her hips her head leaning upon a bolster, and the reins of her back supported in like manner, her rump and buttocks being lifted up: observing to cover her stomach, belly, and thighs with warm linen, as well for decency's sake as to keep them from the cold.

The woman being in this posture, let the midwife or other operator, put up her hand, and try if the neck of the womb be dilated; and then remove the congealed blood that obstructs the passage of the birth, and having gentle made way, let the operator tenderly move the infant, having the head anointed with sweet butter, or any harmless pomatum; and if the waters are not come down, they may be let forth without any difficulty. And if the infant should attempt to break forth, not with the head foremost or across, he ought gently to turn it, that he may find the feet, which having done, let him draw forth one, and having fastened it to a ribbon, put it up again, and finding the other, bring them as close as may be. Let the woman breathe between whiles, assisting nature what she can by straining and bringing forward the birth, that so he may more easily draw it forth; and that the operator may do it the better, and his hold may be the surer, he must fasten or wrap a linen cloth about the child's thighs observing to bring it into the world with its feet downwards.

But in case there be a flux of blood, let the operator be well satisfied whether the child or the secundine come first: for sometimes, when the secundine has come first, the mouth of the womb has been thereby stopped, and the birth hindered, to the hazard both of the woman and child: and therefore in this case the secundine must be removed by a swift turn, and the child sought for, and drawn forth, as has been directed.

If upon enquiry it appears that the secundine comes first, let the woman be delivered with all convenient speed, because great flux of blood will follow; for then the veins are opened. And on this account two things are to be minded; first, whether the secundine advances forward much or little: if the former, and the head of the child first appears, it must be directed to the neck of the womb, as in the case of natural births; but if there appears any difficulty in the delivery, the best way is to search for the feet, and by them it may be put by with a gentle hand, and the child taken out at first; but if the secundine is advanced, so that it cannot be put back, and the child follow it close, then the secundine is to be taken out first with much care, and as quick as may be, and laid aside, without cutting the entrail that is fastened to them; for by that you may be guided to the infant, which, whe-

ther it be alive or dead, must be drawn forth by the feet as soon as possible ; though this is not to be done but in cases of great necessity, for the order of nature is for the secundine to come last.

SECTION IV:

Of the Delivery of a Dead Child.

IN delivering women of a dead child, the operator ought to be certain that the child is dead, which may be known by the falling of the mother's breasts, the coldness of her belly, the thickness of her urine, which is attended with a stinking sediment at the bottom : and no motion to be perceived in the child. Also when she turns herself in her bed, the child sways like a lump of lead, and her breath stinks though not used to do so. When the operator is certain that the child is dead, let him or her apply themselves to the saving of the mother, by giving her those things that are most powerful in assisting nature in her operations. But if through weakness, the womb is not able to co-operate with nature so that a manual operation is absolutely necessary, let the operator carefully observe the following directions, viz. If the child be found dead with its head foremost, he must take notice that the delivery will be the more difficult, because in this case it is not only impossible that the child should any way assist in its delivery, but the strength of the mother does also very much fail her, and thereupon the more sure and safest way for him is to put up his left-hand, sliding it as hollow in the palm as he can into the neck of the womb, into the lower part thereof, towards the feet, and then between the infant and the neck of the matrix ; and having a hook in the right-hand, couch it close, and slip it above the left-hand, between the head of the child and the flat of the hand, fixing it into the bone of the temple towards the eye ; or, for want of conveniently coming at that observe to keep the left-hand in its place, gentle moving, and stirring the head with it, and so with the right-hand hook draw the child forward, encouraging the woman to put forth her utmost strength, and always drawing when the woman's pains are upon her. The head being thus draw forth, the operator must, with all possible speed, slip his hand under the arm holes of the child, and take it quite forth, giving immediately to the woman a toast of fine wheaten bread in a quarter of a pint of tent, to revive and cherish her spirits. By what I have already shewn, the midwife will know what to do in any other case that may fall out, remembering, that for a child to come head foremost, and the body to follow in a straight line is the right posture for the child when it comes to the birth : and if it comes any

other way, it will be the wisdom of the midwife, if possible, to bring it to this posture; but if that cannot be done without very great danger, then put it in a posture that it may be brought forth by the feet. And if the midwife, perceiving in what posture the child presents, or that the woman floods, or any other accident happens, by which she finds it is not in her power to deliver her, it will be best for her to send for a man-midwife in time, rather than put things to the utmost extremity.

CHAP. VIII.

Directions for Lying-in Women.

SECTION I.

How Women should be ordered after their Delivery.

AFTER the birth and after-birth are brought away, if the woman's body be very weak keep her not too hot, for extreme heat weakens nature and dissolves the strength; but whether she be weak or strong, let no cold air come near her, for cold is an enemy to the spermatic parts; and if cold gets into the womb, it increases the after-pains, causes swelling in the womb, and hurts the nerves. If, therefore, a woman has had very hard labour, it is proper, after delivery, to wrap her in a sheep skin, taken off as warm as possible, putting the fleshy side to her reins and belly: if a sheep-skin cannot well be had, the skin of a hare or rabbit, taken off as soon as it is killed, may be applied to the same parts; and by so doing the dilation made in the birth will be closed up, and the melancholy blood expelled from those parts; and these may be continued during the space of an hour or two. After which, let the woman be swathed with a fine linen cloth, about a quarter of a yard in length, chafing the belly before it be swathed with the oil of St. John's wort; afterwards raise up the matrix with a linen cloth, many times folded, then with a little pillow or quilt cover her flank, place the swathe somewhat above the haunches, winding it indifferently stiff, applying, at the same time, a warm cloth to the nipples. Care should be taken not to apply any remedy to keep back the milk, because those remedies which drive back the milk, being of a dissolving nature, it is improper to apply them to the breast during such a disorder, lest evil humours should be contracted in the breast thereby; and therefore twelve hours at least ought to be allowed for the circulation and settlement of the blood.

After the woman has been delivered some time, you may make a restrictive of the yolks of two eggs, a quarter of a pint of white wine, oil of St. John's wort, oil of roses, plantain, and rose-water, of each an ounce, mix them together, fold a linen cloth and dip therein, warm it before a gentle fire, and apply it to the breasts; and the pain of those parts will be greatly eased.

But be sure not to let her sleep soon after her delivery, but let her take some broth, or caudle, or any other liquid matter that is nourishing, about four hours after delivery, and then she may be safely permitted to sleep, if she is disposed, as it is probable she will be, being tired with the fatigue of her labour. But before this, as soon as she is laid in her bed, let her drink a draught of burnt white wine, in which melt a dram of spermaceti. Let her also avoid the light for the first three days; for labour weakens the eye-sight. The herb vervain is of singular service to the sight, and may be used any way, either boiled in meats or drinks, not having the least offensive taste, but many pleasant virtues. If she should be feverish, add the leaves or roots of plantain to it; but if her courses come not away as they ought, let the plantain alone; and, instead thereof, put mother of thyme. If the womb is foul, which may be known by the impurity of the blood, and its stinking and coming away in clotted lumps; or if you suspect any of the after-birth to be left behind, which may sometimes happen, though the midwife be ever so careful and skilful, then make her a drink of feverfew, penny-royal, and mother of thyme, boiled in white wine, and sweetened with sugar: panada and new laid eggs are the best meat for her at first; of which let her eat often, and but little at a time. And let her use cinnamon in all her meats and drinks, for it mightily strengthens the womb; let her stir very little for six or seven days after her delivery; and let her talk as little as may be, for that weakens her. If she goes not well to stool, give her a clyster made with the decoction of mallows and a little brown sugar. After she hath lain in a week, or something more, give her such things as close the womb: to which you may add a little polypodium, both leaves and roots bruised, which will purge gently: this is as much in cases of natural birth as needs at first be done.

SECTION II.

In Extremity of Unnatural Labour.

IN such a case, let the woman observe a temperate diet, and take care that she does by ~~de~~ means overcharge herself, after such an excessive evacuation; not being ruled by, or

giving credit to unskilful nurses, who are apt to admonish them to feed heartily, the better to repair the loss of blood; for the blood is not for the most part pure, but such as has been detained in the vessels or membranes, and it is better voided for the health of a woman than kept, unless there happens an extraordinary flux of blood: for if her nourishment be too much, it may make her liable to fever, and increase the milk to a superfluity, which may be of dangerous consequence. It is therefore requisite, for the first five days especially, that she take moderately panada-broth, poached eggs, jelly of chickens and of calves feet, and French barley broth, each day somewhat increasing the quantity. And if she intends to be nurse to her child, she may take a little more than ordinary, to increase the milk by degrees: which must be of no continuance, but drawn off either by the child or otherwise. In that case likewise, let her have coriander or fennel-seed boiled in barley broth, and for that reason, for the time, before mentioned, let her abstain from meat. If no fever trouble her, she may drink now and then a small quantity of white wine, or claret, as also syrup of maiden-hair, or any other syrup that is of an astringent quality, taking it in a little water well boiled. And after the fear of a fever, or contraction of humour to the breast, is over, she may then be nourished more plentifully with the broths of pullets, capons, pigeons, partridges, mutton, veal, &c. which must not be till after eight days at least from the time of her delivery; for by that time the womb will have purged itself, unless some intervening accident should happen. It will then be expedient to give her cold meats, so it be done sparingly, the better to gather strength; and let her during the time rest quietly, and free from any disturbance, not sleeping in the day-time if she can avoid it. If there happen any obstructions in the evacuation of excrements, the following clyster may be administered: take pellitory of the wall, and of both the mallows, of each a handful; fennel and anni-seed, of each two ounces; boil them in the decoction of a sheep's head, and take of this three quarters, dissolving it in common honey and coarse sugar, and of new fresh butter two ounces; strain it well, and administer it clysterwise. But if this does not operate to your mind, then take an ounce of catholicon.

CHAP. IX.

Of a Mole, or False Conception; and of Monsters and Monstrous Births, with the Reason thereof.

SECTION I.

Of a Mole, or False Conception.

A MOLE, or false conception, is nothing else but a mass or great lump of flesh burdening the womb. It is an inarticulate piece of flesh without any form, and therefore differs from monsters, which are both *formata* and *articulata*: and then it is said not to be a conception, but a false one; which puts a difference between a true conception and a mole; and the difference holds good three different ways: First, In the *genus*, because a mole cannot be said to be an animal. Secondly, It differs in *species*, because it hath no human figure, and bears not the character of a man. Thirdly, It differs in the *individuum*, for it hath no affinity with any of the parts in the human body, or any particulars of the same.

There are variety of judgments among authors about the producing cause of this effect, some affirming that it is produced by the woman's seed going into the womb without the man's: but because we have before proved that women have properly no seed at all, but only an *ovarium*, which is fecundated by the active principle of the man's seed, this opinion needs no confutation; others say, it is engendered of the menstruous blood; but should this be granted, it would follow that maids, by having their courses stopped, might be subject to the same, which none ever yet were. The true cause of this carnous conception, called a mole, proceeds both from the man and the woman; from corrupt and barren seed in the man, and from the menstruous blood in the woman, both mixed together in the cavity of the womb; and nature, finding herself weak, yet desirous of maintaining the perpetuity of her species, labours to bring forth a vicious conception rather than none; and not being able to bring forth a living creature, generates only a piece of flesh.

This imperfect conception may be known to be such by the following signs. The monthly courses are suppressed, the belly is puffed up, and also waxed hard, the breath smells, and the appetite is depraved. But you will say, these are signs of a breeding woman in true conception, and therefore these cannot distinguish a mole. To this I answer, though thus far they agree, yet they are different in several respects: for a mole may be felt in the womb before the third month, an infant cannot: nor is the motion of the mole the effect of

a sensitive power therein, but only caused by the faculty of the womb, and of the seminal spirit diffused through the substance of a mole: for though it has no animal, yet it has a vegetative life; and then the belly is suddenly swelled where there is a mole. In true conception, the belly is first contracted and then riseth gradually. Another difference is, the belly being pressed with the hand, the mole gives way, and the hand being taken away it returns to the place again: but a child in the womb, though pressed with the hand, moves not presently, and, being removed, turns not at all, or at least very slowly. But (to name no more) another very material difference is, that a child continues not in the womb above eleven months at most; but a mole sometimes continues four or five years, sometimes more and sometimes less, according to its being fastened to the matrix for sometimes it has so fallen out that the mole falls away in four or five months; but if it remain until the eleventh month, the legs are feeble, and the whole body appears in a wasting condition, or the belly swells bigger and bigger, which is the reason that some who are thus afflicted think they are hydropical, though it be no such thing; which a woman easily knows, if she will but consider that in a dropsy the legs will swell and grow big; in cases of a mole they consume and wither. This distemper is an enemy to true conception, and of dangerous consequence; for a woman that breeds a mole is every way more inconvenienced than a woman that is with child, and all the while she keeps it she lives in danger of her life.

The cure of this distemper consists chiefly in expelling it as soon as may be; for the longer it is kept the worse it is: and this many times cannot be effected without manual operation; but that being the last remedy, all other means ought to be first used. Among which, phlebotomy ought not to be omitted; for seeing letting of blood causeth abortion, by reason it takes away the nourishment that should sustain the life of the child, why may not this vicious conception be by the same means deprived of that vegetative sap by which it lives? to which end, open the liver vein, and then the saphana in both feet; fasten the cupping-glasses to the loins and sides of the belly: which done, let the urinary part be first mollified, and the expulsive faculty be provoked to expel the burden. And to loosen the ligatures of the mole, take mallows with roots three handfuls; pellitory, camomille, violet leaves, melilot, roots of fennel, parsley, mercury, of each two handfuls; fenugreek and lintseed, of each one pound; boil them in water, and make a bath thereof, and let her sit therein up to her navel. At her going out of the bath, let her reins and privities be anointed with this ungent: take ammoniac, lan-

dani, fresh butter, of each an ounce, and with oil of lintseed make an ointment; or instead of this may be used unguentum agrippæ or dialthæ. Also take aq. bryon. compos. roots of althæ and mercury, of each a handful; lintseed and barley meal, of each six ounces; boil all these with water and honey, and make a plaster: and the ligaments of the mole being thus loosened, let the expulsive faculty be stirred up to expel the mole; for the effecting of which all those medicaments are very proper which bring down the courses. Therefore take savin, madder, valerian, horehound, sage, hyssop, betony, pennyroyal, calamint, hypericon; with water make a decoction, and give three ounces of it, with an ounce and an half of syrup of feverfew. But if these remedies prove not available, then must the mole be drawn away by manual operation, in the manner following. Let the operator (having placed the woman in a proper posture, as has been directed in cases of unnatural labour) slide his hand into the womb, and with it draw forth the mole: but if it be grown so big that it cannot be drawn away whole, (which is very rare, because it is of a soft tender body, and much more pliable than a child,) let the operator bring it away by parts, by using a erotchet or knife, if it cannot be done otherwise. And if the operator finds it is joined and fastened to the womb, he must gently separate it with his finger ends, his nails being pared, putting them by little and little between the mole and the womb; beginning on the side where it does stick fast, and so pursue it till it be quite loosened, taking great care, if it grows too fast, not to rend or hurt the proper substance of the womb, proceeding as in the case of an after-burden, that stays behind in the womb when the string is broken off: but a mole has never any string fastened to it, nor any burden from whence it should receive any nourishment, but does of itself immediately draw it from the vessels of the womb. And thus much shall suffice to be said concerning a mole; of which I have shewn the cause, the signs, and the cure.

SECTION II.

Of Monsters and Monstrous Births.

MONSTERS are properly depraved conceptions, and are deemed by the ancients to be excursions of nature, and are always vicious, either in figure, situation, magnitude, or number.

They are vicious in figure, when a man bears the character of a beast: they are vicious in magnitude, when the parts are not equal, or that one part is bigger than the other; and this is a thing very common, by reason of some excrescence. They are vicious in situation many ways, as if the ears were

on the face, or the eyes on the breasts or on the legs, as was seen in a monster born at Ravenna in Italy, in the year 1570. And, lastly, they are vicious in number, when a man hath two heads, four hands, and two bodies joined, which was the case of the monster born at Zazara in the year 1550.

As to the cause of their generation, it is either *divine* or *natural*. The *divine* cause proceeds from the permissive will of the great Author of our being, suffering parents to bring forth such depraved monsters, as a punishment for their filthy and corrupt affections, which are let loose unto wickedness, like brute beasts that have no understanding: for which reason the ancient Romans enacted, that those who were deformed should not be put into religious houses. And St. Jerome, in his time, grieved to see the deformed and lame offered up to God in religious houses; and Kécherman, by way of inference, excluded all that were mishapen, because outward deformity of body is often a sign of the pollution of the heart, being a curse laid upon the child for the incontinence of the parents. Yet there are many born deformed, which deformity ought not to be ascribed to the parents. Let us therefore search out the *natural* cause of their generation, which, according to the ancients, who have dived into the secrets of nature, is either in the matter of the agent, in the seed, or in the womb. The matter may be in fault two ways, either by defect or by excess; by defect, when the child hath but one arm or one leg, &c. by excess, when it has three hands or two heads. Some monsters are also begotten by women's bestial and unnatural coition, &c. The agent or womb may be in fault three ways: First, In the forming faculty, which may be too strong or too weak; by which a depraved figure is sometimes produced. Secondly, The instrument or place of conception; the evil conformation or evil disposition whereof will cause a monstrous birth. And, Thirdly, the imaginative power at the time of conception, which is of such force that it stamps a character of the thing imagined upon the child; so that the child, or the children of an adulteress, by the mother's imaginative power, may have the nearest resemblance to her own husband, though begotten by any other man. And through this power or imaginative faculty it was, that a woman, at the time of conception, beholding the picture of a blackamoor, conceived and brought forth a child, resembling an Ethiopian. And that this power of imagination was well enough known to the ancients, is evident by the example of Jacob, the father of the twelve tribes of Israel, who having agreed with his father-in-law to have all the spotted sheep for the keeping of his flock, to increase his wages, took hazel-rods, peeling them with

white streaks in them, and laid them before the sheep when they came to drink, and they coupling together, whilst they beheld the rods, conceived and brought forth spotted young. Nor does the imagination work on the child at the time of conception only, but afterwards also; as was seen in the example of a worthy gentlewoman, who being big with child, and passing by a butcher killing meat, a drop of blood sprinkled on her face: whereupon she presently said that the child would have some blemish on its face, which proved true, for at the birth it was found marked with a red spot.

But besides the way already mentioned, monsters are sometimes produced by other means; to wit, by the undue coition of a man and his wife when her monthly courses are upon her; which being a thing against nature, no wonder that it should produce an unnatural issue. If therefore a man's desire be ever so great for coition, (as sometimes it is after long absence,) yet if a woman knows that the *custom of women* is upon her, she ought not to admit of any embraces, which at that time are both unclean and unnatural. The issue of these unclean embraces proving often monstrous, as a just punishment for such a turpidinous action. Or if they should not always produce monstrous births, yet are the children thus begotten for the most part dull, heavy, sluggish, and defective in the understanding, wanting the vivacity and liveliness which those children who are begotten when women are free from their courses are endued with.

There has been some contending among authors, to know whether those who are born monsters have reasonable souls, some affirming, and others denying it; the result of both at last coming to this, that those who, according to the order of nature, are descended from our first parents by the coition of a man and woman, though their outward shape be deformed and monstrous, have notwithstanding reasonable souls; but those monsters that are not begotten by man, but are the product of a woman's unnatural lust, and copulating with other creatures, shall perish as the brute beasts by whom they were begotten, not having a reasonable soul. The same being also true of imperfect and abortive births.

There are some of opinion that monsters may be engendered by infernal spirits; but notwithstanding Ægidius Facius pretended to believe it with respect to a deformed monster born at Cracovia; and Hieronimus Carcomus writeth of a maid that was got with child by the devil; but he being a wicked spirit, and not capable of having human seed, how is it possible he should beget a human creature? If they say the devil may assume to himself a dead body and enliven the faculties of it, and thereby make it able to generate; I an-

swer, that though we suppose this could be done, which I believe not, yet that body must bear the image of the devil; and it borders upon blasphemy to think, that the all-wise and good Being would so far give way to the worst of spirits, as to suffer him to raise up his diabolical offspring: for in the school of nature we are taught the contrary, viz. *that like begets like*; whence it follows, that a man cannot be begot of a devil.

The first I shall present is a most frightful monster indeed, representing an hairy child. It was covered over with hair like a beast. But what rendered it yet more frightful was, that its navel was in the place where his nose should stand, and his eyes placed where his mouth should have been, and its mouth was in the chin. It was of the male kind, and born in France, in the year 1597; of which the following is a figure.



A boy was born in Germany with one head and one body, but having four ears, four arms, four thighs, four legs, and four feet. This birth the learned, who beheld it, judged to proceed from the redundance of the seed: but there not being enough for twins, nature formed what she could, and so made the most of it. This child lived some years, and though he had four feet, he knew not how to go:—by which we may see the wisdom of nature, or rather the goodness of nature, and of nature's God, in the formation of the body of man. See the annexed figure.



Heaven in our first formation did provide
 Two arms, two legs: but what we have beside
 Renders us monstrous and mishapen too,
 Nor have we any work for them to do;
 Two arms, two legs, are all that we can use,
 And to have more there's no wise man will chuse.

In the time of king Henry III. a woman was delivered of a child, having two heads and four arms, and the rest was a twin under the navel; and then beneath all the rest was single, as appears in the plate below. The heads were so placed that they looked contrary ways, and each had two distinct arms and hands: they would both laugh, both speak, and both cry, and eat and be hungry together. Sometimes the one would speak, and the other keep silence, and sometimes both would speak together. It was of the female sex; and though it had two mouths, and did eat with both, yet there was but one fundament to disburden nature. It lived several years, but the one outlived the other three years, carrying the dead one, (for there was no parting them,) till the other fainted with the burden, and more with the stink of the dead carcase.



A child was born in Flanders which had two heads and four arms, seeming like two girls joined together, having two of their arms lifted up between and above their heads; the thighs being placed as it were across one another, according to the figure in the following plate. How long they lived I had no account of.



Nature to us does sometimes monsters show,
That we by them may our own mercies know ;
And thereby sin's deformity may see,
Than which there's nothing can more monstrous be.

PART III.

Displaying the Secrets of Nature, relating to Physiognomy.

CHAP. I.

Of Physiognomy, shewing what it is, and whence it is derived.

PHYSIOGNOMY is an ingenious science, or knowledge of nature, by which the inclinations and dispositions of every creature are understood; and because some of the members are uncompounded and entire of themselves, as the heart, tongue, &c. and some of a mixed nature, as the eyes, the nose, and others; we therefore say, that there are many signs which agree and live together, which inform a wise man how to make his judgment before he be too rash to deliver it to the world.

Nor is it to be esteemed a foolish or idle art, seeing it is derived from the superior bodies: for there is no part of the face of a man but what is under the peculiar influence or government not only of the seven planets, but also of the twelve signs of the Zodiac: and the disposition, vices, virtues, and fatality, either of a man or woman, are plainly foretold, if the person pretending to the knowledge thereof be an artist, which, that my reader may hereby attain to, I shall set these things in a clearer light.

The reader should remember, that the forehead is governed by Mars; the right eye is under the dominion of Sol; the left is ruled by the moon, or Luna; the right ear is the care of Jupiter; the left of Saturn; the rule of the nose is claimed by Venus, which, by the way, is one reason that in all unlawful venereal encounters, the nose is too subject to bear the scars which are gotten in those wars; and the nimble Mercury, the signification of eloquence, claims the dominion of the mouth, and that very justly.

Thus have the seven planets divided the face among them, but not with so absolute a sway, but that the twelve signs of the Zodiac do also come in for a part: and therefore the sign Cancer presides in the uppermost part of the forehead; Leo attends upon the right eye-brow, as Sagitarius does upon the

right eye, and Libra upon the right ear; upon the left eyebrow you will find Aquarius and Gemini, and Aries taking care of the left ear; Taurus rules in the middle of the forehead; and Capricorn the chin; Scorpio takes upon him the protection of the nose; Virgo claims the precedence of the right cheek, and Pisces of the left. And thus the face of man is cantoned out amongst the signs and planets; which, being carefully attended to, will sufficiently inform the artists how to pass judgment. For according to the sign or planet ruling, so also is the judgment to be of the part ruled, which all those that have understanding know easily how to apply.

In the judgment that is to be made from physiognomy, there is a great difference betwixt a man and a woman, the reason is, because, in respect of the whole composition, men more fully comprehend it than women do, as may evidently appear by the manner and method we shall give in the following chapter. Wherefore the judgments we shall pass in every chapter, do properly concern a man as comprehending the whole species, and but improperly the woman, as being but a part thereof, and derived from the man; and therefore whoever is called to give judgment on such and such a face, ought to be wary about all the lines and marks that belong to it; respect being also had to the sex: for when we behold a man whose face is like unto a woman's, and we pass a judgment upon it, having diligently observed it, and not on the face only, but other parts of the body, as his hands, &c. In like manner we also behold the face of a woman, who in respect of her flesh and blood is like unto a man, and in the disposal also of the greatest parts of the body. But does physiognomy give the same judgment of her as it does of a man that is like unto her? by no means, but far otherwise; in regard, that the complexion of the woman is much different from that of a man, even in those respects which are said to be common. Now in those common respects two parts are attributed to a man, a third part to a woman.

Wherefore, it being our intention to give you an exact account, according to the rule of physiognomy, of all and every part of the members of the body, we will begin with the head, as it hath relation only to man and woman, and not any other creature, that the work may be more obvious to every reader.

CHAP. II.

Of the Judgment of Physiognomy.

HAIR that hangs down without curling, if it be of a fair complexion, thin, and soft withall, signifies a man to be naturally faint-hearted, and of a weak body, but of a quiet and harmless disposition. Hair that is big, and thick, and short withall, denotes a man to be of a strong constitution, secure, bold, deceitful, and, for the most part, unquiet and vain, lusting after beauty, and more foolish than wise, though fortune may favour him. He whose hair is partly curled and partly hanging down, is commonly a wise man, or a very great fool, or else a knave. He whose hair groweth thick on his temple and his brow, one may at first sight certainly conclude that such a man is by nature simple, vain, luxurious, lustful, credulous, clownish in his speech and conversation, and dull in his apprehension. He whose hair not only curls very much, but busheth out, and stands on end, if the hair be white, or of a yellowish colour, he is by nature proud and bold, dull of apprehension, soon angry, a lover of venery, and given to lying, malicious, and ready to do any mischief. He whose hair rises in the corners of his temples, and is gross and rough withal, is a man highly conceited of himself, inclined to malice, but cunningly conceals it, is very courtly, and a lover of new fashions. He who hath much hair, that is to say, whose hair is thick all over his head, is naturally vain, and very luxurious, of a good digestion, easy of belief, and slow of performance, of a weak memory, and for the most part unfortunate. He whose hair is of a reddish complexion, is for the most part, if not always, proud, deceitful, detracting, venereous, and full of envy. He whose hair is extraordinary fair, is, for the most part, a man fit for all praise-worthy enterprizes, a lover of honours, and much more inclined to do good than evil; laborious, and careful to perform whatsoever is committed to his care, secret in carrying on any business, and fortunate. Hair of a yellowish colour, shews a man to be good conditioned, and willing to do any thing, fearful, shame-faced, and weak of body, but strong in the abilities of the mind, and more apt to remember than avenge an injury. He whose hair is of a browish colour, and curled not too much nor too little, is a well disposed man, inclined to that which is good, a lover of peace, cleanliness, and good manners. He whose hair turns gray or hoary in the time of his youth, is generally given to women, vain, false, unstable, and talkative.

Note, That whatsoever signification the hair has in men, it has the same in women also.

Thus does wise nature make our very hair,
 Shew all the passions that within us are :
 If to the bottle we are most inclin'd,
 Or if we fancy most the female kind ;
 If into virtue's paths our minds we bend,
 Or if to vicious ways our footsteps tend,
 A skilful artist can unfold the same,
 And from our hair a certain judgment frame :
 But since our periwigs are come in fashion,
 No room is left for such an observation.

The forehead that riseth in a round, signifies a man liberally merry, of a good understanding, and generally inclined to virtue. He whose forehead is fleshy, and the bone of the brow jutting out, and without wrinkles, is a man much inclined to suits of law, contentious, vain, deceitful, and addicted to follow ill courses. He whose forehead is very low and little, is of a good understanding, magnanimous, but extremely bold and confident, and a great pretender to love and honour. He whose forehead seems sharp, and pointing up in the corners of his temple, so that the bone seems to jut forth a little, is a man naturally weak and fickle, and weak in the intellects. He whose brow upon the temples is full of flesh, is a man of a great spirit, proud, watchful, and of a gross understanding. He whose brow is full of wrinkles, and hath as it were a seam coming down the middle of the forehead, so that a man may think he hath two foreheads, is one that is of a great spirit, a great wit, void of deceit, and yet of a hard fortune. He who has a full large forehead, and a little round withal, destitute of hair, or at least, that has little on it, is bold, malicious, high spirited, full of choler, and apt to transgress beyond all bounds, and yet of a good wit, and very apprehensive. He whose forehead is long and high, and jutting forth, and whose face is figured, almost sharp and pecked towards the chin, is one reasonably honest, but weak and simple, and of a hard fortune.

Who views men well may on their vices hit,
 For some men's crimes are in their foreheads writ ;
 But the resolved man outbraves his fate,
 And will be good, altho' unfortunate.

Those eye-brows that are much arched, whether in man or woman, and which by frequent motion elevate themselves, shew the person to be proud, high spirited, vain-glorious, bold and threatening ; a lover of beauty, and indifferently inclined to either good or evil. He whose eye-lids bend down-

ward when he speaks to another man, or when he looks upon him, and who has a kind of skulking look, is by nature a peevish wretch, close in all his actions, of a very few words, but full of malice in his heart. He whose eye-brows are thick, and have but little hair upon them, is weak in his intellects, and too credulous, very sincere, sociable, and desirous of good company. He whose eye-brows are folded, and the hair thick and bending downwards, is one that is clownish and unlearned, heavy, suspicious, miserable, envious, and one that will cheat and cozen you if he can, and is only to be kept honest by good looking to. He whose eye-brows hath but short hair, and of a whitish colour, is fearful, and very easy of belief, and apt to undertake any thing. Those, on the other hand, whose eye-brows are black, and the hair of them but thin, will do nothing without great consideration, and are bold and confident of the performance of what they undertake; neither are they apt to believe any thing without reason for so doing.

Thus by the eye-brows women's minds we know,
 Whether they're white or black, or quick or slow,
 And whether they'll be cruel or be kind,
 By looking at their eye-brows we may find.

If the space between the eye-brows be of more than ordinary distance, it shews the person to be hard-hearted, envious, close and cunning, apprehensive, greedy of novelties, of a vain fortune, addicted to cruelty more than love. But those men whose eye-brows are at lesser distance from each other, are, for the most part, of a dull understanding; yet subtle enough in their dealings, and of an uncommon boldness, which is often attended with a great felicity; but that which is most commendable in them is, that they are most sure and constant in their friendship.

Great and full eyes, either in man or woman, shew the person to be, for the most part, slothful, bold, envious, a bad concealer of secrets, miserable, vain, given to lying, and yet of a bad memory, slow in invention, weak in his intellects, and yet very much conceited of that little stock of wisdom he thinks himself master of. He whose eyes are hollow in his head, and therefore discerns excellently well at a great distance, is one that is suspicious, malicious, furious, perverse in his conversation, of an extraordinary memory, bold, cruel, and false, both in words and deeds, threatening, vicious, luxurious, proud, envious and malicious: But he whose eyes are as it were starting out of his head, is a simple foolish person, shameless, very servile, and easy to be persuaded either to vice or virtue. He who looks studiously and acute-

ly with his eyes and eye-lids downwards, denotes thereby to be of a malicious nature, very treacherous, false, unfaithful, envious, miserable, impious towards God, and dishonest towards men. He whose eyes are small and conveniently round, is bashful and weak, very credulous, liberal to others, and even in his conversation. He whose eyes look a squint, is thereby denoted to be a deceitful person, unjust, envious, furious, a great liar, and, as the effect of all this, miserable. He who hath a wandering eye, and which is rolling up and down, is, for the most part, a vain, simple, deceitful man, lustful, treacherous, or high-minded, an admirer of the fair sex, and one easy to be persuaded to virtue or vice. He or she whose eyes are twinkling, and which move forward or backward, shew the person to be luxurious, unfaithful, and treacherous, presumptuous, and hard to believe any thing that is spoken. If a person has any greenness mingled in the white of his eyes, such is commonly silly, and often very false, vain and deceitful, unkind to his friends, a great concealer of his own secrets, and very choleric. Those whose eyes are every way rolling up and down, or they who seldom move their eyes, and when they do, do as it were draw their eyes inwardly, and accurately fasten them upon some object, such are by their inclinations very malicious, vain-glorious, slothful, unfaithful, envious, false, and contentious. They whose eyes are addicted to blood-shot, are naturally choleric, proud, disdainful, cruel, without shame, perfidious, and much inclined to superstition. They that have eyes like those of oxen, are persons of good nutriment, but of a weak memory, are dull of understanding, and silly in their conversation. But they whose eyes are neither too little nor too big, and inclined to black, do signify a man mild, peaceable, honest, witty, and of a good understanding: and one that when need requires will be serviceable to his friends.

Thus from the eyes we several things may see,
 By nature's art of physiognomy;
 That no man scarce can make a look astray,
 But we thereby some secret symptoms may
 Discern of his intention; and foresee
 Unto which path his steps directed be,
 And this may teach us goodness more to prize,
 For where one's good, there's twenty otherwise.

A long and thin nose denotes a man bold, furious, angry, vain, easy to be persuaded either to good or evil, weak and credulous. A long nose extended, the tip of it bending downwards, shews the person to be wise, discreet, secret and officious, honest and faithful, and one who will not be over-

reached in bargaining. A bottle-nose is what denotes a man to be impetuous in the obtaining his desires, also vain, false, luxurious, weak, and an uncertain man, apt to believe, and easy to be persuaded. A nose broad in the middle, and less towards the end, denotes a vain talkative person, a liar, and of hard fortune. He who hath a long and great nose is an admirer of the fair sex, and well accomplished for the wars of Venus, but ignorant of the knowledge of any thing that is good; extremely addicted to vice; assiduous in the obtaining what he desires, and very secret in the prosecution of it; and though very ignorant, would fain be thought very knowing. A nose very sharp on the tip of it, and neither too long nor too short, too thick nor too thin, denotes the person, if a man, to be of a fretful disposition, always pining and peevish; and if a woman, a scold or contentious, wedded to her own humours, of a morose and dogged carriage, and if married a plague to her husband. A nose very round at the end of it, and having but little nostrils, shews the person to be munificent and liberal, true to his trust, but withal very proud, credulous and vain. A nose very long and thin at the end of it, and somewhat round, signifies one bold in his discourse, honest in his dealings, patient in receiving and slow in offering injuries, but yet privately malicious. He whose nose is naturally more red than any other part of his face, is thereby denoted to be covetous, impious, luxurious and an enemy to goodness. A nose that turns up again, and is long and full on the tip of it, shews the person that has it to be bold, proud, covetous, envious, luxurious, a liar and deceiver, vain-glorious, unfortunate, and contentious. He whose nose riseth high in the middle, is prudent and polite, and of great courage, honourable in his actions, and true to his word. A nose big at the end shews a person to be of a peaceable disposition, industrious and faithful, and of a good understanding. A very wide nose, with wide nostrils, denotes a man dull of apprehension, and inclined more to simplicity than wisdom, and withal contentious, vain-glorious, and a liar.

Thus from the nose our physiognomist
 Can smell men's inclinations, if he list;
 And from its colour and its make,
 Of vice and virtue a survey can take.

When the nostrils are close and thin they denote a man to have but little testicles, and to be very desirous of the enjoyment of women, but modest in his conversation. But he whose nostrils are great and wide, is usually well hung and lustful; but withal of an envious, bold and treacherous dis-

position, and though dull of understanding, yet confident enough.

Thus those who chiefly mind the brutal part,
May learn to chuse a husband by this art.

A great and wide mouth shews a man to be bold, warlike, shameless, and stout, a great liar, and as great a talker, and also a great eater; but as to his intellects he is very dull, being for the most part very simple. A little mouth shews the person to be of a quick and pacific temper, somewhat fearful, but faithful, secret, modest, bountiful, and but a little eater. He whose mouth smells of a bad breath, is one of a corrupted liver or lungs, is oftentimes vain, wanton, deceitful, of indifferent intellects, envious, covetous, and a promise-breaker. He that has a sweet breath is the contrary.

Thus from the mouth itself we likewise see
What signs of good and bad may gather'd be;
For let the wind blow east, west, north, or south,
Both good and bad proceed out of the mouth.

The lips, when they are very big and blubbering, shew a person to be credulous, foolish, dull, and stupid, and apt to be enticed to any thing. Lips of a different size denote a person to be discreet, secret in all things, judicious, and of a good wit, but somewhat hasty. To have lips well coloured, and more thin than thick, shews a person to be good humoured in all things, and more easily persuaded to good than evil. To have one lip bigger than the other shews variety of fortune, and denotes the party to be of a dull sluggish temper, and of a very indifferent understanding, as being much addicted to folly.

The lips they so much dote on for a kiss,
Oft tell fond lovers when they do amiss.

When the teeth are small, and but weak in performing their office, and especially if they are short and few, though they shew the person to be of a weak constitution, yet they denote him to be of a meek disposition, honest, faithful, and secret in whatsoever he is entrusted with. To have some teeth longer and shorter than others, denotes a person to be of a good apprehension, but bold, disdainful, envious and proud. To have teeth very long and growing sharp towards the end, if they are long in chewing, and thin, denotes the person to be envious, gluttonous, bold, shameless, unfaithful, and suspicious. When the teeth look very brown or yellowish, whether they be long or short, it shews the person to be of a suspicious temper, envious, deceitful, and turbulent. To have teeth strong and close together, shews the person to be of a

long life, a desirer of novelties, and things that are fair and beautiful, but of a high spirit, and one that will have his humour in all things; he loves to hear news, and afterwards to repeat it, and is apt to entertain any thing to his behalf. To have teeth thin and weak shews a weak feeble man, and one of short life, and of a weak apprehension; but chaste, shamefaced, tractable, and honest.

Thus from the teeth the learned can portend,
Whether men's steps to vice or virtue bend.

A tongue too swift in speech, shews a man to be downright foolish, or at best but a very vain wit. A stammering tongue, or one that stumbles in the mouth, signifies a man of a weak understanding and wavering mind, quickly in a rage and soon pacified. A very thick and rough tongue denotes a man to be apprehensive, subtle, and full of compliments, yet vain and deceitful, treacherous and prone to impiety. A thin tongue shews a man of wisdom and sound judgment, very ingenious, and of an affable disposition, yet sometimes timorous and too credulous.

No wonder 'tis that from man's speech we see,
Whether they wise or whether foolish be:
But from a silent tongue our authors tell,
The secret passions that in men do dwell.

A great and full voice in either sex shews them to be of a great spirit, confident, proud and wilful. A faint and weak voice, with but little breath, shews a person to be of a good understanding, a nimble fancy, a little eater, but weak of body and of a timorous disposition. A loud and shrill voice which sounds clearly, denotes a person provident, sagacious, true and ingenious, but withal capricious, vain-glorious, and too credulous. A strong voice when a man sings denotes him to be of a strong constitution and of a good understanding, neither too penurious nor too prodigal, also ingenious, and an admirer of the fair sex. A weak and trembling voice shews the owner of it to be envious, suspicious, slow in business, feeble and fearful. A loud, shrill and unpleasant voice, signifies one bold and valiant, but quarrelsome and injurious, and altogether wedded to his own humours and governed by his own counsels. A rough and hoarse voice, whether in speaking or singing, declares one to be a dull and heavy person, of much guts and little brains. A full and yet mild voice, pleasing to the hearer, shews the person to be of a quiet and peaceable disposition, (which is a great virtue and rare to be found in a woman,) and also very thrifty and secret, not prone to anger but of a yielding temper. A voice begin-

ring low or in the bass, and ending high in the treble, denotes a person to be violent, angry, bold, and very secure.

Thus by our voice 'tis to an artist known
 Unto what virtue or what vice we're prone :
 And he that will of a good wife make choice,
 May choose her—by observing of her voice.

A thick and full chin, abounding with too much flesh shews a man inclined to peace, honest and true to his trust, but slow in invention, and easy to be drawn either to good or evil. A pecked chin and reasonably full of flesh shews a person to be of a good understanding, of a high spirit and laudable conversation. A double chin shews a peaceable disposition but dull of apprehension, vain, credulous, a great supplanter, and secret in all his actions. A crooked chin bending upwards and pecked for want of flesh is, by the rules of physiognomy, and according to nature, a very bad man, being proud, impudent, envious, threatening, deceitful, prone to anger and treachery and a great thief.

Thus from the forehead to the chin we've shown
 How mankind's inclinations may be known ;
 From whence the observing reader too may find,
 We're more to evil than to good inclin'd.

The hair of young men usually begins to grow down upon their chin at the age of fifteen, and sometimes sooner. These hairs proceed from the superfluity of heat ; the fumes whereof ascend to their chins, like smoke to the funnel of a chimney ; and because it cannot find an open passage by which it may ascend higher, it vents itself forth in the hairs which are called the beard. There are very few or almost no women at all that have hair on their cheeks : and the reason is, those humours which cause hair to grow on the cheeks of men are by women evacuated in their monthly courses, which they have more or less according to the heat or coldness of their constitution, and the age and motion of the moon, of which we have spoken at large in the first part of this book. Yet sometimes women of a hot constitution have hair to be seen on their cheeks, but more commonly on their lips or near their mouths, where the heat most aboundeth. And where this happens such women are much addicted to the company of men, and of a strong and manly constitution. A woman who hath little hair on her cheeks, or about her mouth and lips, is of a good complexion, weak constitution, shame-faced, mild and obedient ; whereas, a woman of a more hot complexion is quite otherwise. But in a man a beard well composed and thick of hair signifies a man of a good nature, ho-

nest, loving, sociable, and full of humanity:—on the contrary, he that hath a very little beard is for the most part proud, pining, peevish, and unsociable. They who have no beards have always shrill and strange kinds of squeaking voices, and are of a weak constitution, which is apparent in the case of eunuchs, who, after they are deprived of their virility, are transformed from the nature of men into the condition of women.

Of men and women's beards I might say more,
But prudence bids me this discourse give o'er.

Great and thick ears are certain signs of a foolish person, or a bad memory and worse understanding. But small and thin ears shew a person to be of a good wit, grave, secret, thrifty, modest, resolute, of a good memory and willing to serve his friend. He whose ears are longer than ordinary is thereby signified to be a bold man, uncivil, vain, foolish, serviceable to another more than himself, and a man of small industry but of a great stomach.

Who his just praise unwillingly does hear,
Shews a good life as well as a good ear.

A face apt to sweat on every motion shews the person to be of a hot constitution, vain and luxurious, of a good stomach but of a bad understanding and a worse conversation. A very fleshy face shews the person to be of a fearful disposition but a merry heart, and withal bountiful and discreet, easy to be entreated and apt to believe every thing. A lean face, by the rules of physiognomy, denotes the person to be of a good understanding but somewhat capricious and disdainful in his conversation. A little and round face shews a person to be simple, very fearful, of a bad memory and a clownish disposition. A plump face, full of carbuncles, shews a man to be a great drinker of wine, vain, daring and soon intoxicated. A face red or high coloured, shews a man to be much inclined to choler, and one that will be soon angry, and not easily pacified. A long and lean face shews a man to be both bold in speech and action, but withal foolish, quarrelsome, proud, injurious and deceitful. A face every way of due proportion denotes an ingenious person, one fit for any thing, and very much inclined to what is good. One of a broad full fat-face is, by the rules of physiognomy, of a dull, lumpish, heavy constitution, and that for one virtue hath three vices. A plain flat face without any rising shews a person to be very wise, loving and courtly in his carriage, faithful to his friend and patient in adversity. A face sinking down a little with cresses in it, inclining to leanness, denotes a person to be very laborious but envious, deceitful, false,

quarrelsome, vain and silly, of a dull and clownish behaviour. A face of a handsome proportion and more inclining to fat than lean shews a person just in his actions, true to his word, civil and respectful in his behaviour, of an indifferent understanding and of an extraordinary memory. A crooked face long and lean denotes a man endued with as bad qualities as the face is with ill features. A face broad upon the brows and sharper and less as it grows towards the chin shews a man simple and foolish in managing his affairs, vain in his discourse, envious in his nature, deceitful, quarrelsome and rude in his conversation. A face well coloured, full of good features, and of an exact symmetry and a just proportion in all its parts and which is delightful to look upon, is commonly the index of a fairer mind and shews a person to be well disposed; but withal declares that virtue is not so impregably seated there but that by strong temptation (especially of the fair sex) it may be supplanted and overcome by vice. A pale complexion shews the person not only fickle but very malicious, treacherous, false, proud, presumptuous and extremely unfaithful. A face well coloured shews the person to be of a praise-worthy disposition and of a sound complexion, easy of belief and respectful to his friends, ready to do a courtesy and very easy to be drawn to any thing.

Thus physiognomy readeth in each face,
 What vice or virtue we're most prone t' embrace;
 For in man's face there hardly is a line,
 But of some inward passion 'tis a sign;
 And he that reads this section o'er may find,
 The fairest face has still the clearest mind.

A great head and round withal denotes the person to be secret and of great application in carrying on business; and also ingenious and of large imaginative faculty and invention; and likewise laborious, constant and honest. The head whose gullet stands forth and inclines towards the earth signifies a person thrifty, wise, peaceable, secret, of a retired temper and constant in the management of his affairs. A long head and face and great withal denotes a vain, foolish and idle person; also weak, credulous and very envious. To have one's head always shaking and moving from side to side denotes a shallow, weak person; unstable in all his actions, given to lying, a great deceiver, a great talker and prodigal in all his fortunes. A big head and broad face shews a man to be very courageous, a great hunter after women, very suspicious, bold and shameless. He who hath a very big head but not so proportionate as it ought to the body, if he hath a short neck and crooked gullet, is generally a man of ap-

prehension, wise, secret, ingenious, of sound judgment, faithful, true and courteous to all. He who hath a little head and long slender throat is, for the most part, a man very weak yet apt to learn, but unfortunate in his actions. And so much shall suffice with respect to the judgment drawn from the head and face.

CHAP. III.

Of Judgments drawn from several other Parts of Man's Body, &c.

THE head and face are the principal parts in the body of man, being the index which heaven has laid open to every one's view to make a judgment therefrom; therefore I have been the larger in my judgment from the several parts thereof. As to the other parts I shall be much more brief, not being so obvious to the eyes of man; but to proceed in order:—

The throat if it be white whether it be fat or lean shews a man to be vain-glorious, timorous, wanton and very much subject to choler. If the throat be so thin and lean that the veins appear it shews a man to be weak, slow and of a dull and heavy constitution.

A long neck shews one to have a long and slender foot, and that the person is stiff and inflexible either to good or evil. A short neck shews one to be witty and very ingenious, but deceitful and inconstant, well skilled in the use of arms but yet cares not to use them, being a great lover of peace and quietness.

A lean shoulder bone signifies a man to be weak, timorous, peaceable, but not laborious, and yet fit for any employment. He whose shoulder bones are of a great bigness is commonly (by the rules of physiognomy) a strong man, faithful but unfortunate, somewhat dull of understanding, very laborious, a great eater and drinker and one equally contented in all conditions. He whose shoulder bone seems to be smooth is, by the rule of nature, modest in his looks and temperate in all his actions both at bed and board. He whose shoulder bone bends and is crooked inwardly is commonly a dull person and withal deceitful.

Long arms hanging down and touching the knees (though such arms are rarely seen) denotes a man liberal but withal vain-glorious, proud and inconstant. He whose arms are very short in respect of the stature of his body, is thereby signified to be a man of high and gallant spirit, of a graceful

temper, bold and warlike. He whose arms are full of bones, sinews and flesh, is a great desirer of novelties and beauties and one that is very credulous and apt to believe every thing. He whose arms are very hairy whether they be lean or fat is, for the most part, a luxurious person, weak in body and mind, very suspicious and malicious withal. He whose arms have no hair on them at all is of a weak judgment, very angry, vain, wanton, credulous, easily deceived himself and yet a great deceiver of others, no fighter and very apt to betray his dearest friends.

CHAP. IV.

Of Palmistry, shewing the various Judgments drawn from the Hand.

BEING engaged in this third part to shew what judgment may be drawn, according to physiognomy, from the several parts of the body, and coming in order to speak of the hands, it has put me under the necessity of saying something about Palmistry; which is a judgment made of the conditions, inclinations and fortunes of men and women from the various lines and characters nature has imprinted in their hands, which are almost as various as the hands that have them.

The reader should remember that one of the lines of the hand (and which indeed is reckoned the principal) is called the line of life; this line incloses the thumb, separating it from the hollow of the hand. The next to it (which is called the natural line) takes its beginning from the rising of the forefinger near the line of life and reaches to the table line, and generally makes a triangle. The table line (commonly called the line of fortune) begins under the little finger and ends near the middle finger. The girdle of Venus (which is another line so called) begins near the first joint of the little finger and ends between the forefinger and middle finger. The line of death is that which plainly appears in a counter line to that of life and is called the sister line, ending usually as the other ends; for when the line of life is ended death comes and it can go no farther. There are lines in the fleshy parts, as in the ball of the thumb, which is called the mount of Venus; under each of the fingers are also mounts which are each one governed by several planets; and the hollow of the hand is called the plain of Mars: thus,

The thumb we to dame Venus' rule commit,
 Jove the forefinger sways as he thinks fit:

Old Saturn does the middle finger guide ;
 O'er the ring finger Sol does still preside ;
 The outside brawn pale Cynthia does direct ;
 And into th' hollow Mars does most inspect ;
 The little finger does to Mercury fall ;
 Which is the nimblest planet of them all.

I proceed to give judgment from these several lines:—in palmistry the left hand is chiefly to be regarded because therein the lines are most visible and have the **strictest** communication with the heart and brain. In the next place observe the line of life, and if it be fair, extending to its full length and not broken with an intermixture of cross lines, it shews long life and health ; and it is the same if a double line of life appears, as there sometimes does. When the stars appear in this line it is a signification of great losses and calamities : if on it there be the figure of two O's or a Y, it threatens the person with blindness ; if it wraps itself about the table line then does it promise wealth and honour to be attained by prudence and industry. If the line be cut or jagged at the upper end it denotes much sickness ; if this line be cut by any lines coming from the mount of Venus, it declares the person to be unfortunate in love and business also, and threatens him with sudden death. A cross between the line of life and the table-line shews the person to be very liberal and charitable, and of a noble spirit. Let us now see the signification of the table-line.

The table-line when broad and of a lively colour shews a healthful constitution, a quiet contented mind and a courageous spirit ; but if it has crosses towards the little finger it threatens the party with much affliction by sickness. If the line be double or divided into three parts at any of the extremities, it shews the person to be of a generous temper, and of a good fortune to support it ; but if this line be forked at the end it threatens the person shall suffer by jealousies and doubts and loss of riches gotten by deceit. If three points such as these . . . are found in it they denote the person prudent and liberal, a lover of learning and of a good temper ; if it spreads towards the fore and middle finger, and ends blunt, it denotes preferment. Let us now see what is signified by the middle line.

This line has in it oftentimes (for there is scarce a hand in which it varies not) divers very significant characters. Many small lines between this and the table-line threatens the party with sickness, and also gives him hopes of recovery. A half cross branching into this line, declares the person shall have honour, riches and good success in all his undertakings. A

half moon denotes cold and watrey distempers; but a sun or star upon this line promises prosperity and riches. This line double in a woman shews she will have several husbands but no children.

The line of Venus, if it happens to be cut or divided near the forefinger, threatens ruin to the party and that it shall befall him by means of lascivious women and bad company. Two crosses upon the line, one being on the fore-finger and the other bending towards the little finger, shews the party to be weak and inclined to modesty and virtue: indeed it generally denotes modesty in women; and therefore those who desire such wives usually chuse them by this standard.

The liver line, if it be straight and crossed by other lines, shews the person to be of a sound judgment and a piercing understanding; but if it be winding, crooked and bending outward it shews deceit and flattery, and that the party is not to be trusted. If it makes a triangle or quadrangle it shews the person to be of a noble descent and ambitious of honour and promotion. If it happens that this line and the middle line begin near each other it denotes a person to be weak in his judgment, in man; but if a woman, danger by hard labour.

The plain of Mars being in the hollow of the hand, most of the lines pass through it, which renders it very significant. This plain being hollow, and the lines being crooked and distorted, threatens the party to fall by his enemies. When the lines beginning at the wrist are long within the plain, reaching to the brawn of the hand, they shew the person to be one given to quarrelling, often in broils, and of a hot and fiery spirit, by which he shall suffer much damage. If deep and large crosses be in the middle of the plain it shews the party shall obtain honour by martial exploits; but if it be a woman, that she shall have several husbands and easy labour with her children.

The line of death is fatal when crosses or broken lines appear in it; for they threaten the person with sickness and a short life. A clouded moon appearing therein threatens a child-bed woman with death. A bloody spot in the line denotes a violent death. A star, like a comet, threatens ruin by war, and death by pestilence. But if a bright sun appears therein it promises long life and prosperity.

As for the lines in the wrist, being fair they denote good fortune, but if crossed and broken the contrary.

Thus he that nature rightly understands,
May from each line imprinted in his hands;

His future fate and fortune come to know,
 And in what path it is his feet shall go ;
 His secret inclinations he may see,
 And to what vice he shall addicted be ;
 To th' end, that when he looks into his hand,
 He may upon his guard the better stand ;
 And turn his wand'ring steps another way,
 Whene'er he finds he does from virtue stray.

CHAP. V.

Judgments, according to Physiognomy, drawn from the several Parts of the Body, from the Hands to the Feet.

A LARGE and full breast shews a man valiant and courageous, but withal proud and hard to deal with, quickly angry and very apprehensive of an injury : he whose breast is narrow and which riseth a little in the middle of it, is, by the best rules of physiognomy, of a clear spirit, of a great understanding, good in counsel, very faithful, clear both in mind and body, yet, as an enemy to this, he is soon angry, and inclined long to keep it. He whose breast is something hairy is very luxurious and serviceable to another. He who hath no hairs upon his breast is a man weak by nature, of a slender capacity and very timorous, but of a laudable life and conversation, inclined to peace, and much retired to himself.

The back of the chin bone, if the flesh be any thing hairy and lean, and higher than any other part that is behind, signifies a man shameless, beastly, and withal malicious. He whose back is large, big and fat is thereby denoted to be a strong and stout man, but of a heavy disposition, vain, slow and full of deceit.

He or she whose belly is soft over all the body is weak, lustful and fearful upon little or no occasion ; of a good understanding and of excellent invention, but little eaters, faithful, but of various fortune and meets with more adversity than prosperity. He whose flesh is rough and hard in a man of strong constitution and very bold, but vain, proud and of a cruel temper. A person whose skin is smooth, fat and white is a person curious, vain-glorious, timorous, shame-faced, malicious, false, and too wise to believe all he hears.

A thigh full of strong bristly hair and the hair inclined to curl signifies one lustful, licentious and fit for copulation : thighs with but little hair and that soft and slender, shews

the person to be reasonably chaste and one that has no great desire to venereal pleasures and who will have but few children.

The legs of both men and women have a fleshy substance behind which are called calves, which nature hath given them (as in our books of living creatures we have observed) in lieu of those long tails which most other creatures have pendant behind. Now a great calf, and he whose legs are of a great bone and hairy withal, denotes the person to be strong, bold, secure, dull in understanding and slow in business, inclined to procreation and for the most part fortunate in his undertakings.—Little legs and but little hair on them shews the person to be weak, fearful, of a quick understanding, and neither luxurious at bed nor board. He whose legs do much abound with hair shews he has great store in another place, and that he is lustful and luxurious, strong but unstable in his resolution and abounding with many ill humours.

The feet of either man or woman, if broad and thick with flesh and long in figure, especially if the skin feels hard, they are by nature of a strong constitution and a gross nutriment, but of weak intellects, which renders the understanding vain. But feet that are thin and lean and of a soft skin shews the person to be weak of body, but of a strong understanding and an excellent wit.

The soles of the feet do administer plain and evident signs whereby the disposition and constitution of men and women may be known, as do the palms of their hands, as being full of lines, by which lines all the fortunes or misfortunes of men and women may be known, and their manners and inclinations made plainly to appear. But this in general we may take notice of, that many long lines and strokes do presage great affliction and a very troublesome life, attended with much grief and toil, care, poverty and misery: but short lines, if they are thick and full of cross lines are yet worse in every degree. Those, the skin of whose soles are very thick and gross, are for the most part able, strong and venturous; whereas, on the contrary, those, the skin of whose soles of their feet is thin, are generally weak and timorous.

I shall now, before I conclude, (having given an account of what judgments may be made by observing the several parts of the body, from the crown of the head to the soles of the feet,) give an account of what judgments may be drawn, by the rule of physiognomy, from things extraneous, which are found upon many, and which indeed to them are parts of the body; but are so far from being necessary parts, that they are the deformity and burden of it.—I shall also speak of the habits of the body as they distinguish persons.

I. Of Crooked and Deformed Persons.

A CROOKED breast or shoulder, or the exuberance of flesh in the body either of man or woman, signifies the person to be extremely parsimonious and ingenious, and of a great understanding, but very covetous and scraping after the things of the world, attended also with a very bad memory; being also very deceitful and malicious: they are seldom in a medium, but either virtuous or extremely vicious. But if the person deformed hath an excrescence on his breast instead of the back, he is for the most part of a double heart, and very mischievous.

II. Of the divers Manners of Going and particular Postures both of Men and Women.

HE or she that goes slowly, making great steps as they go, are generally persons of bad memory and dull of apprehension, given to loitering and not apt to believe what is told them. He who goes apace and makes short steps is most successful in all his undertakings, swift in his imaginations, and humble in the disposition of his affairs. He who makes wide and uneven steps, and strides long withal, is one of a greedy, voracious nature, subtle, malicious and wills to do evil.

III. Of the Gait or Motion in Men and Women.

EVERY man hath a certain gait or motion, and so in like manner hath every woman. For a man to be shaking his head, or using any light motion with his hands or feet, whether he stands or sits or speaks, is always accompanied with an extravagant motion, unnecessary, superfluous and unhand-some. Such a man, by the rules of physiognomy, is vain, unwise, unchaste, a detractor, unstable and unfaithful. He or she whose motion is not much when discoursing with any one, is for the most part wise and well bred and fit for any employment, ingenious and apprehensive, frugal, faithful and industrious in business. He whose posture is forwards and backwards, or, as it were, whisking up and down, or minical, is thereby denoted to be a vain, silly person, of a heavy and dull wit and very malicious. He whose motion is lame and limping, or any otherwise imperfect, or that counterfeits any imperfection, is denoted to be envious, malicious, false and detracting.

IV. Judgments drawn from the Stature of a Man.

PHYSIOGNOMY draws several judgments also from the stature of a man, which are as follow: If a man be up-

right and straight, inclined rather to leanness than fat, it shews him to be bold, cruel, proud, clamorous, soon angry, and hard to be reconciled when displeas'd; very frugal, deceitful, and in many things malicious. To be of tall stature and corpulent with it, denotes him to be not only handsome but valiant also, but of no extraordinary understanding; and, which is worst of all, ungrateful and trepanning. He who is extremely tall and very lean and thin is a projecting man, that designs no good to himself, and suspects every one to be as bad as himself, importunate to obtain what he desires, and extremely wedded to his own humours. He who is thick and short is vain, envious, suspicious, and very shallow of apprehension, easy of belief, but very long before he will forget an injury. He who is lean and short but upright withal is, by the rules of physiognomy, wise and ingenious, bold and confident, and of a good understanding, but of a deceitful heart. He who stoops as he goes, not so much by age as custom, is very laborious, a retainer of secrets but very incredulous and not easy to believe every vain report he hears. He that goes with his belly stretching forth is sociable, mery and easy to be persuaded.

V. General Observations worthy of Note.

WHEN you find a red man to be faithful, a tall man to be wise, a fat man to be swift of foot, a lean man to be a fool, a handsome man not to be proud, a poor man not to be envious, a whitely man not to be wise, one that talks through his nose to speak without snuffing, a knave to be no liar, an upright man not to be bold and hearty to his own loss; one that drawls when he speaks not to be crafty and circumventing; a man of a hot constitution, and full of hair on his breast and body, not to be lustful; one that winks at another with his eyes, not to be false and deceitful; one that knows how to shuffle his cards to be ignorant how to deal them; a rich man to be prodigal; a sailor or hangman to be pitiful; a poor man to build churches; a higler not to be a liar and a praiser of his ware; a buyer not to find fault with and undervalue that which he would willingly buy; a quack doctor to have a good conscience both to God and man; a bailiff or catchpole not to be a merciless villain; an hostess not to over reckon you, and an usurer to be charitable; then say you have found a prodigy, or a man acting contrary to the course of nature.



THE
FAMILY PHYSICIAN;

*Being Choice and Approved REMEDIES for the
several Distempers incident to the Human Body.*

A Powder for the Epilepsy or Falling Sickness.

TAKE of opoponax, crude antimony, dragons blood, castor peony seeds, of each an equal quantity, make them into a subtile powder; the dose half a dram, in black cherry water. Before you take it, the stomach must be cleansed with some proper vomit, as that of Mynsicht's emetic tartar from four grains to six. For children salt of vitriol from a scruple to half a dram.

A Vomit for a Swimming in the Head.

TAKE cream of tartar half a scruple, castor two grains, mix all together for a vomit, to be taken at four o'clock in the afternoon. At night, going to bed, it will be very proper to take a dose of apoplectic powder.

For Spitting of Blood.

TAKE conserve of comfrey, and of hips, of each an ounce and a half; conserve of red roses three ounces, dragons blood a dram, spices of hyacinth two scruples, red coral a dram; mix with the syrup of red poppies, and make a soft electuary; take the quantity of a walnut night and morning.

A Powder against Vomiting.

TAKE crabs eyes, red coral, ivory, of each two drams, burnt hartshorn one dram, cinnamon and red saunders, of each half a dram; make all into a subtile powder, and take half a dram.

For the Bloody Flux.

TAKE a dram of powder of rhubarb in a sufficient quantity of conserve of red roses early in the morning, and at

night take of torrified or roasted rhubarb half a dram, diascordium a dram and a half, liquid laudanum cydoniated a scruple; mix them and make a bolus.

For an Inflammation of the Lungs.

TAKE curious water ten ounces, water of red poppies three ounces, syrup of poppies one ounce, pearl prepared a dram; make a julep, and take six spoonfuls every four hours.

For Weakness in Women.

AFTER a gentle purge or two take the following decoction, viz. a quarter of a pound of lignum vitæ; sassafras two ounces; boil the whole in six quarts of water to a gallon; strain and keep it for use: take half a pint first in the morning, fasting for two hours after; another at four o'clock in the afternoon; and a third at going to bed.

An Ointment for the Itch.

TAKE sulphur vive, in powder, half an ounce, oil of tartar per diliquium a sufficient quantity, ointment of roses four ounces, make a liniment, to which add a scruple of oil of rhodium, to aromatize it, and rub the parts affected with it.

For Worms in Children.

TAKE worm seed half a dram, flour of sulphur a dram, sal prunella half a dram, mix and make a powder; give as much as will lie upon a silver threepence, night and morning in treacle or honey. For grown persons add a small quantity of aloes rosatum, and so make them up into pills; three or four of which may be taken every morning.

A Diet Drink for the Vertigo or Swimming of the Head.

TAKE small ale, and boil in it the leaves of misletoe of the apple-tree, roots of male peony, and peony flowers: then put into a vessel of four gallons, in which hang a bag of half a pound of peacock's dung, two drams of cloves bruised; drink it as common drink.

For a Looseness.

TAKE of venice treacle and diascordium, of each half a dram, in warm ale, water-gruel, or what you like best, at night going to bed.

For Fevers in Children.

TAKE of crabs eyes one dram, cream of tartar half a dram, white sugar candy finely powdered the weight of both; mix all well together, and give as much as will lie upon a silver threepence in a spoonful of barley water or sack whey.

For an Head Ach of long standing.

TAKE the juice or distilled water of hog lice, and continue the use of it.

For the Gripes in Children.

GIVE a drop or two of the oil of anniseed in a spoonful of panada, milk, or any thing you think proper.

A Distilled Water for a confirmed Phthisis.

TAKE leaves of ground-ivy five handfuls, six nutmegs sliced, two pounds of the crumbs of white bread, three pounds of snails half boiled and sliced into milk, and take of it three or four times a day; sweetened with sugar of pearl or roses.

A quieting Night Draught when the Cough is violent.

TAKE of water of green wheat six ounces, syrup of diascordium three ounces; mix them, and take two or three spoonfuls going to bed every night, or every other night.

For Vomiting or Looseness.

TAKE of venice treacle one ounce, powder of tormentil roots, contrayerva, pearl and prepared coral, of each a sufficient quantity, of the syrup of dried roses make an electuary; take the quantity of a walnut every fourth or fifth hour; drink after it a draught of ale or beer, with a crust of bread, mace, or cinnamon boiled in it.

A Distilled Water for the Jaundice.

TAKE a pound of the roots of English rhubarb sliced, the rinds of four oranges sliced, the filings of steel a pound, fresh strawberries six pounds, three quarts of white wine; let them stand in infusion for some time, and distil all according to art. Take of it four ounces twice a day, with twenty drops of the spirit of saffron.

For the Rheumatism.

TAKE volatile salt of hartshorn, volatile salt of amber, of each two drams, crabs eyes one ounce, cochineal a scruple; mix and make a powder. Take half a dram of this three times a day, or indeed every four hours, keeping your bed and sweating upon it.

For a Violent Tooth-Ach.

IF the tooth be hollow, nothing cures but drawing; but if occasioned through a defluxion of humours upon the part, first take a gentle purge, and at night when you go to bed take a grain or two of London laudanum, which will thicken the humours, stop the defluxion, and consequently remove the pain.

For St. Anthony's Fire.

BLEEDING premised, take frog spawn water and plantain water of each half a pint, sugar of lead two drams; mix and shake the bottle till the salt is dissolved. Dip a linen cloth in this water, and bathe the part affected with it, which it cools wonderfully.

For the Black Jaundice.

TAKE flower of sal ammoniac a dram, salt of amber a scruple, dianucum a dram, extract of gentian a dram, saffron a scruple, gum ammoniac dissolved in vinegar of squils what suffices, make a mass of small pills; take three or four morning or evening.

For an Ague.

TAKE the common bitter drink without the purgatives two quarts, salt of wormwood two ounces, the best English saffron a dram. After you have taken a vomit, or convenient purge, take half a pint of this three times a day, viz. in the morning fasting, three o'clock in the afternoon, and last at night.

For the Cholic.

TAKE anniseed, sweet fennel seed, coriander, carraway seeds, of each two drams, cummin seed a dram, rased ginger a small quantity, bruise all in a mortar, and put them into a quart of Nantz brandy; let them infuse three days, shaking the bottle three or four times a day, then strain and keep it for use; take two or three spoonfuls in the fit.

For the Palpitation or Beating of the Heart.

TAKE powder of crabs eyes, burnt hartshorn, and red coral, of each a dram, English saffron a scruple; mix, and

make a powder. Take a scruple of it night and morning in a spoonful of barley water, drinking a draught after it.

For a Pain in the Stomach proceeding from Wind.

TAKE venice treacle three drams, dittany, seeds of ambrosius daucus, of each six grains, galangal, cloves, of each a scruple, wood of aloes, coral, of each a scruple, conserve of roses an ounce, conserve of mint half an ounce, with a sufficient quantity of syrup of mint make an electuary. if need require, you may add two grains of opium. Dose, the quantity of a nutmeg in the morning fasting.

Lozenges restorative in a Consumption.

TAKE pine nuts prepared two drams and a half, greenfustick two drams, species diambrae two scruples, cinnamon half a dram, galangal a scruple, cloves half a dram, nutmegs two scruples, with ginger half a dram, xiloa aloes half a scruple, with four ounces and a half of sugar dissolved in rose water, and the spices, make a confection in lozenges.

Against Aches and Pains in the Joints.

POWDER of chamedrois, chamopetys, and gentian, of each three drams, dried leaves of rue four ounces; make all into a fine powder. After due purging give a dram of this night and morning in a spoonful of white wine.

For Spots and Pimples in the Skin.

TWO ounces of black soap, sulphur vive in powder one ounce: tie them in a rag, and hang them in a pint of vinegar for the space of nine days; then rub and wash the part gently night and morning.

Purging Pills for the Scurvy.

TAKE rosin of julep twenty grains, aromatic pills with gum two grains, vitriolated tartar twenty-six grains, oil of juniper ten grains, with a sufficient quantity of gum ammoniac dissolved in vinegar of squils. Take four at a time early in the morning, fasting two hours after. You may take them once a week.

For Stinking Gums without Rottenness.

TAKE powder of the best myrrh one ounce, claret wine a pint: after two or three days infusion, wash your gums and mouth with it.

For the Rheumatism proceeding from the Scurvy.

TAKE stone-horse dung a pound, white wine three or four quarts, distil according to art; take five or six ounces

twice or thrice a day. Some take the infusion only, but this exceeds it.

For a Convulsion Cough in Children.

AFTER a gentle vomit and purge, apply a blister to the nape of the neck; but if the distemper be very obstinate, then cut an issue in the neck or arm, or in the arm pits; keep them close to a diet drink of chida sarsa, shavings of ivory, saunders, and some diuretic ingredients. But if a specific, you may give cupmoss every day in powder in boiled milk. You may add the decoction of hyssop, with a little castor and saffron.

For an Inward Bleeding.

TAKE leaves of plantain and stinking nettles, of each three handfuls; bruise them very well, and pour on them six ounces of plantain water; afterwards make a strong expression, and drink the whole off.

For a Bleeding at the Nose.

TAKE a dried toad, sew it up in a silk bag, and hang it at the pit of the stomach for a considerable time.—This has performed the cure when other medicines have proved ineffectual.

For the same.

TAKE calcanthum rubefactum or the caput mortuum of vitriol half an ounce; boil it in a quart of quick lime water to a pint; when cold and settled strain it. Dip a tent in it and thrust it up the nostrils; or you may snuff some of it up the nose.

Powder against Poison and Pestilence.

TAKE zedoary, euphorbium, corallina, tormentil, gentian, common dittany, scalded earth, armenian bole, red and white coral, spikenard, mastich, clove, jelly flowers, lesser centuary, red saunders, bone of stag's heart, camphire, of each equal parts. Make all into an impalpable powder; give one dram with sorrel water, or with wine and sorrel boiled together.

THE
Experienced Midwife.

PART I.

A GUIDE for Child-bearing Women.

INTRODUCTION.

I HAVE given this book the title of **THE COMPLETE AND EXPERIENCED MIDWIFE**, both because in is chiefly designed for those who profess midwifery, and contains whatever is necessary for them to know in the practice thereof, and also because it is the result of many years experience, and that in the most difficult cases, and is therefore the more to be depended upon. A midwife is the most necessary and honourable office, being indeed a helper of nature; which therefore makes it necessary for her to be well acquainted with all the operations of nature in the work of generation, and the instruments with which she works, for she that knows not the operations of nature, nor with what tools she works, must needs be at a loss how to assist therein. And seeing the instruments of operation both in men and women are those things by which mankind are produced, it is very necessary that all midwives should be well acquainted with them, that they may the better understand their business, and assist nature as there shall be occasion. The first thing then necessary, as introductory to this treatise, is an *ANATOMICAL DESCRIPTION of the several parts of Generation both in Men and Women*: and having designed throughout to comprehend much in a little room, I shall avoid all unnecessary and impertinent matters with which books of this nature are for the most part too much clogged, and which are more curious than needful. And though I shall be necessitated to speak plainly, that so I may be understood, yet I shall do it with that modesty that none shall have need to blush, unless it be

from something in themselves, rather than from what they shall find here; having the motto of the royal garter for my defence, which is, '*Honi soit qui mal y pense*;' or, '*Evil be to him that evil thinks*.'

CHAP. I.

An Anatomical Description of the Instruments of Generation both in Man and Woman.

SECTION I.

Of the Parts of Generation in Man.

AS the generation of mankind is produced by the coition of both sexes, it necessarily follows, that the instruments of generation are of two sorts, viz. male and female; the operations of which are by action and passion; and herein the agent is the seed and the patient the blood; whence we may easily collect, that the body of man being generated by action and passion, he must needs be subject thereunto during his life. Now, since the instruments of generation are male and female, it will be necessary to treat of them both distinctly, that the honest and discreet midwife may be well acquainted with the several parts, and their various operations, as they contribute to the work of generation. And, in doing this, I shall give the honour of precedence to my own sex, and speak first of the parts of generation in man, which will be comprehended under six particulars, viz. The preparing vessels, the *corpus varicosum*, the testicles or stones, the *vasa deferentia*, the seminal vessels, and the yard. Of each of which in their order.

1. The first are the *vasa preparentia*, or preparing vessels, which are four in number, two veins, and as many arteries, and they are called preparing vessels from their office, which is to prepare that matter or substance which the stones turn into seed, to fit it for the work. Whence you may note, that the liver is the original of blood, and distributes it through the body by the veins, and not the heart, as some have taught. As to the original of these veins, the right vein proceedeth from the *vena cava*, or great vein, which receives the blood from the liver, and distributes it by its branches to all the body; the left is from the emulgent vein, which is one of the two main branches of the hollow vein passing to the reins. As to the arteries, they both arise from the great artery, which the Greeks call that which is indeed the great trunk and original of all the arteries. But I will not trouble you with

Greek derivations of words, affecting more to teach you the knowledge of things than words.

2. The next thing to be spoken of is the *corpus varicosum*, and this is an interweaving of the veins and arteries which carry the vital and natural blood to the stones to make seed of. These, though at the first declension they keep at a small distance the one from the other, yet before they enter the stones they make an admirable intermixture of twisting the one from the other, so that sometimes the veins go into the arteries, and sometimes the arteries into the veins; the substance of which is very hard and long, not much unlike a pyramid in form, without any sensible hollowness: the use is to make one body of the blood and vital spirits, which they both mix and change the colour of, from red to white, that so the stones may both have a fit matter to work upon, and do their work more easily; for which reason, the interweaving reacheth down to the very stones, and pierceth into their substance.

3. The stones are the third thing to be spoken of, called also *testicles*; in Latin, *testes*; that is, a witness, because they witness one to be a man. As to these I need not tell you their number, nor where nature has placed them, for that is obvious to the eye. Their substance is soft, white, and spongy, full of small veins and arteries, which is the reason they swell to such a bigness upon the flowing down of the humour in them. Their form is oval: but most authors are of opinion that their bigness is not equal, but that the right is the biggest, the hottest, and breeds the best and strongest seed. Each of these stones have a muscle, called *cremaster*; which signifies to hold up, because they pull up the stones in the act of coition, that so the vessels being slackened, may the better void the seed. These muscles are weakened both by age and sickness; and then the stones hang down lower than in youth and health. These stones are of great use, for they convert the blood and vital spirits into seed for the procreation of man: but this must not be understood as if they converted all the blood that comes into them into seed, for they keep some for their own nourishment. But besides this, they add strength and courage to the body; which is evident from this, that eunuchs are neither so hot, strong, nor valiant as other men, nor is an ox so hot or valiant as a bull.

4. The next in order are the *vasa deferentia*, which are the vessels that carry the seed from the stones to the seminal vessels, which is kept there till its expulsion. These are in number two, in colour white, and in substance nervous or sinewy; and from a certain hollowness which they have in them are also spermatic pores. They rise not far from the preparing

vessels; and when they come into the cavity of the belly, they turn back again, and pass into the back-side of the bladder, between it and the right gut: and when they come near the neck of the bladder, they are joined to the seminal galls, which somewhat resemble the cells of an honey-comb; which cells contain an oily substance, for they draw the fatty substance from the seed, which they empty into the urinal passage, which is done for the most part in the act of copulation, that so the thin internal skin of the yard suffers not through the acrimony or sharpness of the seed. And when the *vasa deferentia* has passed, as before narrated, they fall into the *glandula prostrata*, which are the vessels ordained by nature to keep the seed, and which are next to be spoken of.

5. The seminal vessels, called *glandulum seminale*, are certain kernels placed between the neck of the bladder and the right gut, compassing about the *vasa deferentia*, the *urethra*, or common passage, for seed and urine passing through the midst of it, and may properly enough be called the conduit of the yard. At the mouth of the *urethra*, where it meets with the *vasa deferentia*, there is a thick skin, whose office is to hinder the seminal vessels, which are of a spongy nature, from shedding their seed against their will: this skin is very full of pores, and through the heat of the act of copulation the pores open, and so give passage to the seed, which being of a very subtle spirit, and especially being moved, will pass through this caruncle or skin as quicksilver through leather; and yet the pores of this skin are not discernible unless in the anatomy of a man who had some violent running in the reins when he died, and then they are conspicuous, these vessels being the proper seat of that disease.

6. The last of the parts of generation in man to be spoken of is the yard, which has a principal share in the work of generation, and is called penis, from its hanging without the belly; and it consists of skin, tendons, veins, arteries, sinews, and great ligaments, and is long and round, being ordained by nature both for the passage of the urine, and for the conveying of seed into the matrix. It hath some parts common with it to the rest of the body, as the skin, or the *membrana carnosa*; and some parts it has peculiar to itself, as the two nervous bodies, the *septum*, the *urethra*, the *glans*, the four *muscles*, and the *vessels*. The skin, which the Latins call *cutis*, is full of pores, through which the sweat and fuliginous or sooty black vapours of the third concoction (which concocts the blood into flesh) pass out: These pores are very many and thick, but hardly visible to the eye; and when the yard stands not, it is flabby: but when it stands, it is stiff: The skin is very sensible, because the nerves concur to make

up its being; for the brain gives sense to the body by the nerves. As to the *carnus membrana*, or fleshy skin, it is so called, not because its body is fleshy, but because it lies between the flesh, and passeth into other parts of the body underneath the fat, and sticks close to the muscles: but in the yard there is no fat at all, only a few superficial veins and arteries pass between the former skin and this, which when the yard stands are visible to the eye: These are the parts common both to the yard and to the rest of the body. I will now speak of those parts of the yard which are peculiar to itself, and to no other parts of the body: And those are likewise six, as has been already said, of which it will also be necessary to speak.

Of the peculiar internal parts of the Yard.

1. Of the Nervous Bodies: These are two, though joined together, and are hard, long and sinewy, they are spongy within, and full of black blood; the spongy substance of the inward part of it seems to be woven together like a net, consisting of innumerable twigs of veins and arteries. The black blood contained therein is very full of spirits, and the delights or desires of Venus add heat to these, which causeth the yard to stand; and that is the reason why venereal sights and tales will do it. Nor need it be strange to any, that Venus, being a planet cold and moist, should add heat to those parts, since by night, as the Psalmist testifies, Psal. cxxxix.—Now this hollow and spongy intermixture or weaving was so ordered by nature, on purpose to contain the spirit of venereal heat, that the yard may not fall before it has done its work. These two side ligaments of the yard, where they are thick and round, arise from the lower part of the share-bone, and at the beginning are separated the one from the other, resembling a pair of horns, or the letter Y, where the *urethra*, or common passage of urine and seed, passeth between them.

2. Those nervous bodies of which I have spoken, so soon as they come to the joining of the share-bone, are joined by the *septum lucidum*, which is the second internal part to be described, which in substance is white and nervous, or sinewy, and its use is to uphold the two side ligaments and the *urethra*.

3. The third thing in the internal parts of the yard is the *urethra*, which is the passage or channel by which both the seed and urine is conveyed out through the yard. The substance of it is sinewy, thick, soft, and loose, as the side ligaments are; it begins at the neck of the bladder, and being joined to it, passeth to the *glans*. It has in the beginning of it three holes, of which the largest of them is in the midst,

which receives the urine into it; the other two are smaller, by which it receives the seed from each seminal vessel.

4. The yard has four muscles, on each side two: These muscles are instruments of voluntary motion, without which no part of the body can move itself. It consists of fibrous flesh to make its body, of nerves for its sense, of veins for its nourishment, of arteries for its vital heat, of a membrane or skin to knit it together, and to distinguish one muscle from another, and all of them from the flesh: of these muscles, as I said before, the yard has two on each side, and the use of them is to erect the yard and make it stand, and therefore they are also called erectors. But here you must note, that of the two on each side, the one is shorter and thicker than the other; and these are they that do erect the yard, and so are called erectors: but the two other being longer and smaller, their office is to dilate the lower part of the *urethra*, both for making water and emitting seed; upon which account they are called accelerators.

5. That which is called the glans, is the extreme part of the yard, which is very soft, and of a most exquisite feeling, by reason of the thinness of the skin wherewith it is covered: This is covered with the *præputium*, or fore-skin, which in some men covers the top of the yard quite close, but in others it doth not; which skin moving up and down in the act of copulation, brings pleasure both to man and woman. This outer skin is that which the Jews were commanded to cut off on the eighth day. The *præputium*, or fore-skin, is tied to the glans by a ligament or bridle, which is called *frænum*.

6. The last internal part of the yard are the vessels thereof, veins, nerves and arteries. Of these some pass by the skin, and are visible to the eye when the yard stands: others pass by the inward parts of the yard; the arteries are wonderfully dispersed through the body of the yard, much exceeding the dispersion of the veins; for the right artery is dispersed to the left side, and the left to the right side. It hath two nerves, the lesser whereof is bestowed upon the skin, the greater upon the muscles and body of the yard. But this much shall suffice to be said in describing the parts of generation in men. I shall therefore, in the next place, proceed to describe those of women, that so the honest and industrious midwife may know how to help them in their extremities.

SECTION II.

Describing the Parts of Generation in Woman.

WHATEVER ignorant persons may imagine, or some good women think, that are unwilling those private parts which nature has given them should be exposed, yet in this case it

is absolutely necessary ; for I do positively affirm, that it is impossible truly to comprehend what a midwife ought to do, if these parts are not perfectly understood by them ; nor do I know any reason they have to be ashamed to see or hear a particular description of what God and nature has given them, since it is not the having these parts, but the unlawful use of them, that causes shame.

To proceed then in this description more regularly, I shall speak in order of these following principal parts : first, of the Privy Passage ; secondly, of the Womb ; thirdly, of the Testicles or Stones ; fourthly, of the Spermatic Vessels.

1st. Of the Privy Passage. Under this head I shall consider the six following parts :—

1. The lips, which are visible to the eye, and are designed by nature as a cover to the *fissura magna*, or great orifice : these are framed of the body, and have pretty store of spongy fat ; and their use is to keep the internal parts from cold and dust. These are the only things that are obvious to the sight : the rest are concealed, and cannot be seen, unless these two lips are stretched asunder, and the entry of the privities opened.

2. When the lips are severed, the next thing that appears is the *nymphæ* or wings ; they are formed of soft and spongy flesh, and are in form and colour like the comb of a cock.

3. In the uppermost part, just above the urinary passage, may be observed the *clitoris*, which is a sinewy and hard body, full of spongy and black matter within, like the side ligament of the yard, representing in form the yard of a man, and suffers erection and falling as that doth ; and it grows hard, and becomes erected as a man's yard, in proportion to the desire a woman hath to copulation ; and this also is that which gives a woman delight in copulation : for without this a woman hath neither a desire to copulation nor delight in it, nor can conceive by it. And I have heard that some women have had their *clitoris* so long that they have abused other women therewith : Nay, some have gone so far as to say, that these persons that have been reported to be *hermaphrodites*, as having the genitals both of men and women, are only such women in whom the *clitoris* hangs out externally, resembling the form of a yard. But though I will not be positive in this, yet it is certain, that the larger the *clitoris* is in any woman, the more lustful she is.

4. Under the *clitoris*, and above the neck, appears the orifice or urinary passage, which is much larger in women than men, and causes their water to come from them in a great stream. On both sides the urinary passage may be seen two small membranous appendices, a little broader above than

below, issuing forth out of the inward parts of the great lips, immediately under the *clitoris*; the use whereof is to cover the orifice of the urinary, and defend the bladder from the cold air: so that when a woman voideth her urine, she contracteth the parts so, that she conducts it out without suffering it to spread along the privities, and often without so much as wetting the lips; and therefore these small membranous wings are called the *nymphæ*, because they govern women's water. Some women have had them so great and long, that they have been necessitated to cut off so much as has exceeded and grew without the lips.

5. Near this are four caruncles, or fleshy knobs, commonly called *caruncles myrtiformes*; these are placed on each side two, and a small one above, just under the urinary passage, and in virgins are reddish, plump, and round, but hang flagging when virginity is lost. In virgins they are joined together by a thin sinewy skin or membrane, which is called the *hymen*, and keeps them in subjection, and makes them resemble a kind of rose-bud half blown. This disposition of the caruncles is the only certain mark of virginity, it being in vain to search for it elsewhere, or hope to be informed of it any other way: And it is from the pressing and bruising these caruncles, and forcing and breaking the little membranes, (which is done by the yard in the first act of copulation,) that there happens an effusion of blood; after which they remain separated, and never recover their first figure, but become more and more flat as the acts of copulation are increased; and in those that have children they are almost totally defaced, by reason of the great distention these parts suffer in the time of their labour. Their use is to straiten the neck of the womb, to hinder the cold air from incommoding it, and likewise to increase mutual pleasure in the act of coition; for the caruncles being then extremely swelled and filled with blood and spirits, they close with more pleasure upon the yard of the man, whereby the woman is much more delighted. What I have said of the effusion of blood which happens in the first act of copulation, though when it happens it is an undoubted sign of virginity, shewing the *caruncles myrtiformes* have never been pressed till then, yet when there happens no blood, it is not always a sign that virginity is lost before; for the *hymen* may be broken without copulation, by the defluxion of sharp humours, which sometimes happens to young virgins, because in them it is thinnest: It is also done by the unskilful application of pessaries to provoke the terms, &c. But these things happen so rarely, that those virgins to whom it so happens do thereby bring themselves under a just suspicion.

6. The next to be spoken of is the neck of the womb,

which is nothing else but the distance between the privy passage and the mouth of the womb, into which the man's yard enters in the act of copulation; and in women of reasonable stature is about eight inches in length. It is of a membranous substance, fleshy without, skinny and very much wrinkled within; that it may both retain the seed cast into it in the act of copulation, and also that it may dilate and extend itself to give sufficient passage to the infant at its birth. It is composed of two membranes, the innermost of them being white, nervous, and circularly wrinkled, much like the palate of an ox, that so it might either contract or dilate itself according to the bigness or length of the man's yard; and to the end, that by the collision, or squeezing, or pressing made by the yard in copulation, the pleasures may be naturally augmented. The external or outmost membrane is red and fleshy, like the muscle of the fundament, surrounding the first, to the end the yard may be the better closed within it: and it is by means of this membrane that the neck adheres the stronger both to the bladder and the right gut. The internal membrane in young girls is very soft and delicate, but in women much addicted to copulation it grows harder: and in those who are grown aged, if they have been given much to venery, it is almost become grisly.

2dly. Having spoken of the Privy Passage, I come now to speak of the womb, which the Latins call *matrix*, yet the old English word is the womb. Its parts are two; the mouth of the womb and the bottom of it. The mouth is an orifice at the entrance into it, which may be dilated and shut together like a purse; for although in the act of copulation it be big enough to receive the glans of the yard, yet after conception it is so closely shut, that it will not admit of the point of a bodkin to enter; and yet again at the time of the woman's delivery, it is opened so extraordinarily, that the infant passes through it into the world; at which time this orifice wholly disappears, and the womb seems to have but one great cavity, from its bottom to the very entrance of the neck. When a woman is not with child it is a little oblong, and in substance very thick and close; but when she is with child it is shortened, and its thickness diminishes proportionably to its distention. And therefore it is a mistake of some anatomists to affirm, that its substance waxeth thicker a little before a woman's labour; for any one's reason will inform them, that the more distended it is, the thinner it must be, and the nearer a woman is to the time of her delivery, the shorter her womb must be extended. As to the action by which this inward orifice of the womb is opened and shut, it is purely nature; for were it otherwise, there would not be so many

bastards begotten as there are; nor would many married women have so many children, were it at their own choice, for they would hinder conception, though they would be willing enough to use copulation; for nature has attended that action with something so pleasing and delightful, that they are willing to indulge themselves in the use thereof, notwithstanding the pains they afterwards endure, and the hazard of their lives that often follow it: and this comes to pass, not so much from any inordinate lust in women, as that the great Director of Nature, for the increase and multiplication of mankind, and even of all other species in the elementary world, hath placed such a magnetic virtue in the womb, that it draws the seed to it as the loadstone draws iron.

The Author of Nature has placed the womb in the belly, that the heat might always be maintained by the warmth of the part surrounding it: it is therefore seated in the middle of the *hypogastrium*, (or lower part of the belly,) between the bladder and the *rectum*, (or right gut,) by which also it is defended from any hurt, through the hardness of the bones; and is placed in the lower part of the belly, for the convenience of copulation, and of the birth's being thrust out at the full time.

It is of a figure almost round, inclining somewhat to an oblong, in part resembling a pear, for, from being broad at the bottom, it gradually terminates in the point of the orifice, which is narrow.

The length, breadth and thickness of the womb, differ according to the age and disposition of the body:—For in virgins not ripe it is very small in all its dimensions, but in women whose terms flow in great quantities, and such as frequently use copulation, it is much larger; and if they have had children, it is larger in them than in such as have had none; but in women of a good stature, and well shaped, it is (as I have said before) from the entrance of the privy parts to the bottom of the womb, usually about eight inches; but the length of the body of the womb alone does not exceed three inches, the breadth thereof is nearly about the same, and of the thickness of the little finger, when the woman is not pregnant: but when the woman is with child it becomes of a prodigious greatness, and the nearer she is to her delivery the more is the womb extended.

It is not without reason then that nature (or the God of nature rather) has made the womb of a membranous substance; for thereby it does the easier open to conceive, and is gradually dilated from the growth of the *fetus*, or young one, and is afterwards contracted and closed again, to thrust forth both it and the after-burden, and then to retire to its primi-

tive seat. Hence also it is enabled to expel any noxious humours which sometimes happen to be contained within it.

Before I have done with the womb, which is the field of generation, and ought therefore to be the more particularly taken care of, (for as the seeds of plants can produce no fruits, nor spring, unless sown in ground proper to waxen and excite their vegetative virtue, so likewise the seed of a man, though potentially containing all the parts of a child, would never produce so admirable an effect, if it were not cast into the fruitful field of nature, the womb,) I shall proceed to a more particular description of the parts thereof, and the uses to which nature has designed them

The womb then is composed of various similiary parts, that is, of membranes, veins, arteries and nerves. Its membranes are two, and they compose the principal part of its body; the outermost of which ariseth from the *peritoneum* or *cawl*, and is very thin, without smooth, but within equal, that it may the better cleave to the womb, being fleshy and thicker than any part else we meet with in the body when the woman is not pregnant, and is interwoven with all sorts of fibres or small strings, that it may the better suffer the extension of the child, and the waters caused during the pregnancy, and also that it may the easier close again after delivery.

The veins and arteries proceed both from the *hypogastrics* and the *spermatic vessels*, of which I shall speak by and by: all these are inserted and terminated in the proper membrane of the womb. The arteries supply it with blood for its nourishment, which, being brought thither in too great a quantity, sweats through the substance of it, and distils as if it were a dew into the bottom of its cavity; from whence do proceed both the terms in ripe virgins, and the blood which nourisheth the embryo in breeding women. The branches which issue from the spermatic vessels are in each side of the bottom of the womb, and are much less than those which proceed from the *hypogastrics*, those being greater, and bedewing the whole substance of it. There are yet some other small vessels, which, arising the one from the other, are conducted to the internal orifice; and by these, those that are pregnant do purge away the superfluity of their terms, when they happen to have more than is used in the nourishment of the infant; by which means nature has taken such care of the womb, that, during pregnancy, it shall not be obliged to open itself for the passing away those excrementitious humours, which, should it be forced to do, might often endanger abortion.

As touching the nerves, they proceed from the brain, which furnishes all the inner parts of the lower belly with them; which is the true reason it hath so great a sympathy with the

stomach, which is likewise very considerably furnished from the same part : so that the womb cannot be afflicted with any pain but the stomach is immediately sensible thereof, which is the cause of those loathings or frequent vomitings which happen to it.

But, besides all these parts which compose the womb it hath yet four ligaments, whose office is to keep it firm in its place, and prevent its constant agitation by the continual motion of the intestines which surround it, two of which are above and two below : those above are called the broad ligaments, because of their broad and membranous figure, and are nothing else but the production of the *peritoneum*, which, growing out of the side of the loins towards the reins, come to be inserted in the sides of the bottom of the womb, to hinder the body from bearing too much on the neck, and so from suffering a precipitation, as will sometimes happen when the ligaments are too much relaxed ; and do also contain the testicles, and as well conduct the different vessels as the *ejaculatories* to the womb. The lowermost are called round ligaments, taking their original from the side of the womb near the horn, from whence they pass the groin, together with the production of the *peritoneum*, which accompanies them through the rings and holes of the oblique and transverse muscles of the belly, which divide themselves into many little branches, resembling the foot of a goose, of which some are inserted into the *os pubis*, and the rest are lost and confounded with the membranes that cover the upper and interior parts of the thigh ; and it is that which causes the numbness which women with child feel in their thighs. These two ligaments are long, round, and nervous, and pretty big in their beginning near the *matrix*, hollow in their rise, and all along to the *os pubis*, where they are a little smaller, and become flat, the better to be inserted in the manner aforesaid : it is by their means the womb is hindered from rising too high. Now, although the womb is held in its natural situation by means of these four ligaments, yet it has liberty enough to extend itself when pregnant, because they are very loose, and so easily yield to its distention. But besides these ligaments, which keep the womb as it were in a poise, yet it is fastened, for greater security, by its neck, both to the bladder and *rectum*, between which it is situated, whence it comes to pass, that if at any time the womb be inflamed, it communicates the inflammation to the neighbouring parts.

Its use, or proper action in the work of generation, is to receive and retain the seed, and to reduce it from power to action by its heat, for the generation of the infant, and therefore absolutely necessary for the conservation of the species.

It also seems by accident to receive and expel the impurities of the whole body, as when women have abundance of whites; and to purge away, from time to time, the superfluity of the blood, as it doth every month by the evacuation of the blood, as when a woman is not with child. Thus much shall suffice for the description of the womb, on which subject I have dwelt the more, because (as I have before said) it is the field of generation.

3dly. The next thing to be described, in the genitals of women, is the testicles or stones; for such women have as well as men, but not for the same use, and, indeed, they differ from those of men also in several particulars:

As, First, in place, being within the belly; whereas in men they are without. Secondly, in figure, being uneven in women, but smooth in men. Thirdly, in magnitude, being lesser in women than in men. Fourthly, they are not fixed in women by muscles, but by ligatures. Fifthly, they have no prostrates, or kernels, as men have. Sixthly, they differ in form, being depressed or flattish in women, but oval in men. Seventhly, they have but one skin, whereas men have four; for the stones of men being more exposed, nature has provided for them accordingly. Eighthly, their substance is more soft than in men. Ninthly, their temperature is colder than in men. And as they differ in all these respects, so do they also in their use, for they perform not the same actions as in men, as I shall presently shew. As for their seat, it is in the hollowness of the abdomen, and therefore not extremely pendulous, but rest upon the *ova*, or egg. It is true, Galen and Hippocrates did erroneously imagine, that the stones in women did both contain and elaborate the seed, as those do in men; but it is a great mistake: for the testicles of a woman are, as it were, no more than two clusters of eggs, which lie there to be impregnated by the most spiritous particles or animating effluvia conveyed out of the womb through two tubes, or different vessels: But, however, the stones in women are really useful, for where they are defective generation work is at an end. For though those little bladders, which are on their superficies, contain nothing of seed, yet they contain several eggs, (commonly to the number of twenty in each testicle), one of which, being impregnated in the act of coition, by the most spiritous part of the seed of the man, descends through the oviducts into the womb, and there, in process of time, becomes a living child.

4thly, I am now to speak of the spermatic vessels in women, which are two, and are fastened in their whole extent by a membranous appendix to the broad ligament of the womb: these do not proceed from the testicles, as in men,

but are distant from them a finger's length at least; and being disposed after the manner of the miseraic veins, are trained along this membranous distance, between the different vessels and the testicles. Their substance is, as it were, nervous and moderately hard; they are round, hollow, big and broad enough at their end, joining to the horn of the womb. Some authors affirm, that by these women discharge their seed into the bottom of the womb; but the whole current of our modern authors runs quite another way, and are positive that there is no seed at all in their vessels; but that after the egg or eggs, in the *ovaria* or testicles, are impregnated by the seed of the man, they descend through these two vessels into the womb, wherein being placed the embryo is nourished. These vessels are shorter in women than they are in men, for the stones of a woman lying within the belly, their passage must needs be shorter; but their various wreathings and windings in and out, make amends for the shortness of their passage. These vessels are not united before they come to the stones, but divide themselves into two branches, the biggest only whereof pass through the testicles and the lesser to the womb, both for the nourishment of itself and the infant in it. I will only observe further, that these spermatic veins receive the arteries as they pass by the womb, and so there is a mixture between the vital and natural blood, that so the work might be the better wrought; and that it is so, appears by this, that if you blow up the spermatic vein, you may perceive the right and left vessel of the womb blown up; from whence also the communication of all the vessels of the womb may be easily perceived.

The *deferentia*, or carrying vessels, spring from the lower part of the testicles; are in colour white, and in substance sinewy, and pass not to the womb straight, but wreathed, with several turning and windings, as was said of the spermatic vessels; that so the shortness of the way may be likewise compensated by their winding meanders; yet near the womb they become broad again. They proceed in two parts from the womb, which resemble horns, and are therefore called the horns of the womb. And this is all that is needful to be known or treated of, concerning the parts of generation both in men and women.

Only since our modern anatomists and physicians are of different sentiments from the ancients, touching the woman's contributing of seed for the formation of the child as well as the man; the ancients strongly affirming it, but our modern authors being generally of another judgment: I will here declare the several reasons for their different opinions.

SECTION III.

Of the Difference between the Ancient and Modern Physicians, touching the Woman's contributing Seed to the Formation of the Child.

I WILL not make myself a party in this controversy, but set down impartially, and yet briefly, the arguments on each side, and leave the judicious reader to judge for himself.

Though it is apparent, say the ancients, that the seed of man is the principal, efficient, and beginning of action, motion and generation, yet it is evident that the woman doth afford seed, because she hath seminal vessels, which else had been given her in vain; but since nature forms nothing in vain, it must be granted they were made for the use of seed and procreation, and fixed in their proper places to operate, and contribute virtue and efficacy to the seed: and this, say they, is further proved from hence, that if women at the years of maturity use not copulation to eject their seed, they often fall into strange diseases, as appears by young women and virgins; and also it is apparent, that women are never better pleased than when they are often satisfied this way, which argues the pleasure and delight they take therein; which pleasure and delight, say they, is double in women to what it is in men; for, as the delight of men in copulation consists chiefly in the emission of their seed, so women are delighted both in the emission of their own and the reception of the man's.

But against this all our modern authors affirm, that the ancients were very erroneous; forasmuch as the testicles in women do not afford seed, but are two eggs, like those of fowls and other creatures, neither have they any such offices as in men, but indeed are an *ovarium*, or receptacle for eggs; wherein these eggs are nourished by the sanguinary vessels dispersed through them; and from thence, one or more, as they are fœcundated by the man's seed, are conveyed into the womb by the *oviducts*. And the truth of this, say they, is so plain, that if you boil them, their liquor will have the same taste, colour, and consistency, with the taste of birds eggs. And if it be objected that they have no shells, the answer is easy; for the eggs of fowls, while they are in the *ovary*, nay, after they have fallen into the *uterus*, have no shell; and though they have one when they are laid, yet it is no more than a fence which nature has provided for them against outward injuries, they being hatched without the body; but those of women being hatched within the body, have no need of any other fence than the womb to secure them.

They also further say; there are in the generation of the *fetus*, or young one, two principles, active and passive: the active is the man's seed, elaborated in the testicles, out of the arterial blood and animal spirits; the passive principle is the *ovum*, or egg, impregnated by the man's seed: for to say that women have true seed, say they, is erroneous. But the manner of conception is this: The most spiritous part of a man's seed in the act of copulation, reaching up to the *ovarium*, or testicles of the woman, (which contains divers eggs, sometimes more, sometimes fewer,) impregnates one of them, which being conveyed by the oviducts to the bottom of the womb, presently begins to swell bigger and bigger, and drinks in the moisture that is plentifully sent thither, after the same manner that the seeds in the ground suck the fertile moisture thereof to make them sprout.

But, notwithstanding what is here urged by our modern anatomists, there are some late writers of the opinion of the ancients, viz. that women have both, and emit seed in the act of copulation; and the good women themselves take it ill to be thought merely passive in those wars wherein they make such vigorous encounters, and positively affirm they are sensible of the emission of their seed in those engagements; and that a great part of the delight which they take in that act consists in it. I will not therefore go about to take any of their happiness away from them, but leave them in possession of their imagined felicity.

Having thus laid the foundation of this work, in the description I have given of the parts dedicated to the work of generation both in men and women, I will now proceed to speak of conception, and of those things that are necessary to be observed by women from the time of their conception to the time of their delivery.

CHAP. II.

Of Conception; what it is, the Signs thereof, whether conceived of a Male or Female; how Women are to order themselves after it.

SECTION I.

What Conception is, and the Qualifications requisite thereto.

CONCEPTION is nothing else but an action of the womb, by which the prolific seed is received and retained, that an infant may be engendered and formed out of it. There

are two sorts of conception; the one according to nature, which is followed by the generation of the infant in the womb; the other is false, and wholly against nature, in which the seed changes into water, and produces only a false conception, mole, or other strange matter. Now there are three things principally necessary in order to a true conception, so that generation may follow; to wit, diversity of sex, congression and emission of seed. Without diversity of sexes there can be no conception; for though some will have a woman to be an animal that can engender of herself, it is a great mistake: there can be no conception without a man to discharge his seed into the womb. What they alledge of pullets laying eggs without a cock treading them, is nothing to the purpose; for those eggs should they be set under a hen, will never become chickens, because they never received any prolific virtue from the male, which is absolutely necessary to this purpose, and is sufficient to convince us, that diversity of sex is necessary even to those animals as well as to the generation of man. But diversity of sex, though it be necessary to conception, yet it will not do alone; there must also be a congression of those different sexes; for diversity of sex would profit but little if copulation did not follow. I confess I have heard of some subtle women, who, to cover their sin and shame, have endeavoured to persuade some peasants that they were never touched by man, to get them with child; and that one in particular pretended to conceive by going into a bath where a man had washed himself a little before, and spent his seed into it, which was drawn and sucked into her womb, as she pretended: but such stories as these are only fit to amuse them that know no better.—Now that these different sexes should be obliged to come to the touch, which we call copulation or coition, besides the natural desire of begetting their like, which stirs up men and women to it, the parts appointed for generation are endowed by nature with a delightful and mutual itch, which begets in them a desire to the action; without which, it would not be very easy for a man, born for the contemplation of divine mysteries, to join himself by the way of coition to a woman, in regard of the uncleanness of the part and the action: and on the other hand, if women did but think of those pains and inconveniences to which they are subject by their great bellies, and those hazards even of life itself, besides the unavoidable pains that attend their delivery, it is reasonable to believe they would be affrighted from it. But neither sex make these reflections till after the action is over, considering nothing before hand but the pleasure of enjoyment. So that it is by this voluptuous itch that nature obligeth both sexes to this congression. Upon which the third

thing followeth of course, viz. the emission of seed into the womb in the act of copulation. For the woman having received this prolific seed into her womb, and retaining it there, the womb thereupon becomes compressed, and embraces the seed so closely, that being closed, the point of a needle, (as saith Hippocrates,) cannot enter it without violence; and now the woman may be said to have conceived; being reduced by its heat and power into action, the several faculties which are in the seed it contains making use of the spirits with which the seed abounds, and which are the instruments by which it begins to trace out the first lineaments of all the parts; to which afterwards, making use of the menstruous blood flowing to it, it gives in time growth and final perfection. And thus much shall suffice to shew what conception is.—I shall now proceed to give various symptoms of conception.

SECTION II.

Signs of Conception.

THERE are many prognostics or signs of conception. I will name some of the chief, which are the most certain, and let alone the rest.

1. If a woman has been more than ordinarily desirous of copulation, and hath taken more pleasure than usual therein, (which upon recollection she may easily know,) it is a sign of conception.

2. If she retain the seed in her womb after copulation: which she may know, if she perceives it not to flow down from the womb as it used to do before; for this is a sure sign the womb has received it into the inward orifice, and there retains it.

3. If she finds a coldness and chillness after copulation, it shews the heat is retired to make conception.

4. If, after this, she begins to have loathings to those things which she loved before, and this attended with a loss of appetite, and a desire after meats to which she was not addicted before, and hath often nauseatings and vomitings, with sour belchings, and exceeding weakness of stomach.

5. After conception the belly waxeth very flat, because the womb closeth itself together, to nourish and cherish the seed, contracting itself so as to leave no empty space.

6. If the veins of the breasts are more clearly seen than they were wont to be, it is a sign of conception.

7. So it is if the tops of the nipples look redder than formerly, and the breasts begin to swell, and grow harder than usual; especially if this be attended with much pain and soreness.

8. If a woman hath twisting and griping pains, much like those of the cramp in the belly, and about the navel, it is a sign she hath conceived.

9. If under the lower eye-lid the veins be swelled and appear clearly, and the eye be something discoloured, it is a certain sign she is with child, unless she have her menses at the same time upon her, or that she has sat up the night before.

10. Some also make this trial of conception: They stop the woman's urine in a glass or phial for three days, and then strain it through a fine linen cloth, and if they find small living creatures in it, they conclude that the woman has certainly conceived.

11. There is also another easy trial: Let the woman that supposes she has conceived take a green nettle and put it into her urine, cover it close, and let it remain therein a whole night: if the woman be with child it will be fall of red spots on the morrow, but if she be not with child it will be blackish.

12. The last sign I shall mention is that which is most obvious to every woman, which is the suppression of her terms: For, after conception, nature makes use of that blood for the nourishment of the embryo, which before was cast out by nature because it was too great in quantity. For it is an error to think that the menstrual blood, simply in itself considered, is bad: because, if a woman's body be in good temper, the blood must needs be good; and that it is voided monthly, is, because it offends in quantity, but not in quality. But though the suppression of the terms is generally a sure sign of conception to such persons as have had them orderly before, yet, the having them always is not a sign there is no conception: forasmuch as many that have been with child have had their terms, and some even till the fifth or sixth month, which happens according to the woman's being more or less sanguine; for if a woman has more blood than will suffice for the nourishment of the embryo, nature continues to void it in the usual way. Whence the experienced midwife may learn there are few general rules which do not sometimes admit of an exception. But this shall suffice to be spoken of the signs and prognostics of conception.

SECTION III.

Whether Conception be Male or Female.

AUTHORS give us several prognostics of this; though they are not all to be trusted, yet there is some truth among them: The signs of a male child being conceived are,

1. When a woman, at her rising up, is more apt to stay herself upon her right hand than her left.

2. Her belly lies rounder and higher than when she has conceived of a female.

3. She first feels the child to beat on her right side.

4. She carries her burden more light, and with less pain, than when it is a female.

5. Her right nipple is redder than the left, and her right breast harder and more plump.

6. Her colour is more clear, nor is she so swarthy as when she has conceived a female.

7. Observe the circle under her eye, if of a pale and blueish colour; and if that under her right eye be most apparent, and most discoloured, she has conceived a son.

8. If she would know she hath conceived of a son or a daughter, let her milk a drop of her milk into a bason of fair water; if it spreads and swims at top, it certainly is a boy; but if it sinks to the bottom as it drops in, round in a drop, it is a girl. This is an infallible rule. And in all it is to be noted, that what is a sign of a male conception, the contrary holds good of a female.

SECTION IV.

How a Woman ought to order herself after Conception.

MY design in this treatise being brevity, I shall pretermitt all that others say of the causes of twins, and whether there be any such thing as *superfetations*, or a second conception in a woman, which is yet common enough when I come to shew you how the midwife ought to proceed in the delivery of those women that are pregnant with them. But having already spoken of conception, I think it now necessary to show how such as have conceived ought to order themselves during their pregnancy, that they may avoid those inconveniences which often endanger the life of the child, and many times their own.

A woman after her conception, during the time of her being with child, ought to be looked on as indisposed or sick, though in good health; for child-bearing is a kind of nine months sickness, being all that time in expectation of many inconveniences, which such a condition usually causes to those that are not well governed during that time; and therefore ought to resemble a good pilot, who, when sailing in a rough sea and full of rocks, avoids and shuns the danger if he steers with prudence; but if not it is a thousand to one but he suffers shipwreck. In like manner, a woman with child is often in danger of miscarrying and losing her life, if

she is not very careful to prevent those accidents to which she is subject all the time of her pregnancy; all which time her care must be double, first of herself, and secondly of the child she goes with, for otherwise a single error may produce a double mischief; for if she receives any prejudice, her child also suffers with her.

Let a woman, therefore, after conceptions, observe a good diet, suitable to her temperamient, custom, condition, and quality; and if she can, let the air where she ordinarily dwells be clear and well tempered, free from extremes either of heat or cold; for being too hot, it dissipateth the spirits too much and causeth many weaknesses; and by being too cold and foggy, it may bring down rheums and distillations on the lungs, and so cause her to cough, which by its impetuous motions forcing downwards, may make her miscarry; she ought also to avoid all nauseous and ill smells, for sometimes the stick of a candle not well put out may cause her to come before her time; and I have known the smell of charcoal to have the same effect. Let her also avoid smelling of rue, mint, penny-royal, castor, brimstone, &c.

But with respect to her diet, women with child have generally so great loathings, and so many different longings, that it is very difficult to perscribe an exact diet for them. Only this I think advisable, that they may use those meats and drinks which are to them most desirable, though perhaps not in themselves, so wholesome as some others, and it may not be so pleasant, but this liberty must be made use of with this caution, that what she so desires be not in itself absolutely unwholesome: and also that in every thing they take care of excess. But if a child-bearing woman finds herself not troubled with such longings as we have spoken of, let her eat in such quantity as may be sufficient for her and the child, which her appetite will in great measure regulate; for it is alike hurtful for her to fast too long as to eat too much; and therefore, rather let her eat a little and often, especially let her avoid eating too much at night; because the stomach, being too much filled, compresseth the diaphragms, and thereby causes difficulty of breathing. Let her meat be easy of digestion, such as the tenderest parts of beef, mutton, veal, fowls, pullets, capons, pigeons, and partridges, either boiled or roasted, as she likes best; new laid eggs are also very good for her; and let her put into her broth those herbs that purify it, as sorrel, lettuce, succory, and burrage; for they will purge and purify the blood; let her avoid whatsoever is hot seasoned, especially pies and baked meats, which being of hot digestion overcharge the stomach. If she desires fish, let it be fresh, such as is taken out of rivers and run-

ning streams. Let her eat quinces or marmalade, &c. to strengthen her child; for which purpose sweet almonds, honey, sweet apples, and full ripe grapes, are also good. Let her abstain from all sharp, sour, bitter, and salt things, and all things that tend to provoke the terms; such as garlick, onions, olives, mustard, fennel, with pepper, and all spices, except cinnamon, which in the three last months are good for her. If at first her diet be sparing, as she increases in bigness let her diet be increased; for she ought to consider she has a child as well as herself to nourish. Let her be moderate in her drinking: and if she drinks wine let it be rather claret than white, (which will breed good blood, help the digestion, and comfort the stomach, which is always but weakly during her pregnancy) but white wine being diuretic, or that which provokes urine ought to be avoided. Let her have a care of too much exercise, and let her avoid dancing, riding in a coach, or whatever else puts the body into violent motion, especially in her first month. But to be more particular, I shall here set down rules proper for every month for the child-bearing woman to order herself, from the time she has first conceived to the time of her delivery.

Rules for the First Two Months.

AS soon as a woman knows, or has reason to believe, she hath conceived, she ought to abstain from all motion or exercise, whether to walk on foot or ride on horseback, or if in a coach it ought to be very gently. Let her also abstain from venery, (to which, after conception, she has usually no great inclination,) lest there be a mole, or *superfatation*; which is adding of one embryo to another. Let her beware she lift not her arms too high, nor carry great burdens, nor repose herself on hard and uneasy seats. Let her use moderately meat of good juice and easy digestion, and let her wine be neither too strong nor too sharp, but a little mingled with water: or if she be very abstemious, she may use water wherein cinnamon is boiled. Let her avoid fasting, thirst, watching, mourning, sadness, anger, and all other perturbations of the mind. Let none present any strange or unwholesome thing to her, nor so much as name it, lest she should desire it, and not be able to get it, and so either cause her to miscarry, or the child have some deformity on that account. Let her belly be kept loose with prunes, raisins, or manna in her broth; and let her use the following electuary, to strengthen the womb and the child.

“ Take conserve of burrage, bugloss, and red roses, each two ounces; of balm an ounce; citron peel and mirobolans

candied of each an ounce ; extract of wood aloes a scruple ; pearl prepared half a dram ; red coral and ivory each a dram ; precious stones each a scruple ; candied nutmegs two drams ; and with syrup of apples and quinces make an electuary."

Let her observe the following Rules.

" Take pearis prepared a dram ; red coral prepared and ivory each half a dram ; precious stones each a scruple ; yellow citron peals, mace, cinnamon, cloves, each half a dram ; saffron a scruple ; wood aloes half a scruple ; ambergrease six drams ; and with six ounces of sugar dissolved in rose-water make rouls."

Let her also apply strengtheners to the navel, of nutmegs, mace, mastich, made up in bags, or a toast dipped in marmsey, sprinkled with powder of mint ; if she happens to desire clay, chalk, or coals, (as many women with child do,) give her beans boiled with sugar ; and if she happens to long for any thing which she cannot obtain, let her presently drink a large draught of pure water.

Rules for the Third Month.

IN this month and the next be sure to keep from bleeding ; for though it may be safe at other times, it will not be so to the end of the fourth month ; and yet if too much blood abound, or some incident disease happen, which requires evacuation, you may use a cupping-glass, with scarification, and a little blood may be drawn from the shoulders and arms, especially if she has been accustomed to bleed.—Let her also take care of lacing herself too straitly, but give herself more liberty than she used to do ; for by inclosing her belly in too strait a mould, she hinders the infant from taking its free growth, and often makes it come before its time.

Rules for the Fourth Month.

IN this month you ought also to keep the child-bearing woman from bleeding, unless in extraordinary cases, but when this month is past, blood-letting and physic may be permitted, if it be gentle and mild ; and perhaps it may be necessary to prevent abortion. In this month she may purge as in acute diseases ; but purging may be only used from the beginning of this month to the end of the sixth ; but let her take care that in purging she use no vehement medicine, nor very bitter, as aloes, which is an enemy to the child, and opens the mouth of the vessels ; neither let her use coloquintida, scammony, nor turbith ; she may use cassia, manna, rhubarb, agaric and senna ; but dyacidonium purgans is best, with a little of the electuary of the juice of roses.

Rules for the Fifth, Sixth, and Seventh Months.

IN those months child-bearing woman are often troubled with coughs, heart-beating, fainting, watching, pains in the loins and hips, and bleeding. The cough is from a sharp vapour that comes to the jaws and rough artery from the terms, or from the thin part of that blood gotten into the veins of the breast, or fallen from the head to the breast: This endangers abortion, and strength fails from watching; therefore purge the humors that fall from the breast with rhubarb and agaric, and strengthening the head as in a catarrh, and give sweet lenitives as in a cough. Palpitation and fainting arise from vapour that go to it by the arteries or from blood that aboundeth, and cannot get out at the womb, but ascends and oppresseth the heart: and, in this case, cordials should be used both inwardly and outwardly. Watching is from sharp, dry vapours that trouble the animal spirits; in this case use frictions, and let the woman wash her feet at bed-time, and let her take syrup of poppies, dried roses, emulsions of sweet almonds and white poppy seeds. If she be troubled with pains in her loins and hips, as in these months she is subject to be from the weight of her child, who is now grown big, and heavy, and so stretcheth the ligaments of the womb, and parts adjacent, let her hold it up with a swathing band about her neck.

About this time also the woman often happens to have a flux of blood, either at the nose, womb, or hemorrhoids, from plenty of blood, or from the weakness of the child that takes it not in, or else from evil humours in the blood that stirs up nature to send it forth. And sometimes it happens that the vessels of the womb may be broken either by some violent motion, fall, cough, or trouble of mind, (for any of these will work that effect,) and this is so dangerous, that in such a case the child cannot be well; but if it be from blood only, the danger is no less, provided it flows by the veins of the neck of the womb, for then it prevents plethory, and takes not away the nourishment of the child; but if it proceeds from the weakness of the child that draws it not, abortion often follows, or hard travail, or else she goes beyond her time. But if it flows by the inward veins of the womb, there is more danger by the openness of the womb, if it comes from evil blood; the danger is alike from cacochimy, which is like to fall upon both. If it arises from plethory, open a vein, but with very great caution use astringents, of which the following will do well:—"Take pearls prepared a scruple; red coral two scruples; mace, nutmegs, each a dram; cinnamon half a dram; make a powder, or with sugar, rousls." Or give this powder in broth. "Take red coral half a dram;

precious stones half a scruple; red saunders half a dram; bole a dram; sealed earth, tormentil roots, each two scruples, with sugar of roses and manus christi, and pearl, five drams, make a powder." You may also strengthen the child at the navel; and if there be a cacochimy, alter the humours; and if you may do it safely, evacuate: you may likewise use amulets in her hands and about her neck. In a flux of hemorrhoids wear off the pain; and let her drink wine with a toast and nutmeg. In these months the belly is also subject to be bound; but if it be without any apparent disease, the broth of a chicken, or of veal sodden with oil, or with the decoction of mallows, or marsh-mallows, mercury, and linseed, put up in a clyster, will not be amiss, but in less quantity than is given in other cases; to wit, of the decoction five ounces, of common oil three ounces, of sugar two ounces, of cassia fistula one ounce. But if she will not take a clyster, one or two yolks of new laid eggs, or a few pease pottage warm, with a little salt and sugar, supped up a little before meat, will be very convenient: but if her belly shall be distended, and stretched out with wind, a little fennel seed and anniseed reduced into powder and mingled with honey and sugar, made after the manner of an electuary, will do very well. Also if the thighs and feet swell, let them be anointed with oxphrodium (which is a liquid medicine made with vinegar and rose water) mingled with a little salt.

Rules for the Eighth Month.

THE eighth month is commonly the most dangerous, therefore the greatest care and caution ought to be used, and her diet ought to be better in quality, but not more, nor indeed so much in quantity as before: but as she must abate her diet, so she must increase her exercise; and because then women with child, by reason the sharp humours alter the belly, are accustomed to weaken their spirits and strength, they may well take before meat an electuary of diarrhodon, of aromaticum rositum, or diamargarton; and sometimes they may lick a little honey. As they will loathe and nauseate their meat, they may take green ginger candied with sugar, or the rinds of citron and oranges candied; and let her often use honey for the strengthening of the infant. When she is not far from her time, let her eat every day seven roasted figs before meat, and sometimes let her lick a little honey: but let her beware of salt and powdered meats, for they are neither good for her nor the child.

Rules for the Ninth Month.

IN the ninth month let her have a care of lifting any great weight; but let her move a little more to dilate the parts and stir up natural heat. Let her take heed of stooping, and neither sit too much nor lie on her sides; neither ought she to bend herself much, lest the child be unfolded in the umbilical ligament, by which means it often perisheth. Let her walk and stir often, and let her exercise be rather to go upwards than downwards; let her diet now especially be light and easy of digestion; as damask prunes with sugar, or figs and raisins, before meat; as also the yolks of eggs, flesh and broth of chickens, birds, partridges and pheasants; astringent and roasted meats, with rice, hard eggs, millet and such like things are proper; baths of sweet water, with emollient herbs, ought to be used by her this month without intermission. And after the bath, let her belly be anointed with oil of roses and violets; but for her privy parts, it is better to anoint them with the fat of hens, geese, or ducks, or with oil of lillies, and the decoction of lintseed and fenugreek, boiled with oil of lintseed and marsh-mallows, or with the following liniment:

“Take of mallows and marsh-mallows, cut and shred, of each an ounce; of lintseed, one ounce; let them be boiled from twenty ounces of water to ten; then let her take three ounces of the boiled broth; of oil of almonds, and oil of flower-de-luce, of each one ounce; of deers suet three ounces: let her bathe with this, and anoint herself with it warm.”

If for fourteen days before the birth, she do, every morning and evening, bathe and moisten her belly with muscadine and lavender water, the child will be much strengthened thereby. And if every day she eat toasted bread it will hinder any thing from growing to the child. Her privy parts may be also gently stroaked down with this fomentation:

“Take three ounces of lintseed; of mallows and marsh-mallows sliced, of each one handful; let them be put into a bag and boiled immediately:”—Then let the woman with child every morning and evening take the vapour of this decoction in a hollow stool, taking great heed that no wind or air come to her in any part, and then let her wipe the part so anointed with a linen cloth, that she may anoint the belly and groins as at first.

When she is come so near her time as to be within ten or fourteen days thereof, if she begins to feel more than ordinary pain, let her use every day the following:

“ Take mallows and marsh-mallows, of each one handful ; camomile, hard mercury, maiden hair, of each a handful ; of lintseed four ounces ; let them be boiled in such a sufficient quantity of water as to make a broth therewith.”—But let her not sit too hot upon the seat, nor higher than a little above her navel ; nor let her sit on it longer than about half an hour, lest her strength languish and decay : for it is better to use it often than to stay too long in it.

Thus have I shewn how a child-bearing woman ought to govern herself in each month during her pregnancy ; how she must order herself at her delivery shall be shewn in another chapter, after I have first shewn the industrious midwife how the child is formed in the womb, and the manner of its decumbiture there.

CHAP. III.

Of the Parts proper to a Child in the Womb : how it is formed there, and the Manner of its Situation therein.

IN the last chapter I treated of conception, shewed what it was, how accomplished, its signs, and how she who had conceived ought to order herself during the time of her pregnancy. Now, before I come to speak of her delivery, it is necessary that the midwife be first acquainted with the parts proper to a child in the womb, and also that she know how it is formed, and the manner of its situation and decumbiture there ; which are so necessary to her, that without the knowledge thereof no one can tell how to deliver a woman as she ought. This therefore shall be the work of this chapter. I shall begin with the first of these.

SECTION I.

Of the Parts proper to a Child in the Womb.

IN this section, I must first tell you what I mean by the parts proper to a child in the womb ; and they are only those that either help or nourish it, whilst it is lodged in that dark repository of nature, and that help to clothe and defend it there, and are cast away, as of no more use, after it is born ; and these are two, viz. the *umbilicus*, or navel vessels, and the *secundine* ; by the first it is nourished, and by the second clothed and defended from wrong. Of each of these I shall speak distinctly ; and, first,

Of the Umbilicus, or Navel Vessels.

THESE are four in number, viz. one vein, two arteries, and the vessel which is called *urachos*. 1. The vein is that by which the infant is nourished, from the time of its conception to the time of its delivery; till, being brought into the light of the world, it has the same way of concocting its food that we have. This vein ariseth from the liver of the child, and is divided into two parts when it hath passed the navel; and these two are again divided and subdivided, the branches being upheld by the skin called *chorion*, (of which I shall speak by and by,) and are joined to the veins of the mother's womb, from whence they have their blood for the nourishment of the child. 2. The arteries are two on each side, which proceed from the back branches of the great artery of the mother; and the vital blood is carried by these to the child, being ready concocted by the mother. 3. A nervous or sinewy production is led from the bottom of the bladder of the infant to the navel, and this is called *urachos*: and its use is to convey the urine of the infant from the bladder to the *allantois*. Anatomists do very much vary in their opinions concerning this, some denying any such thing to be in the delivery of women, and others on the contrary affirming it; but experience has testified there is such a thing. For Bartholomew Carbrolius, the ordinary doctor of anatomy to the college of physicians at Montpelier in France, records the history of a maid, whose water being a long time stopped, at last issued out through her navel. And Johannes Fernelius speaks of the same thing that happened to a man of thirty years of age, who having a stoppage in the neck of the bladder, his urine issued out at his navel many months together, and that without any prejudice at all to his health, which he ascribes to the ill lying of his navel, whereby the *urachos* was not well dried. And Volchior Coitas quotes such another instance in a maid of thirty-four years of age, at Nuremburg in Germany. These instances, though they happen but seldom, are very sufficient to prove that there is such a thing as an *urachos* in men. These four vessels before mentioned, to wit, one vein, two arteries, and the *urachos*, do join near to the navel, and are united by a skin which they have from the *chorion*, and so become like a gut or rope, and are altogether void of sense; and this is that which the good women call the navel-string. The vessels are thus joined together, that so they might neither be broken, severed, nor entangled; and when the infant is born are of no use, save only to make up the ligament which stops the hole of the navel, and some other physical uses, &c.

Of the Secundine, or After-birth.

SETTING aside the name given to this by the Greeks and Latins, it is called in English by the names of *secundine*, *after-birth*, and *after-burden*, which are held to be four in number.

1. The first is called *placenta*, because it resembles the form of a cake, and is knit both to the navel and *chorion*, and makes up the greatest part of the *secundine*, or *after-birth*. The flesh of it is like that of the melt, or spleen, soft, red, and tending something to blackness, and have many small veins and arteries in it; and certainly the chief use of it is for containing the child in the womb.

2 The second is the *chorion*. This skin, and that called the *amnios*, involve the child round, both above and underneath, and on both sides, which the *allantois* doth not: This skin is that which is most commonly called the *secundine*, as it is thick and white, garnished with many small veins and arteries, ending in the *placenta*, before named, being very light and slippery. Its use is not only to cover the child round about, but also to receive and safely bind up the roots, and the veins and arteries, or navel vessels, before described.

3. The third thing which makes up the *secundine*, is the *allantois*, of which there is a great dispute among anatomists, some say there is such a thing, and others that there is not: Those that will have it to be a membrane, say it is white, soft, and exceeding thin, and just under the *placenta*, where it is knit to the *urachos*, from whence it receives the urine; and its office is to keep it separate from the sweat, that the saltness of it may not offend the tender skin of the child.

4. The fourth and last covering of the child is called *amnios*, and it is white, soft, and transparent, being nourished by some very small veins and arteries. Its use is not only to enwrap the child round, but also to retain the sweat of the child.

Having thus described the parts proper to the child in the womb, I will next proceed to speak of the formation of the child therein, as soon as I have explained the hard terms in this section, that those for whose help this is designed may understand what they read. There is none, sure, can be so ignorant, as not to know that a vein is that which receives blood from the liver, and distributes it in several branches to all the parts of the body. *Arteries* proceed from the heart, are in a continual motion, and by their continual motion quicken the body. *Nerve* is the same with sinew, and is that by which the brain adds sense and motion to the body. *Placenta pro-*

perly signifies a sugar-cake; but in this section it is used to signify a spongy piece of flesh, resembling a cake full of veins and arteries, and is made to receive the mother's blood appointed for the infant's nourishment in the womb. *Chorion* is the outward skin which compasseth the child in the womb. The *amnios* is the inner skin which compasseth the child in the womb. The *allantois* is the skin that holds the urine of the child during the time that it abides in the womb. The *urachos* is the vessel that conveys the urine from the child in the womb to the *allantois*.

SECTION II.

Of the Formation of the Child in the Womb.

TO speak of the formation of the child in the womb we must begin where nature begins; and that is at the act of coition, in which the womb having received the generative seed, without which there can be no conception, the womb immediately shuts up itself so close that not the point of a needle can enter the inward orifice; and this it does partly to hinder the issuing out of the seed again, and partly to cherish it by an inbred heat, the better to provoke it to action; which is one reason why women's bellies are so lank at their first conception. The woman having thus conceived, the first thing which is operative in the conception is the spirit, whereof the seed is full, which nature quickening by the heat of the womb, stirs it up to action. This seed consists of very different parts, of which some are more and some are less pure. The internal spirits therefore separateth those parts that are less pure, which are thick, cold, and clammy, from them that are more pure and noble. The less pure are cast to the outsides, and with them the seed is circled round, and with them the membranes are made, in which that seed which is the most pure is wrapped round, and kept close together, that it may be defended from cold and other accidents, and operate the better.

The first thing that is formed is the *amnios*, the next the *chorion*; and they enwrap the seed round as it were in a curtain. Soon after this (for the seed thus shut up in the woman lies not idle) the navel vein is bred, which pierceth those skins, being yet very tender, and carries a drop of blood from the veins of the mother's womb to the seed, from which drop is formed the liver, and from which liver there is quickly bred the *vena cava*, or *chief vein*, from which all the rest of the veins that nourish the body spring; and now the seed hath something to nourish it, whilst it performs the rest of nature's work, and hath blood also administred to every part of it, to form the flesh.

This vein being formed, the navel arteries are soon after formed, then the great artery, of which all others are but branches, and then the heart; for the liver furnisheth the arteries with blood to form the heart, the arteries being made of seed, but the heart and the flesh of blood. After this the brain is formed; then the nerves, to give sense and motion to the infant. Afterwards the bones and flesh are formed; and of the bones, first the vertebræ or chine bones, then the skull, &c.

As to the time in which this curious part of nature's workmanship is formed, physicians assign four different seasons wherein this microcosm is formed, and its formation perfected in the womb; The first is immediately after coition; the second time of forming, say they, is when the womb, by the force of its own innate power and virtue, makes a manifest mutation or coagulation in the seed, so that all the substance thereof seems coagulated flesh and blood, which happens about the twelfth or fourteenth day after copulation; and though this concretion of fleshy mass abounds with spirits, yet it remains undistinguishable without any form, and may be called a rough draft of the *fetus* or *embryo*. The third time in which this fabric is come to some further maturity, is, when the principal parts may be in some measure distinguished, and one may discern the *liver, umbilical veins, arteries, nerves, brain, and heart*; and this is about eighteen days after conception. The fourth and last time assigned by physicians for the formation of the child, is about the thirtieth day after conception for a male, but for a female, they tell us forty-two or forty-five days are required, though for what reason I know not, nor does it appear by the birth; for if the male receives its formation fifteen days sooner than the female, why should it not be born so much sooner too! But as to that, every day's experience shews us the contrary; for women go the full time of nine months both with male and female. But at this time of thirty days (or some will have it forty-five) the outward parts may be also seen exquisitely elaborate, and distinguished by joints; and from that time the child begins to be animated, though as yet there is no sensible motion; and has all the parts of the body, though small and very tender, yet entirely formed and figured, although not longer in the whole than one's middle finger; and from thenceforward, the blood flowing every day more and more to the womb, not by intervals like their courses, but it continually grows bigger and stronger to the end of nine months, being the full time of a woman's ordinary labour.

Very great have been the disputes among both philosophers and physicians about the nourishment of the child in the womb,

both as to what it is, and which way it receives it. *Almæon* was of opinion, that the infant drew in its nourishment by its whole body, because it is rare and spungy, as a sponge sucks in water, on every side; and so he thought the infant sucked blood, not only from its mother's veins, but also from the womb. *Democritus* held, that the child sucked in the nourishment at its mouth. *Hippocrates* affirms that the child sucks in both nourishment and breath by its mouth from the mother, for which he gives two reasons: 1. That it will suck as soon as it is born, and therefore must have learned to suck before. 2. Because there are excrements found in the guts as soon as it is born. But neither of these reasons are sufficient to prove his assertion: For as to the first, "That the child will suck as soon as it is born," it is from a natural instinct; for, take a young cat that never saw its dam catch a mouse, and yet it will catch mice itself, as soon as it is able. And as to his second reason, it is a sufficient answer to say, that the excrements found in the guts of an infant newly born, are not excrements of the first concoction, which is evident, because they do not stink, but are the thickest part of the blood, which is conveyed from the vessels of the spleen to the guts. Having, therefore, said enough to confute the opinion of the child's receiving its nourishment by the mouth, I do affirm, that the child receives its nourishment in the womb by the navel: and that it should do so, is much more consonant to truth and reason; which fact being granted, it will easily follow, that the nourishment the child receives is from the pure blood conveyed into the liver by the navel-vein, which is a branch of the *vena porta*, or *gate-vein*, and passeth to the small veins of the liver. Here this blood is made more pure, and the thicker and rawer part of it is conveyed to the spleen and kidneys, and the thicker excrescence of it to the guts, which is that excrement found there as soon as the child is born. The pure part is conveyed to the *vena cava*, and by it distributed throughout the body by the small veins, which, like so many small rivulets, pass to every part of it. This blood is accompanied (as all blood is) with a certain watery substance, the better to convey it through the passage it is to run in, which, as in men, is breathed out by sweating, and contained in the *amnios*, as I have already mentioned.

SECTION III.

Of the Manner of the Child's lying in the Womb.

I COME now to shew after what manner the child lies in the womb; a thing so essential for a midwife to know, that she can be no midwife who is ignorant of it, and yet,

even about this, authors extremely differ; for there is not two in ten that agree, what is the form that the child lies in the womb, or after what fashion it lies there; and yet this may arise, in a great measure, from the different figures that the child is found in, according to the different periods of the woman's pregnancy; for near the time of its deliverance out of those winding chambers of nature, it oftentimes changes the form in which it lay in at a former period. Hippocrates affirms, that the child is so placed in the womb, as to have its hands, its knees, and its head, bent down towards its feet, so that it lies round together, its hands upon both of its knees, and its face between them; so that each eye toucheth each thumb,) and its nose betwixt its knees: and Bartholinus was also of the same opinion. Columbus describes the posture of the child thus: "The right arm bowed, the fingers whereof under the ear and above the neck; the head bowed down, so that the chin toucheth the breast, the left arm bowed above both breast of face, and the left arm is propped up by bending of the right elbow; the legs are lifted upwards, the right of which is so lifted up, that the thigh toucheth the belly, the knees, the navel, the heel, the left buttock, and the foot is turned back and covereth the secrets; the left thigh toucheth the belly, and the legs is lifted to the breast, the back lying outward." And this much shall suffice, touching the opinions of authors on this subject.

I will now shew the several situations of the child in the mother's womb, according to the different times of pregnancy, by which those that are contrary to nature, and are the chief cause of all ill labours, will be the more easily conceived by the understanding midwife; it ought therefore, in the first place, to be observed, that the infant, as well male as female, is generally situated in the midst of the womb; for though sometimes appearance a woman's belly seemeth bigger on one side than on the other, yet it is so with respect to her belly only, and not of her womb, in the midst of which it is always placed.

But in the second place, a woman's great belly makes different figures according to the different times of pregnancy; for when she is young with child, the embryo is always found of a round figure, a little oblong, having the spine moderately turned inwards, the thigh folded, and a little raised, to which the legs are so joined that the heels touch the buttocks; the arms bending, and the hands placed upon the knees, towards which the head is inclining forwards, so that the chin toucheth the breast; in which posture it resembles one sitting to ease nature, and stooping down with the head to see what comes from him. The spine of its back is at

that time placed towards the mother's, the head uppermost, the face forwards, and the feet downwards : and proportionably to its growth, it extends its members by little and little, which were exactly folded in the first month. In this posture it usually keeps till the seventh or eighth month, and then by a natural propensity and disposition of the other parts of the body, the head is turned down towards the inwards orifice of the womb, tumbling as it were over its head, so that then the feet are uppermost, and the face toward the mother's great gut ; and this turning of the infant in this manner, with his head downwards, towards the latter end of a woman's reckoning, is so ordered by nature, that it may thereby be the better disposed for the passage into the world at the time of its mother's labour, which is not then far off, and indeed several children turn not at all until the very time of birth, for in this posture all its joints are most easily extended in coming forth ; for by this means the arms and legs cannot hinder its birth, because they cannot be bended against the inward orifice of the womb ; and the rest of the body being very supple, passeth without any difficulty after the head, which is hard and big, being past the birth. It is true there are divers children that lie in the womb in another posture, and come to the birth with their feet downwards, especially if there be twins ; for then by their different motions they do so disturb one another, that they seldom come both in the same posture at the time of labour, but one will come with the head, and another with the feet, or perhaps lie across ; and sometimes neither of them will come right. But however the child may be situated in the womb, or in whatever posture it presents itself at the time of birth, if it be not with its head forwards, as I have before described, it is always against nature, and the delivery will occasion the mother more pain and danger, and requires greater care and skill from the midwife than when the labour is more natural : of which the following scheme will give a great demonstration, which is the form of a child in the womb ready for the birth, naked and disrobed of all its tunicles proper and common.

CHAP. IV.

A Guide for Women in Travail, shewing what is to be done when they fall in Labour, in order for their Delivery.

THE end of all that we have been treating of is the bringing forth a child into the world with safety both to the mother and the infant, as the whole time of a woman's pregnancy may very well be termed a kind of labour: for, from the time of her conception to the time of her delivery, she labours under many difficulties, is subject to many distempers, and in continual danger, from one effect or another, till the time of the birth comes; and when that comes, the greatest labour and travail comes along with it, insomuch, that then all her other labours are forgotten, and that only is called the time of her labour; and to deliver her safely is the principal business of the midwife. And to assist her therein, shall be the chief design of this chapter. The time of the child's being ready for its birth, when nature endeavours to cast it forth, is that which is properly the time of a woman's labour; nature then labouring to be eased of her burden. And since many child-bearing women (especially of their first child) are often mistaken in their reckoning, and so when they draw near their time take every pain they meet with for their labour, which often proves prejudicial and troublesome to them when it is not so, I will, in the first section of this chapter, set down some sign, by which a woman may know when the true time of her labour is come.

SECTION I.

Signs of the true Time of a Woman's Labour.

WHEN women with child, especially of their first, perceive any extraordinary pains in their belly, they immediately send for their midwife, as taking for their labour, and then if the midwife be not a skilful and judicious woman, to know the time of her labour, but takes it for granted; without further enquiry, (for some such there are,) and so goes about to put her into labour before nature is prepared for it, she may endanger the life both of the mother and child, by breaking the *amnios* and *chorion*. These pains, which are often mistaken for labour, are removed by warm cloths laid to the belly, and the application of a clyster or two, by which those pains that precede a true labour are rather furthered than hin-

dered. There are also other pains incident to women in that condition from a flux of the belly, which are easily known by the frequent stools that follow them.

The signs therefore of labour, some few days before, are, that the woman's belly, which before lay high, sinks down, and hinders her from walking so easily as she used to do; also there flows from the womb slimy humours, which nature has appointed to moisten and smooth the passage, that its inward orifice may be the more easily dilated when there is occasion; which beginning to open at that time, suffers that slime to flow away, which proceeds from the *glandules* called *prostratae*.

These are signs preceding labour; but, when she is presently falling into labour, the signs are, great pain about the region of the reins and loins, which, coming and reiterating by intervals, answer to the bottom of the belly by congruous throes, and sometimes the face is red and inflamed, the which being much heated by the endeavours a woman makes to bring forth the child; and likewise because during the strong throes her respirations are intercepted, which causes the blood to have recourse to her face: also her privy parts are smelted by the infant's head lying in the birth, which by thrusting, causes those pains to descend outwards. She is much subject to vomiting, which is a sign of good labour and speedy delivery, though by ignorant women thought otherwise, for good pains are thereby excited and redoubled; which vomiting is occasioned by the sympathy there is between the womb and the stomach. Also when the birth is near, women are troubled with a trembling in the thighs and legs, not with cold, like the beginning of an ague fit, but with the heat of the whole body, though this does not alway happen. Also if the humours which then flow from the womb are discoloured with blood, it is that which the midwives call *shows*, and is an infallible mark of the birth's being near. And if then the midwife puts up her fingers into the neck of the womb, she will find the inner orifice dilated; at the opening of which, the membranes of the infant containing the waters, present themselves, and are strongly forced downwards with each pain she hath; at which time one may perceive them sometimes to resist, and then again press forward the finger, being more or less hard and extended, according as the pains are stronger or weaker. These membranes, with the waters in them, when they are before the head of the child, which the midwives call *the gathering of the waters*, resemble, to the touch of the finger, those eggs which have no shell, but are covered only with a single membrane. After this, the pains still redoubling, the membranes are broken by a strong

impulsion of the waters which presently flow away, and then the head of the infant is presently felt naked, and presents itself at the inward orifice of the womb; when these waters come thus away, then the midwife may be assured that the birth is very near, this being the most certain sign that can be; for the *amnios allantois* being broken, which contained those waters, by the pressing forward of the birth, the child is no better able to subsist long in the womb afterwards, than a naked man in a heap of snow. Now these waters, if the child comes presently after them, facilitate the labour, by making the passage slippery: and therefore let no midwife (as some have foolishly done) endeavour to force away the water, for nature knows best when the true time of the birth is, and therefore retains the water till that time. But if by accident the water breaks away too long before the birth, then such things as will hasten it may be safely administered; and what those are I shall shew in another section.

SECTION III.

How a Woman ought to be ordered when the Time of her Labour is come.

WHEN it is known that the true time of her labour is come, by the signs laid down in the foregoing section, of which those that are most to be relied on are pains and strong throes in the belly, forcing downwards towards the womb, and a dilation of the inward orifice, which may be perceived by touching it with the finger, and the gathering of the waters before the head of the child, and thrusting down of the membranes which contain them; through which, between the pains, one may in some manner, with the finger, discover the part which presents, (as was said before,) especially if it be the head of the child, by its roundness and hardness. I say, if these things concur, and are evident, the midwife may be sure it is the time of her labour; and care must be taken to get all things ready that are necessary to comfort the woman at that time. And the better to help her, be sure to see she be not strait-laced: you may also give her a pretty strong clyster, or more, if there be occasion, provided it be done at the beginning, and before the child be too forward, for it will be difficult for her to receive them afterwards. The benefit accruing hereby will be, that they excite the gut to discharge itself of excrements, that so the rectum being emptied, there may be more space for the dilation of the passage; likewise, to cause the pains to bear the more downward, through the endeavours she makes when she is at stool; and, in the mean time, all other necessary things for her labour should be put.

in order, both for the midwife and child. To this end some will get a midwife's stool, but a pallet bed girted is much the best way, placed near the fire, if the season so require; which pallet ought to be so placed, that there may be easy access to it on every side, that the woman may be the more readily assisted, as there is occasion.

If the woman abound with blood, to bleed her a little may not be improper, for thereby she will both breathe the better, and have her breasts more at liberty, and likewise more strength to bear down the pain; and this she may do without danger, because the child being about that time ready to be born, has no more need of the mother's blood for its nourishment: Besides, this evacuation does many times prevent her having a fever after delivery. Also, before her delivery, if her strength will permit, let her walk up and down her chamber; and that she may have strength so to do, it will be necessary to give her some good strengthening things, such as jelly broth, new laid eggs, or some spoonfuls of burnt wine. And let her, by all means, hold out her pains, bearing them down as much as she can, at the time when they take her; and let the midwife from time to time touch the inward orifice with her finger, to know whether the waters are ready to break, and whether the birth will follow soon after; let her also anoint the woman's privities with emollient oil, hog's lard and fresh butter, if she finds they are hard to be dilated. Let the midwife likewise be all the while near the labouring woman, and diligently observe her gestures, complaints, and pains, for by this she may guess pretty well how her labour advanceth; because when she changeth her ordinary groans into loud cries, it is a sign the child is very near the birth; for at that time her pains are greater and more frequent. Let the woman likewise, by intervals, rest herself on the bed to regain her strength, but not too long, especially if she be little, short, and thick; for such women have always worse labour if they lie long on their beds in their travail: it is better therefore that they walk as much as they can about the chamber, the women supporting her under her arms, if it be necessary, for by this means the weight of the child causeth the inward orifice of the womb to dilate sooner than in bed; and, if her pains be stronger and more frequent, her labour will not be near so long.

Let not the labouring woman be concerned at those qualms and vomitings which perhaps she may find come upon her, for they will be much for her advantage in the issue, however uneasy she may be for the time, as they further her throes and pains, provoking downwards. But to proceed:—When the waters of the child are ready and gathered, which may be

perceived through the membranes to present themselves to the inward orifice, of the bigness of the whole dilation, the midwife ought to let them break of themselves, and not like some hasty midwives, who being impatient of the woman's long labour, break them, intending thereby to hasten their business; when, instead thereof, they retard it: for by the too hasty breaking of these waters, (which nature designed to cause the infant to slide forth the more easy,) the passage remains dry, by which means the pains and throes of the labouring woman are less efficacious to bring forth the infant than they would otherwise have been. It is therefore much the better way to let the waters break of themselves; after which the midwife may with ease feel the child bare by that which first presents, and thereby discern whether it comes right, that is, with the head foremost, for that is the most proper and natural way of its birth: if the head comes right, she will find it round, big, hard, and equal; but if it be any other part she will feel it unequal, rugged, and soft or hard, according to the nature of the part it is. And this being the true time when the woman ought to be delivered, if nature be not wanting to perform her office, therefore when the midwife finds the birth thus coming forward, let her hasten to assist and deliver it, for it ordinarily happens soon after if it be natural.

But if it happens, as sometimes it may, that the waters break away too long before the birth, in such a case those things that hasten nature may be safely administered; to which purpose, let her make use of penny-royal, dittany, juniper berries, red coral, bettony, and feverfew boiled in white wine, and a draught of it drank; or it would be much better to take the juice of it when it is in its prime, which is in May; and having clarified it, let them make it into a syrup, with double its weight of sugar, and keep it by them all the year, to use when occasion calls for it. Mugwort, used in the same manner, is also good in this case. Also a dram of cinnamon powder given inwardly profits much in this case. And so does tansy, bruised and applied to the privities, or an oil of it so made and used as you were taught before. The stone *Ærites* held to the privities is of extraordinary virtue, and instantly draws away both child and after-burden; but great care must be taken to remove it presently, for it will draw forth the womb and all; for such is the magnetic virtue of this stone, that both child and womb follow it as readily as iron doth the load-stone, or as the load-stone the North-star.

There are many other things that physicians affirm are good in this case; among which are an ass or a horse's hoof hung

near the privities; a piece of red coral hung near the same place: a load-stone helps much, held in the woman's left hand; or the skin which a snake hath cut off, girt about the middle next the skin. These things are mentioned by Mizaldus; but setting those things aside, as not so certain, notwithstanding Mizaldus quotes them, the following prescriptions are very good to give speedy deliverance to women in travail.

1. A decoction of white wine made savory, and drank.
2. Take wild tansy, or silver-weed, bruise it, and apply it to the woman's nostrils.
3. Take date stones, and beat them to powder, and give her half a dram of them at a time in white wine.
4. Take parsley and bruise it and press out the juice, and dip a linen cloth in it, and put it up, so dipped, into the mouth of the womb, it will presently cause the child to come away, though it be dead, and will bring away the after-burden. Also the juice of parsley is a thing of so great virtue, (especially stone parsley,) that being drank by a woman with child, it not only cleanseth the womb, but also the child in the womb, of all gross humours.
5. A scruple of castorum in powder, in any convenient liquor, is very good to be taken in such a case; and so also is two or three drops of spirit of castorum in any convenient liquor; also eight or nine drops of spirits of myrrh, taken in any convenient liquor, gives speedy deliverance.
6. Give a woman in such a case another woman's milk to drink, it will cause speedy delivery, and almost without any pain.
7. The juice of leeks, being drank with warm water, hath a mighty operation to cause speedy delivery.
8. Take penny-seeds and beat them into powder, and mix the powder with oil, with which oil anoint the loins and privities of the woman with child; it gives her deliverance very speedily, and with less pain than can be imagined.
9. Take a swallow's nest and dissolve it in water, strain it, and drink it warm; it gives delivery with great speed and much ease.

Note this also in general, That all things that move the terms are good for making the delivery easy; such as myrrh, white amber in white wine, or lily water, two scruples or a dram; or cassia lignea, dittany, each a dram; cinnamon half a dram; saffron a scruple, given as a dram; or take borax mineral a dram, cassia lignea a scruple, saffron six grains and give it in sack; or take cassia lignea a dram, dittany, amber, of each half a dram, cinnamon, borax, of each a dram and a half, saffron a scruple and give her half a dram; or give her

some drops of oil of hazel in a convenient liquor; or two or three drops of oil of cinnamon in vervain water. Some prepare the *secundine* thus: Take the navel-string and dry it in an oven, take two drams of the powder, cinnamon a dram, saffron half a scruple, with juice of savin make troches, give two drams: or, wash the *secundine* in wine and bake it in a pot; then wash it in endive water and wine, take half a dram of it; long pepper, galangal, of each half a dram; plantain and endive seed, of each a dram and a half; lavender seed four scruples, and make a powder: or, take laudanum two drams; storax, calamint, benzoin, of each half a dram; musk, ambergrease, each six grains; make a powder or troches for a fume. Or use pessaries to provoke the birth: take galbanum dissolved in vinegar, an ounce; myrrh two drams; saffron a dram; with oil of oats make a pessary.

An Ointment for the Navel.

Take oil of keir two ounces; juice of savin an ounce; of leeks and mercury each half an ounce; boil them to the consistence of the juice; and galbanum dissolved in vinegar, half an ounce; myrrh two drams; storax liquid a dram; sound birthwort, sowbread, cinnamon, saffron, a dram; with wax make an ointment, and apply it.

If the birth be retarded through the weakness of the mother, refresh her with applying wine and soap to the nose. Confect. Alkermas, Diamarg.

These things may be applied to help nature in the delivery when the child comes to the birth the right way, and yet the birth is retarded; but if she finds the child comes the wrong way, and she is not able to deliver the woman as she ought to be, by helping nature and saving both mother and child, (for it is not enough to lay a woman, if it might be done by another with more safety and ease, and less hazard both to woman and child,) then let her send speedily for better and more able help; and not, as I once knew a midwife, when a woman she was to deliver had hard labour, rather than a man-midwife should be sent for, would undertake to deliver the woman herself, (though told by others that it was a man's business,) and, in attempting it, brought away the child, but left the head of the infant in the mother's womb; and had not a man-midwife been presently sent for, the mother had lost her life as well as the child: such persons may rather be termed butchers than midwives. But, supposing the woman's labour to be natural, I will next shew what the midwife ought to do in order to her delivery.

CHAP. V.

Of Natural Labour; what it is, and what the Midwife is to do in such a Labour.

SECTION I.

What Natural Labour is.

THERE are four things to denominate a woman's labour natural; the first is, that it be at the full time; for if a woman comes before her time it cannot properly be termed natural labour, neither will it be so easy as if she had completed her nine months. The second thing is, that it be speedy, and without any ill accident; for when the time of her birth is come, nature is not dilatory in the bringing of it forth, without some ill accident intervene, which renders it unnatural. The third is, that the child be alive; for all will grant that the being delivered of a dead child is very unnatural. The fourth thing requisite to a natural birth is, that the child come right: for if the position of the child in the womb be contrary to what is natural, and the event proves it so too often, it makes that which should be a time of life, the death of both the mother and the child.

Having thus told you what I mean by natural labour, I shall next shew how the midwife is to proceed herein, in order to the woman's delivery. When all the foregoing requisites concur, and after the waters be broke of themselves, let the labouring woman be conducted to a pallet bed, provided near the fire for that purpose, as has already been said, and let there rather be a quilt laid upon the pallet bedstead than a feather bed, having thereon linen and cloths in many folds, with such other things as are necessary, and that may be changed according to the exigence requiring it, so that the woman may not be incommoded with the blood, waters and other filth which is voided in labour. The bed ought so to be ordered, that the woman, being ready to be delivered, should lie on her back upon it, having her body in a convenient posture, that is, her head and breast a little raised, so that she be between lying and sitting; for, being so placed, she is best capable of breathing, and likewise will have more strength to bear her pains, than if she lay otherwise, or sunk down in her bed. Being so placed, she must spread her thighs abroad, folding her legs a little towards her buttocks, somewhat raised by a small pillow underneath, so that her rump may have more liberty to retire back; and let her feet be staid against some firm things; besides this, let her take hold of some of

the good women attending her with her hands, that she may the better stay herself during her pains. She being thus placed near the side of her bed, having her midwife by, the better to assist upon all occasion, let her take courage, and help her pains the best she can, bearing them down when they take her, which she must do by holding in her breath, and forcing herself as much as possible, in like manner as when she goes to stool; for, by such straining, the *diaphragma* or *midriff* being strongly thrust downwards, necessarily forces down the womb, and the child in it. In the mean time, let the midwife endeavour to comfort her all she can, exhorting her to bear her labour courageously, telling her it will be quickly over, and that there is no fear but she will have a speedy delivery. Let the midwife also, having no rings on her hands anoint it with oil or sweet butter, and therewith dilate gently the inward orifice of the womb, putting her finger ends into the entry thereof and then stretch them one from the other, when her pains take her; by this means endeavouring to help forward the child, and thrusting by little and little the sides of the orifice towards the hinder parts of the child's head, anointing the parts also with fresh butter, if it be necessary.

When the head of the infant is somewhat advanced into this inward orifice, the midwife's phrase is, "*It is crowned;*" because it girds and surrounds it just as a crown; but when it is so far that the extremities begin to appear without the privy parts, then, say they, "*The child is in the passage;*" and at this time the woman feels herself as it were scratched or pricked with pins, and is ready to imagine that the midwife hurts her, when it is occasioned by the violent distention of those parts, and the laceration which at some times the bigness of the child's head causeth there. When things are in this posture, let the midwife seat herself conveniently to receive the child, which will now come quickly; and with her finger ends, (which she must be sure to keep close pared) let her endeavour to thrust the crowning of the womb of which I have spoken before) back over the head of the child. And as soon as it is advanced as far as the ears, or thereabouts, let her take hold of the two sides with her two hands, that when a good pain comes she may quickly draw forth the child, taking care that the navel-string be not entangled about the neck, or any other parts, as sometimes it is, lest thereby the after burden be pulled with violence, and perhaps the womb also, to which it is fastened; and so either cause her to flood, or else break the strings, both which are of bad consequence to the woman, whose delivery may thereby be rendered the more difficult. It must also be carefully observed that the head be not drawn

forth straight, but shaking it a little from one side to the other, that the shoulders may sooner and easier take its place, immediately after it be past, without losing any time, lest the head being past, the child be stopt there by the largeness of the shoulders, and so come in danger of being suffocated and strangled in the passage, as it sometimes happens for the want of care therein. But as soon as the head be born, if there be need, she may slide in her fingers under the armpits, and the rest of the body will follow without difficulty.

As soon as the midwife hath in this manner drawn forth the child, let her put it on one side, lest the blood and water which follow immediately should do it any injury by running into its mouth and nose, as it would do if it lay on its back, and so endanger the choaking of it. The child being thus born, the next thing requisite is to bring away the after-burden; but before that, let the midwife be very careful to examine whether there be no more children in the womb; for sometimes a woman may have twins that expected it not; which the midwife may easily know by the continuance of the pains after the child is born, and the bigness of the mother's belly. But the midwife may be more sure of it, if she puts her hand up to the entry of the womb, and finds there another water gathering, and a child in it presenting to the passage; and if she finds so, she must have a care of going about to fetch away the after-birth, till the woman be delivered of all the children she is pregnant with. Wherefore the first string must be cut, being first tied with a thread three or four double, and fasten the other end with a string to the woman's thigh, to prevent the inconvenience it may cause by hanging between her thighs; and then removing the child already born, she must take care to deliver her of the rest, whether more or less, observing all the same circumstances as at the first; after which it will be necessary to fetch away the after-birth or births. But of that I shall treat in another section; and first shew what is to be done to the new-born infant:

SECTION II.

Of the cutting of the Child's Navel-string.

THOUGH this is by many accounted but a trifle, yet great care is to be taken about it; and it shews none of the least art and skill of a midwife to do it as it should be; and that it may be so done, the midwife ought to observe, First, the time; Second, the place; Third, the manner; Fourth, the event.

The time is, as soon as ever the infant comes out of the womb, whether it brings part of the after-birth with it or not; for sometimes the child brings into the world a piece of

the *amnios* upon its head, and is what the good women call the *caul*, and ignorantly attribute some extraordinary virtue to the child that is so born; but this opinion is only the effect of their ignorance; for when a child is born with such a crown (as some call it) upon its brow, it generally betokens weakness, and denotes a short life.—But to the matter in hand. As soon as the child is come into the world, consider whether it be weak or strong: and if it be weak, let the midwife gently put back part of the vital and natural blood into the body of the child by its navel; for this recruits a weak child, (the vital and natural spirits being communicated by the mother to the child by its navel-string,) but if the child be strong the operation is needless. Let me remind you, that many children that are born seemingly dead may be soon brought to life again, if you squeeze six or seven drops of blood out of that part of the navel-string which is cut off, and give it to the child inwardly.

Authors can scarcely agree whether the navel-string should be cut long or short; some prescribing it to be cut off at four finger's breadth, which is at the best but an uncertain rule, unless all fingers are of one size.—It is a received opinion, that the parts adapted to generation are either contracted or dilated according to the cutting of the navel-string; and that is the reason that midwives are generally so kind to their own sex, that they leave a longer part of the navel-string; to a male than to a female, because they would have the males well provided for the encounters of Venus; and the reason they give why they cut that of the female shorter is, because they believe it makes them modest, and their privities narrower, which makes them more acceptable to their husbands. Mizaldus was not altogether of the opinion of these midwives, and therefore he ordered the navel-string to be cut long both in male and female children; for which he gives this reason, that the instrument of generation follows the proportion of it, and therefore, if it be cut too short in a female, it will be a hindrance to her having children.—I will not attempt to contradict the opinions of Mizaldus, that experience has made good; one of which is, that if the navel-string of a child, after it is cut, be suffered to touch the ground, the child will never hold its water, neither sleeping or waking, but will be subject to an unvoluntary making of water all its life-time: and another is, that a piece of the child's navel-string carried about one, so that it touch the skin, defends him that wears it from the falling-sickness and convulsions.

As to the manner how it must be cut: Let the midwife take a brown thread four or five times double, of an ell long,

or thereabouts, tied with a single knot at each of the ends, to prevent their entangling; with this thread so accommodated (which the midwife must have in readiness before the woman's labour, as also a good pair of scissars, that so no time may be lost) let her tie the string within an inch of the belly with a double knot, and, turning about the ends of the thread, let her tie two more on the other side of the string, reiterating it again, if it be necessary; then let her cut off the navel another inch below the ligature, towards the after-birth, so that there only remains but two inches of the string, in the midst of which will be the knot we speak of, which must be so strait knit as not to suffer a drop of blood to pass out of the vessels; but care must be taken not to knit it so strait as to cut it in two, and therefore the thread must be pretty thick, and pretty strait knit, it being better too strait than too loose; for some children have miserably lost their lives, with all their blood, before it was discovered, because the navel-string was not well tied. Therefore great care must be taken that no blood squeeze through; for if there do, a new knot must be made with the rest of the string. You need not fear to bind the navel-string very hard, because it is void of sense, and that part of it which you leave on falls off of its own accord in a very few days, sometimes six or seven, and sometimes sooner; but rarely tarries longer than the eighth or ninth. When you have thus cut the navel-string, then take care the piece that falls off touch not the ground, for the reason I told you Mizaldus gave, which experience has justified.

As to the last thing I mentioned, which is the event or consequence, or what follows the cutting of the navel-string. As soon as the navel-string is cut off, apply a little cotton or lint to the place to keep it warm, lest the cold enter into the body of the child, which it will most certainly do if you have not bound it hard enough. If the lint or cotton you apply to it be dipt in oil of roses, it will be the better; and then put another small rag three or four times double upon the belly. Upon the top of all put another small bolster, and then swathe it with a linen swathe four fingers broad, to keep it steady, lest by rolling too much, or by being continually stirred from side to side, it comes to fall off before the navel-string, which you left remaining, is fallen off. It is the usual custom of midwives to put a piece of burnt rag to it, which we commonly call tinder; but I would rather advise them to put a little aromatic to it, because of its drying quality. But this shall suffice to be spoken as to the cutting of the navel-string.

SECTION III.

How to bring away the After-Burden.

A WOMAN cannot be said to be fairly delivered, though the child be born, till the after-burden be also taken from her; herein differing from most animals, who, when they have brought forth their young, cast forth nothing else but some waters, and the membranes which contained them. But women have an after-labour, which sometimes proves more dangerous than the first; and how to bring it safely away, without prejudice to her, shall be my business to shew in this section.

As soon as the child is born, before the midwife either ties or cuts the naval string, lest the womb should close, let her take the string and wind it once or twice about one or two of the fingers of her left-hand, joined together, the better to hold it, with which she may draw it moderately, and with the right-hand she may take only a single hold of it above the left near the privities, drawing likewise with that very gently, resting the while, the fore-finger of the same hand, extending and stretched forth along the string towards the entry of the vagina; always observing, for the more facility, to draw it from the side where the burden cleaves least, for in so doing the rest will separate the better; and special care must be taken that it be not drawn forth with too much violence, lest by breaking the string near the burden, the midwife will be obliged to put the whole hand into the womb to deliver the woman; and she had need be a very skilful woman that undertakes it, lest the womb, to which this burden is sometimes very strongly fastened, be not drawn away with it, as it has sometimes happened. It is therefore best to use such remedies as may assist nature. And here take notice, that what brings away the birth will also bring away the after-birth. And therefore, for the effecting this work, I will lay down the following rules.

1. Use the same means in bringing away the after-birth that you made use of to bring away the birth; for the same care and circumspection is needful now that was then.

2. Consider the labouring woman cannot but be much spent by what she has already undergone in bringing forth the infant; and therefore be sure to take care to give her something to comfort her. And in this case good jelly broths also a little wine and toast in it, and other comforting things, will be very necessary.

3. A little white hellebore in powder, to make her sneeze, is in this case very proper.

4. Tansey and the stone etites, applied as before directed, is also of good use in this case.

5. If you take the herb vervain, and either boil it in wine, or make a syrup with the juice of it, which you may do by adding to it double its weight in sugar (having clarified the juice before you boil it) and a spoonful or two or that given to the woman is very efficacious to bring away the secundine; and feverfew and mugwort have the same effect if taken as the former.

6. Alexander boiled in wine, and the wine drank; also sweet servie, sweet cicely, angelica roots, and mustertwort, are excellent remedies in this case.

7. Or. If these fail, the smoke of marygold received up a woman's privities by a funnel, have been known to bring away the after-birth, even when the midwife let go her hold.

8. Which is all I shall add in this case. Boil mugwort in water till it be very soft; then take it out, and apply it in manner of a poultice to the navel of a labouring woman, and it instantly brings away the birth and after-birth: but special care must be taken to remove it as soon as they come away, lest by its longer tarrying it should draw away the womb also. But this much shall suffice to be spoken of bringing away the after-burden in all natural labours.

SECTION IV.

Of laborious and difficult Labour, and how the Midwife is to proceed therein.

TO proceed in this section the more regular, it will be necessary to acquaint the reader that there are three sorts of bad labour, all painful and difficult, but not all properly unnatural. It will be necessary therefore to distinguish these.

The first of these bad labours is that wherein the mother and child suffer very much by extreme pain and difficulty, even though the child comes right; and this is distinguishably called laborious labour.

The second is that which is difficult, and differs not much from the former, except that, besides those extraordinary pains, it is generally attended with some unhappy accident, which by retarding the birth, causes the difficulty; and these difficulties being removed, accelerate the birth, and hasten the delivery.

Some have asked what the reason is that women bring forth their children with so much pain? I answer, the sense of feeling is distributed to the whole body by the nerves, and the mouth of the womb being so strait that it must of necessity be dilated at the time of the woman's delivery, the dilating

Therefore stretches the nerves, and from thence comes the pain. And therefore the reason why some women have more pain in their labour than others, proceeds from their having the mouth of the matrix more full of nerves than others, as skillful anatomists do easily discover.

But to proceed: The best way to remove these difficulties that occasion hard pains and labour as I am here to treat of, is to shew from whence they proceed; for the cause of any distemper being known is as much as half the cure. Now the difficulty of labour proceeds either from the mother or child, or both.

From the mother by reason of the indisposition of her body, or may be from some particular part only, and chiefly the womb, as when the woman is weak, and the womb is not active to expel its burden, or from weakness or disease, or want of spirits; or it may be from some strong passion of the mind with which she was before possessed; it may be also because she may be too young, and so may have the passages too strait; or too old, and then, if it be the first child, because her parts are too dry and too hard, and cannot be so easily dilated, as happens also to them who are too lean. Likewise those who are either small, short, or deformed, as crooked women who have not a breath strong enough to help their pains, and to bear them down; and persons that are crooked, having sometimes the bones of the passage not well shaped: the cholic also hinders labour, by preventing the true pains; and all great and acute pains, as when the woman is taken with a violent fever, a great flooding, frequent convulsions, bloody flux, or any other very great or violent distemper.

Also excrements retained cause much difficulty, and so does a stone in the bladder; or when the bladder is full of urine, without being able to void it; or when the woman is troubled with great and painful biles. It may also be from the passages when the membranes are thick, the orifice too strait, and the neck of the womb is not sufficiently open, the passages are pressed and strained by tumours in the adjacent parts, or when the bones are too firm, and will not open, which very much endangers both mother and child; or when the passages are not slippery, by reason of the waters having broke too soon, or of the membranes being too thin. The womb may be also out of order with respect to its bad situation, or conformation, having its neck too strait, hard and callous, which may easily be so naturally, or may come by accident, being many times caused by a tumour, a posthume, ulcer, or superfluous flesh.

As to hard labour occasioned by the child, it is when the child happens to stick to a mole, or when it is so weak it cannot break the membranes, for if it be too big all over, or in the head only, or if the navel vessels are twisted about its neck, when the belly is hydropsical, or when it is monstrous, having two heads, or being joined to another child; also when the child is dead, or so weak that it can contribute nothing to its birth, likewise when it comes wrong, or when there are two or more. And to all these various difficulties there is oftentimes one more, and that is, the ignorance of the midwife, for want of understanding her business, hinders nature in her work instead of helping her.

Having thus looked into the cause of hard labour, I will now shew the industrious midwife how she may minister some relief to the labouring woman under these difficult circumstances. But it will require understanding and judgment in the midwife, when she finds a woman in difficult labour, to know the particular obstruction, or cause thereof, that so a suitable remedy may be applied; as for instance, when it happens by the mother's being too young and too strait, she must be gently treated, and the passages anointed with oil, hog's lard, or fresh butter, to relax and dilate them the easier, lest there should happen a rupture of any part when the child is born; for sometimes the *peritonæum* breaks with the skin from the privities to the fundament. But if a woman be in years with her first child, let her lower parts be anointed to mollify the inward orifice, which in such a case being more hard and callous, does not easily yield to the distention of labour, which is the true cause why such women are longer in labour, and also why their children, being forced against the inward orifice of the womb, (which, as I have said, is a little callous,) are born with great lumps and bruises on their heads. Those women that are very small and mishapen should not be put to bed, at least till their waters are broken, but rather kept upright, and assisted to walk about the chamber, by being supported under the arms; for by that means they will breathe more freely, and mend their pains better than on the bed, because there they lie all on a heap. As for those that are very lean, and have hard labour from that cause, let them moisten the parts with oils and ointments, to make them more smooth and slippery, that the head of the infant and the womb be not so compressed and bruised by the hardness of the mother's bones, which form the passage. If the cause be weakness, she ought to be strengthened, the better to support her pains; to which end give her good jelly broths, and a little wine with a toast in it. If she fears her pains, let her be comforted, assuring her that she will not endure many

more, but that she will soon be delivered. But if her pains be slow and small, or none at all, they must be provoked by frequent and pretty strong clysters, that so they may be excited thereby; after which let her walk about the chamber, that so the weight of the child may help them forward. But if she flood, or have convulsions, she must then be helped by a speedy delivery; the operations whereof I shall relate in this section of unnatural labours. If she be costive let her use clysters, which may also help to dispel the cholic, at those times very injurious, because attended with useless pains, and because such bear not downward, and so help not to forward the birth. If she find an obstruction or stoppage in the urine, by reason the womb bears too much on the bladder, let her lift up her belly a little with her hand, and try if by that she receives any benefit; if she finds she does not, it will be necessary to introduce a catheter into her bladder, and thereby draw forth her urine. If the difficulty be from the ill posture of a woman, let her be placed otherwise, in a posture more suitable and convenient for her: also if it proceed from the indisposition of the womb, as from its oblique situation, &c. it must be remedied as well as can be by the placing of her body accordingly: or if it be a vicious conformation, having the neck too hard, too callous, and too strait, it must be anointed with oils and ointments, as before directed. If the membranes be so strong as that the waters do not break in due time, they may be broken with the fingers, if the midwife be first well assured that the child is come forward into the passage, and ready to follow presently after, or else by the breaking of the waters too soon, the child may be in danger of remaining dry a long time; to supply which defect you may moisten the parts with fomentations, decoctions, and emollient oils; which yet is not half so well as when nature does the work in her own time, with the ordinary slime and waters, which do best when they come in their own proper time and place. But these membranes do sometimes press forth with the waters three or four fingers breadth out of the body before the child, resembling a bladder full of water; but there is then no great danger to break them, if they be not already broken; for when the case is so, the child is always in readiness to follow, being in the passage; but let the midwife be very careful not to pull it with her hand, lest the after-burden be thereby loosened before its time, for it adheres thereto very strongly. If the navel-string happens to come first, it must presently be put up again, and kept too if possible, or otherwise the woman must immediately be delivered. But if the after-burden should come first, it must not be put up again by any means; for the infant hav-

ing no further occasion for it, it would be but an obstacle if it were put up; in this case it must be cut off, having tied the navel-string, and afterwards draw forth the child with all the speed that may be, lest it be suffocated.

SECTION V.

Of Women Labouring with a Dead Child.

WHEN the difficulty of labour arises from a dead child it is a case of great danger to the mother, and great care ought to be taken therein; but before any thing be done, the midwife ought to be well assured the child is dead indeed, which may be known by these signs:—

1. The breast suddenly slacks, falls flat, or bags down.
2. A great coldness possesses the belly of the mother, especially about the navel.
3. Her urine is thick, a filthy stinking settling at the bottom.
4. No motion of the child can be perceived; for the trial whereof, let the midwife put her hand in warm water, and lay it upon her belly; for that, if it be alive, will make it stir.
5. She is very subject to dream of dead men, and be affrighted therewith.
6. She has extravagant longings to eat such things as are against nature.
7. Her breath stinks, though not used so to do.
8. When she turns herself in her bed, or rises up, the child sways that way like a lump of lead.

But these things carefully observed, the midwife may make a judgment whether the child be alive or dead; especially if the child-bearing woman takes the following prescription:

“Take half a pint of white wine and burn it, and add thereto half an ounce of cinnamon, but no other spice whatever;” and when she has drunk it, if her travailing pains come upon her, the child is certainly dead; but if not, the child may possibly be either weak or sick, but not dead; and that which will bring her pains upon her if it be dead, will refresh the child, and give her ease, if it be living: for cinnamon refresheth and strengtheneth the child in the womb.

Now, if upon trial, it be found the child be dead, let the mother do all she can to forward her delivery, because a dead child can be no ways helpful therein. It will be necessary therefore that she take some comfortable things to prevent her fainting, by reason of those putrid vapours ascending from the dead child. And in order to her delivery, let her take the following herbs boiled in white wine, or at least as

many of them as you can get, viz. "Dittany, bettony, penny-royal, sage, fever-few, centaury, ivy leaves and berries." Let her also take sweet-basil in powder, half a dram at a time, in white wine. Let her privities be also anointed with the juice of garden tansy. Or if you take tansy in the summer, when it can be most plentifully had, and before it runs up to the flower, and, having bruised it well, boil it in oil till the juice of it be consumed. If you set it in the sun, after you have mixed it with oil, it will be more effectual. This an industrious midwife, who would be prepared for all events, ought to have always by her. As to the manner of her delivery, the same methods must be used as are mentioned in the section of natural labour. And here I cannot but commend again the stone etites, held near the privities, whose magnetic virtue renders it exceedingly necessary on this occasion, for it draws the child any way, with the same facility as the load-stone draws iron.

Let the midwife also make a strong decoction of hyssop with water, and let the woman drink it very hot, and it will in a little time bring away the dead child.

If, as soon as she is delivered of the dead child, you are in doubt part of the after-birth is left behind in her body, (for in such cases as these many times it is rotten, and comes away by piece-meal,) let her continue drinking the same decoction till her body is cleansed.

A decoction made of the herb musterwort, used as you did the decoction of hyssop, works the same effects. Let the midwife also take roots of polypodium, and stamp them well; warm them a little, and bind them on the sides of her feet, and it will soon bring away the child either alive or dead.

The following medicines also are such as stir up the expulsive faculties: but in this case they must be made stronger, because the motion of the child ceaseth.

Take savin, round birthwort, troches of myrrh, asaram roots, cinnamon half an ounce, saffron a scruple, give a dram with savin water. Or,

Take borax, savin, dittany, each an ounce; myrrh, asaram roots, cinnamon, saffron, each half a dram; make a powder, and give a dram.

But she may purge first, and then put in an emollient to ease the birth, anointing her round about the womb with oil of lillies, sweet almonds, camomile, hen and goose grease. Also foment (to get out the child) with a decoction of mercury, orris, wild cucumbers, fæchus, broom flowers. Then anoint the privities and loins with ointment of sow-bread. Or,

Take coliquintida, agaric, birthwort, each a dram; make a powder, add ammoniacum dissolved in wine, ox gall, each two drams, with oil of keir make an ointment. Or this pessary:

Take birthwort, orris, black hellebore, coliquintida, myrrh, each a dram, powdered; ammoniacum dissolved in wine, ox gall, each two drams. Or make a fume with asses hoofs burnt, or gallianum, or castor, and let it be taken in with a funnel.

To take away pains and strengthen the parts, foment with the decoction of mugwort, mallows, rosemary, with wood myrtle, St. John's wort, each half an ounce, spermaceti two drams, deers suet an ounce, with wax make an ointment. Or,

Take wax four ounces, spermaceti an ounce, melt them, dip flax therein, and lay it all over her belly.

If none of these things will do, the last remedy is to use surgery: then the midwife ought, without delay, to send for an expert and able man-midwife, to deliver her by manual operation, which I shall treat of next.

CHAP. VI.

Of Unnatural Labour; and how to proceed in it.

IN shewing the duty of a midwife, when the child-bearing woman's labour is unnatural, it will be requisite to shew, in the first place, what I mean by unnatural labour; for, for women to *bring forth children in pain and sorrow*, is natural and common to all. Therefore, that which I call unnatural is, when the child comes to the birth in a contrary posture to that which nature ordained, and in which the generality of children come into the world. Now, as truth is but one, and error dilates itself into infinite variety, so it is in this case; there is but one proper, right, and natural way or posture in which children come to the birth, but there are as many wrong and unnatural ways of birth, as there are different postures of children when they come to be born.

The right and natural birth is, when the child comes with its head first; yet even this is too short a definition of a natural birth, for, if any part of the head but the crown comes first, so that the body follows not in a straight line, it is a wrong and difficult birth, even though the head come first; therefore, if the child comes with its feet, or with the side

across, it is quite contrary to nature, or, to speak more plainly, that which I shall call unnatural. Now there are four general ways a child may come wrong. Firstly, When any of the four parts of the body first present themselves. Secondly, When, by an unhappy transposition any of the hinder parts first present themselves. Thirdly, When either of the sides; or, Fourthly, the feet present themselves first: To these four, all the particular and different wrong postures that a child can present itself in for the birth, may be reduced; and therefore I shall not confine myself herein to treat only of these four more generally wrong.

SECTION I.

How to Deliver a Woman of a Dead Child by Manual Operation.

THE last section of the last chapter was about the delivering of a woman of a dead child, wherein several things were directed to be applied in order to facilitate the delivery: but when all these fail, a manual operation is absolutely necessary. In order to which, let the operator acquaint the woman with the absolute necessity there is of such an operation; and that as the child has already lost its life, there is no other way left for saving of her's. Let him also tell her, for encouragement, he doubts not, with the divine blessing, to deliver her safely, and that the pain arising thereby will not be so great as she fears; and then let him endeavour to stir up the woman's pains, by giving her some sharp clyster, to excite her throes to bear down and bring forth the child; and if this prevail not, let him proceed with his manual operation.

First, therefore, let her be placed across the bed, that he may operate the easier, and let her lie on her back, with her hips a little higher than her head or at least her body equally placed, when it is necessary to put back or return the infant to give it a better pasture: being thus situated, she must fold her legs so as her heels be towards her buttocks and her thighs spread, and held so by a couple of strong persons; there must be others also to support her under her arms, that the body may not slide down when the child is drawn forth, for which sometimes a great strength is required: let the sheets and blankets cover her thighs for decency's sake, out of respect to the assistants, and also to prevent her catching cold; the operator herein governing himself as well with regard to his convenience, and the facility and surety of the operation, as to the other things. Then let him anoint the entrance of

the womb with oil or fresh butter, if it be necessary, so that he may with more ease introduce his hand, which must also be anointed; and having, by signs before mentioned, received satisfaction that it is a dead child, he must endeavour to fetch it away as soon as possible he can; and if the child offers the head first, he must gently put it back until he hath liberty to introduce his hand quite into the womb; then sliding it along under the belly to find the feet, let him draw it forth by them, being very careful to keep the head from being locked in the passage, and that it be not separated from the body; which may be affected the more easily, because the child being very rotten and putrefied, the operator is not so mindful to keep the breast and face downwards as he is in living births. But if, notwithstanding all these precautions, by reason of the child's putrefaction, the head should be separated and left behind in the womb, it must be drawn forth according to the directions which shall be given in sect. 3 of this chapter for the purpose.—But when the head coming first, is so far advanced that it cannot be well put back, it is better to draw it forth so, than to torment the woman too much by putting it back to turn it, and bring it by the feet: but the head being a part round and slippery, it may so happen that the operator cannot take hold of it with his fingers by reason of its moistness, nor put them up to the side of it, because the passage is filled with its bigness he must take a proper instrument, and put it as far as he can without violence, between the womb and the child's head, observing to keep the point of it towards the head, (for the child being dead before, there can be no danger in the operation,) and let him fasten it there, giving it good hold upon one of the bones of the skull, that it may not slide; and after it is well fixed in the head, he may therewith draw it forth, keeping the ends of the fingers of his left hand flat upon the opposite side, the better to help to disengage it, and by wagging it a little to conduct it directly out of the passage, until the head be quite born; and then taking hold of it with the hands only, the shoulders may be drawn into the passage, and so sliding the fingers of both hands under the arm pits, the child may be quite delivered; and then the after-burden fetched, to finish the operation, being careful not to pluck the navel-string too hard, lest it break, as often happens, when it is corrupted.

If the dead child comes with the arm up to the shoulder, so extremely swelled that the woman must suffer too great a violence to have it put back, it is then (being first well assured the child is dead) best to take it off at the shoulder joints, by twisting it three or four time about, which is very

easily done, by reason of the softness and tenderness of the body; after the arm is separated, and no longer possessing the passage, the operator will have more room to put up his hand into the womb, to fetch away the child by the feet.

But although the operator be sure the child is dead in the womb, yet he must not therefore use instruments, because they are never to be used but when the hands are not sufficient; and there is no remedy to prevent danger to the woman, or to bring forth the child any other way; and the judicious operator will chuse that way which is the most safe,

SECTION II.

How a Woman must be delivered when the Child's Feet comes first.

THERE is nothing more obvious to those whose business it is to assist labouring women, than that the several unnatural postures in which children present themselves at their births, are the occasion of most of the bad labours and ill accidents that happen unto women in such a condition.

And since midwives are very often obliged, because of their unnatural situations, to draw the children forth by the feet, I conceive it to be most proper to shew first, how a child must be brought forth that present itself in that posture, because it will be a guide to several of the rest.

I know indeed that in this case it is the advice of several authors to change the figure, and place the head so, that it may present the birth; and this counsel I should be very inclinable to follow, could they but also shew how it might be done; but it will appear very difficult, if not impossible, to be performed, if we would avoid the dangers that by such violent agitations both the mother and the child must be put into; and therefore my opinion is, that it is better to draw it forth by the feet, when it presents itself in that posture, than to venture a worse accident by turning it.

As soon therefore as the waters are broke, and it is known that the child comes thus, and that the womb is open enough to admit the midwife's or operator's hand into it, or else by anointing the passages with oil or hog's grease, to endeavour to dilate it by degrees, using her fingers to this purpose, spreading them one from the other after they are together entered, and continuing to do so till it be sufficiently dilated, then taking care that her nails are well pared, and no rings on her fingers, and her hands well anointed with oil or fresh butter, and the woman placed in the manner directed in the former section, let her gently introduce her hand into the en-

try of the womb, where finding the child's feet, let her draw it forth in the manner I shall presently direct; only let her first see whether it presents one foot or both, and if but one foot, she ought to consider whether it be the right foot or the left, and also in what fashion it comes; for by that means she will soonest come to know where to find the other, which as soon as she knows and finds, let her gently draw it forth with the other; but of this she must be especially careful, that this second be not the foot of another child: for if so, it may be of the most fatal consequence, for she may sooner split both mother and child than draw them forth; but this may easily be prevented, if she does but slide her hand up the first leg and thigh to the twist, and there find both thighs joined together, and descending from one of the same body. And this is also the best means to find the other foot, when it comes with but one.

As soon as the midwife hath found both the child's feet, she may draw them forth, and holding them together, may bring them by little and little in this manner, taking afterwards hold of the legs and thighs as soon as she can come at them, drawing them so till the hips come forth. Whilst this is doing, let her observe to wrap the parts in a single cloth, that so her hands, being already greasy, slide not on the infant's body, which is very slippery, because of the vicious humours which are all over it, and prevent one's taking good hold of it, which being done, she may take hold under the hips, to draw it forth to the beginning of the breast; and let her on both sides with her hand bring down the arms along the child's body, which she may then easily find; and then let her take care that the belly and face of the child be downwards, for if it should be upwards, there would be some danger of its being stopt by the chin over the share-bone; and therefore if it be not so, must turn it to that posture; which may be easily done, if she take hold of the body when the breast and arms are forth in the manner we have said, and draws it, by turning it in proportion to that side which it most inclines to, till it be turned with the face downwards; and so having brought it to the shoulders, let her lose no time, desiring the woman at the same time to bear down, that so at drawing, the head, at that instant, may take its place, and not be stopt in the passage.

Some children there are, whose heads are so big that when the whole body is born, yet that stops in the passage, though the midwife takes all possible care to prevent it. And when this happens, she must not endeavour only to draw forth the child by the shoulders, let her unfortunately separate the body from the head, as I have known it done by the midwife, but

she must discharge it by little and little from the bones in the passage with the fingers of each hand, sliding them on each side opposite the one to the other, sometimes above, and sometimes under, until the work be ended; endeavouring to dispatch as soon as possible, lest the child be suffocated, as it will unavoidably be if it should remain long in that posture; and this being well and carefully effected, she may soon after fetch away the after-birth, as before directed.

SECTION III.

How to bring away the Head of the Child when separated from the Body and left behind in the Womb.

THOUGH the utmost care be taken in bringing away the child by the feet, yet if the child happens to be dead, it is sometimes so putrefied and corrupted, that with the least pull the body separates from the head, and it remains alone in the womb, and cannot be brought away but with manual operation and difficulty, from its being extremely slippery, by reason of the place where it is, and from the roundness of its figure, on which no hold can be well taken; and so very great is the difficulty in this case, that sometimes two or three able practitioners in the art of midwifery have one after the other left the operation unfinished, not being able to effect it, after the utmost efforts of their industry, skill and strength; so that the woman, not being delivered perished. To prevent such fatal accidents for the time to come, let the following operation be observed.

When the infant's head separates from its body, and is left alone behind, whether through putrefaction, or otherwise, let the operator immediately, without any delay, whilst the womb is yet open, direct up his right hand to the mouth of the head, (for no other hold can there be had,) and having found it, let him put one or two of his fingers into it, and the thumb under his chin, then let him draw it by little and little, holding it so by the jaw; but if that fails, as sometimes it will when putrefied, then let him pull forth his right hand, and slide up his left, with which he must support the head, and with the right let him take a narrow instrument, called a crotchet; but let it be strong and with a single branch, which he must guide along the inside of his hand, with the point toward it, for fear of hurting the womb; and having thus introduced it, let him turn it towards the head, for to strike either into an eye-hole, or the hole of an ear, or behind the head, or else between the stature, as he finds it most con-

venient and easy; and then draw forth the head so fastened with the said instrument, still helping to conduct it with his left hand; but when he hath brought it near the passage, being strongly fastened to the instrument, let him remember to draw forth his hand, that the passage not being filled with it may be the larger and easier, keeping still a finger or two on the side of the head, the better to disengage it.

There is also another way to do this, with more ease and less hardship than the former which is this; let the operator take a soft fillet, or linen slip, of about four fingers breadth, and the length of three quarters of an ell, or thereabouts, taking the two ends with the left hand, and the middle with the right; and let him so put up his right, as that it may be beyond the head, to embrace it as a sling doth a stone; and afterwards draw forth the fillet with the two ends together, it will easily be drawn forth, the fillet not hindering the least passage, because it takes up little or no room.

When the head is thus fetched out of the womb, care must be taken that not the least part of it be left behind, likewise to cleanse the woman well of her after-burden, if yet remaining. Some have questioned which ought to be brought away first, the child's head yet remaining in the womb, or the after-burden? The answer to which question may be by way of distinction; that is to say, if the burden be wholly separated from the sides of the womb, that ought to be first brought away, because it may hinder the taking hold of the head; but if it still adheres to the womb, it must not be meddled with till the head be brought away, for if one should go to separate it from the womb, it might cause a flooding, which would be augmented by the violence of the operation, the vessels to which it is joined remaining open, for the most part, as long as the womb is distended, which the head causeth while retained in it, and cannot close till this gross body be voided, which it doth by contracting and compressing itself together, as has been more fully explained before; besides, the after-birth cleaving to the womb, during the operation, prevents it from receiving easily either hurt or bruise.

SECTION IV.

How to Deliver a Woman when the Side of the Child's Head is presented to the Birth.

THOUGH some think it a natural labour when the child's head comes first, yet if the child's head presents not the right way, even that is an unnatural labour; and therefore though the head comes first, if it be the side instead of the

crown, it is very dangerous both to the mother and child, for the child may sooner break its neck than be born in that manner; and by how much the mother's pains continue to bear the child, which it is impossible, unless the head be rightly placed, for the more the passages are stopt; therefore, as soon as the position of the child is known, the woman must be laid with all speed, lest the child should advance further in this vicious posture, and thereby render it more difficult to thrust back, which must be done in order to place the head right in the passage as it ought to be.

To this purpose therefore, place the woman so that her hips may be a little higher than her head and shoulders, causing her to lean a little upon the opposite side to the child's ill posture; then let the operator slide up his hand, well anointed with oil, by the side of the child's head, to bring it right, gently with his fingers between the head and the womb; but, if the head be so engaged that it cannot be done that way, he must then put his hand up to the shoulders, so that by thrusting them back a little into the womb, sometimes on one side and sometimes on the other, he may, by little and little, give it a natural position. I confess it would be better if the operator could put back the child by its shoulders with both hands, but the head takes up so much room, that he will find much ado to put up one, with which he must perform his operation with the help of the finger-ends of the other hand, putting forward the birth as when natural.

Some children present their face first, having their head turned back, in which posture it is extremely difficult a child should be born; and if it continue so long, the face will be swelled, and with alblack and blue, so that it will at first seem monstrous, which is occasioned as well by the compression of it in that place, as by the midwife's fingers handling it too readily, in order to place it in a proper posture. This blackness will wear away in three or four days time, anointing it often with oil of sweet almonds. To deliver the birth, the same operation must be used as before mentioned, when the child comes with the side of the head first; only let the midwife or operator work very gently, to avoid as much as possible the bruising of the face.

SECTION V.

How to Deliver a Woman when a Child presents one or both Hands together with the Head.

SOMETIMES the infant will present some other part together with the head, which if it does, it is usually one or

both its hands; this hinders the birth, because the hands take up part of the passage, which is little enough for the head alone; besides that, when this happens, they generally cause the head to lean on one side, therefore this position may very well be styled unnatural. When the child presents thus, the first thing to be done after it is perceived, must be to prevent it from coming down more, or engaging further in the passage; and therefore the operator, having placed the woman on the bed, with her head a little lower than her hips, must guide back the infant's hand with his own as much as may be, or both of them, if they both come down, to give way to the child's head; and this being done, if the head be on one side, it must be brought into its natural posture, in the middle of the passage, that it may come in a straight line, and then proceed as directed in the foregoing section.

SECTION VI.

How a Woman is to be Delivered when the Hands or Feet of the Infant come together.

WHEN the hands and feet of an infant present together, there is none but will readily grant, that the labour is unnatural, because it is impossible a child could be born in that manner. In this therefore, when the midwife guides her hand towards the orifice of the womb, she will perceive only many fingers close together; and if it be not sufficiently dilated, it will be a good while before the hands and feet will be exactly distinguished, for they are sometimes so shut and pressed together, that they seem to be all of one and the same shape, but when the womb is open enough to introduce the hand into it, she will easily know which are the hands and which are the feet; and having well taken notice thereof, let her slide up her hand, and presently direct it towards the infant's breast, which she will find very near, and then let her very gently thrust back the body towards the bottom of the womb, leaving the feet in the same place where she found them; and then taking care to place the woman in a convenient posture, that is, to lay her hips a little raised above her breast and head, (which situation ought always to be observed when the child is to be put back into the womb,) let the midwife afterwards take hold of the child by the feet, and draw it forth, as is directed in the second section.

This labour, though somewhat troublesome, yet is much better than when the child presents one of its hands, for the child must be turned quite about before it can be drawn forth; but in this they are ready, presenting themselves: and there is

but little more to do, than to lift and thrust back a little the upper part of the body, which is almost done of itself, by drawing it alone by the feet.

I confess, indeed, that there are many authors that have written of labours, who would have every wrong birth reduced to a natural figure, which is, to turn it, that it may come with the head first; but those that have thus written, are such as never understood the practical part; if they had, the least experience herein would have convinced them, that it is very often impossible; at least, if it were to be done, as violence must necessarily be used in doing it, very probably it would be the death of mother and child in the operation. I would therefore lay down, as a general rule, that whenever an infant presents itself wrong to the birth, in what posture soever, from the shoulders to the feet, it is the best way and soonest done, to draw it out by the feet: and that it is better searching for them if they do not present themselves, rather than to try to put it in the natural posture, and place the head foremost; for the great endeavours necessary to be used in turning the infant in the womb do so much weaken both child and mother, that there remains not afterwards strength enough to commit the operation to the work of nature; for usually the woman hath no more throes or pains fit for labour after she has been so wrought upon; for which reason it would be very difficult and tedious at best, and the child, by such an operation made very weak, would be in extreme danger of perishing before it could be born. It is therefore much better in these cases to bring it away immediately by the feet, searching for them as I have already directed, when they do not present themselves; by which the mother will be prevented of a tedious labour, and the child be often brought alive into the world, who otherwise would hardly escape from death.—And thus much shall suffice to be said of unnatural labours, for by the rules already given, a skilful artist will know how to proceed in any posture in which the child shall present itself.

SECTION VII.

How a Woman should be Delivered that hath Twins, which present themselves in different Postures.

WE have already spoken something of the birth of twins in the chapter of natural labour; for it is not an unnatural labour barely to have twins, provided they come in the right position to the birth. But when they shall present themselves in divers postures, they come properly under the denomination of unnatural labour; and if when one child presents it-

self in a wrong figure, it makes the labour dangerous and unnatural, it must needs be more so when there are several, and render it not only more painful to the mother and children, but to the operator also; for they often trouble each other, and hinder both their births; besides which, the womb is then filled with them, so that the operator can hardly introduce his hand without much violence, which he must do if they are to be turned or thrust back, to give them, if possible, a better position.

When a woman is pregnant with two children, they rarely present to the birth together; the one being generally more forward than the other, and that is the reason why only one of them is felt, and that many times the midwife knows not that there are twins, till the first is born, and she is going to fetch away the after-birth. In the fifth chapter, wherein I treated of natural labour, I shewed how a woman should be delivered of twins, both presenting themselves right, and therefore, before I close this chapter of unnatural labour, it only remains that I shew what ought to be done when they either both come wrong, or one of them only, as for the most part it happens; the first generally coming right, and the second with the feet forward, or in some worse posture. In such a case, the birth of the first must be hastened as much as possible to make way for the second, which is best brought away by the feet, without endeavouring to place it right, even though it was somewhat inclining towards it, because it has been already tired and weakened by the birth of the first, as well as its mother, and there would be greater danger of its death than likelihood of its coming out of the womb that way.

But if, when the first is born naturally, the second should likewise offer its head to the birth, it would then be best to leave nature to finish what she has so well begun; and if nature should be too slow in her work, some of those things mentioned in the fourth chapter to accelerate the birth, may be properly enough applied: If, after that, the second birth should be yet delayed, let manual operation be deferred no longer: but the woman being properly placed, as before directed, let the operator direct his hand gently into the womb, to find the feet, and so draw forth the second child, which will be the more easily effected, because there is way made sufficient by the birth of the first; and if the waters of the second child be not broke, as it often happens, yet intending to bring it by the feet, he need not scruple to break the membranes with his fingers; for though, when the birth of a child is left to the operation of nature, it is necessary that the waters should break of themselves; yet when the child is brought

out of the womb by art, there is no danger in breaking of them; nay, on the contrary it becomes necessary, for without the waters are broken, it would be almost impossible to turn the child.

But herein principally lies the care of the operator that he is not deceived, when either the hands or feet of both children offer themselves together to the birth, in this case he ought well to consider the operation, whether they be not joined together or any way monstrous, and which part belongs to one child, and which to the other; that so they may be fetched one after the other, and not both together, as might be if it were not duly considered; taking the right foot of the one and the left of the other, so drawing them together, as if they both belonged to one body, because there is a left and a right, by which means it would be impossible ever to deliver them; but a skilful operator will easily prevent this, if having found two or three feet of several children presenting together in the passage, and taking aside two of the most forward, a right and a left, and sliding his hand along the legs and thighs up to the waist if forwards, or buttocks if backwards, he finds they both belong to one body; of which being thus assured, he may begin to draw forth the nearest, without regarding which is strongest or weakest, bigger or less, living or dead, having put first a little aside that part of the other child which offers to have the more way, and so dispatch the first, whichever it is, as soon as may be, observing the same rules as if there was but one; that is, keeping the breast and face downwards, with every circumstance directed in that section where the child comes with its feet first; and not fetch the burden till the second child is born. And therefore, when the operator hath drawn forth one child, he must separate it from the burden, having tied and cut the navel-string, and then fetch the other by the feet in the same manner, and afterwards bring away the after-burden with the two strings, as hath been before shewed. If the children present any other part than the feet, the operator may follow the same method as directed in the foregoing section, where the several unnatural positions are fully treated of.

CHAP. VII.

Directions for Child-bearing Women in their Lying in.

IN the fourth, fifth, and sixth chapters, we have treated at large of women's labour, and how they may be safely delivered both in natural and unnatural labours. Having therefore thus brought the good woman to bed, I will, in this present chapter, direct how she ought to be ordered in her lying in.

SECTION I.

How a Woman newly Delivered ought to be ordered.

AS soon as she is laid in her bed, let her be placed in it conveniently for ease and rest, which she stands in great need of, to recover herself of the great fatigue she underwent during her travail; and that she may lie the more easily, let her head and body be a little raised, that she may breathe more freely, and cleanse the better, especially of that blood which then comes away, that so it may not clot, which, being retained, causeth very great pain.

Having thus placed her in bed, let her drink a draught of burnt white wine, when you have first melted therein a dram of spermaceti. The herb vervain is also a most singular herb for a woman in this condition, boiling it in what she either eats or drinks, fortifying the womb so exceedingly that it will do it much good in two days, having no offensive taste, though many pleasant virtues. And this is no more than what she stands in need of, for her lower parts being greatly distended by the birth of the infant, it is good to endeavour the prevention of an inflammation there. Let there be also outwardly applied all over the bottom of the belly and privities the following anodyne or cataplasm: Take two ounces of oil of sweet almonds, and two or three new laid eggs, yolks and whites, stirring them both together in an earthen pipkin over hot embers, till it comes to the consistence of a poultice; which being spread upon a cloth, must be applied to those parts indifferently warm, having first taken away the closures, (which were put to her presently after her delivery,) and likewise such clots of blood as were then left. Let this lie on five or six hours, and then renew it again as you see cause.

Great care ought to be taken at first, that, if her body be very weak, she be not kept too hot, for extremity of heat

weakens nature, and dissolves the strength; and whether she be weak or strong, be sure that no cold air comes near her at first; for cold is an enemy to the spermatic parts, and if it gets into the womb it increases the after-pains, causes swellings in the womb, and hurts the nerves. As to her diet, let it be hot, and let her eat but little at a time. Let her avoid the light for the three first days, and longer if she be weak, for labour weakens the eyes exceedingly, by a harmony between the womb and them. Let her also avoid great noise, sadness, and trouble of mind.

If the womb be foul, which may be easily perceived by the impurity of the blood, (which will then either come away in clots or stinking, if you suspect any of the after-burden to be left behind, which may sometimes happen,) make her drink of feverfew, mugwort, penny-royal, and mother of thyme, boiled in white wine, sweetened with sugar.

Panada and new laid eggs is the best meat for her at first, of which she may eat often, but not too much at a time.

And let her nurse use cinnamon in all her meats and drinks, for it is a great strengthener to the womb.

Let her stir as little as may be till after the fifth, sixth, or seventh days of her delivery, if she be weak. And let her talk as little as may be, for that weakens her.

If she goes not well to stool, give her a clyster made only with the decoction of mallows and a little brown sugar.

When she hath lain in a week, or something more, let her use such things as close the womb; of which knot grass and comfrey are very good; and to them you may add a little polypodium, for it will do her good, both leaves and roots being bruised.

SECTION II.

How to remedy those Accidents which a Lying-in Woman is subject to.

I. THE most common accident that troubles women in their lying-in is after pains; about the cause whereof physicians make no small stir, some affirming one thing to be the cause and some another: but it is most certain that they proceed from cold and wind contained in the bowels, with which they are easily filled after labour, because there they have more room to dilate than when the child was in the womb, by which they were compressed; and also because nourishment and matter, contained as well in them as in the stomach, have been so confusedly agitated from side to side during the pains of labour, by the throes which always must compress the belly, that they could not be well digested; whence this

wind is afterwards generated, and in consequence the gripes which the woman feels running in her belly from side to side, according as the wind moves more or less, and sometimes likewise from the womb, because of the compression and commotion which the bowels make : these being generally the cause, let us now apply a suitable remedy.

1. Boil an egg soft, and pour out the yolk of it, with which mix a spoonful of cinnamon water, and let her drink it : and if you mix in it two grains of ambergrease, it will be the better ; and also vervain taken in any thing she drinks will be as effectual as the other.

2. Give the lying-in woman, immediately after delivery, oil of sweet almonds and syrup of maiden-hair mixed together. Some prefer oil of walnuts, provided it be made of nuts that are very good, but tastes worse than the other at best. This will lenify the inside of the intestines by its unctuousness, and by that means bring away that which is contained in them more easily.

3. Take and boil onions very well in water, then stamp them with oil and cinnamon seed in powder, spread them upon a cloth, and apply them to the region of the womb.

4. Let her be careful to keep her belly very hot, and her drink not too cold : and if they prove very violent, hot cloths from time to time must be laid to her belly, or a pancake fried in walnut oil may be applied to it, without swathing her belly too strait. And for the better evacuating the wind out of the intestines, give her a clyster, which may be repeated as often as necessity requires.

5. Take bay berries, beat them to powder, put the powder upon a chafing dish of coals, and let her receive the smoke of them up her privities.

6. Take tar and barrow-grease, of each an equal quantity, boil them together, and whilst it is boiling add a little pigeons dung to it. Spread some of this upon a linen cloth, and apply it to the reins of the back of her that is troubled with after-pains, and it will give her speedy relief.

Lastly, Let her take half a dram of bay-berries beaten to powder in a draught of muskadel or tent.

II. Another accident to which women in child-bed are subject, is the hemorrhoids, or piles, occasioned through their great straining in bringing the child into the world. To cure this,

1. Let her be let blood in the vein saphanæ.

2. Let her use polypodium in her meat and drink, bruised and boiled.

3. Take an onion, and having made a hole in the middle

of it, fill it full of oil, roast it, and having bruised it all together, apply it to the fundament.

4. Take a dozen of snails without shells if you can get them, or else so many shell-snails, and put them out, and having bruised them with a little oil, apply them warm to the fundament.

5. Take as many woodlice as you can get, and bruise them, and having mixed them with a little oil, apply them warm as before.

6. If she go well to stool, let her take an ounce of cassia fistula drawn at night going to bed; she need no change of diet after.

III. Retention of the menstrues is another accident happening to women in child-bed: and which is of so dangerous a consequence that, if not timely remedied, it proves mortal. Where this happens,

1. Let the woman take such medicines as strongly provoke the terms, such as dittany, bettony, pennyroyal, savory, feverfew, centaury, juniper berries, and piony roots.

2. Let her take two or three spoonfuls of briony, water each morning.

3. Gentian roots beaten to powder, and a dram of them taken every morning in wine, is an extraordinary remedy.

4. The roots of birthwort, either long or round, so used and taken as the former, is very good.

5. Take twelve piony seeds, and beat them to a very fine powder, and let her drink them in a draught of hot cardus posset, and let her sweat after. And if this last medicine does not bring them down the first time she takes it, let her take as much more three hours after, and it seldom fails.

IV. Overflowing of the menstrues is another accident incidental to child-bed women.

1. Take shepherds purse, either boiled in any convenient liquor, or dried and beaten to powder, and it will be an admirably remedy to stop them, this being especially appropriated to the privities.

2. The flowers and leaves of brambles, or either of them, being dried and beaten to powder, and a dram of that taken every morning in a spoonful of red wine, or in a decoction of the leaves of the same (which perhaps is much better) is an admirable remedy for the immoderate flowing of the terms in women.

V. Excoriations, bruises and rents of the lower parts of the womb, are often occasioned by the violent distention and separation of the four caruncles in a woman's labour. For the healing whereof:

As soon as the woman is laid, if there be only simple contusions and excorations, then let the anodyne cataplasm, formerly directed, be applied to the lower parts (to ease the pain,) made of the yolks and whites of new-laid eggs, and oil of roses boiled a little over warm embers, continually stirring it till it be equally mixed, and then spread upon a fine cloth, it must be applied very warm to the bearing place for five or six hours, and when it is taken away, lay some fine rags, dipped in oil of St. John'swort, on each side of the bearing place, or let the part excoriated be anointed with oil of St. John'swort twice or thrice a day; also foment the parts with barley water and honey of roses, to cleanse them from the excrements which pass. When the woman voids her urine, let them be defended with fine rags, and thereby hinder the urine from causing smart and pain.

VI. The curdling and clotting of the milk is another accident that often happens to women in child-bed; for in the beginning of child-bed, the woman's milk is not purified, because of the great commotions her body suffered during her labour, which affected all the parts, and it is then mixed with many other humours. Now this coddling of the milk does for the most part proceed from the breasts not being properly drawn, either because she hath too much milk, and the infant is too small and weak to suck it all, or because she doth not desire to be a nurse; for the milk, in those cases, remaining in the breast after concoction, without being drawn, loseth that sweet and balsamic quality it had, and by reason of the heat it acquires, and the too long stay it makes there, it sours, curdles, and clots, in like manner as we see rennet put into ordinary milk turns it into curds. Curdling of the milk may also be occasioned by having taken cold, and not keeping the breasts well covered.

But from what causes soever this curdling of the milk proceeds, the most certain remedy is speedily to draw the breasts until they are emptied and dried. But in regard to the infant, by reason of its weakness it cannot draw strong enough, the woman being hard marked when her milk is curdled, it will be most proper to get another woman to draw her breast until the milk comes freely, and then she may give her child suck. That she may not afterwards be troubled with a surplus of milk, she must eat such diet as gives but little nourishment. and see that she keep her body open.

But if the cause be such that the woman neither can nor will be a nurse, will then be necessary to apply other remedies for the curing of this distemper. For then it will be best not to draw her breasts, as that will be the way to bring

more milk into them; for which purpose it will be necessary to empty the body by bleeding in the arm; besides which, let the humours be drawn down by strong clysters and bleeding in the foot, nor will it be amiss to purge gently; and to digest, dissolve, and dissipate the curdled milk, apply the cataplasm of pure honey, or that of sour brains dissolved in a decoction of sage, milk, smallage, and fennel, mixing with it oil of camomile, with which oil let the breasts be also well anointed. The following liniment is also good to scatter and dissipate the milk.

A Liniment to scatter and dissipate the Milk.

That the milk flowing back to the breasts may without offence be dissipated, you must use this ointment:—"Take pure wax two ounces, of lintseed oil half a pound; when the wax is melted, let the liniment be made, wherein linen cloths must be dipped, and according to their largeness be laid upon the breast; and when it shall be discussed and pains no more, let other linen cloths be dipped in the distilled water of acorns, and put upon them."

Note—That the cloths dipped in the distilled water of acorns must be used only by those that cannot nurse their own children; but if a swelling in the breasts of them which give suck does arise from abundance of milk, and threatens an inflammation, let them use the former ointment, but abstain from using the distilled water of acorns.

CHAP. VIII.

Directions for Nurses in ordering New-Born Children.

HAVING in the former chapter shewn how the lying-in woman should be ordered, it is now high time to take care of the infant, to whom the first service should be performed, that is, the cutting of the navel-string, of which I have spoken at large before.

SECTION I.

What is to be done to New-Born Infants after cutting the Navel-string.

WHEN the child's navel-string hath been cut, according to the rules before prescribed, let the midwife presently cleanse it from the excrements and filth it brings into the world, of

which some are within the body, as the urine in the bladder, and the excrements found in the gut; and others without, which are thick and whitish, and clammy, proceeding from the sliminess of the waters; there are children sometimes so covered all over with this, that one would say they were rubbed over with soft cheese, and some women are of so easy a belief that they really think it so, because they had eaten some while they were with child. From these excrements let the child be cleansed with wine and water a little warmed, washing every part therewith, but chiefly the head, because of the hair, also the folds of the groins, armpits, and the cod or privities; which parts must be gently cleansed with a linen rag, or a soft sponge dipped in thin luke-warm wine. If this clammy or viscous excrement stick so close that it will not be easily washed off from those places, it may be fetched off with oil of sweet almonds, or a little fresh butter melted with wine, and afterwards well dried off; she must also make tents, of fine rags, and wetting them in this liquor, clear the ears and nostrils: but for the eyes, wipe them only with a dry soft rag, not dipping it in the wine lest it should make them smart.

The child being thus washed and cleansed from its native blood and impurities which attended it into the world, it must in the next place be searched to see whether all things be right about it, and that there is no fault or dislocation; whether its nose be straight or its tongue tied, or whether there be any bruise or tumour of the head, or whether the mould be not overshotten; also whether the scrotum (in case it be a boy) be not blown up and swelled; and, in short, whether it has suffered any violence by its birth in any part of its body, and whether all the parts are well and duly shaped, that suitable remedies may be applied if any thing be found not right. Nor is it enough to see that all be right without, and that the outside of the body be cleansed, but she must chiefly observe whether it dischargeth the excrements retained within, and whether the passages be open, for some have been born without having them perforated; therefore, let her examine whether the conduits of the urine and stool be clear, for want of which some have died, not being able to void their excrements, because timely care was not taken at first. As to the urine, all children, as well males as females, do make water as soon as they are born if they can, especially when they feel the heat of the fire, and sometimes also void their excrements, but not so soon as the urine. If the infant does not ordure the first day, then put up in its fundament a small suppository, to stir it up to be discharged, that it may not cause painful gripes by remaining so long in its belly. A

sugar almond may be proper for this purpose, anointed over with a little boiled honey; or else a small piece of castile soap rubbed over with fresh butter; she may also give the child for this purpose a little syrup of roses or violets at the mouth, mixed with some oil of sweet almonds drawn without a fire, anointing the belly also with the same oil, or a little fresh butter.

The midwife having thus washed and cleansed the child, according to the before-mentioned directions, let her begin to swaddle it in swathing clothes, and when she dresses the head, let her put small rags behind the ears to dry up the filth which usually engenders there, and so let her do also in the folds of the armpits and groins, and so swathe it; having wrapped it up warm in bed and blankets, which there is scarce any woman so foolish but knows well enough how to do, only let me give them this caution, that they swathe not the child too strait in its blankets, especially about the breast and stomach, that it may breathe the more freely, and not be forced to vomit up the milk it sucks, because the stomach cannot be sufficiently extended to contain it; therefore let its arms and legs be wrapped in its bed, stretched and straight, and swathed to keep them so, viz. the arms along its sides, and its legs equally both together, with a little of the bed between them, that they may not be galled by rubbing each other; then let the head be kept steady and straight, with a stay fastened on each side of the blanket, and then wrap the child up in mantles and blankets to keep it warm. Let none think this of swathing the infant is needless to be set down, for it is necessary it should be thus swaddled, to give its little body a straight figure, which is most decent and proper for a man, and to accustom him to keep upon his feet, who otherwise would go upon all four.

CHAP. IX.

Of Infantile Disorders, &c.

IN new-born children there are so many distempers they are subject to, that daily experience shews us there are not above half the children that are born which live till they are three years old; which is occasioned, as well because of the tenderness of their bodies as the feebleness of their age, which hinders them from expressing the inconvenience they labour under, any otherwise than by their cries. The business of this chapter therefore shall be to discover the indispositions which they are subject to, with the remedies proper for them.

SECTION I.

Of Gripes and Pains in the Bellies of young Children.

I MENTION this first, as it is often the first and most common distemper which happens to little infants after their birth, many children being so troubled and pained with it, that it causes them to cry night and day, and at last to die of it. The cause of it, for the most part, comes from the sudden change of their nourishment: having always received it from the umbilical vessels whilst in their mother's womb, they come on a sudden to change not only the manner of receiving it, but the nature and quality of what they receive as soon as they are born; for instead of purified blood only, which was conveyed to them by means of the umbilical vein, they are now obliged to be nourished with their mother's milk, which they suck with their mouths, and from which are engendered many excrements, causing gripes and pains, and that not only because it is not so pure as the blood with which it was nourished in the womb, but because the stomach and intestines cannot yet make a good digestion, being unaccustomed to it. It is also caused sometimes by a rough phlegm, and sometimes by the worms, for physicians affirm that worms have been bred in children even in their mother's belly.

The remedy therefore must be suited according to the cause. If it proceed from the too sudden change of nourishment, the remedy must be to forbear giving the child suck for some days, lest the milk be mixed with the phlegm, which is then in the stomach corrupt: and at first it must suck but little, until it be accustomed to digest it. If it be the excrements in the intestines, which by their long stay increase these pains, give them at the mouth a little oil of sweet almonds and syrup of roses; if it be worms, lay a cloth dipped in oil of wormwood, mixed with ox-gall, upon the belly; or a small cataplasm, mixed with the powder of rue, wormwood, coloquintida, aloes, and the seeds of citron, incorporated with ox-gall, and the powder of lupines. Or give it oil of sweet almonds, with sugar candy, and a scruple of anniseed; it purgeth new born babes from green choler and stinking phlegm; and if it be given with sugar-pap, it allays the griping pains of the belly. Also anoint the belly with oil of dill, or pellitory stamped with oil of camomile, and apply it to the belly.

SECTION II.

Of Weakness in New-Born Infants.

WEAKNESS is an accident which many children bring into the world along with them, and is often occasioned by

the labour of the mother; by the violence and length whereof they suffer so much, that they are born with great weakness, and many times it is difficult to know whether they are alive or dead, their body appearing so senseless, and their face so blue and livid, that they seem to be quite choaked; and even after some hours, their shewing any signs of life is attended with so much weakness, that it looks like a return from death, and that they are still only upon the borders of this world.

In this case, the best way to help the infant is, to lay him speedily in a warm bed and blanket, and carry him near to the fire; then let the midwife sup a little wine and spout it into its mouth, repeating it often if there be occasion. Let her apply linen to the breast and belly dipped in wine, and let the face be uncovered, that he may breathe the more freely; also let the midwife keep its mouth a little open, cleanse the nostrils with small linen tents dipped in white wine, that so he may receive the smell of it, and let her chaff every part of his body well with warm cloths, to bring back the blood and spirits, which being retired inwards, through weakness, often puts him in danger of being choaked. By the application of these means the infant will insensibly recover strength, and begin to stir his limbs by degrees, and at length to cry, which though it be but weakly at first, yet afterwards, as he breathes more freely, will cry stronger and stronger.

SECTION III.

Of the Fundament being closed up in New-Born Infants.

ANOTHER defect that new-born infants are liable to is, to have their fundaments closed up, by means whereof they can neither evacuate the new excrements engendered by the milk they suck, nor that which was amassed in the intestines whilst in their mother's belly, which is certainly mortal, without a speedy remedy. There has been some female children who have had their fundament quite closed, and yet have voided the excrements of the guts by an orifice, which nature, to supply that defect, had made within the neck of the womb.

For the cure or remedy of this, we must take notice that the fundament is closed two ways; either by a single skin, through which one may discover some black and blue marks, proceeding from the excrements retained, which, if one touch with the finger, there is a softness felt within, and thereabouts it ought to be pierced; or else it is quite stopped by a thick fleshy substance, in such sort that there appears nothing with-

out by which its true situation may be known. When there is nothing but a single skin which makes the closure, operation is very easy, and the children may do very well; for then an operation or opening may be made with a small incision knife cross-ways, that it may the better receive a round form, and that the place may not afterwards grow together, taking care not to prejudice the sphincter or muscle of the rectum. The incision being thus made, the excrements will certainly have issue. But if, by reason of their long stay in the belly, they are become so dry that the infant cannot void them, then let a small clyster be given to moisten and bring them away; afterwards put a linen tent into the new made fundament, which at first had best be anointed with honey of roses, and towards the end with a drying cicatrizing ointment, such as unguentum album, or pomphilex, observing to cleanse the infant of his excrements, and dry it again as soon and as often as he evacuates them, that the apertion may be prevented from turning into a malignant ulcer.

But now if the fundament be stopped up, in such a manner that neither mark nor appearance can be either seen or felt, then the operation is much more difficult; and even when it is done, the danger is much more of the infant's escaping it. And then if it be a female, and it sends forth its excrements by the way I have mentioned before, it is better not to meddle, than, by endeavouring to remedy the inconvenience, run an extreme hazard of the infant's death. But when there is no vent for the excrements, without which death is unavoidable, then the operation is justifiable.

The operation in this case must be thus:—Let the operator, with a small incision-knife that hath but one edge, enter into the void place, and turning the back of it upwards within half a finger's breadth of the child's rump, which is the place where he will certainly find the intestine, let him thrust it forward, that it may be open enough to give free vent to the matter therein contained, being especially careful of the spincter; after which, let the wound be dressed according to the method directed.

SECTION IV.

Of the Thrush, or Ulcers in the Mouth of an Infant.

THE thrush is a distemper that children are very often subject to, and it arises from bad milk, or from foul humours in the stomach; for sometimes, though there be no ill quality in the milk itself, yet it may corrupt in the child's stomach, because of its weakness, or some other indisposition, in which, acquiring an acrimony instead of being well digested, there

arises from thence biting vapours, which, forming a thick viscosity, do thereby produce this distemper.

It is often difficult, as physicians tell us, because it is seated in hot and moist places, where putrefaction is easily augmented, so that the remedies applied cannot lodge there, being soon washed away with spittle. But if they arise from too hot a quality in the nurse's milk, care must be taken to temper and cool it, prescribing her cool diet, bleeding and purging her also, if there is occasion.

Take lentiles husked, powder them, and lay it upon the child's gums: or take melidium in flour, half an ounce, and with oil of roses make a liniment. Also wash the child's mouth with barley and plaintain water, and honey of roses, or syrup of dry roses, mixing with them a little verjuice, or juice of lemons, as well to loosen and cleanse the vicious humours which cleave to the inside of the child's mouth, as to cool those parts which are already over-heated. This may be done by means of a small fine rag fastened to the end of a little stick, and dipped therein, with which the ulcers may be gently rubbed, being careful not to put the child to too much pain, lest an inflammation make the distemper worse. The child's body must also be kept open, that so the humours being carried to the lower parts, the vapours may not ascend, as it is usual for them to do when the body is costive, and the excrements too long retained. If the ulcers appear malignant, let such remedies be used as will do their work speedily, so that the evil qualities that cause them being thereby instantly corrected, their malignity may be prevented; and in this case touch the ulcers with plantain-water sharpened with the spirits of vitriol, for the remedy must be made sharp according to the malignity of the distemper. It will not be unnecessary to purge these ill humours out of the whole habit of the child, by giving half an ounce of succory with rhubarb.

SECTION V.

Of Pains in the Ears, Inflammation, Moisture, &c.

THE brain in infants is very moist, and hath many excrements which nature cannot send out at its proper passages: they get often to the ears, and there cause pains, flux of blood, inflammation, and matter with pain, and in children is hard to be known, having no other way to make it known but by constant crying; you will also perceive them ready to feel their ears themselves, but will not let another touch them if they could help it: and sometimes you may discern the parts about the ears to be very red.—These pains, if let alone,

are of dangerous consequence, because they may bring forth watching and epilepsy, for the moisture breeds worms there, and fouls the spongy bones, and by degrees becomes incurable deafness.

To prevent all those ill consequences, allay the pain with all convenient speed, but have a care of using remedies. Therefore only use warm milk about the ears, with a decoction of poppy tops, or oil of violets: to take away the moisture, the honey of roses, and let aquamels be dropped into the ears; or take of virgin honey half an ounce, red wine two ounces, allum, saffron, saltpetre, each a dram; mix them at the fire; or drop in hemp-seed oil with a little wine.

SECTION VI.

Of Redness and Inflammation of the Buttocks, Groin, and Thighs of a Young Child.

IF there be not great care taken to change and wash the child's bed as soon as it is fouled with the excrements, and to keep the child very clean, the acrimony will be sure to cause redness, and beget a smarting in the buttocks, groin, and thighs of the child, which, by reason of the pain, will afterwards be subject to inflammation, which follows the sooner through the delicacy and tenderness of their skin, from which the outward skin of the body is in a short time separated and worn away.

The remedy of this is two-fold; that is to say, first, to keep the child cleanly; and, in the second place, to take off the sharpness of its urine. As to keeping it cleanly, she must be a sorry nurse that needs to be taught how to do it, for if she lets it have but dry, clean, and warm beds and clouts, as often and as soon as it has fouled and wet them, either by its urine or excrements, it will be sufficient: and as the second, the taking off the sharpness of the child's urine, that must be done by the nurse's keeping a cool diet, that her milk may have the same quality; and therefore, she ought to abstain from all things that may heat it. But, besides these, cooling and drying remedies are requisite to be applied to the inflamed parts; therefore let the parts be bathed with plantain-water, with a fourth of lime water added to it, each time the child's excrements are wiped off; and if the pain be very great, let it only be fomented with luke-warm milk. The powder of compost to dry it, or a little mill-dust strewed upon the parts affected, may be proper enough; and it is used by several women. Also Ungentum Album, or Diapampholigos, spread upon a small piece of leather, in form of a plaster, will not be amiss.

But the chief thing must be the nurse's taking great care to wrap the inflamed parts with fine rags when she opens the child, that those parts may not be gathered and pained by rubbing them together.

SECTION VII.

Of Vomiting in Young Children.

VOMITING in children proceeds sometimes from too much milk, and sometimes from bad milk, and is often from a moist loose stomach; for as dryness retains, so looseness lets go. This is for the most part without danger in children, and they that vomit from their birth are the lustiest: for the stomach not being used to meat, and too much milk being taken, crudities are easily bred, or the milk is corrupted; and it is better to vomit these up than to keep them in: but if vomiting last long it will cause an atrophy or consumption, for want of nourishment. To remedy this, if it be from too much milk, that which is emitted is yellow and green, or otherwise ill coloured and stinking, in this case mend the milk, as has been shewed before; cleanse the child with honey of roses, and strengthen its stomach with syrup of milk and quinces made into an electuary. If the humours be hot and sharp, give the syrup of pomegranates, currants, and coral; and apply to the belly the plaster of bread, the stomach cerat, or bread dipped in hot wine; or take oil of mastich, quinces, mint, wormwood, each half an ounce; of nutmegs, by expression, half a dram; chemical oil of mint, three drops. Coral hath an occult property to prevent vomiting, and is therefore hung about their necks.

SECTION VIII.

Of Breeding Teeth in Young Children.

THIS is a very great, and yet necessary evil in all children, having a variety of symptoms joined with it; they begin to come forth, not all at a time, but one after another, about the sixth or seventh month; the fore teeth coming first, then the eye teeth, and last of all the grinders: the eye teeth cause more pain to the child than any of the rest, because they have a very deep root, and a small nerve, which hath communication to that which makes the eye move. In the breeding of their teeth they feel first an itching in their gums; then they are pierced as with a needle, and pricked by the sharp bones, whence proceed great pains, watching and inflammation of the gums, fever, looseness, and convulsions, especially when they breed their eye teeth.

The signs when children breed their teeth are these:—1. It is known by the time, which is usually about the seventh month. 2. Their gums are swelled, and they feel a great heat there, with an itching which makes them put their fingers in their mouth to rub them, from whence a moisture distils down into the mouth, because of the pain they feel there. 3. They hold the nipple faster than before. 4. The gum is white where the tooth begins to come; and the nurse in giving them suck finds the mouth hotter, and that they are much changed, crying every moment, and do not sleep, or but very little at a time. The fever that follows breeding of teeth comes from choleric humours, inflamed by watching, pain and heat. And the longer the teeth are in breeding, the more dangerous it is, so that many in breeding of them die of fevers and convulsions.

For remedy, two things are to be regarded; one is, to preserve the child from the evil accidents that may happen to it by reason of the great pain; the other, to assist as much as may be the cutting of the teeth, when they can hardly cut the gums themselves.

For the first of these, viz. the preventing these accidents to the child, the nurse ought to take great care to keep a good diet, and to use all things that may cool and temper her milk, that so a fever may not follow the pain of the teeth. And to prevent the humour from falling too much upon the inflamed gums, let the child's belly be kept always loose by gentle clysters, if he be bound; though oftentimes there is no need of them, because they are at those times usually troubled with a looseness, and yet for all that clysters may not be improper either.

As to the other, which is to assist in cutting the teeth, that the nurse must do from time to time, mollifying and loosening them, by rubbing them with her finger dipped in butter or honey, or let the child have a virgin-wax candle to chew upon; or anoint the gums with the mucilage of quince made with mallow water, or with the brains of a hare: also foment the cheeks with the decoction of althæa, camomile flowers, and dill, or with the juice of mallows and fresh butter. If the gums are inflamed, add juice of the nightshade and lettuce. I have already said, the nurse ought to keep a temperate diet. I will now add, that barley broth, water gruel, raw eggs, prunes, lettuce, and endive, are good for her, but let her avoid salt, sharp, biting, and peppered meats, and wine.

SECTION IX.

Of the Flux of the Belly, or Looseness in Infants.

IT is very common for infants to have the flux of the belly, or looseness, especially upon the least indisposition; nor is it to be wondered at, seeing their natural moistness contributes so much thereto; and if it be extraordinary violent, such are in a better state of health than those that are bound. This flux, if violent, proceeds from divers causes: as 1. From breeding of teeth, and is then commonly attended with a fever in which the concoction is hindered, and the nourishment corrupted. 2. From watching. 3. From pain. 4. From stirring of the humours by a fever. 5. When they suck or drink too much in a fever. Sometimes they have a flux without breeding of teeth, from outward cold in the guts or stomach, that obstructs concoction. If it be from the teeth it is easily known, for signs in breeding of teeth will discover it. If it be from external cold, there are signs of other causes. If from a humour flowing from the head, there are signs of a catarrh, and the excrements are frothy. If crude and raw humours are voided, there is wind belching and phlegmatic excrements. If they be yellow, green, and stinking, the flux is from hot and sharp humours. It is best of breeding of teeth when the belly is loose, as I have said before; but if it be too violent, and you are afraid it may end in a consumption, it must be stopped, and if the excrements that are voided be black, attended with fever, it is very bad.

The remedy in this case hath a principal respect to the nurse, and the condition of the milk must chiefly be observed; the nurse must be cautioned that she eat no green fruit, nor things of hard concoction. If the child suck not, remove the flux with purges, such as leave a bleeding quality behind them; as syrup of honey or roses, or a clyster. Take the decoction of millium, myrobolans, each two or three ounces, with an ounce or two of syrup of roses and make a clyster. After cleansing, if it proceed from a hot cause, give syrup of dried roses, quinceys, myrtles, with a little sanguis draconis. Also anoint with oil of roses, myrtles, mastich, each two drams; with oil of myrtles and wax make an ointment. Or, take red roses, moulin, each an handful, cyprus roots, two drams; make a bag, boil it in red wine, and apply it to the belly. Or, use the plaster of bread, or stomach ointment. If the cause be cold, and the excrements white, give syrup of mastich, and quinceys, with mint water. Use outwardly mint, mastich, cummin; or take rose seeds an ounce,

cummin, anniseeds, each two drawns; with oil of mastich, wormwood, and wax, make an ointment.

SECTION X.

Of the Epilepsy, and Convulsions in Children.

THIS is a distemper that is the death of many young children, and proceeds from the brain first, as when the humours are bred in the brain that cause it, either from the parents or from vapours, or bad humours that twitch the membranes of the brain; it is also sometimes caused from other distempers, and from bad diet; likewise the tooth-ach, when the brain consents, causes it, and so does a sudden fright. As to the distemper itself, it is manifest and well known enough where it is; and as to the cause whence it comes, you may know by the signs of the disease whether it comes from bad milk, or worms, or teeth; if these are all absent, it is certain that the brain is first affected; if it comes with the small pox or measles, it ceaseth when they come forth, if nature be strong enough.

For the remedy of this grievous and often mortal distemper, give the following powder, to prevent it, to a child as soon as it is born:—Take male piony roots, gathered in the decrease of the moon, a scruple, with leaf gold make a powder; or take piony roots a dram, piony seeds, misletoe of the oak, elk's-hoof, man's-skull, amber, each a scruple, musk two grains; make a powder. The best part of the cure is taking care of the nurse's diet, which must not be disordered by any means. If it be from corrupt milk, provoke vomiting; to do which, hold down the tongue, and put a quill, dipped in sweet almonds, down the throat. If it comes from worms, give such things as will kill them. If there be a fever, respect that also, and give coral smaraged and elk's-hoof. In the fit, give epileptic water, as lavender water, and rub with oil of amber, or hang a piony root, elk's-hoof, and coral smaraged, a bout the neck.

As to a convulsion, it is when the brain labours to cast out that which troubles it; the matter is in the marrow of the back, and fountain of the nerves. It is a stubborn disease, and often kills.

For remedy whereof, in the fit, wash the body, especially the back bone, with decoction of althæ, lilly-roots, piony and camomile-flowers; and anoint it with man's grease, goose grease, oil of worms, orris, lillies, foxes, turpentine, mastich, storax and calamint. The sun-flower is also very good, boiled in water, to wash the child.

PART II.

Containing proper and safe Remedies for the curing of all Distempers that are peculiar to the Female Sex, especially those that are Obstructions to the Bearing of Children.

HAVING finished the First Part of this Book, and therein, I hope, amply made good my promise to the reader, I come now to treat of the distempers peculiar to the female sex, which it is not my design so to enlarge as to treat of all the distempers they are incident to, but those only to which they are most subject when in a breeding condition, and those that keep them from being so; for each of which distempers I have laid down such proper and safe remedies, as, with the divine blessing, may be sufficient to repel them; and since, as amongst all the diseases to which human nature is subject, there is none that more diametrically opposes the very end of our creation, and the design of Nature in the formation of different sexes, and the power thereby given us for the work of generation, than that of sterility or barrenness; which, where it prevails, renders the most accomplished midwife but an useless person, and destroys the design of our book; I think therefore barrenness is an effect that deserves our first consideration.

CHAP. I.

Of Barrenness; its several Kinds; with proper Remedies against it; and the Signs of Insufficiency both in Men and Women.

SECTION I.

Of Barrenness in general.

AS there is no general rule but will admit of some exception, so it is against this second part; for, though I have promised to treat herein only of diseases peculiar to the

female sex, yet this chapter will engage me to speak of a defect in men, barrenness being an effect incident to them also, and therefore it is necessary to be handled with respect to men as well as women; without treating it so, I shall not be able to make good the old proverb of—*setting the saddle upon the right horse.*

Having promised this, and thereby anticipated an objection, I shall now proceed to the subject of this chapter, which is BARRENNESS.

Barrenness is either natural or accidental.

Natural barrenness is, when a woman is barren though the instruments of generation are perfect both in herself and husband, and no preposterous or diabolical course used to cause it, and neither age nor disease, nor any natural defect hindering, and yet the woman remains naturally barren, and conceives not.

Now this may proceed from a natural cause: for if the man and woman be of one complexion, they seldom have children; and the reason is clear, for the universal course of nature being formed by the Almighty of a composition of contraries cannot be increased by a composition of likes; and therefore, if the constitution of the woman be hot and dry as well as that of the man, there can be no conception; and if, on the contrary, the man should be of a cold and moist constitution as well as the woman, the effect would be the same; and this barrenness is purely natural. The only way to help it is for people before they marry to observe each others constitution and complexion, if they wish to have children. If their complexions and constitutions be alike, they are not fit to come together, for the discordant natures make the only harmony in the work of generation.

Another natural cause of barrenness is want of love between man and wife. Love is that vital principle that ought to inspire each organ in the act of generation, or else it will be spiritless and dull; for if their hearts be not united in love, how should their seed unite to cause conception? This is sufficiently evinced in that there never follows conception on a rape; therefore if men and women wish to have children, let them live so, that their hearts as well as their bodies may be united, or else they may miss of their expectations.

A third cause of natural barrenness is the letting of virgins blood in the arm before their natural courses are come down, which is usually in the fourteenth or fifteenth year of their age; sometimes, perhaps, before the thirteenth, but near before the twelfth. And because usually they are out of order and indisposed before their purgations come down, their parents run to the doctor to know what is the matter: he

then prescribes opening a vein in the arm, seeing it was fullness of blood which was the cause offending; this makes her well at present; and when the young virgin happens to be in the same disorder again, the mother straight runs to a surgeon, and he directly uses the same remedy: by those means the blood is diverted from its proper channel, that it comes not down to the womb, as in other women, and so the womb dries up, and the woman is for ever barren. The way to prevent this is, to let no virgin bleed in the arm before her courses come down well; but, if there be occasion, let her bleed in the foot, for that will bring the blood downwards, and, by that means, provoke the menstrues to come down.

Another cause of natural barrenness, is debility in copulation. If persons perform not that act with all the heat and ardour that nature requires, they may as well let it alone, and expect to have children without it; frigidity and coldness never producing conception. Of the cure of this we will speak by and by, after I have spoken of accidental barrenness, which is what is occasioned by some morbid matter or infirmity upon the body either of the man or the woman, which being removed they become fruitful. And since, as I have before noted, the first and great law of the creation was to *increase and multiply*, so barrenness is in direct opposition to that law, and frustrates the end of our creation; and that it is a great affliction to divers to be without children, and often causes man and wife to have hard thoughts one of another, each party thinking the cause not in them; I shall here, for the satisfaction of well-meaning people, set down the signs and causes of insufficiency both in men and women, premising first, that when people have no children, they must not attach blame to either party, for neither may be in the fault; for perhaps God sees it not good (for reasons best known unto himself) to give them any; of which we have divers instances in history. And though the Almighty in the production of nature, works by natural means, yet where he withholds his blessing, natural means are ineffectual, for it is the blessing which is the power and energy by which nature brings her productions forth.

SECTION II.

Signs and Causes of Insufficiency in Men.

ONE cause may be in some viciousness of the yard, as if the same be crooked, or any ligament thereof distorted or broken, whereby the ways and passages through which the seed should flow come to be stopt or vitiated.

Another cause may be too much weakness of the yard, and

tenderness thereof, so that it is not strongly enough erected, to inject seed into the womb; for the strength and stiffness of the yard very much conduce to conception, by reason of the forcible injection of the seed.

Also, if the stones have received any hurt, so that they cannot exercise the proper gift in producing seed, or if they be oppressed with any inflammation or tumour, wound or ulcer, or are drawn up within the belly, and not appearing outwardly: these are signs of insufficiency, and causes of barrenness.

Also, a man may be barren by reason of the defect of seed; as first, if he cast forth no seed at all, or less in substance than is needful. Or, secondly, if the seed be vicious, or unfit for generation; as on the one side it happens in bodies that are gross and fat, the matter of it being defective; and on the other side too much leanness, or continual wasting or consumption of body, destroys seed; nature turning all the matter and substance thereof into nutriment for the body.

Too frequent copulation is also one great cause of barrenness in men, as it abstracteth the seminal moisture from the stones before it is sufficiently prepared and concocted; so if any one by daily copulation do exhaust and draw out all the moisture of the seed, then do the stones draw the moist humours from the superior veins into themselves; and so having but little blood in them, they are forced of necessity to cast it out raw and unconcocted, and thus the stones are violently deprived of the moisture of their veins, and the superior veins from all the other parts of the body, for their proper nourishment, thereby depriving the body of its vital spirits; and therefore no wonder that those who use immoderate copulation are very weak in their bodies, seeing their whole frame is thereby deprived of the best and purest blood and spirit, insomuch that many who have been too much addicted to that pleasure have killed themselves in the very act; therefore it is no wonder if such unconcocted and undigested seed should be unfit for generation.

Gluttony, drunkenness, and other excesses, do so much hinder men from fruitfulness, that it makes them unfit for generation.

But among other causes of barrenness in men, this also is one that makes them barren, and almost of the nature of eunuchs; and that is, the incision or cutting of the veins behind their ears, which, in case of distempers, is oftentimes done; for according to the opinion of most physicians and anatomists, the seed flows from the brain, by the veins behind the ears, more than from any other part of the body; from whence it is very probable, that the transmission of the seed is hinf-

dered by the cutting of the veins behind the ears, so that it cannot descend at all to the testicles, or comes thither very crude and raw. Thus much for the signs and causes of barrenness in men.

SECTION III.

Signs and Causes of Insufficiency or Barrenness in Women.

ALTHOUGH there are many causes of the barrenness of women, yet the chief and principal are internal, respecting either the privy parts, the womb, or menstruous blood: therefore Hippocrates saith, in speaking of the easy or difficult conception of women, the first consideration is to be had of their species, for little women are more apt to conceive than great; slender than gross; white and fair than ruddy and high-coloured; black than wan; those that have their veins conspicuous are more apt to conceive than others; but to be very fleshy is evil; but to have great and swelled breasts is good.

The next thing to be considered is the monthly purgations, whether they have flowed duly and plentifully every month, and are of a good colour, and whether they have been equal every month.

Then the womb or place of conception is to be considered; it ought to be clean and sound, dry and soft; not retracted or drawn up; not prone, nor descending downwards; nor the mouth thereof turned awry, nor too close shut. But to speak more particularly:

The first parts to be spoken of are, the *pudenda*, or privities, and the womb; which parts are shut and inclosed either by nature or against nature, and from hence such in women are called *imperfores*, as in some women the mouth of the womb continues compressed or closed up, from the time of their birth until the coming down of the courses, and then on a sudden, when their terms press forward to purgation, they are affected with great and unusual pains; some of these break of their own accord, others are opened and dissected by physicians, others never break at all, and it brings death.

All these Atius particularly handles, shewing that the womb is shut three different ways which hinder conception. The first is, when the lips of the *pudenda* grow or cleave together; the second is, when there are certain membranes growing in the middle part of the *matrix* within; the third is, when (though the lips and bosom of the *pudenda* may appear fair and open) the mouth of the womb may be quite shut up: all which are occasions of barrenness, in that they hinder both the use of man, the monthly courses, and conception.

But amongst all the causes of barrenness in women the greatest is in the womb, which is the field of generation; and if this field be corrupt it is vain to expect any fruit, let it be ever so well sown, for it may be unfit for generation, by reason of many distempers to which it is subject; as for instance, over much heat, and over much cold: for women whose wombs are too thick and cold, cannot conceive, because coldness extinguishes the heat of human seed. Immoderate moisture of the womb also destroys the seed of man, and makes it ineffectual, as corn sown in ponds and marshes; and so does over much dryness in the womb, so that the seed perisheth for want of nutriment. Immoderate heat of the womb is also a cause of barrenness, for it scorcheth up the seed, as corn sown in the drought of summer; for immoderate heat hurts all the parts of the body, as no conception can live in the woman.

And when unnatural humours are engendered, as too much phlegm, tympanies, wind, water, worms, or any such evil humours abounding, contrary to nature, causes barrenness, as does also the terms not coming down in due order, as I have already said.

A woman may also have other accidental causes of barrenness, (at least such as may hinder her conception,) as sudden frights; anger; grief; and perturbation of the mind; too violent exercises, as leaping, dancing, running, &c. after copulation, and the like. But I will now add some signs by which these things may be known.

If the cause of barrenness be in the man, through over much heat in his seed, the woman may easily feel that it is receiving it.

If the nature of the woman be too hot, and so unfit for conception, it will appear by having her terms very little, and the colour inclining to yellowness; she is also very hasty, choleric, and crafty, her pulse beats very swift, and she is very desirous of copulation.

To know whether the fault is in the man or the woman, sprinkle the man's urine upon a lettuce leaf, and the woman's upon another, and that which dries up first is unfruitful. Also take five wheaten corns, and seven beans, put them in earthen pots, and let the party make water therein. Let this stand seven days, and if in that time they begin to sprout, then the party is fruitful; but if they sprout not, then the party is barren, whether it be man or woman.

There are some that make this experiment of women's fruitfulness: Take myrrh, red storax, and some odoriferous things, and make a perfume of it, which let the woman receive into the neck of the womb through a funnel; if the

woman feels the smoke ascend through her body to the nose, then she is fruitful, otherwise barren. Some also take garlic and beer, and let the woman lie on her back upon it, and if she feel the scent thereof to her nose it is a sign of fruitfulness.

Culpepper and others also give a great deal of credit to the following experiment.

Take a handful of barley, and steep half of it in the urine of the man, and the other half in the urine of the woman, for the space of four and twenty hours, and then take it out and set the man's by itself, and the woman's by itself: set it in a flower pot, or some other thing where you may let it dry, then water the man's every morning with his own urine, and the woman's with her's; that which grows first is the most fruitful; and if one grow not at all, that party is naturally barren.

But having now spoken enough of the disease, it is high time to assign the cure.

If barrenness proceeds from stoppage of the menstrues, let the woman sweat, for that opens the parts; and the best way to sweat is in a hot house. Then let the womb be strengthened by drinking a draught of white wine, wherein a handful of stinking arrack, first bruised, has been boiled: for by a secret magnetic virtue it strengthens the womb, and by a sympathetic quality removes any disease thereof. To which also add a handful of vervain, which is very good to strengthen both the womb and head, which are commonly afflicted together by sympathy. Having used these two or three days, if they come not down, take of calamint, penny-royal, thyme, bettony, dittany, burnet, feverfew, mugwort, sage, piony-roots, juniper-berries, half a handful of each, or so many as can be got; let all these be boiled in beer, and taken for her ordinary drink.

Take one part of the gentian root, two parts of centaury, distil them with ale in an alembic, after you have bruised the gentian roots and infused them well, This water is an admirable remedy to provoke the terms. But if you have not this water in readiness, take a dram of centaury, and half a dram of gentian roots bruised, boiled in posset drink, and take a draught of it at night going to bed. Seed of wild navew beaten to powder, and a dram of it taken in the morning in white wine, is also very good; but if it answers not, she must be let blood in the legs. And be sure you administer your medicines a little before the full of the moon, or between the new and full moon, but by no means in the wane of the moon, for if you do they will be ineffectual.

If barrenness proceeds from the overflowing of the men-

strues, then strengthen the womb as you were taught before, afterward anoint the reins of the back with oil of roses, oil of myrtle, and oil of quinceys, every night, then wrap a piece of white bays about your reins, the cotton side next the skin, and keep the same always to it. But above all I recommend this medicine to you:—Take comfrey leaves or roots, and clown wound wort, of each a handful, bruise them well, boil them in ale, and drink a good draught of it now and then: or take cinnamon, cassia lignea, opium, of each two drams; myrrh, white pepper, galbanum, of each one dram; dissolve the gum and opium in white wine; beat the rest into powder: then make pills by mixing them together exactly; and let the patient take two every night going to bed; but let the pills not exceed fifteen graips.

If barrenness proceeds from a flux of the womb, the cure must be according to the cause producing it, or which it proceeds from, which may be known by its signs; for a flux of the womb being a continual distillation from it for a long time together, and the colour of what is voided shews what humour it is that offends: in some it is red, and that proceeds from blood putrefied: in some it is yellow, and that denotes cholera: in others white and pale, and that denotes phlegm. If pure blood comes out, as if a vein was opened, some corrosion or gnawing of the womb is to be feared. All of them are known by these signs.

The place of conception is continually moist with the humours, the face is discoloured, the party loathes meat and breathes with difficulty, the eyes are much swollen, which is sometimes without pain. If the offending humour be pure blood, then you must let blood in the arm, and the cephalic vein is fittest to draw back the blood, and then let the juice of plantain and comfrey be injected into the womb. If phlegm be the cause, let cinnamon be a spice used in all her meats and drinks, and let her take a little Venice treacle or mithridate every morning. Let her boil burnet, mugwort, feverfew, and vervain, in all her broths. Also half a dram of myrrh, taken every morning, is an excellent remedy against this malady. If cholera be the cause, let her take burrage, bugloss, red roses, endive, and succory roots, lettuce and white poppy seed, of each a handful; boil these in white wine till one half be wasted; let her drink half a pint every morning; to which half a pint add syrup of peach flowers and syrup of cichony, of each an ounce; with a little rhubarb, and this will gently purge her. If it proceeds from putrefied blood, let her be bled in the foot, and then strengthen the womb, as directed in the stopping of the menstrues.

If barrenness be occasioned by the falling out of the womb, as sometimes happens, let her apply sweet scents to her nose, such as civit, galbanum, storax, calamitis, wood of aloes, and such other things as are of that nature; and let her lay stinking things to the womb, such as asafœtida, oil of amber, or the smoke of her own hair, being burnt: for this is a certain truth, that the womb flies *from* all stinking things, and *to* all sweet things. But the most infallible cure in this case is, take a common burdoc leaf, (which you may keep dry if you please all the year,) apply this to her head, and it will draw the womb upwards. In fits of the mother, apply it to the soles of her feet, and it will draw the womb downwards. Bur-seed beaten to powder draws the womb which way you please, according as it is applied.

If barrenness proceeds from a hot cause, let the party take whey, and clarify it, then boil plantain leaves and roots in it, and drink it for her ordinary drink. Let her also inject the juice of plaintain into the womb with a syringe; if in winter, when you can get the juice, make a strong decoction of the leaves and roots in water, and inject that up with a syringe; let it be but blood-warm, and you will find this medicine of great efficacy. And further, to take away barrenness proceeding from hot causes, take often conserve of roses, cold lozenges made of tragacanth, the confection of traisantail; and use to smell some camphire, rose water, and saunders. It is also good to bleed the basilica, or liver-vein, and take four or five ounces of blood, and then take this purge: take electuarum de epithymo de succo rosarum, of each two drams and a half, clarified whey four ounces; mix them well together, and take it in the morning fasting; sleep after it about an hour and a half, and fast four hours after it, and about an hour before you eat any thing drink a good draught of whey. Also take liiy-water four ounces; mandragora water one ounce; saffron half a scruple; beat the saffron to powder, and mix it with the waters, and drink them warm in the morning: use this eight days together.

SECTION IV.

Some excellent Remedies against Barrenness, and to cause Fruitfulness.

TAKE broom flowers, smallage, parsley-seed, cummin, mugwort, feverfew, of each half a scruple; aloes half an ounce; India salt, saffron, of each a dram; beat and mix them well together, and put it to five ounces of feverfew water warm, stop it up close, and let it stand and dry in a warm place, and take it three times one after another: then

make each dram into six pills, and take one of them every other night before supper.

For a purging medicine against barrenness :—Take conserve of benedicta lax, one quarter of an ounce ; depsillo, three drams : electuary de succo rosarum, one dram ; mix them together with feverfew-water, and drink it in the morning betimes. About three days after the patient hath taken the purge, let her be let blood four or five ounces in the median or common black vein in the right foot ; and then take five days one after another, filed ivory a dram and a half, in feverfew-water ; and during the time, let her sit in the following bath an hour together morning and night :—Take wild yellow rapes, daucus, balsom wood and fruit, ashkeys, of each two handfuls, red and white behen, broom-flowers, of each a handful ; musk three grains, amber, saffron, amber, and broom-flowers, put them into the decoction after it is boiled and strained.

A confection very good against barrenness :—Take pistachia, pingles, eringoes, of each half an ounce ; saffron one dram ; lignum aloes, galengal, mace, coriophilla, balm flowers, red and white behen, of each four scruples ; shaven ivory, cassia bark, of each two scruples ; syrup of confected ginger twelve ounces, white sugar six ounces ; decoct all these well together in twelve ounces of balm water, and stir it well together ; then put to it musk and amber, of each a scruple ; take thereof the quantity of an nutmeg three times a day, in the morning, an hour before noon, and an hour after supper.

But if the cause of barrenness either in man or woman be through scarcity or diminution of the natural seed, then such things are to be taken as do increase the seed and incite or stir up to venery, and further conception, which I shall here set down, and then conclude this chapter of barrenness.

For this, yellow rape seed baked in bread is very good : also young fat flesh not too much salted ; also saffron, the talis stincus, and long pepper prepared in wine. Avoid sour, sharp, doggy, and slimy meats, long sleep after meat, with furfeiting and drunkenness, and as much as they can keep themselves from sorrow.

These things following increase the natural seed, and stir up venery, and recover the seed again when it is lost, viz. eggs, milk, rice boiled in milk, sparrows brains, flesh, bones and all ; the stones and pizzles of bulls, bucks, rams, and bears ; also cock stones, lamb stones, partridges, quail and pheasants eggs : this is an undeniable aphorism that whatever any creature is addicted to, they move or incite the woman or man that eats them to the like ; and therefore partridges,

quails, sparrows &c. being much addicted to venery, they work the same effect in those men and women that eat them. Also take notice, that in what part of the body the faculty which you would strengthen lies, take the same part of the body of another animal, in whom the faculty is strong, as a medicine. As for instance, the procreative faculty lies in the testicles, therefore cock-stones, lamb-stones, &c. are proper to stir up venery. I will also give you another general rule; all creatures that are fruitful being eaten, render those fruitful that eat them, as crabs, lobsters, prawns, pigeons, &c. The stones of a fox, dried and beaten to powder, and a dram taken in the morning in sheep's milk, and the stones of a boar, taken in a like manner, are very good. The heart of a male quail carried about the man, and the heart of a female quail carried about the woman, causeth natural love and fruitfulness. Let them also that would increase their seed, eat and drink of the best as much as they can, for, *sine cere-re et libero friget Venus*, is an old proverb, which is, *with-out good meat and good drink Venus will be frozen to death*.

Pottages are good to increase the seed, such as are made of beans, peas, and lupines, and mix the rest with sugar.— French beans, wheat sodden in broth, anniseed, also onions stewed, garlicks, leeks, yellow rapes, fresh bugwort-roots, oringo-roots confected, ginger confected, &c. Of fruits, hazel-nuts, cypress-nuts, pitachia, almonds, and marchpanes made thereof. Spices good to increase seed are, cinnamon, cardanum, galengal, long pepper, cloves, ginger, saffron, asafoetida, taken a dram and a half in good wine, is very good for this purpose.

The weakness and debility of a man's yard being a great hinderance to procreation, to strengthen it let him use the following ointments; take wax, oil of bevercod, marjoram gentle, and oil of confus, of each a like quantity, mix it into an ointment and put to it a little musk, with which anoint the yard, cods, &c. Take of house emmets three drams, oil of white sefanum, oil of lillies, of each an ounce; pound and bruise the ants, put them to the oil, and let them stand in the sun six days, then strain out the oil, and add to it euphorbium one scruple, pepper and rue of each one dram, and mustard seed half a dram; set this again altogether in the sun two or three days, and anoint the instruments of generation with it.

CHAP. II.

Of the Diseases of the Womb.

I HAVE already said, that the womb is the field of generation; and if this field be corrupted, it is in vain to expect any fruit, though it be ever so well soyn; it is therefore not without reason that I intend in this chapter to set down the several distempers to which the womb is liable, with proper and safe remedies.

SECTION I.

Of the Hot Distempers of the Womb.

EXCESS of heat is the cause of this distemper, for the heat of the womb is necessary to conception; but, if it be too much, it nourisheth not the seed, but disperseth its heat, and hinders the conception. This preternatural heat is sometimes from the birth, and makes the womb barren; but if it be accidental, it is from hot causes, that bring the heat and blood to the womb: it arises also from internal and external medicines, and from too much hot meat, drink, and exercise. Those that are troubled with this distemper have but few courses, and those yellow, black, burnt, or sharp; have hair betimes on their privities; are very prone to lust; are subject to the head-ach; and abound with choler. When this distemper is strong upon them, they have but few terms, and out of order, being bad, and hard to flow, and in time they become hypochondriacs, and for the most part barren, having sometimes a frenzy of the womb.

The remedy is, to use coolers, so that they offend not the vessels that must be open for the flux of the terms. Therefore inwardly use coolers, such as succory, endive, violets, water-lilies, sorrel, lettuce, saunders, and syrups, and conserves made thereof. Also take conserve of succory, violets, water-lilies, burrage, each an ounce; conserve of roses half an ounce, diamargaton frigid; diatriasental, each half a dram; and with syrup of violets, or juice of citrons, make an electuary. For outward applications make use of ointment of roses, violets, water-lilies, gourds, and venus-narvel applied to the back and loins.

Let the air be cool, her garments thin, and her meat endive, lettuce, succory, and barley. Give her no hot meats nor strong wine, unless mixed with water. Rest is good for her, but she must abstain from copulation, though she may sleep as long as she will.

SECTION II.

Of the Cold Distempers of the Womb.

THIS distemper is the reverse of the foregoing, and equally an enemy to generation, being caused by a cold quality abounding to excess, and proceeds from a too cold air, rest, idleness, and cooling medicines. It may be known by an aversion to venery, and taking no pleasure in the act of copulation when they spend their seed. Their terms are phlegmatic, thick, and slimy, and do not flow as they should. The womb is windy, and the seed crude and waterish. It is the cause of obstructions and barrenness, and hard to be cured.

For the cure of this distemper use this water:—Take galengal, cinnamon, nutmeg, mace, cloves, each two drams; ginger, cubeds, zedory, cardanum, each an ounce, grains of paradise, long pepper, each half an ounce; beat them, and put them into six quarts of wine for eight days; then add sage, mint, balm, motherwort, each three handfuls. Let them stand eight days more, then pour off the wine, and beat the herbs and the spices, and then pour on the wine again, and distil them. Or you may use this:—Take cinnamon, nutmegs, cloves, mace, ginger, cubeds, cardanum, grains of paradise, each an ounce and an half; galengal six drams, long pepper half an ounce, zedory five drams, bruise them, and add six quarts of wine; put them into a cellar nine days, daily stirring them; then add of mint two handfuls, and let them stand fourteen days, pour off the wine and bruise them, and then pour on the wine again and distil them. Also anoint with oil of lilies, rue, angelica, bays, cinnamon, cloves, mace, and nutmeg. Let her diet and air be warm, her meat of easy concoction, seasoned with anniseed, fennel, and thyme, and let her avoid raw fruits and milk diets.

SECTION III.

Of the Inflation of the Womb.

THE inflation of the womb is a stretching of it by wind, called by some a windy mole; the wind proceeding from cold matter, whether thick or thin, contained in the veins of the womb, by which the weak heat thereof is overcome, and is either flows thither from other parts, or is gathered there by cold meats or drinks: cold air may be a procuring cause of it also, as women that lye-in are exposed to it. The wind is contained either in the cavity of the vessels of the womb, or between the tunics, and it may be known by a swelling in the region of the womb, which sometimes

reaches to the navel, loins, and diaphragma; and it rises and abates as the wind increaseth or decreaseth. It differs from the dropsy, in that it never swells so high; and that neither the physician nor midwife may take it for a conception, let them observe the signs of women with child, laid down in the first part of this book; and if one sign be wanting, they may suspect it to be an inflation, of which this is a farther sign, that in conception the swelling still increaseth, and sometimes decreaseth; also if you strike upon the belly in an inflation, there will be a noise, but not so in case there be a conception. It also differs from a mole; because in this there is a weight and hardness of the belly; and when they move from one side to another, they feel a weight that moveth but not so in this. If the inflation be without the cavity of the womb, the pain is greater and more extensive, nor is there any noise, because the wind is more pent up.

This distemper is neither of long continuance, nor dangerous, if looked after in time; and if it be in the cavity of the womb, is more easily expelled. To which purpose give her diaphnicon, with a little castor, and sharp clysters that expel wind. If this distemper happen to a woman in travail, let her not purge after delivery, nor bleed, because it is from a cold matter; but if it come after child-bearing, and her terms come down sufficiently, and that she has fulness of blood, let the saphæna vein be opened; after which let her take the following electuary:—Take conserve of bettony and rosemary, of each an ounce and a half; candied eringoes, citron peels candied, each half an ounce; diacimium, diagalengal, each a dram; oil of anniseed six drops, and with syrup of citrons make an electuary. For outward applications make a cataplasm of rue, mugwort, camomile, dill, calamint, new penny-royal, thyme, with oil of rue, keir, and camomile: and let the following clyster, to expel wind, be put into the womb:—Take agnus castus, rye, calamint, each a handful; anniseed, castus, cinnamon, each two drams; boil them in wine to half a pint. She may likewise use sulphur, Bath and Spaw water, both inward and outward, because they expel wind.

SECTION IV.

Of a Dropsy in the Womb.

THIS is another morbid effect of the womb, proceeding from water, as that before mentioned did from wind, by which the belly so swells it deceives many, causing them to think themselves with child, when indeed they are not; being no other than an unnatural swelling, raised by the gather-

ing together of waters, from moisture mixed with the terms, and with an evil sanguification from the liver and spleen; also by immoderate drinking, or eating of crude meats; all which, causing a repletion, do suffocate the native heat; it may also be caused by the overflowing of the courses, or by any immoderate evacuation. The signs of this distemper are, the lower parts of the belly, with the privities, are puffed up and pained; the feet swell; the natural colour of the face decays; the appetite is depraved; the terms also are fewer, and cease before their time; her breasts are also soft, but without milk. This is distinguished from a general dropsy, in that the lower parts of the belly are most swelled; neither does the sanguificative faculty appear so hurtful, nor the urine so pale, nor the countenance so soon changed, neither are the superior parts so extenuated, as in a general dropsy. But yet this distemper foretels the total ruin of the natural functions, by that singular consent the womb hath with the liver, and therefore an evil habit of body or a general dropsy will follow.

For the cure of this disease, first mitigate the pain with fomentations of mellilot, mallows, lintseed, camomile, and althæ, then let the humour be prepared with syrup of stæchus, calamint, mugwort of both sorts, with the distilled waters or decoction of elder, marjoram, sage, origin, speerage, penny-royal, and bettony; and let her purge with senna, agarie, rhubarb, and eliterian. To purge the water:—Take calamint, mugwort, lovage roots, penny-royal, each a handful; savia a pugil; madder roots, angelical, of each half an ounce; boil them in water, and sweeten them with sugar. Or, if she likes it better, make broths of the same. Also take specirem diambre, diamesci dulcis, diacalementi, diacinnamoni, diacimini, troce de myrrh, of each two drams; sugar one pound, with bettony water make lozenges, and let her take of them two hours before meals. Apply also to the bottom of the belly, as hot as can be endured, a little bag of camomile, cummin, and mellilot, boiled in oil of rue; and anoint the belly and privities with unguentum Agrippæ, mingling therewith oil of froes. Let the lower parts of the belly be covered with a plaister of bay berries, or with a cataplasim made of cummin, camomile and briony roots, adding thereto cows and goats dung. For injection into the womb, take asarum roots three drams, penny-royal, calamint, each half a handful, savin a pugil, mechoacon a dram; anniseed, cummin, each half a dram. Boil them, and take six ounces strained, with oil of elder and orris, each an ounce; and inject it into the womb by a metrenchita; let the air be hot and dry. Moderate exercise may be allowed, but much sleep is for-

bidden. She may eat the flesh of partridges, larks, chickens, mountain birds, hares, coneys, &c. and let her drink be wine mixed with a little water.

SECTION V.

Of an Inflammation of the Womb.

THIS effect is a tumour possessing the womb, accompanied with unnatural heat, by obstruction, and gathering together of corrupt blood; for the blood that comes to the womb gets out of the vessels into its substance, and grows hot, putrefies, and causes an inflammation, either all over, or in part, before or behind, above or below. This happens also by suppression of the menstrues, repletion of the whole body, immoderate copulation, often handling of the genitals, difficult child-birth, vehement agitation of the body, or by falls or blows. The signs of this inflammation are tumours, with heat and pain in the region of the womb, stretching and heaviness in the privities, also a pain in the head and stomach, with vomiting, coldness of the knees, convulsions of the neck, doting, trembling of the heart; and sometimes straitness of breath, by reason of heat which is communicated to the diaphragm or midriff; and the breasts, sympathizing with the womb, are pained and swelled; but more particularly, if the fore part of the matrix be inflamed, the privities are grieved, and the urine is suppressed, or flows forth with difficulty; if it be behind, the loins and back suffer, and the belly is bound; if the inflammation be in the bottom of the womb, the pain is towards the navel: if the neck of the womb be affected, the midwife, putting up her finger, may feel the mouth of it retracted and closed up, with a hardness about it. As to the prognostics of it, all inflammations of the womb are dangerous, and sometimes deadly, especially if it be all over the womb; if the woman be with child she rarely escapes; an abortion follows, and the mother dies.

As to the cure: first, let the humours flowing to the womb be repelled; for the effecting of which, after the body hath been opened with cooling clysters, letting of blood will be needful: open therefore a vein in the arm, but have a care of bleeding in the foot, lest thereby you draw more blood to the womb; but afterwards, if you perceive it to be from the terms stopped, you may. The opinion of Galen is, that the blood may be diverted by bleeding in the arm, or cupping the breasts; and that may be by opening an ancle vein, and cupping upon the hips. Then purge gently, with cassia, rhubarb, senna, and mirabolans, thus:--Take senna two drams, anniseed one scruple, mirabolans half an ounce, bar-

ley water a sufficient quantity, make a decoction; dissolve it in syrup of succory, with rhubarb two ounces, pulp of cassia half an ounce, oil of anniseed two drops, and make a potion. Also, at the beginning of the disease anoint the privities and reins with oil of roses and quinceys. Make plasters of plantain, lintseed, barley-meal, mellilot, fenugreek, and white of eggs; and if the pain be vehement add a little opium. For repellers and anodynes take venus-narvel, purslain, lettuce, house-leek, vine leaves, each a handful, boil them in wine, and barley-meal two ounces: pomegranate flowers two drams, boil a dram with oil of roses, and make a poultice. Or take diacibilon simple, two ounces, juice of venus-narvel and plantain, each half an ounce, take of fenugreek, mallow roots, decocted figs, lintseed, barley-meal, doves dung, turpentine, of each three drams, deers suet half a dram, opium half a scruple, and with wax make a plaster. After it is ripe, break it by motion of the body, coughing, sneezing, or else by cupping and pessaries: as, take rue half a handful, figs an ounce, pigeons dung, orris roots each half a dram; with wool make a pessary. After it is broken, and the pains abate, then cleanse and heal the ulcer with such cleansers as these, viz. whey, barley-water, honey, wormwood, smallage, gribus, orris, birthwort, myrrh, turpentine, allum: also take a pint of new milk boiled, honey half a pint, orris powder half an ounce, and use it very often every day. If it break about the bladder, use an emulsion of cole seeds, whey, and syrup of violets. Let her drink barley water, or clarified whey, and her meat should be chickens and chicken broth, boiled with endive, succory, sorrel, bugloss and mallows.

SECTION VI.

Of Schirrosity, and Hardness of the Womb.

PHLEGM, or swelling in the womb neglected, or not perfectly cured, often produces a schirrosity in the matrix, which is a hard, insensible, unnatural swelling, causing barrenness, and begetting an indisposition of the whole body. The immediate cause is a thick earthy humour (as natural melancholy for instance) gathered in the womb, and causing a schirrous without inflammation. It is a proper schirrous when there is neither sense nor pain, and it is an improper schirrous when there is some little sense and pain. This distemper is most usually in women of a melancholy constitution, and also such as have not been cleansed from their menstrues, or from the retention of the lochia, or after-purgings; it is likewise sometimes caused by eating corrupt meats; or

those inordinate longings called *pica*, to which breeding women are often subject: and lastly, it may also proceed from obstructions and humours in the womb, or some evil effects in the liver and spleen. It may be known by these signs. If the effect be in the bottom of the womb, she feels as it were a heavy burden representing a mole, yet differing in that the breasts are attenuated and the whole body also. If the neck of the womb be hardened no outward humour will appear, the mouth of it is retracted, and touched with the finger feels hard; nor can she have the company of a man without great pains and prickings. This schirrosity or hardness is (when confirmed) incurable, and will turn into a cancer or dropsy; and ending in a cancer proves deadly: the reason of which is, the native heat in those parts being almost smothered, it is hard to be restored again.

For the cure of this, prepare the humour with syrup of burrage, succory, epileymum and clarified whey; which being done, take of the following pills, according to the patient's strength: hiera picra six drams and a half; agaric, lazuli ablati falsi Indiæ, coloquintida, of each a dram and a half; mix them and make pills. The body being purged, proceed to mollify the hardness of the privities and the neck of the womb with the following ointment: take oil of capers, lillies, sweet almonds and jessamin, each an ounce; mucilage, fenugreek, althæ, ointment of althæ, each six drams; ammoniacum dissolved in wine an ounce, which with wax make an ointment. Then apply below the navel diachylon fernelli; and make emulsions of figs, mugwort, mallows, penny-royal, althæ, fennel-roots, mellilot, fenugreek and lintseed boiled in water: but for injection take bdellium dissolved in wine, oil of sweet almonds, lillies, camomile, each two ounces; marrow of veal-bone and hen's-grease each an ounce; with the yolk of an egg. The air should be temperate; and as for her diet, let her abstain from all gross, vicious and salt meats, as pork, fish, old cheese, &c.

SECTION VII.

Of the Straitness of the Womb, and its Vessels.

THIS is a defect of the womb, which is an obstruction to the bearing of children, as hindering both the flowing of the menstrues and conception, and is seated in the vessels of the womb, and of the neck thereof. The cause of this straitness are thick and rough humours that stop the mouths of the veins and arteries. These humours are bred either by gross or too much nourishment, when the heat of the womb is so weak that it cannot attenuate the humours; which, by reason thereof, either flow from the whole body, or are gathered in.

to the womb. Now the vessels are made closer or straiter several ways, as sometimes by inflammations, schirrous or other tumours; sometimes by compressions, or by a scar, or flesh, or membrane that grows after the wound. The signs by which this is known are, the stoppage of the terms, not conceiving, crudities abounding in the body, which are known by particular signs; for if there was a wound, or the secundine was pulled out by force, phlegm comes from the wound. If stoppage of the terms be from an old obstruction, or from the disorderly use of astringents, it is more curable; if it be from a schirrous or other tumours that compress or close the vessels, the disease is incurable.

For the cure of that which is curable, obstructions must be taken away, phlegm must be purged, and she must be let blood, as will be hereafter directed in the stoppage of the terms. Then use the following medicines:—Take of anniseed and fennel seed, each a dram; rosemary, penny-royal, calamint, bettony-flowers, each an ounce; castus, cinnamon, galengal, each half an ounce; saffron half a dram with wine. Or, take asparagus roots, parsley roots, each an ounce; penny-royal, calamints, each an handful; wall-flowers, dill-flowers, each two pugils; boil, strain and add syrup of mugwort, an ounce and a half. For a fomentation, take penny royal, mercury, calamint, marjorum, mugwort, each two handfuls; sage, rosemary, bays, camomile flowers, each a handful; boil them in water, and foment the groin and bottom of the belly, or let her sit up to the navel in a bath, and then anoint about the groin with oil of rue, lillies, dill, &c.

SECTION VIII.

Of the Falling of the Womb.

THIS is another evil effect of the womb, which is both very troublesome and also a hinderance to conception.—Sometimes the womb falleth to the middle of the thighs, nay, almost to the knees, and may be known then by its hanging out. Now that which causeth the womb to change its place, is when the ligaments by which it is bound to the other parts are not in order: for there are four ligaments, two above, broad and membranous, that come from the pretonæum, and two below, that are nervous, round, and hollow; it is also bound to the great vessels by veins and arteries, and to the back by nerves; now the place is changed when it is drawn another way, or when the ligaments are loose, and it falls down by its own weight. It is drawn on one side when the menstrues are hindered from flowing, and the veins and arteries are full; namely, those which go to the womb. If it be a mole on one side, the liver and spleen cause it; by the liver

veins on the right side and the spleen on the left; as they are more or less filled. Others are of opinion it comes from the solution of the connexion of the fibrous neck, and the parts adjacent; and that is from the weight of the womb descending: this we deny not, but the ligaments must be loose or broken. But women in a dropsy could not be said to have the womb fallen down if it came only from looseness; but in them it is caused by the saltness of the water, which dries more than it moistens. Now if there be a little tumour within or without the privities, like a skin stretched, or a weight felt upon the privities, it is nothing else but a descent of the womb: but if there be a tumour like a goose-egg and a hole at the bottom, there is at first a great pain in the parts to which the womb is fastened; as the loins, the bottom of the belly, and the *os sacrum*, which proceeds from the breaking or stretching of the ligaments, but a little after the pain abates; and there is an impediment in walking, and sometimes blood comes from the breach of the vessels, and the excrements and urine are stopped, and then a fever and convulsion ensueth, and so it often proves mortal, especially if it happens to women with child.

For the cure of this distemper, first put it up before the air alter it, or it be swollen or inflamed; and therefore first of all give a clyster to remove the excrements, then lay her upon her back, with her legs abroad and thighs lifted up and head down; then take the tumour in your hand and thrust it in without violence; if it be swelled by alteration and cold, foment it with the decoction of mallows, althæ, line, fenugreek, camomile flowers, bay berries, and anoint it with oil of lillies and hen's-grease. If there be an inflammation do not put it up, but fright it in, by putting a red hot iron before it, and making a shew as if you intended to burn; but first sprinkle upon it the powder of mastich, frankincense, and the like: Thus—take frankincense, mastich, each two drams; sarcocol steeped in milk a dram; mummy, pomegranate flowers, sanguis draconis, each half a dram; when it is put up let her lie with her legs stretched and one upon the other for eight or ten days, and make a pessary in the form of a pear with cork or sponge and put it into the womb, dipped in sharp wine or juice of Acacia with powder of sanguis, galbanum and bdellium. Also apply a cupping-glass with a great flame under the navel or paps, or to both kidneys, and lay this plaster to the back:—Take opoponax two ounces; storax liquid half an ounce; mastich, frankincense, pitch, bole, each two drams; then with wax make a plaster: or, take laudanum a dram and a half; mastich and frankincense each half a dram; wood aloes, cloves, spike, each a

dram; ash-coloured amber grease four grains; musk half a scruple; make two round plasters to be laid on each side of the navel; make a fume of snails skins salted, or of garlic, and let it be taken in by a funnel. Use also astringent fomentations of bramble leaves, plantain, horse-tails, myrtles, each two handfuls; worm seed two pugils; pomegranate flowers half an ounce; boil them in wine and water. For an injection, take comfrey roots an ounce; rupture wort two drams; yarrow and mugwort each half an ounce, boil them in red wine and inject it with a syringe. To strengthen the womb, take hartshorn, bays, of each a dram; myrrh half a dram; make a powder for two doses, and give it with sharp wine. Or you may take zedory, parsnip seed, crabs eyes prepared, each a dram; nutmeg half a dram, and give a dram in powder; but astringents must be used with great caution, lest by stopping the courses a worse mischief follow. To keep it in its place, make rollers and ligatures as for the rupture; and put pessaries into the bottom of the womb that may force it to remain. I know some physicians object against this, and say they hinder conception; but others in my opinion much more justly affirm that they neither hinder conception nor bring any inconvenience: nay, so far from that, they help conception and retain it, and cure the disease perfectly.—Let the diet be of drying, astringent and gluing qualities, such as rice, starch, quinces, pears and green cheese; but let summer fruits be avoided, and let her wine be astringent and red.

CHAP. III.

Of the Diseases relating to Women's Monthly Courses.

SECTION I.

Of Women's Monthly Courses in general.

DIVINE providence, which, with a wisdom worthy of itself, has appointed women to conceive by coition with the man, and to bear and bring forth children, has provided for the nourishment of children during their recess in the womb of their mother, by that redundancy of the blood which is natural to all women, and which flowing out at certain periods of time, (when they are not pregnant,) are from thence called *terms*; and *menses*, from their monthly flux of excrementitious and unprofitable blood: now that the matter flowing forth is excrementitious, is to be understood only with respect to the redundancy and overplus thereof, being an ex-

crement only with respect to its quantity ; for, as to its quality, it is as pure and incorrupt as any blood in the veins : and this appears from the final cause of it, which is the propagation and conservation of mankind ; and also from the generation of it, it being the superfluity of the last aliment of the fleshy parts. If any ask, if the menstrues be not of a hurtful quality, how can it cause such venomous effects ; as if it fell upon trees and herbs, it makes the one barren, and mortifies the other ? I answer : This malignity is contracted in the womb ; for the woman wanting native heat to digest this superfluity, sends it to the matrix, where seating itself till the mouth of the womb be dilated, it becomes corrupt and mortified ; which may easily be considering the heat and moistness of the place ; and so this blood being out of its proper vessels and too long retained, offends in quality. But if frigidity be the cause why women cannot digest all their last nourishment, and by consequence have these monthly purgations, how comes it to pass, some may say, why they are of so cold a constitution more than men ? Of this I have already spoken in the chapter of barrenness ; only chiefly thus :—The Author of our being has laid an injunction upon men and women to propagate their kind, and hath also wisely fitted them for that work ; and seeing that in the act of coition there must be an agent and a patient, (for if they be of one constitution there can be no propagation,) there the man is hot and dry, and the woman cold and moist ; he is the agent, she the patient or weaker vessel, that she might be subject to the office of a man. It is therefore necessary that the woman should be of a cold constitution, because in her is required a redundancy of matter for the infant depending on her ; and this is wisely ordained by nature, for otherwise the child would detract from and weaken the principal parts of the mother, which would most naturally render the product of the infant the destruction of the patient. Now these monthly purgations usually begin about the fourteenth year, and continue till the forty-sixth or fiftieth year ; yet not so constantly but that oftentimes there happens a suppression, which is sometimes natural and sometimes morbidical ; when they are naturally suppressed, it is either in breeding-women, or such as give suck : but that which is morbidical must be the subject of the following sections.

SECTION II.

Of the Suppression of the Monthly Courses.

THE suppression of the terms, which is morbidic, is an interception of that customary evacuation of blood which should come from the matrix every month, and which pro-

ceeds from the matter vitiated. The cause of this suppression is either internal or external: the internal cause is either instrumental or material in the blood or in the womb. The blood may be faulty two ways: in quantity or in quality; in quantity, when it is so consumed that there is no overplus left, as in viragoes and all virile women, who, through the heat and strength of nature, digest and consume all their best nourishment: but women of this constitution are rather to be accounted Anthropophagæ, that is, women-eaters, than women-breeders; they consume one of the principles of generation, which gives a being to the world, that is, the menstruous blood. The blood may also be consumed and the terms stayed by too much bleeding at the nose; and likewise by a flux of the hemorrhoids, or by the dysentery, evacuations, and chronical and continued diseases. But secondly, the matter may be vicious in quality, as if it be sanguinous, phlegmatical, hideous, or melancholic: each of these, if they offend in grossness, will cause an obstruction in the veins.

The womb also may be in fault divers ways: by the narrowness of the veins passages, by aposthumes ulcers tumours, and by overmuch cold and heat, the one vitiating the action and the other consuming the matter; also by an evil composition of the matter, or by an evil composition of the uterine parts, by the neck of the womb being turned aside, and sometimes (though rarely) by a membrane or excrescence of flesh growing about the womb.

The external cause may be heat, or dryness of the air, immoderate watching great labour, violent motion, whereby the matter is so consumed, and the body so exhausted that there is no redundant blood remaining to be expelled; whereas it is recorded of the Amazons, that being active, and always in motion they had little or no monthly fluxes: it may also be caused by cold; and most frequently it is, so, making the blood vicious and gross, condensing and binding up the passages, that it cannot flow forth.—The signs this disease are pains in the head, neck, back and loins, with weariness of the whole body, especially of the hips and legs, by reason of a confinity which the womb hath with those parts: if the suppression proceeds from cold, it causes a heavy sluggish disposition, and pale colour a slow pulse, the urine crude, waterish and much in quantity, and no desire to copulation, the excrements of the guts being usually retained; but if it proceeds from heat, the signs are contrary. If it be natural, or caused by conception, it may be known by drinking water and honey after supper, going to bed; for if, after the taking it, it causeth the woman to feel a bearing pain about the navel and lower parts of the belly, it is a sign she hath conceived,

and that the suppression is natural; if not then it is vicious, and ought medicinally to be taken away; otherwise many dangerous diseases will follow, such as swoonings, faintings, intermission of pulse, obstructions, cachexies, jaundice dropsies, hardness of the spleen, epilepsies, frenzies, apoplexies, melancholy, passion, &c. which makes it highly necessary to say something now of the cure.

The cure of this distemper must be by evacuation, for this suppression is a plethoric effect; it will therefore be best in the midst of the menstrual period to open the liver vein; and for the reversion of the humour two days before the wonted evacuation, open the saphæna veins of both feet: and if the repletion be not great, apply cupping-glasses to the legs and thighs; after letting blood the humour must be prepared and made flexible with syrup of stæchus, horehound, hyssop, bettony, maiden-hair, of each one handful make a decoction, and take thereof three ounces; syrup of mugwort, succory, maiden-hair, mixed each half an ounce; and after she comes out of the bath let her drink it off. Then purge pil. de agaric, elephang, coch. foedit. Galen in this case commends pilula de hiera cum coloquintida; for as they are proper to purge the humour offending, so they open the passage of the womb. If the stomach be overcharged, let her take a vomit; but if it be so prepared as to act both ways, lest the humours should be too much turned back by working only upwards; to which end, take trochisk of agaric two drams, infuse them in three ounce of oximel, in which dissolve benedict. laxat. half an ounce, and of the electuary diasasum one scruple; and let her take it after the manner of a purge. When the humour has been thus purged, you may proceed to more proper and forcible remedies. Take extract of mugwort one scruple and a half, rinds of cassia, parsley-seed, castor, of each a scruple, also take juice of smallage, after supper, or at going to bed. And administer to the lower parts by suffumigations, pessaries, unctions, injections, and infusions; make suffumigations of amber, galbanum, melantium, bay-berries, mugwort, cinnamon, nutmegs, cloves, &c. Make pessaries of figs, and leaves of the mercury bruised, and rolled up with lint. Make injections of the decoction of mercury, bettony, origin, mugwort, and figs, and inject into the womb by an instrument fit for that purpose. For unction, take landant, oil of myrrh, of each two drams; oil of lilies, almonds, capers, camomile, of each half an ounce; and with wax make an unguent, with which let the place be anointed.

Let the air be hot and dry, and her sleep shorter than ordinary; let her use moderate exercise before meals, and let her meat and drink be attenuating

SECTION III.

Of the Overflowing of the Monthly Courses.

THIS distemper is directly contrary to that of which I have spoken in the foregoing section, and is no less dangerous than the other, and therefore requires to be spoken of next in order. This distemper is a sanguinous excrement, proceeding from the womb, and exceeding in the time and quality. I call it sanguinous, because there are two ways by which the blood flows: one is by the internal veins in the body of the womb, which is properly called the monthly flux; the other is, by those veins which are terminated in the neck of the matrix, which some physicians call the hemorrhoids of the womb; and that it exceeds in quantity when they flow about three days; but this is the most certain sign of their excess in flowing, when they flow so long that the faculties of the body are thereby weakened; for in bodies abounding with gross humours, this immoderate flux does sometimes unburden nature of her load, and is not to be stopt without advice from a physician.

The cause of this immoderate flowing is either external or internal; the external cause may be the heat of the air, lifting and carrying heavy burdens, unnatural child-birth, falls, &c. The external cause may be threefold; in the matter, instrument or faculty: the matter, which is the blood, may be vicious two ways; first, in quantity, being so much that the veins are not able to contain it; secondly, in quality, being adust, sharp, waterish, or unconcocted: The instrument, viz. the veins, are faulty, by the dilation of the orifice, which may be caused two ways; first, by the heat of the constitution, climate, or season, heating of the blood, whereby the passages are dilated, and the faculty weakened, that it cannot retain the blood; secondly, by falls, blows, violent motion, breaking of a vein, &c.

This inordinate flux may be known by the appetite's being decayed, the concoction depraved, and all the actions of the face changed, and a general feebleness possessing the whole body. If it comes by the breaking of a vein, the body is sometimes cold, the blood flows forth on heaps, and that suddenly, with great pain; if it comes through heat, the orifice of the veins being dilated, then there is little or no pain, yet the blood flows faster than it doth in an erosion, and not so fast as in a rupture. If by erosion, or sharpness of blood, she feels a great scalding in the passage; it differs from the other two, in that it flows not so suddenly nor so copiously as they do. If it be by weakness of the womb, she has an aversion to copulation; if it proceeds from the blood, drop some of it

on a cloth, and when it is dry you may judge of the quality by the colour; it be choleric, it will be yellow; if melancholy, black; if phlegmatic, waterish and whitish.

The cure of this consists in three particulars; first in repelling and carrying back the blood; secondly, in correcting and taking away the fluxibility of the matter; and thirdly, in corroborating the veins or faculties. For the first, to cause a regression of the blood, open a vein in her arm, and draw out so much blood as the strength of the patient will permit, and that not together, but at several times, for thereby the spirits are less weakened, and the retraction so much the greater. Apply the cupping-glass to the liver, that the reversion may be in the fountain. To correct the fluxibility of the matter, cathartical means, moderated with astringents, may be used. If caused by sharpness of blood, consider whether the erosion be by salt phlegm, or adust choler: if by salt phlegm, prepare with syrup of violets, wormwood, roses, citron-peels, succory, &c. then take this purgation following; mirabolans, cherbul half an ounce, trochisks of agaric, one dram; with plantain-water make a decoction; add thereto syr. rosat. lux. three ounces, and make a portion. If by adust choler, prepare the body with syrup of roses, myrtles, sorrel, purslain mixed with water of plantain, knot grass and endive, then purge with this potion:—Take rinds of mirabolans, rhubarb, of each one dram; cinnamon fifteen grains; infuse them one night in endive water; add to it the strained pulp of tamarinds, cassia, of each an half an ounce, syrup of roses one ounce, and make a portion. If the blood be waterish and unconcocted as it is in hydropical bodies, and flows forth by reason of the tenuity, to draw off the water will be profitable: to which end, purge with agaric, elaterium, and colocintida. Sweating is also very proper in this case, for by it the matter offending is taken away, and the motion of the blood is carried to the outward parts. To procure sweat, use cardamum water with mithridate, or the decoction of guaiacum, saffra, sarsaparella; gum of guaiacum does also greatly provoke sweat; and pills of sarsaparella, taken every night going to bed, are worthily commanded. If the blood flows forth from the opening or breaking of a vein, without any evil quality of itself, then ought corroboratives only to be applied, which is the thing to be done in this inordinate flux. bole ammoniac one scruple, London treacle one dram, old conserve of roses half an ounce, with syrup of myrtles, make an electuary. Or, if the flux has continued long, take of mastich two drams, olibani, troch. de carabe, of each one dram, balanstium, one scruple, make a powder; with syrup of quinces make it into pills, and take one always before meals.

SECTION IV.

Of Terms coming out of Order, either before or after the usual Time.

BOTH these have an ill constitution of body ; every thing is beautiful in its order, in nature as well as morality ; and if the order of nature be broken, it shews the body to be out of order.

When the monthly courses come before their time, it shews a depraved excretion that comes for the time, often flowing sometimes twice a month : the cause why they come sooner is in the blood, which stirs up the expulsive faculty in the womb, or sometimes in the whole body, caused oftentimes by the person's diet, which increases the blood too much, makes it too sharp or too hot : and if the retentive faculty of the womb be weak, and the expulsive faculty strong, and of a quick sense, it brings them forth the sooner : and sometimes they flow sooner by reason of a fall, stroke, or some violent passion, which the parties themselves can best relate. If it be from heat, thin and sharp humours, it is known by the distemper of the whole body. The looseness of the vessels, and weakness of the retentive faculty, is known from a moist and loose habit of body. It is more troublesome than dangerous, but hinders conception, and therefore the cure is necessary for all, but especially such as desire children. If it proceeds from a sharp blood, let her temper it by a good diet and medicines. To which purpose let her use baths of iron water, that correct the distemper of the bowels, and then evacuate. If it proceeds from the retentive faculty, and looseness of the vessels, it is to be corrected with gentle astringents.

As to the courses flowing after the usual time, the cause is the thickness of the blood, and the smallness of its quantity, with the straightness of the passage and weakness of the expulsive faculties, either of these singly may stop the courses, but if they all concur, they render the distemper the worse. If the blood abounds not in such a quantity as may stir up nature to expel it, its purging must necessarily be deferred till there be enough. And if the blood be thick, the passage stopped, and the expulsive faculty weak, the menses must needs be out of order, and the purging of them retarded.

For the cure of this, if the quantity of blood be small, let her use a larger diet, and very little exercise. If the blood be thick and foul, let it be made thin, and the humours mixed therewith be evacuated. It is good to purge after the courses have done flowing, and to use calamints : and indeed the oftener she purges the better. She may also use fumes and pes-

saries; apply cupping-glasses without scarification to the inside of the thighs; rub the legs, and scarify the ancles, and hold the feet in warm water four or five days before the courses come down. Let her also anoint the bottom of her belly with things proper to provoke the terms.

SECTION V.

Of the False Courses, or Whites.

THE whites, or false courses, are a foul excretion from the womb; for from the womb proceeds not only the menstruous blood, but accidentally many other excrements, which is a distillation of a variety of corrupt humours through the womb, flowing from the whole body, or part of the same; which though called the *whites*, are sometimes blue, or green, or reddish, not flowing at a set time, or every month, but in a disorderly manner, sometimes longer and sometimes shorter. It is different from the running of the reins, being both less in quantity and whiter and thicker in quality, and coming at a great distance. It is different also from night pollutions, which are only in sleep, and proceed from the imagination of venery.

The cause of this distemper is either promiscuously in the whole body by cacochymy, or weakness of the same, or in some of the parts; as in the liver, which, by the inability of the sanguificative faculty, causeth a generation of corrupt blood, and then the matter is reddish; sometimes in the gall being remiss in its office, not drawing away those choleric superfluities which are engendered in the liver, and then the matter is yellowish; sometimes in the spleen, not defecating and cleansing the blood of the excrementitious parts, and then the matter flowing forth is blackish. It may also come from catarrhs in the head, or from any other putrefied or corrupt member. But if the matter of the flux be whiter, the case is either in the stomach or reins. In the stomach, by a phlegmatical and crude matter there contracted and vitiated through grief, melancholy and other distempers; for otherwise, if the matter were only pituitous, and no ways corrupt or vitiated, being taken in the liver, it might be converted into blood, for phlegm in the ventricle is called nourishment half digested. But being corrupt, though it be sent into the liver, it cannot correct that which the first hath corrupted, and therefore the liver sends it to the womb, which can neither digest it nor repel it, and so it is voided out, still keeping the colour which it had in the ventricle. The cause also may be in the veins being over-heated, whereby the spermatic matter, by reason of its tenuity, flows forth. The external cause may be the

moistness of the air, eating corrupt meats, anger, grief, slothfulness, immoderate sleeping, and costiveness.

The signs are, extenuation of the body, short and stinking breath, loathing of meat, pain in the head, swelling of the eyes, melancholy, humidity, flowings from the womb of divers colours, as reddish, black, green, yellow, or white: it is known from the overflowing of the courses, in that it keeps no certain periods, and is of so many colours, all which do degenerate from the blood.

For the cure of this, it must be by methods adapted to the ease; and as the causes are various so must be the cure.

If it be caused by the distillation from the brain, take syrup of bettony, stæchus and marjoram, purge with pilloch. napalia, of the juice of sage, hyssop, bettony, nagalia, with one drop of oil of cloves and a little silk cotton. Take elect. dranth. aromat. rosar. diambre, diamos-dulcis, of each one dram, nutmeg half a dram, at night going to bed.

If the matter flowing forth be reddish, open a vein in the arm; if not, apply ligatures to the arms and shoulders: some have cured this distemper by rubbing the upper part with crude honey; and so Galen says he cured the wife of Bœtius.

If it proceeds from crudities in the stomach, or from a cold distempered liver, take every morning of the decoction of lignum sanctum; purge with pil. de agrico. de harmod. de hiera diacolocynthid. fœtida aggravite. Take of elect. arom. ros. two drams; citron peals dried one dram; santali alba, ligni aloes, of each half a scruple; sugar six ounces; with mint water make lozenges of it and take it after meals.

If with frigidity of the liver be joined a repression of the stomach, purging by vomiting is commendable: for which take three drams of the electuary of diarum. Some physicians also allow of the diuretical means, as of opium, petroselinum, &c.

If the matter of the flux be *melancholus*, prepare with syrup of maidenhair, epithemum, polypody, burrage, bugloss, fumetory, hart's tongue and syrup bysantium, which must be made without vinegar, otherwise it will rather animate the disease than strengthen nature; for melancholy by the use of vinegar is increased; and by Hippocrates, Silvius and Aven-tius, it is disallowed of as an enemy to the womb, and therefore not used inwardly in uterine diseases: purges of melancholy are, pilulæ eumartæ, pilulæ indæ. pilulæ de lap. lazuli liosena, and confectio hameighi. Take of stamp't prunes two ounces; senna one dram; epithemum, polypody, fumetory, of each a dram and a half; sour dates an ounce; with endive water make a decoction; take of it four ounces; add unto it confections amech three drams, manna three drams.

Or, pil. indatum, pil. fætidaruni, agarici trochiscati, of each one scruple, lapis lazuli, five grains; with syrup of erithimum make pills, and take one every week.

If the matter of the flux be choleric, prepare with syrup of endive, violets, succory, roses, and purge with mirabolons, manna, rhubarb, cassia; take of rhubarb two drams, anniseed one dram, cinnamon a scruple and a half; infuse them in six ounces of prune broth; add to the straining, of manna an ounce, and take it according to art. Take spicerum diatrionsontalon, diatragacanth. frig. diarrhod. abbatis diacoinit, of each a dram; sugar four ounces; with plantain water make lozenges.

Lastly, let the womb be cleansed from the corrupt matter, and then corroborated; and for the cleansing thereof, make injections of the decoction of bettony, feverfew, mugwort, spikenard, bistort, mercury, sage, adding thereto sugar, oil of sweet almonds, of each two ounces. Then to corroborate the womb, prepare trochisks in this manner: take of myrrh, feverfew, mugwort, nutmegs, mace, amber, ligni aloes, storax, red roses, of each an ounce; with mucilage of tragacanth, make trochisks; cast them on the coals, and smother the womb therewith; a fomentation may be also made for the womb of red wine, in which has been decocted mastich, fine bole, balustia, and red roses: drying diet is best, because this distemper usually abounds with phlegmatic and crude humours. Immoderate sleep is hurtful, but moderate exercise will do well.

Thus have I gone through the principal disorders peculiar to the female sex; and prescribed for each of them such remedies as, with the divine blessing, will cure their distempers, confirm their health, and remove all those obstructions which might otherwise prevent their bearing children: and I have brought it into so narrow a compass that it might be of the more general use, being willing to put it into every one's power, that has occasion for it, to purchase this rich treasure at an easy rate.

END OF THE EXPERIENCED MIDWIFE.

ARISTOTLE'S
PROBLEMS;

WITH

OTHER ASTRONOMERS, ASTROLOGERS, PHYSICIANS AND PHILOSOPHERS:

WHEREIN ARE CONTAINED,

*Divers Questions and Answers touching the
State of Man's Body.*

READER.

THESE Problems having been printed very often, and finding so general an acceptance, divers books have been foisted upon the world under the name of ARISTOTLE; so that many people have bought them, thinking they had the right sort, by which the public has been injured as well as the proprietors.

The matter it contains is necessary for all people to know; and as man is said to be a microcosm, or little world; and in him the Almighty has imprinted his own image so lively, that no power whatsoever is able to blot it out; so this image and similitude is the soul and understanding. And notwithstanding all the perfections which man hath in himself, few or none can take delight in the study of himself, or is careful to know the substance, state, condition, quality or use of the several parts of his own body; although he be the honour of nature, and more to be admired than the strangest and rarest wonder that ever happened. I have therefore published this little book, wrote by ARISTOTLE, and the deepest philosophers, who teach the use of all parts of the body, their nature, quality, property and substance; and question not but it will afford both innocent, necessary and useful knowledge, and also prove profitable to both sexes.

ARISTOTLE'S PROBLEMS.

AMONG all living creatures, why hath man only his countenance lifted up towards heaven?

Unto this question there are divers answers:—

First, it proceeds from the will of the Creator. And although the answer be true, yet it seemeth not to be of force, for so all questions might be answered.

Secondly, I answer, that for the most part every workman doth make his first work worse, and then his second better; so God, creating all other beasts before man, gave them their face looking down to the earth: and then, secondly, he created man, as doth appear in *Genesis*, unto whom he gave an honest shape, lifted unto heaven, because it is drawn from divinity, and doth also derogate from the goodness of God, who maketh all his works perfect and good.

Thirdly, It is answered, that man only among all living creatures is ordained to the kingdom of heaven, and therefore hath his face elevated and lifted up to heaven, because that, despising worldly things, he ought to contemplate only heavenly things.

Fourthly, that the reasonable part is like unto angels, and finally ordained towards God; as it appears by Averrois, in the *first de Anima*; and therefore he hath a figure looking upward.

Fifthly, That man is a microcosm, that is, a little world, as Aristotle saith, and therefore he doth command all other living creatures and they obey him.

Sixthly, It is answered, that naturally there is unto every thing and every work that form and figure given which is fit and proper for its motion; as unto the heaven roundness, to the fire a pyramidal form, that is, round beneath and sharp towards the top, which form is most apt to ascend; and so man hath his face lifted up towards heaven to behold the wonders of God's works.

Why is the head of beasts hairy?

The answer is, according to the opinion of Const. that the hairs are the ornament of the head and of the brain, and the brain is purged and evacuated of gross humour by the growing of the hair, from the highest unto the lowest parts, which pass through the pores of the exterior flesh and do become dry, and are converted into hairs. This appears to be true, because that in a man's body there is nothing dryer than the

hairs; for they are dryer than the bones, as Albertus Magnus doth affirm; because that some beasts are nourished with bones, as dogs, but no beasts can digest feathers or hair, but do void them undigested, being too hot for nutriment.

Secondly, It is answered, that the brain is purged four manner of ways: first, of superfluous watery humours by the eyes, from melancholy by the ears, of choler by the nose, and phlegm by the hair; and that is the intent of the physician.

Why have men longer hair on their heads than other living creatures?

Arist. de Generat. Anim. says, that men have the moistest brain of all living creatures, from which the seed proceedeth, which is converted into the long hair of the head.

Secondly, It is answered, that the humours of man are fat, and do not become dry easily, and therefore the hair groweth long in him. In other beasts the humours easily dry, and therefore the hair groweth not so long.

Why doth the hair take deeper root in man's skin than in other living animals?

Because they have greater store of nourishment in man, and therefore grow more into the inward parts of man. And this is also the reason why in other creatures the hair doth alter and change with the skin, and not in man, unless it be sometimes a scar or wound.

Why have women longer hair than men?

Because women are moister than men, and phlegmatic, and therefore there is more matter of hair in them; and by consequence the length also of their hair doth follow.

And furthermore, this matter is more increased in women than in men from their interior parts, and especially in the time of their monthly terms, because the matter doth then ascend, whereby the humour which breedeth the hair doth increase. And Albertus doth say, that if the hair of a woman in the time of her flowers be put into dung, a venomous serpent is engendered of it.

Secondly, Because women want beards, and so the matter of the beard doth go into the matter of the hair.

Why have some men soft hair and some hard?

We answer with Aristotle, that the hair hath proportion with the skin, of which some is hard, some thick, some subtle and soft, and some gross; therefore the hair which groweth out of a thick and gross skin is thick and gross, and that which groweth out of a subtle and fine is fine and soft; and when the pores are open, then cometh forth much humour, and therefore hard hair is engendered; and when the pores are strait, then there doth grow soft and fine hair. And this

doth Aristotle shew in men, in whom we have an eminent token, because women have softer hair than they; for in women the pores are shut, and are strait by reason of their coldness.

Secondly, Because that for the most part choleric men have harder and thicker hair than others, by reason of their heat, and because the pores are for ever open in them, and therefore they have beards sooner than others. Whereupon the philosopher saith, that those beasts which have hard hair are the boldest, because such hair proceedeth of heat and choler, which choler maketh man fight. Aristotle also giveth an example in the bear and the boar; and contrariwise, beasts that have soft hair are fearful, because they be cold, as the hare and hart. Aristotle doth give another reason for the softness and hardness of the hair, drawn from the climate where a man is born; because that in hot regions hard and gross hair is engendered, as appears in the Ethiopians; and the contrary is true in a cold country, as appears in the North.

Why have some men curled hair and some smooth?

The answer is, That the cause of the curling of the hair is by great abundance of heat in a man, that the hair doth curl and grow upward. And a sign of this proveth true, because that sometimes a man doth enter into a bath smooth haired, afterwards by bathing he becometh curled; and therefore the keepers of baths have often curled hair, as also the Ethiopians and choleric men. But the cause of smoothness is the abundance of moist humours which tend downwards; and a proof of this is, because they have humidity in them and small heat.

Why do women shew their ripeness by the hair on their privy parts, and not elsewhere, but men in their breasts?

We answer, physician like, because in men and women there is abundance of humidity in that place; but more in women, because men have the mouth of the bladder in that place where the urine is contained, of which hair in the breasts is engendered, and above the navel. But of women it is said, that the humidity of the bladder, and of the matrix or womb, is joined, and meeteth in that low secret place; and therefore is dissolved and separated in that place through much vapours and fumes, which are the cause of hair. And the like doth happen in other places, as where hair is under the arms.

Why have not women beards?

Because they want heat, as appeareth in some effeminate men, who are beardless from the same cause, because they have the complexion of a woman.

Why doth the hair grow in them that are hanged?

Because their bodies are exposed to the sun, which through

its heat does dissolve the moisture into a fume or vapour, of which the hair doth grow and increase.

Why is the hair of the beard thicker and grosser than elsewhere, and the more men are shaven the harder and thicker it groweth?

Because, according to the rule of the physicians, by how much more the humour or vapour of any liquor is dissolved and taken away, by so much the more the humour remaining doth draw to the same; and therefore by how much more the hair is shaven, so much the humours gather thicker; and of them hair is engendered, and doth there also wax hard.

Why are women smooth and fair in respect of men?

The answer is, according unto *Arist. de Generat Anim.* because that in women all humidity and superfluity, which are the matter and cause of the hair of the body, is expelled with their monthly terms; the which superfluity remaineth in men, and through vapours do pass into the hair. And a sign of this is, because women having a running at the nose, or imposthume, or ulcer, no such matter is expelled. And we see some old women begins to have beards in their old age, and this, after forty or fifty years of age, when their flowers have ceased.

Why doth man only, above all other creatures, wax hoary and grey?

The answer, according to the philosophers, is because man hath the hottest heart of all living creatures; therefore wise nature, lest a man be suffocated through the heat of his heart, which is most hot, hath placed it under the brain which is most cold; to the end that the heat of the heart may be tempered with the coldness of the brain, and the coldness of the brain may be heated with the heat of the heart, by which there might be a temperature in both. A sign to prove this is, because of all living creatures man hath the worst breath if he comes to his full age. Furthermore, man doth consume half his time in sleeping, which doth proceed from the great access of the coldness and moisture of the brain, and by that means doth want natural heat to digest and consume that moistness; the which heat he hath sufficiently in his youth; and therefore in that age is not grey; but in his old age, when heat faileth, and therefore vapours ascending from the stomach remain undigested and unconsumed for want of natural heat, and then putrefy; of which putrefaction of humours the whiteness doth follow, which is called greyness or hoariness. By which it doth appear, that hoariness is nothing else but a whiteness of hair, caused by the putrefaction of humours about the roots of the hair, through the want of natural heat in old age. Sometimes also greyness is caused

by the naughtiness of the complexion, which may happen in youth, and sometimes by reason of the moisture undigested, and sometimes through over great fear and care, as it appeareth in merchants, sailors, and thieves: whence cometh this verse;

“Cura facit canos quam vis homo non habet at nos.”

Why doth red hair grow white sooner than any other?

According to the opinion of Aristotle, because redness is an infirmity of the hair; for it is engendered of a weak and infirm matter; that is to say, of matter corrupted with the flowers of the women, and therefore they wax white sooner than black hair.

Why do wolves grow grisly?

The better to understand this question, note the difference between greyness and grisliness. That of greyness is caused through the defect of natural heat, but grisliness through devouring and heating. The wolf being a devouring beast and a great eater, he letteth it down gluttonously without chewing, and that at once, enough for three days, by which meat gross vapours are engendered in the wolf's body, and by consequence grisliness. Secondly, Greyness and grisliness do differ, because greyness is only in the head, and grisliness over all the body.

Why do horses grow grisly and grey?

According to Aristotle, because they are for the most part in the sun: and in his opinion also, heat doth accidentally cause putrefaction; and therefore that kind of heat the matter of hair doth putrefy, and by consequence they are quickly pilled.

Why do men become bald, and trees let fall their leaves in the winter?

Aristotle doth give the same reason for both, because that the want of moisture in both is the cause of the want of the hair and of the leaves; and this is proved, because that a man becometh bald through venery, for that is letting forth of natural humidity and heat. And so by the excess of carnal pleasure moisture is consumed, which is the nutriment of the hair, and therefore baldness doth ensue. And this is evidently proved in eunuchs and women, who do not grow bald, because they do not depart from their moistness; and therefore eunuchs are of the complexion of women. But if you ask why eunuchs be not bald, nor have the gout, as Hippocrates saith, the answer is, according to Galen, because the cause of baldness is dryness, the which is not in eunuchs because they want their stones, which do minister heat unto all the parts of the body, and the heat doth open the pores, which being open, the hair doth fall.

Why are not women bald?

Because they are cold and moist, which are the causes that the hair remaineth; for moistness doth give nutriment to the hair, and coldness doth bind the pores.

Why are bald men deceitful, according to the verse,

“ Si non vis falli, fugius concerni . . . avi ? ”

Because baldness doth witness a choleric complexion, which is hot and dry; and choleric men are naturally deceitful, according to the verse,

“ Heritutes, fallax, irascens, prodigius audax.”

And therefore it followeth, *a primo ad ultimum*, that bald men are deceitful and crafty.

How comes it that blind are not naturally bald?

Because that, according to Aristotle, the eye hath most moisture in it, and that moisture which should pass through by the substance of the eyes, doth become a sufficient nutriment to the hair, and therefore they are seldom bald.

For what reason doth the hair stand on end when men are afraid?

Because in the time of fear the heat doth go from the outward part of the body into the inward, to the intent to help the heart, and so the pores in which the hair is fastened are shut up; after which stopping and shutting up of the pores the standing up of the hair doth follow, as is seen in beasts, as dogs, wild bears and peacocks.

Of the Head.

Why is a man's head round?

Because this is most fit to receive any thing into it, as Aristotle doth affirm, *Lib. de Cæs.* and the head doth contain in it five senses. This is also seen in a material sphere.

Why is the head round?

Aristotle saith, because it doth contain in it the moistest parts of the living creatures, and also because the brain may be defended thereby as with a shield.

Why is the head absolutely long but somewhat round?

To the end the three creeks and cells of the brain might the better be distinguished; that is, the fancy in the forehead, the discoursing or reasonable part in the middle, and the memory in the hindermost part.

Why doth a man lift up his head towards the heavens when he doth imagine?

Because the imagination is in the forepart of the head or brain, and therefore it lifteth up itself, that the creeks or cells of the imagination may be opened, and that the spirits which help the imagination, and are fit for that purpose, having recourse thither, may help it.

To what end doth a man when he museth or tbinketh on things past look down towards the earth?

Because the cell or creek which is behind, is the creek or chamber of memory, and therefore that looketh towards heaven when the head is bowed down; and so that cell is open, to the end that the spirits which perfect the memory should enter it.

How comes it that the head is not fleshy like other parts of the body?

Because that, according to Aristotle, the head would be too heavy, and would not stand steadfast; and therefore it is without flesh. Also a head loaded with flesh doth betoken an evil complexion.

Why is the head subject to aches and griefs?

According unto Const. by reason the evil humours, which, proceeding from the stomach, ascend up to the head, and disturb the brain, and so cause the pain in the head. Sometimes it proceeds from overmuch filling the stomach, because, according to the opinion of Galen, two great sinews pass from the brain to the mouth of the stomach, and therefore these two parts do suffer grief always together. Sometimes the head-ach doth proceed of drinking strong wines, of fuming meats, as garlic or onions; sometimes of phlegm in the stomach, whereof spring quotidian fevers.

Why have women the head-ach oftener than men?

Albertus saith that it is by reason of their monthly terms, which men are not troubled with; and so a moist, unclean and venomous fume is dissolved, which seeking a passage upward, doth cause the head-ach.

Why is the brain white?

There are two answers: the first, because it is cold, and coldness is the mother of white: the philosophers do teach the second, because it may receive the similitude and likeness of all colours, which the white colour can best do, because it is most simple.

How comes it that all the senses are in the head?

Because, as Albertus saith, the brain is there, on which all the senses depend, and are directed by it, and by consequence it maketh all the spirits to feel, and by it all the membranes are governed.

Why cannot a man escape death if the brain or heart be injured?

Because the brain and heart are two of the most principal parts which concern life; and therefore if they be hurt there is no remedy or cure.

For what purpose is the brain moist?

Because it may easily receive an impression, which moist-

ure can best do, as appeareth in wax, which doth easily receive the print of a seal when it is soft.

Why is the brain cold?

This is answered two ways; first, because by this coldness it may clear the understanding of a man, and make it subtie. Secondly, that by the coldness of the brain the heat of the heart may be tempered; and this Aristotle also teacheth.

Of the Eyes.

Why have you one nose and two eyes?

Because our light is more necessary for us than smelling: and therefore it doth proceed from the goodness of nature, that if we receive any hurt or loss of an eye, that yet the other should remain: unto the which the spirit with which we see, called *spiritus visus*, is directed, when the other is out.

Why have children in their youth great eyes, and why do they become smaller and lesser in their age?

According to Aristotle *de generat.* it proceedeth from the want of fire, and from the assemblage and meeting together of light and humour. The eyes being lightened by reason of the sun, which doth lighten the humours of the eye, and purge it; and in the absence of the sun those humours become dark and black, and therefore the sight is not good.

Why does the bluish grey eye see badly in the day-time and well in the night?

Because, saith Aristotle, greyness is light and shineth of itself, and the spirits with which we see are weakened in the day-time and strengthened in the night.

Why are men's eyes of divers colours?

This proceedeth by reason of the diversity of the humours; the eye therefore hath four coverings and three humours; the first covering is called *consolidative*, which is the uttermost, and is strong and fat. The second is called an *horny skin or covering*, to the likeness of horn, and that is a clear covering. The third is called *uvea*, of the likeness of a black grape. The fourth is called a *cobweb*. But, according to the opinion of some, the eye doth consist of seven coverings or skins, and three humours. The first humour is called *abunquines*, for the likeness unto the white of an egg. The second *glarial*, that is, clear, like unto ice or crystalline. The third *vitreous*, that is, clear as glass. And the diversity of humour causeth the diversities of the eyes.

Why are men who have but one eye good archers? and why do good archers commonly shut one eye? and why do such as behold the stars look through a trunk with one eye?

This matter is handled in the perspective arts, and the reason is, as it appeareth in the book of causes, because that every virtue and strength, united and knit together, is stronger than of itself dispersed and scattered. Therefore all the force of seeing dispersed into the two eyes, one of them being shut, it is gathered into the other, and so the light is fortified in it; the consequence is, he doth see better and more certainly with one eye being shut than both being open.

Why do such as drink and laugh much shed many tears?

Because that whilst they drink and laugh without measure, the air which is drawn in doth not pass out through the wind-pipe, and so with force is directed and sent to the eyes, and passing out by their pores doth expel the humours of the eyes, which humours being so expelled do bring tears.

Why do such as weep much urinate but little?

Because, saith Aristotle, the radical humidity of a tear and of urine are of one and the same nature; and therefore where weeping doth increase, there urine doth diminish; and that they be of one nature is plain to the taste, because they are both salt.

Why do not some persons that have clear eyes see distinctly?

By reason of the oppilation and naughtiness of the sinews with which we see; for the temples being destroyed, the strength of the light cannot be carried from the brain to the eye.

Why is the eye clear and smooth like unto glass?

Because the things which may be seen are better beaten back from a smooth thing than otherwise, that thereby the sight should be strengthened.

Secondly, I answer, it is because the eye is very moist, above all parts of the body, and of a waterish nature; and as the water is clear and smooth, so likewise is the eye.

Why do men who have their eyes deep in their head see well afar off, and the like in beasts?

Because, saith Aristotle, (*2 de Gener. Animal*) the force and power by which we see is dispersed in them, and doth go directly to the thing which is seen. And this is proved by a similitude, because that when a man doth stand in a deep ditch or well, he doth see in the day time, standing in those places, the stars of the firmament; as Aristotle doth teach in his treatise *de Formula Specula*; because that then the power of the sight and of the beams is not scattered.

Wherefore do those men who have their eyes far out, and not deep in the head, see but meanly, and not far distant?

Because, saith Aristotle, the beams of the sight which pass from the eye are scattered on every side, and go directly

unto the thing that is seen, and therefore the sight is weakened.

Why are many beasts born blind, as the whelps of lions and dogs ?

Because such beasts are not yet of perfect ripeness and maturity, and the course of nutriment doth not work in them. And this is proved by a similitude in the swallow, whose eyes, if they were taken out when they are little ones in the nest, would grow again; and this is plain in many other beasts who are brought forth before their time as it were dead, as the whelps of bears. And this reason doth belong rather to the perspective than the natural philosopher.

Why do the eyes of a woman that bath her flowers stain a new glass, as Aristotle saith, de somno & vigil; and this is like the problem, why doth a basilisk kill a man with his sight ?

To the first I answer, that when the flowers do come from a woman, then a most venomous air is dissolved in them, which doth ascend into the woman's head; and she having grief of her head, doth cover it with many veils and handkerchiefs; and because the eyes are full of small insensible holes, which are called pores, there the air seeketh a passage, and so doth infect the eyes which are full of blood, and their eyes do appear also dropping and full of tears by reason of the evil vapour that is in them, and those vapours are incorporated and multiplied, until they come unto the glass before them; and by reason that such a glass is found clear and smooth, it doth easily receive that which is unclean.

To the second it is answered, that the basilisk is a very venomous and infected beast, and that there pass from his eyes venomous vapour, which are multiplied upon the thing which is seen by him, and even unto the eye of man; the which venomous vapours or humours entering into the body do infect him, and so in the end the man dieth. And this is also the reason why the basilisk, looking on a shield perfectly well made with fast clammy pitch, or any hard smooth thing, doth kill himself, because the humours are beaten back from the smooth hard thing unto the basilisk, by which beating back he is killed. And the like is said of a woman when she hath her monthly disease. whereof it followeth that some old women do hurt themselves when they look upon glasses, or other firm and solid things in the time of their terms.

Why are the sparkling eyes of cats and wolves seen in the dark and not in the light ?

Because that the greater light doth darken the lesser, and therefore in a greater light the sparkling cannot be seen, but the greater the darkness the easier it is seen and is made more

strong and shining, because it is not then hindered by a greater external light, which might darken it.

Why doth a man after beholding himself in a glass presently forget his own disposition?

Answer is made in *Lib. de Formu Speculi.* that the image seen by the glass doth represent it weakly and indirectly to the power of the sight; and because it is represented weakly it is also apprehended weakly, and by consequence is not long retained.

Why is the sight recreated and refreshed by a green colour, as this verse sheweth?

“ Fens, speculum gramen oculis sunt aleviamem ”

Because the green colour doth meanly move the instrument of sight, and therefore doth comfort the sight; but this doth not black nor white colours, because the colours do vehemently stir and alter the organ and instrument of the light, and therefore make the greater violence, but by how much the more violent the thing is which is felt or seen, the more it doth destroy and weaken the sense.

Of the Nose.

Why doth the nose stand out farther than other parts of the body?

There are two answers: The first, because the nose is as it were the sink of the brain, by which the phlegm of the brain is purged, and therefore it doth stand forth lest the other parts should be defiled. The second is, (according to Constant.) because the nose is the beauty of the face, and therefore it doth shew itself, and shine. It doth smell also, and adorn the face, as Bœtius saith, *de Descrip. School.*

Why have men the worst smell of all living creatures?

Because the man, as the commentator saith, in respect of its quantity, hath the most brain of all creatures; and therefore by that exceeding coldness or moistness the brain wanteth a good disposition, and by consequence the smelling instrument is not good, as Aristotle and Themistocles do teach; yea, some men there be which do not smell at all.

Why doth the vulture or cormorant smell very well, as the commentator doth say?

Because they have a very dry brain, and therefore the air carrying the smell is not hindered by the humidity of the brain, but doth presently touch its instrument; from whence Aristotle saith, that the vultures, tygers, and other beasts came five hundred miles to the dead bodies after a battle in Greece.

Why did nature make the nostrils?

For three commodities: First, because the mouth being

shut, we might draw breath in by the nostrils to refresh the heart with. The second commodity is, because that the air which proceedeth from the mouth doth savour badly, because of the vapours which rise from the stomach, but that which we breathe from the nose is not noisome. The third is, because the phlegm which doth proceed from the brain is purged by them.

Why doth man sneeze ?

Because that the expulsive virtue of power and the sight should thereby be purged, and the brain also, from superfluities ; because as the lungs are purged by coughing, so is the sight and brain by sneezing ; and those who sneeze often are said to have a strong brain ; and therefore the physicians give sneezing medicaments to purge the brain, and such sick persons as cannot sneeze die quickly, because it is a sign their brain is wholly stuffed with evil humours which cannot be purged.

Why do such as are apoplectic sneeze ; that is, such as are subject easily to bleed ?

Because the passages or ventricles of the brain are stopped in them ; and if they could sneeze, their apoplexy would soon be loosed.

Why doth the heat of the sun provoke sneezing, and not the heat of the fire ?

Because the heat of the sun doth dissolve and not consume ; and therefore the vapour dissolved is expelled by sneezing ; but the heat of the fire doth dissolve and consume, and therefore doth rather hinder sneezing than provoke it.

Of the Ears.

Why do beasts move their ears and not men ?

Because there is a certain muscle near unto the jaw which doth cause motion in the ear ; and therefore, that muscle being extended and stretched, men do not move their ears, as it hath been seen in divers men, but all beasts do use that muscle or fleshy sinew, and therefore do move their ears.

Why is rain prognosticated by the pricking up of asses ears ?

Because the ass is a very melancholy beast, and it proceedeth from melancholy that he doth foresee rain to come. In the time of rain all beasts do prick up their ears ; and therefore the ass, perceiving that it will rain, doth prick up his ears before it come.

Why have some beasts no ears ?

Aristotle doth answer and say, that nature doth give unto every-thing that which is fit for it ; but if she should have given birds ears, their flying would have been hindered by them ; likewise fish do lack ears, because they would hinder

their swimming, and have only certain little holes through which they hear, as Aristotle declares by the sea-calf.

Why have bats ears, seeing they seem to be birds ?

Because they are partly birds in nature, in that they do fly, by reason whereof they have wings, and partly are hairy because they are mice ; therefore nature, as being wise, gave them ears.

Why have men only round ears ?

Because the shape or the whole end of the parts should be proportionable, and especially in all things of one nature ; or, as a drop of water is round, so the whole water, as John de sacro Bosco doth prove ; and so because a man's head is round, the ears incline towards the same figure ; but the head of beasts are somewhat long, and so the ears are drawn into length also.

Why did nature give living creatures ears ?

From two causes : 1. Because with them they should hear. 2. Because that by the ears choleric superfluity is purged ; for as the head is purged of phlegmatic superfluity by the nose, so from choleric by the ears.

Of the Mouth.

Why hath the mouth lips to compass it ?

According to Const. because the lips do cover and defend the teeth, it were unseemly that the teeth should always be seen. Another answer is, that the teeth are of a cold nature, and would therefore be soon hurt if they were not covered with lips. Another reason is, because a man should not be too hasty of speech.

Why hath a man two eyes, two ears, and but one mouth ?

Because a man should speak but little, and bear and see much. And withal, Aristotle doth say, that the hearing in the light doth shew us the difference of many things ; and Seneca doth agree unto this, affirming that nature environed the tongue with a double cloister, and teeth, and lips, and has made the ears open and wide, and has given us but one mouth to speak but little, though we hear much.

Why hath a man a mouth ?

For many commodities : 1. Because the mouth is the gate and door of the stomach. 2. Because the meat is chewed in the mouth, and prepared and made ready for the first digestion is made in the mouth. 3. Because that the air drawn unto the hollow of the mouth for the refreshing of the heart is made more pure and subtile. And for many other causes.

Why are the lips moveable ?

Because of forming the voice and words, which cannot be

perfectly done without them. For as without *a, b, c*, there is no writting; so without the lips no voice can be well formed.

Why do men gape?

This gloss upon the last part of Hippocrates Aphorisms saith, that it proceeds of wearisomeness, as when a man sitteth among such as he doth not know, whose company he would willingly be rid of. Gaping is also caused of the thick fumes and vapours that fill the jaws, by the expulsion of which is caused the stretching out and expulsion of the jaws, and opening of the mouth, which is called gaping.

Why doth a man gape when he sees another man gape?

This proceedeth of imagination. And this is proved by a similitude; for an ass is an animal void of sense, by reason of his melancholy, because he doth retain his superfluity a long time, and would neither eat nor piss, unless he should hear another piss; and so a man gapes through imagination when another man gapes.

Of the Teeth.

Why do they only amongst all other bones feel the sense of feeling?

Because, as Avicen and Galen do say, they might discern of heat and cold which hurt them, which sense other bones need not.

Why hath men more teeth than women?

By reason of the abundance of heat and blood which is more in men than in women.

Why do the teeth grow in the end of our life, and not the other bones?

Because, otherwise, they would be consumed with chewing and grinding.

Why do the teeth only come again when they fall or are taken out, and other bones taken away grow no more?

Because that, according to Aristotle, all other bones are engendered of the humidity which is called radical, and so they breed in the womb of the mother, but the teeth are engendered of nutritive humidity, which is renewed and increased from day to day.

Why do the fore teeth fall in youth, and grow again, and not the cheek teeth.

This proceedeth of the defect of matter, and of the figure, because the fore teeth are sharp, and the others broad. But, according to Aristotle, there is another answer; that is, that it is the office of the fore teeth to cut the meat, and therefore they are sharp; the office of the other is to chew

the meat, and therefore they are broad in fashion, which is fittest for that purpose.

Why do the fore teeth grow the soonest?

Because we want them sooner in cutting than the other in chewing.

Why do teeth grow black in the old age of humam creatures?

This proceedeth of the corruption of the meat and of the phlegm, with choleric humours.

Why are colts teeth yellow, and of the colour of saffron, when they are young, and wax white when they are old?

Aristotle saith, that a horse hath abundance of watery humours in him, which in his youth are digested and converted into grossness; but in old age heat is diminished, and the watery humours remain, whose proper colour is white.

Why did nature give living creatures teeth?

Aristotle saith, *Lib. de Generat. Animal.* to some to fight with, and for the defence of their lives, as unto wolves and bears; unto some to eat with, as unto horses; unto some for the forming of their voice, as unto men.

Why do horned beasts want their upper cheek teeth?

According to Aristotle, in his book *de animal.* horns and teeth are caused of the self-same matter, that is, of nutritional humidity, and therefore the matter which passeth into horns turneth not into teeth, consequently want the upper teeth. And such beasts, according unto Aristotle, cannot chew well; wherefore for want of teeth they have by consequence two stomachs, and so do chew their meat twice; and they do first convey their meat into the first stomach or belly, and then return it from whence it came, and chew it.

Why are some creatures brought forth with teeth, as kids and lambs, and some without, as men?

Nature doth not want in things necessary, nor abound in any thing superfluous; and therefore, because these beasts not long after they be fallen do need teeth, are fallen with teeth; but men are nourished with their mother's dugs for a time, and therefore for a time do not want teeth.

Why have not birds teeth?

Because the matter of teeth passeth into their beak, and therefore there is their digestion; or else it is answered, that although they do not chew with teeth, yet their beaks in digestion do supply the want of teeth.

Of the Tongue.

Why is the tongue full of pores?

According to Aristotle *de Animal*, because the tongue is the means whereby we taste; and through the mouth, in the

pores of the tongue the taste doth come into the sense of tasting. Otherwise it is answered, that frothy spittle is sent into the mouth by the tongue from the lungs moistening the meat, and make it ready for the first digestion; and therefore the tongue is full of pores, because many have passage through it.

Why do the tongues of such as are sick of agues judge all things bitter?

Because the stomachs of such persons are filled with choleric humours, and choler is very bitter, as it appeareth by the gall, and therefore this bitter fume doth infect their tongue, and so the tongue being full of these tastes doth judge them bitter, although the bitterness be not in the meat but in the tongue.

Why doth the tongue water when we hear sour and sharp things named?

Because the imaginative virtue or power is of greater force than the power and faculty of tasting; and when we imagine a taste, we conceive it by the power of tasting as by a mean, because there is nothing felt by the taste, but by means of that spittle the tongue doth water.

Why do some stammer and lisp?

This happeneth from many causes, sometimes through the moistness of the tongue and brain, as children which cannot speak plainly, nor pronounce many letters. Sometimes it happeneth by reason of the shrinking of certain sinews, which are corrupted with phlegm: for such sinews there be that go to the tongue.

Why are tongues of serpents and mad-dogs venomous?

Because of the malignity and fumosity of the venomous humours which doth predominate in them.

Why is a dog's tongue fit and apt for medicine, and contrariwise an horse's tongue pestiferous?

It is by reason of some secret property, or else it may be said the tongue of a dog is full of pores, and so doth draw and take away the viscosity of the wound. Some say that a dog hath by nature some humour in his tongue, with the which by licking he doth heal; the contrary is in a horse.

Why is spittle white?

By reason of the continual moving of the tongue whereof heat is engendered, that doth make white this superfluity, which is spittle.

Why is spittle unsavoury and without taste?

If it had a certain determinate taste, then the tongue would not taste at all, but would have only the taste of spittle, and so could not receive other tastes.

Why doth the spittle of one that is fasting heal an imposthume?

Because, according to Avicen, it is well digested, and made subtle.

Why do some abound in spittle more than others?

This doth proceed of a phlegmatic complexion that doth predominate in them, and therefore the complexion that do say, that such should take care of a quotidian ague, which ariseth from predominance of phlegm; the contrary in those that spit little, because heat abounds in them, which consumes the humidity of the spittle; and so the defect of spittle is a sign of fever.

Why is the spittle of a man that is fasting more subtle than one who is full?

Because that the spittle is without the viscosity of meat, which is wont to make the spittle of one who is full gross and thick.

From whence proceedeth the spittle of men?

From the froth of the lungs, which, according to the physicians, are the seat of phlegm.

Why are such beasts as often go together for generation very full of foam and froth?

Because that then the lights and the heart are in a great motion of lust, and there is engendered in them much frothy matter.

Why have not birds spittle?

Because they have very dry lungs.

Why do such as are called epileptic, that is, such as are overwhelmed and as it were drowned in their own blood, and are diseased, savour badly and corruptly?

The answer according to the physicians is, because the peccant matter lieth in the head; but if he do vomit then the matter is in the stomach; but if he piss much, then the matter is in the passage of the urine; and if they begin to have seed, then it is in the vessels of the seed, and doth purge them.

Why doth the tongue lose sometimes the use of speaking?

The answer is out of Hippocrates, that this doth happen through a palsy or apoplexy, that is, a sudden effusion of blood, and of a gross humour, and sometimes also by infection of *spiritus animalis* in the middle cell of the brain, which hinders the spirits from being carried to the tongue; and so is Galen's meaning, for by the expression of the tongue many actions of divers passions are made manifest.

Of the Roof of the Mouth.

Why are fruits, before they be ripe, of a naughty relish, or bitter, and afterwards sweet?

A naughty relish in taste proceedeth of coldness, and want of heat in gross and thick humidity; but a sweet taste proceedeth of sufficient heat; and therefore in the ripe fruit the humidity is subtle through the heat of the sun, and such fruits are commonly sweet; but before they be ripe, as humidity is gross or subtle for want of heat, the fruit is bitter and sour.

Why are we better delighted with sweet tastes than with bitter?

Because nature is delighted with sweetness; the reason is, because a sweet thing is hot and moist, and though his heart doth dissolve and consume superfluous humidities, and by this humidity immundicity is washed away; but a sharp eager taste, by reason of the cold which predominates in it, doth bind overmuch, and prick and offend the parts of the body in purging, and therefore we do not delight in that taste, because the physicians counsel us not to eat any thing that is bitter in the summer, nor in a great heat; and the reason is, because bitterness doth breed heat; but we should eat bitter things in winter only; and therefore Aristotle doth say, that sweet things are grateful unto nature, and do greatly nourish.

Why doth a sharp taste, as of vinegar, provoke appetite rather than any other?

Because it is cold and doth cool. Now it is the nature of cold to desire and draw, and therefore is the cause of appetite. Mark, that there are nine kinds of tastes; three of which proceed from heat, three from cold, and three from a temperate mean.

Why do we draw in more air than we breathe out?

Aristotle and Albertus in their book *de motu cordis*, do answer, That much air is drawn in, and so converted into nutriment, which, together with the vital spirits, is contained in the lungs. Wherefore a beast is not suffocated so long as he receives air with the lungs, in which some part of the air remaineth also.

Why doth the air seem to be expelled and put forth, seeing that indeed the air is invisible, by reason of its variety and thinness?

Because the air which is received in us, is mingled with vapours and fumosity of the heart, by reason whereof it is made thick, and so is seen. And this is proved by experience, because that in winter we see our breath for the coldness of air doth bind the breath mixed with fumosities, and so it is thickened and made gross, consequently is seen.

Why have some men a stinking breath?

The answer is, according to the physicians, because there rise evil fumes from the stomach; and sometimes it doth proceed from the corruption of the airy parts of the body, as of

the lungs. And the breath of lepers is so infected, that it doth poison the birds that are near them, because the inward parts are very corrupt, as appears by *Const. de Sin.* Now the leprosy is a nourishment of all the parts of the body, together with a corrupting of them; and it doth begin in the blood and exterior members of the body.

Why are lepers hoarse?

Because that in then the vocal instruments are corrupted, that is the lights.

Why do men become hoarse?

Because of the rheum descending from the brain filling the conduit of the lights; or sometimes through imposthumes of the throat, or rheum gathering in the neck.

Why have females of all living creatures the shrillest voice, a cow only excepted, and a woman shriller than a man, and also smaller?

By reason of the composition of the veins the vocal arteries of the voice are formed, as appears by a similitude, because a small pipe sounds shriller than a great one. And also in women, because the passage where the voice is formed is made narrow and strait, by reason of cold, it being the nature of cold to bind; but in men the passage is open and wider through heat, because it is the property of heat to open and dissolve. It proceedeth in women through the moistness of the lungs and weakness of the heart. Young men and diseased have sharp and shrill voices for the same cause. And this is the natural cause why a man child at his birth doth cry, *a, i*, which is a bigger sound, and the female *e*, which is a more slender sound.

Why doth the voice change in men and women; in men at fourteen, in women at twelve; in men when they begin to yield seed, and in women when their breasts begin to grow?

Because then, said Aristotle, the beginning of the voice is slackened and loosened; and he proves this by a similitude of a string of an instrument let down or loosed, which gives a great sound. He proves it another way, because creatures which are gelded, as eunuchs, capons, &c. have softer and slenderer voices than others, by reason they want stones.

Why is not a wolf scarce when a man looks on him?

Because a man is not so cold as a wolf, nor of so malignant a quality.

Why doth a man that is slain, bleed when he is seen of him that killed him?

This proceedeth of divine cause, and not of a natural, because his blood calleth for vengeance against the murderer; but if there be any natural cause of it, it is this the com-

mitter of this wicked fact calleth it to mind, is very sorry for it, and repents him of it; is in anguish of mind, and in a great heat through the imagination he hath conceived, and by that means all his spirits do stir and boil, and repair unto the instruments of the sight of the eyes, unto the wounds which are made, and if they be fresh do presently fall a bleeding. Besides, this is done by the help of the air then breathed in, which, being drawn from the wound, causeth it to bleed.

Why do small birds sing more and louder than great ones, as appears in the lark and the nightingale?

Because the spirits of small birds are subtle and soft, and the organ conduit strait, as appeareth in a pipe; and therefore they do sing very loud.

Why doth the male sing more than the female, as appeareth in all living creatures?

It proceedeth from the desire of carnal copulation, because that then the spirits are moved throughout all the body with the aforesaid appetite and desire. And a female generally speaking is colder than a male.

Why do bees, wasps, flies, locusts, and many such like insects, make a noise, seeing they have no lungs, nor instruments of voice?

According to Aristotle, there is in them a certain small skin, which, when the air doth strike it, causeth a strange sound.

Why do not fish make a sound?

Because, according to Aristotle, they have no lungs, but only gills, nor yet a heart; and therefore they need not the drawing in of the air, and by consequence they make no noise, because that, according to Aristotle, a voice is a percussion of the air which is drawn in.

Of the Neck.

Why hath a living creature a neck?

Because the neck is the supporter of the head, as Aristotle teacheth; and therefore the neck is the middle between the head and the body, to the intent, by it and its sinews, as by certain means and ways, motion and sense of the body might be conveyed throughout all the body; and that by means of the neck, as it were by a distance, the heart, which is hot, might be separated by the brain.

Why do some beasts want necks, as serpents and fishes?

Because such beasts want a heart, and therefore they want not that distance which we have spoken of; or else we answer, they have a neck in some inward part of them, but it is not distinguished outwardly from the heart to the head.

Why is the neck full of bones and joints ?

Because it may bear and sustain the head the stronger ; also because the back bone is joined to the brain by the neck, and from thence it receives marrow, which is of the substance of the brain.

Why have some beasts long necks, as cranes, storks, and such like ?

Because such beasts do seek their living in the bottom of the water, and therefore have such necks ; and some beasts have short necks, as sparrows, hawks, &c. because such are ravenous beasts, and therefore for strength have short necks ; as appeareth in the ox, which has a short neck, and therefore strong.

Why is the neck hollow, and especially before and about the tongue ?

Because there be two passages, whereof the one doth carry the meat unto the nutritive instrument, as to the stomach and liver, and is called by the Greeks *osapagus* ; and the other is the windpipe.

Why is the artery made with rings and circles ?

The better to bow and give a good sounding again.

Why doth a chicken move a good space after his head is cut off, and a man beheaded never stirreth ?

Because chickens and such like have strait sinews and arteries, and therefore the spirit of moving continueth long after the head is off ; but men, and many beasts, have long and large sinews and arteries, and therefore the moving spirits do quickly depart from them, and so by consequence cannot move their bodies.

Of the Shoulders and Arms.

Why hath a man shoulders and arms ?

To give and carry burdens.

Why are his arms round ?

For the swifter and speedier working, because that figure is fittest to move.

Why are his arms thick ?

Because they should be strong to lift and bear burdens, or to thrust and give a strong blow : so their bones are thick, because they contain much marrow, for they would be easily corrupted and marred ; but marrow cannot so well be contained in small as in large bones.

Why do such as are diseased and in grief uncover and cover their arms, and such also as are in agony ?

Because such are near unto death ; and it is a sign of death, by reason of great grief, which causeth that uncovering.

Why do the arms become small and slender in some sickness, as in madmen and such as are ill of the dropsy?

Because all the parts of the body do suffer, the one with the other, and therefore one member being in grief, all the humours do concur and run thither to give succour and help; for when the head doth ach, all humours of the arms run into the head, therefore the arms become small and slender, for want of their proper nutriment.

Why have brute beasts no arms?

Their fore feet are instead of arms, and in their place; or else we may answer more fitly, because all beasts have some part for their defence and to fight with, as the wolf his feet, the cow her horns, the horse his hinder feet, birds their beaks and wings, but only man hath his arms.

Of the Hands.

For what use hath a man hands, and an ape also, which is like unto man?

The hand is an instrument which a man doth especially make use of, because many things are done by the hands, and not by any other part.

Why are some men ambo dexter, that is, use the left hand as the right?

By reason of the great heat of the heart, and for the not bowing of the same, for it is that which makes a man as nimble of the left hand as of the right; and without doubt are of good complexions.

Why are not women ambo dexter as well as men?

Because, as Galen saith, a woman in health that is most hot is colder than the coldest man in health; I say in health, for if she hath an ague she is accidentally hotter than a man.

Why are the fingers full of joints?

To be more fit and apt to receive, and to keep the things received.

Why hath every finger three joints, and the thumb but two?

The thumb hath three, but the third is joined unto the arm, therefore is stronger than the other fingers; and is called *apollon a polleo*, that is, to excel in strength.

Why are the fingers of the right hand nimbler than the fingers of the left?

It proceedeth from the heat that doth predominate in those parts, which causeth great agility.

Why are the fingers always thicker before meat than after?

According to the physicians, because a man that is fasting is full of bad humours and divers fumes, which puff up the parts of the body, and the fingers also; but when those

humours are expelled through meat, the fingers become more slender. And, for the same reason, a man that is fasting is heavier than when he hath meat in his belly, as is most plain in fasters. Another reason may be given, that is, because that after meat the heat is departed from the outward parts of the body into the inward, to help digestion, and the outward and external parts become slender; but after the digestion is made, the blood turneth again to the exterior parts, and then they become great again.

Why are some men left handed?

Because the heart sendeth out heat unto the right side, but more unto the left, and doth also work a slenderness and subtilty on the left side.

Of the Nails.

From whence do nails proceed?

Of the fumosity and humours which are resolved and go into the extremities of the fingers, and they are dried through the power of external air, and brought to the hardness of horn.

Why do the nails of old men grow pale and black?

Because the heat of the heart decayeth, which also causeth the beauty of the nails to decay.

How doth it happen that men are judged to be good or evil complexioned by the colour of their nails?

Because they give witness of the goodness or badness of the heart, and therefore of the complexion; for if they be somewhat red they betoken choler well tempered; but if yellowish or black they signify melancholy.

Why do white spots appear in the nails?

Through a mixture of phlegm with the nutriment.

Of the Breast.

For what reason is the breast hollow?

Because there is the seat of the spiritual and ærial members that are most noble, as the heart and lights; and therefore, because these might be kept from hurt, it was necessary that the breast should be hollow.

Why hath a man the broadest breast of all living creatures?

Because the spirits of men are weak and subtile, and therefore do require a spacious place wherein they are contained, as the breast is.

Why are breasts of beasts round?

Because they be in continual motion, and that figure is under the breast; and therefore that which the heart doth love we draw to the breast, by reason of the neighbourhood.

it has with the heart, so applying the thing loved unto the lover.

Why have women narrower breasts than men?

Because there is more heat in men, which doth naturally move to the uppermost part of them, making those parts great and large; and therefore a great breast is a token of courage, as is evident in the lion and bull; but in women cold predominates, which naturally tends downwards, and therefore, women often fall on their tail, because their hinder parts are gross and heavy, by reason of the cold ascending thither; but a man commonly falls on his breast by reason of its greatness and thickness.

Of the Paps and Dugs.

To what end are paps placed upon the breast?

Because the breast is the seat of the heart, which is most hot, and therefore the paps grow there, to the end that the menses being conveyed thither, as being near to the heat of the heart, should the sooner be digested and perfected, and converted into the matter and substance of milk.

Why are the paps below the breasts in beasts, and above the breasts in women?

Because a woman goes upright, and has two legs only; and therefore, if her paps should be below her breasts they would hinder her going; but beasts have four feet, and therefore they are not hindered in their going.

Why have not men ns great paps and breasts as women?

Because a man hath no monthly terms, and therefore hath no vessel deputed for them. And yet Aristotle saith, that men have small paps, and women have also little small stones.

Are great or small paps best for children to suck, or the mean between both?

In great ones the heat is dispersed, and there is no good digestion of the milk; but in small ones the power and force is strong, because a virtue united is strongest, and by consequence there is good working and digestion of the milk, and therefore the small are better than the great ones; but yet the mean ones are best of all, for every mean is best.

Why do the paps of young women begin to grow about thirteen or fifteen years of age?

Because then the flowers have no course to the teats, by which the young one is nourished, but follow their ordinary course, and therefore wax soft.

How doth it happen that a woman who is with child of a boy hath the right pap harder than the left?

Because the male child is conceived in the right side of the

mother, and therefore the flowers do run to the right paps, and make it hard.

Why doth it shew weakness in the child when the milk doth drop out of the paps before the woman be delivered?

Because the milk is the proper nutriment of the child in the womb of the mother; and therefore, if the milk run out, it is a token that the child is not nourished, and is weak.

Why doth the hardness of the paps betoken the health of the child in the womb?

Because the flowers are converted into milk, which milk doth sufficiently nourish the child, and thereby strength is signified.

Why hath a woman but two paps, and some brute beasts ten or more?

Because, for the most part, a woman hath but one child, either boy or girl, and therefore two paps are sufficient; but as beasts have many young ones, so therefore many teats.

But why are women's paps hard when they be with child, and soft at other times?

They swell then and are puffed up, because the great moisture which proceeds from the flowers doth run into the paps, which at other seasons remaineth in the matrix or womb, and is expelled by the place deputed for it.

How does the milk of the paps come to the matrix or womb?

According to Hippocrates, because there is a certain knitting and coupling of the pap with the womb, and there are certain veins which the midwives do cut in the time of the birth of the child, and by those veins the milk doth flow in at the navel of the child, and so it receives nutriment by the navel. Some say the child in the womb is nourished at the mouth, but it is false, because that so he would void excrements also; but that is false, because it is not seen where.

Why is it a sign of a male child in the womb when the milk that runneth out of the woman's breast is thick and not much, and of a female when it is thin?

Because a woman that goeth with a boy hath great heat in her, which doth perfect the milk and make it thicker; but such as go with a girl have not so much heat, and therefore the milk is undigested, unperfected, watery and thin, and will swim above the water if it be put into it.

Why is the milk white, seeing the flowers are red which it is engendered of?

Because blood which is well purged and concocted becometh white, as appeareth in flesh, whose proper colour is red, and being boiled is white. Another answer is, because every humour which is engendered of such part of the body is made like unto that part in colour where it is engendered, as near

as it can be ; but because the flesh of the paps is white, therefore the colour of the milk is white.

Why doth a cow give more milk than other breasts ?

Because she is a great eating beast ; and where much monthly superfluity is engendered there is much milk, because it is nothing else but that blood purged and tried, and because a cow hath much of this monthly blood, she has much milk.

Why is not milk wholesome ?

For divers reasons: First, because it doth curdle in the stomach, whereof an evil breath is bred. But to this Hippocrates gives this remedy ; saying, if the third part of it be mingled with running water, then it is not hurtful. Another reason is, because the milk doth grow sour in the stomach, where evil humours are bred which infect the breath.

Why is milk bad for such as have the head-ach ?

Because it is easily turned into great fumosities, and hath much terrestrial substance in it, the which ascending doth cause the head-ach.

Why is milk fit nutriment for infants ?

Because it is a natural and useful food, and they were nourished by the same in the womb.

For what reason are the white meats made of a new milched cow good ?

Because milk at that time is very spongy, expels many fumosities, and does as it were purge at that time.

Why is the milk nought for the child if the woman use carnal copulation ?

Because in time of carnal copulation the best part of the milk goes to the seed-vessels and to the womb, and the worst remains in the paps, which hurts the child.

Why is the milk of brown women better than that of white ?

Because brown women are hotter than others, and heat purges the milk, and so it is better.

Why do physicians forbid the eating of fish and milk at the same time ?

Because they produce a leprosy, and because they are both phlegmatic.

Why have not birds and fish milk and paps ?

Because paps would hinder the flight of the birds ; the fish also have neither paps nor milk, as Aristotle saith, but the females cast forth spawn, on which the male touches with a small gut, which causes their kind to be infinite in succession.

Of the Back.

Why have beasts backs ?

For three causes: First, because the back should be the

way and mean of body, from which are extended and spread throughout all the sinews of the back bone, as appears in such as are hanged; because when they are in pieces, or without flesh, the sinews hang whole in the chine or back bone. The second, because it should be a guard and defence for the soft parts of the body, as of the stomach, liver, lights, and such like. The third, because it should be the foundation of all the bones, because we see other bones, as the ribs, fastened to the back bone.

Why hath a man, above all other creatures, a broad back that he can lie upon?

Because a broad back doth answer a broad breast; if therefore man should have a sharp back like unto a beast, that would be an unseemly shape; and therefore it is requisite that he have a broad back.

Why hath a man that lieth on his back horrid visions?

Because the passage or sign of the phantasy is open, which is in the fore part of the brain, and so the phantasy is destroyed, and then those visions follow. Another reason is, because when a man lieth on his back, the humours are distributed and moved upward where the phantasy is, which by that means is destroyed.

Why is it naught to lie on the back?

Because, as the physicians say, it disposes a man to leprosy, madness, and to an incubus, where you may note that mania or madness, is the hurt or disturbance of the fore part of the brain, which is taken away, or depravation of the imagination; but incubus (that is, the night mare) is a passion of the heart, wherein a man thinks himself to be strangled in his sleep, and something lies heavy on his stomach, which he would put off.

Why hath the back bone so many joints or knots, called spondelia, by the physicians?

For the moving and bending it, without which joints that could not be done; and therefore they say amiss that elephants have no such joints, for without them they could not move.

Why do fish die after their back bone is burst?

Because in fish the back bone is instead of the heart. Now the heart is the first thing that lives and the last that dies, and therefore when the bone is broken the fish can live no longer.

Why do men die soon after the marrow is hurt or perished?

Because the marrow proceeds from the brain, which is a principal part of a man; as appears, first, because the marrow is white like the brain; and, secondly, because it hath a thick skin or rind, which that called *nucha* has not, and dif-

fers from the marrow, because of two coverings like the brain, called *pia mater* and *dura mater*.

Why have some men the piles?

Such men are cold and melancholy, which melancholy first passes to the spleen, its proper seat, but cannot be retained there, for the abundance of blood; for which reason it is conveyed to the back bone, where there are certain veins which terminate in the back, and receive the blood. When those veins are full of the melancholy blood, then the conduits of nature are opened, and the blood issues out once a month like women's terms. Those men who have this course of blood are kept from many infirmities, such as the dropsy, plague, &c.

Why are the jews much subject to this disease?

Divines say, because they cried at the death of Christ, *Let his blood fall upon us and our children*: therefore it is said in the psalms, *Percussit tot Deus posteria doci*. Another reason is, because the jews eat much phlegmatic and cold meats, which breed melancholy blood, but it is purged with this flux. A third reason is, motion causes heat, and heat digestion; but strict jews neither move, labour, nor converse with men; besides, they are in continual fear we should revenge the death of our Saviour, which likewise breeds a coldness in them and hinders digestion, causing melancholy blood, which is by this means purged out.

Of the Heart.

Why are the heart and the lungs called lively parts of the body, in Latin, spirituala membrana?

From the word *spiritus*, which signifies breath, life, or soul. and because the vital spirits are engendered in the heart, Yet that is no good answer, for the liver and brain might be so called, because the liver giveth nutriment, and the brain sense and life; the consequence is clear, for the vital spirits are engendered in the liver, and the sensible animal spirits in the brain.

Why are the lungs light, spungy, and full of holes?

That air may the better be received in them for cooling the heart and expelling humours, because the lungs are the fan of the heart. As a pair of bellows is raised up by taking in air, and shrunk by blowing it out, so likewise the lungs draw air to cool the heart, lest the heart should be suffocated through too much heat.

Why is the flesh of the lungs white?

Because they are in continual motion.

Why have those beasts only lungs that have hearts?

Because the lungs be no part for themselves but for the heart; therefore it were superfluous for those creatures to have lungs that have no hearts; but nature is not wanting in things necessary, nor abounding in superfluities.

Why do creatures that have no lungs want a bladder?

Because such drink no water to make their meat digest, but only for tempering their food, and therefore they want a bladder and urine; as appears in such birds as do not drink at all, viz. the falcon and sparrow-hawk.

To what end is the heart in the midst of the body?

Because it should impart life to all parts of the body; therefore it is compared to the sun, which is placed in the midst of the planets, to pour light into them all; and thence the Pythagoreans, styling the heavens a great living creature, say that the sun is the heart thereof.

How is it that in men only the heart is on the left side?

To the end the heat of the heart should mitigate the coldness of the spleen, for the spleen is the the seat of melancholy, which is on the left side also.

Why is the heart first engendered; for, according to Aristotle, the heart doth live first and die last?

Because the heart is the beginning and origin of life, for without it no part can live. According to Aristotle, of the seed retained in the matrix there is first engendered a small skin, which compasses the seed, whereof first the heart is made of the purest blood? then of blood not so pure the liver; and then of thick and cold blood the marrow and brain.

Why are beasts bold that have little hearts?

Because in a little heart the heat is well united and vehement, and the blood touching it doth quickly heat it, and it is speedily carried to the other parts of the body, which gives great courage and boldness.

Why are those creatures that have large hearts timorous, as the hare, &c.?

In such the heat is dispersed, and not able to heat the blood which cometh to it, and so fear is bred.

How comes it that the heart is continually moving?

According to Aristotle and Galen, it is, because in it there is a certain spirit which is more subtle than air, and by reason of its thinness and rarification seeks a larger space, filling the hollow room of the heart, whereof the dilating and opening of the heart doth follow; and because the heart is earthly, the thrusting and moving ceasing, its parts are at rest, tending downwards. Galen giveth an experiment of an acorn, which is put into the fire, the heat dissolves its humidity,

therefore doth it occupy a greater space, so that the rind cannot contain it, but puffs it up and throws it into the fire. The like of the heart: therefore note, that the heart of a living creature is triangular in a manner, having its least part toward the left side, and the greater toward the right, and doth also open and shut in the least part, by which means it is in continual motion: the first motion is called by the physicians *diastole*, that is, extending the breast or heart: and the other *systole*, that is, shutting of the heart; and from these two all the motions of the body proceed, and that of the pulse, which physicians feel.

Why are some persons lean?

The natural heat proceeding from the heart consumes that natural humidity which should be converted into fat. For the most part men are hotter than women, because they have much humidity in them, and a moister heat than men.

How comes it that the flesh of the heart is so compacted and knit together?

Because in thick compact substances heat is strongly received and united; and because the heat, with its heat, should moderate the coldness of the brain, it is made of that flesh apt to keep a strong heat.

How comes the heart to be the hottest part of all living creatures?

It is so compacted as to receive the heat best, and to mitigate the coldness of the brain.

Why is the heart the beginning of life?

It is plain that in it the vital spirit is bred, which is the heat of life; and therefore, according to the opinion of Augustine, the heart hath two receptacles, *i. e.* the right and the left; the right hath more blood than spirit, which spirit is engendered to give life and vivify the body.

Why is the heart long and sharp like a pyramid?

The round figure hath no angles, therefore the heat is round for fear any poison or hurtful matter should be retained in it; and because that figure is fittest for motion.

How comes the blood chiefly to be in the heart?

The blood is in the heart as in its proper or efficient place, which some attribute to the liver; and therefore the heart doth not receive blood of any other part, but all other parts of it.

How happens it that some creatures want a heart?

Although they have no heart, yet they have somewhat that answers it, as appears in eels and other fish, which have the back bone instead of a heart.

Why does the heart beat in some creatures when the head is off, as appears in birds and hens?

Because the heart is what lives first and dies last, and therefore beats more than others parts.

Why doth the beat of the heart sometimes fall of a sudden, as in those who have the fallen sickness?

This proceeds, according to Constant. from a defect of the heart itself, and of certain small skins with which it is covered, the which being infected and corrupted, the heart falleth on a sudden; and sometimes it happens by reason of the parts adjoining, and therefore when any venomous humour goes out of the stomach, and hurts the heart and parts adjoining, that causes the fainting; the disposition of the heart is known by the pulse, because a swift beating pulse shews the heat of the heart, and a slow beating one denotes coldness. Therefore a woman that is in health has a slower and weaker pulse than a man, as shall appear hereafter.

Of the Stomach.

For what reason is the stomach large and wide?

Because in it the food is first concocted or digested, as it were in a pot, to the end that what is pure should be separated from that which is not; and therefore according to the quantity of the food is the stomach enlarged.

How comes it that the stomach is round?

Because if it had angles and corners, the food would remain in it and breed ill humours, and cause an ague; which humours are nevertheless evacuated, lifted up, and consumed, and not hid in any such corners, by reason of the roundness of the stomach.

How comes the stomach to be full of sinews?

Because the sinews can be extended and enlarged, as the stomach is when it is full; but when empty it is drawn together; therefore nature has provided sinews.

How comes the stomach to digest?

Because of the heat which is in it, coming from the parts adjoining, viz. the liver and the heart. For we see in metals, the heat of the fire takes away the rust and dross from iron; the silver from tin; and gold from copper; so by digestion the pure is separated from the impure. Physicians say that digestion is of four sorts.

For what reason doth the stomach join the liver?

Because the liver is very hot, and by its heat helps digestion, and provokes appetite.

Why are we commonly cold after dinner?

Because then the heat goes to the stomach to further digestion, and so the other parts becomes cold.

Why is it hurtful to study soon after dinner?

Because when the heat labours to help the imagination in study, it ceases from digesting the food, and that remains undigested for want of a proper heat, so that people should walk some time after meals.

How comes it that women with child have an inordinate desire of eating coals, ashes, and such like?

It proceeds from the humours of the stomach; and because women with child have corrupt humours, they desire such kind of nutriment.

How comes the stomach slowly to digest meat?

Because it swims in the stomach. Now the best digestion is in the bottom of the stomach; the fat does not descend thither; and therefore such as eat fat meat are very sleepy, by reason digestion is hindered.

Why is all the body worse when the stomach is uneasy?

Because the stomach is knit with the brain, heart, and liver, which are the principal parts in man; and therefore when that is not well, the other parts are evil disposed. The reason is, if the first digestion be hindered, the others are also hindered, for in the first digestion is the beginning of the infirmity, that is, in the stomach.

Why are young men sooner hungry than old men?

Young men digest sooner for three causes: first, for growing; then, for the restoring of life; and, lastly, for conservation of life, as Hippocrates and Galen say; else we answer, that young men being hot and dry, the heat doth digest more, and, consequently, they desire more.

Why do physicians prescribe that men should eat when they have an appetite?

Because much hunger and emptiness will fill the stomach with naughty humours, which he draws into himself instead of meat; which do easily appear, because that if we fast over night we have an appetite to meat; but in the morning none. That is therefore a token that the stomach is filled with naughty humours, and especially its mouth, which is no true filling, but a deceitful one. And therefore, after we have eaten a little, our stomach comes to us again, and then the proverb is, *one morsel draweth down another*; for the first morsel having made clean the mouth of the stomach, doth provoke the appetite.

Why do physicians prescribe that we should not eat too much at a time, but by little and little?

Because when the stomach is full, the meat doth swim in it, which is a dangerous thing. Another reason is, that as very green wood doth put out the fire, so much meat choaks the natural heat and puts it out: and therefore the best physic is to use temperance in eating and drinking.

Why do we desire change of meat according to the change of season; as in winter, beef, pork, mutton; in summer, light meats, veal, lamb, &c.?

Because the complexion of the body is altered, and changes according to the time of the year. Another answer is, that this proceeds from the quality of the season, because the cold winter doth cause a better digestion, the stomach and belly being hotter in winter, by reason of the compassing cold, as Hippocrates and Aristotle do teach.

Why is it that the meat we eat should not be as hot as pepper and ginger?

Because hot meat doth burn the blood, and dispose it to a leprosy. So contrariwise, meat too cold doth mortify and congeal the blood. And our meat should not be over sharp, because it procureth old age, and too much sauce doth burn the entrails, and procureth often drinking, as raw meat doth; and over sweet meats do constipate and cling the veins together.

Why is it a good custom to eat cheese after dinner, and pears after all meat?

Because cheese, by reason of its earthliness and thickness, tendeth down towards the bottom of the stomach, and so putteth down the meat, and the like of pears. Note, that new cheese is better than old, and the old dry soft cheese is very naughty and procureth the head-ach, and stopping of the liver; and the older the worse. Whereupon it is said, that the cheese is naught, and digesteth all things but itself.

Why are nuts good after fish? The verse is, after fish, nuts; after flesh, cheese.

Because fish is of a hard digestion, and doth easily putrify and corrupt; and nuts help digestion, because they are somewhat hot; fish is poisonous sometimes, and nuts are a remedy against poison. Fish should be of a clear stony water, and not of a cold standing muddy water, and should be used in wine and parsley, and so it hurteth least.

Why is it unwholesome to stay long for one dish after another, and to eat of diverse kinds of meat?

Because the first begins to digest when the last is eaten, and so the digestion is not equally made, and therefore the meat digested beginneth to corrupt. But yet this rule is to be noted, touching the order of meat, that if there be any dishes whereof some are light of digestion, as chickens, kid, veal, soft eggs, and such like, these meats should be first eaten, but gross meats, as venison, bacon, beef, roasted pork, hard eggs, and fried eggs, should be eaten last. And the reason is, because that if they should be first served and eaten, and were digested, they would hinder the digestion of the others;

and the light meats not digested would be corrupted in the stomach, and kept in the stomach violently, whereof would follow belching, loathing, head-ach, belly-ach, and great thirst. And by consequence it is very hurtful too at the same meal to drink milk and wine, because they dispose a man to leprosy.

Which is best for the stomach, meat or drink ?

Drink is sooner digested than meat, because meat is of greater substance, and more material than drink, and therefore meat is harder to digest.

Why is it good to drink after dinner ?

Because the drink should make the meat readier to digest. For if a pot be filled with fish or flesh without liquor, then both the pot and the meat is marred. The stomach is like ^unto a pot which doth boil meat, and therefore physicians do ⁿsel to drink at meals.

Why is it good to forbear a late supper ?

Because there is no moving or stirring after supper, and so the meat is not sent down to the bottom of the stomach, but remaineth undigested, and so breeds hurt ; and therefore a light and short supper is best.

How come some men to evacuate clear meat ?

By reason of the weakness of nature and expulsion ; which disease is called *Leinteria*.

Of the Blood.

Why is it necessary that every living thing that has blood have also a liver ?

Because the blood is first made in the liver, its seat, and is drawn from the stomach by certain principal veins and so engendered.

For what reason is the blood red ?

First, it is like the part in which it was made, *i. e.* the liver, which is red, then it is likewise sweet, because it is well digested and concocted ; but if it have a little earthy matter mixed with it, that makes it somewhat salt.

How comes womens blood to be thicker than mens ?

Their coldness thickens, binds, congeals, and joins it together.

How comes the blood to all parts of the body through the liver, and by what means ?

Through the principal veins, as the vein of the head, liver, &c. to nourish all the body.

Of the Urine.

How doth the urine come into the bladder, seeing the bladder is shut ?

Some say by sweating, and it seems to be true. Others say it comes by a small skin in the bladder, which opens and lets in the urine. Pheephylack says, urine is a certain and not deceitful messenger of the health or infirmity of man. Hippocrates says, that men make white urine in the morning and before dinner red, but after dinner pale, and likewise after supper; for there are divers colours.

How doth the leprosy proceed from the liver?

Because it doth greatly engender the brains, and breed the falling sickness and apoplexy.

Why is it hurtful to drink much cold water?

Because one contrary doth hinder and expel another; for water is very cold, and lying in the stomach hinders digestion.

Why is it unwholesome to drink new wine, and why doth it very much hurt the stomach?

One reason is, it cannot be digested, therefore it causes the belly to swell, and in some sort the bloody flux; secondly, it hinders making water; but to drink good wine is wholesome.

Why do physicians forbid us to labour presently after dinner?

For the reasons: first, because motion hinders the virtue and power of digestion; secondly, because stirring immediately after dinner causes the parts of the body to draw the meat raw to them, which often breeds sickness; and thirdly, because motion makes the food descend before it is digested; but after supper it is good to stir, by reason we soon after incline to sleep, therefore should walk a little, that the food may go to the bottom of the stomach.

Why is it good to walk before dinner?

It makes a man well disposed, fortifies and strengthens the natural heat, causing the superfluity in the stomach to descend; wherefore Avicen says, such as neglect this exercise fall into inflammation of the heart.

Why is it wholesome to vomit?

Because it purges the stomach of naughty humours, by expelling them, which would breed ague if they should remain in it. Avicen says, a vomit purges the eyes and head, clearing the brain.

How comes sleep to strengthen the stomach and the digestive faculty?

Because in sleep the heat draws inwards, and helps digestion: but when we awake the heat remains, and is dispersed throughout the body.

Of the Gall and Spleen.

How came living creatures to have a gall?

Because choleric humours are received into it, which through their acidity help the guts to expel superfluities, and assists digestion.

How comes the jaundice to proceed from the gall?

The humour of the gall is bluish and yellow, therefore when its pores are stopt, the humour cannot go into the sack thereof, but is mingled with the blood, wandering throughout all the body and infecting the skin.

Why hath not a horse, mule, or ass, a gall?

Though these creatures have no gall in one place, as in a purse or vessel, yet they have one dispersed in their veins.

How comes the spleen to be black?

It is occasioned by a terrestrial and earthy matter of a black colour. Another reason is, according to physicians, the spleen is the receptacle of melancholy, and that is black.

Why is he lean that hath a large spleen?

Because the spleen draws much water to itself, which would turn to fat; therefore contrariwise, men that have but a small spleen are fat.

Why doth the spleen cause men to laugh; as, says Isidorus, we laugh with the spleen, we are angry with the caul, we are wise with the heart, we love with the liver, we feel with the brain, and speak with the lungs; that is, the cause of laughing, anger, love, wisdom, speech, and feeling, proceed from the spleen, gall, liver, and lungs?

The reason is, the spleen draws much melancholy to it, being its proper seat, the which melancholy proceeds from sadness, and is there consumed, and the cause failing, the effect doth so likewise. And by the same reason the gall causes anger; for choleric men are often angry, because they have much gall. For the better understanding of this, note, that there are four humours in man, *viz.* blood, choler, phlegm, and melancholy; each has its particular receptacle. Of a hot and dry substance choler is engendered, which goes to the gall; but of a cold and dry humour melancholy is engendered, and goes to the spleen; of a cold and moist humour phlegm is engendered, and goes to the lungs or to the spleen for its reception; but the blood, which is the most noble humour, is engendered in the liver, which is its proper place.

Of Carnal Copulation.

To what end do living creatures use carnal copulation?

Because it is the most natural work that is in them to beget their like, for if copulation were not, all procreation had sunk ere now.

What is this carnal copulation?

It is a natural action of male and female, with instruments ordained for that purpose, to propagate their kind; and therefore divines say it is a sin to use that act for any other end.

How is this action good in those that use it lawfully and moderately?

Because, say Avicen and Const. it eases and lightens the body, clears the mind, comforts the head and senses, and expels melancholy. Therefore, sometimes through the omission of this act, dimness of sight doth ensue, and giddiness; because the seed of man retained above its due time is converted into some infectious humour.

Why is immoderate carnal copulation hurtful?

Because it destroys the sight, dries the body, and impairs the brain; it often causes fevers, as Avicen and experience shew; it shortens life too, as is evident in the sparrow, which, by reason of its frequent coupling, lives but three years.

Why doth carnal copulation injure melancholy or choleric men, particularly thin men?

Because it dries the bones much, which are naturally so; on the contrary it is good for the phlegmatic and sanguine, as Avicen says, because they abound with that substance which by nature is necessarily expelled; though Aristotle affirms, that every fat creature has but little seed, because that substance turns to fat.

Why do not female brute beasts covet carnal copulation after they be great with young?

Because then the womb or matrix is shut, and also desire doth cease.

Why should not the act be used when the body is full?

Because it hinders digestion; and is not good for a hungry belly, because it weakens it.

Why is it not good after a birth?

Because then the pores are open, and the heat disperses through the body; yet taken after bathing it cools the body very much.

Why is it not proper after vomiting or a looseness?

Because it is dangerous to purge twice in one day; and so also it is in this act, as the reins and guts are purged by the vomit.

Why are wild beasts furious when they couple, as appears in asses which bray, and harts who are almost mad?

Their blood is kindled with desire, and nature labours to expel superfluities in them, which dispose to anger and madness; but the act done, they are tame and gentle.

Why is there such a delight in the act of venery?

Because this act is a base and contemptible thing in itself, insomuch that all creatures would naturally abhor it were there no pleasure in it, and therefore nature readily uses it, that all kinds of living creatures should be maintained and kept.

Why do such as use it often take less delight in it than those who come to it seldom?

Firstly, Because the passages of the seed are overlarge and wide, therefore it makes no stay there, which would cause delight. Secondly, because that through often evacuation there is but little seed left, therefore no delight. Thirdly, because such, instead of seed cast out blood undigested and raw, or some other watery substance which is not hot, therefore often no delight.

Whether can carnal copulation take place by the mouth, so that animals may conceive thereby, as some say of pigeons, that by kissing they copulate and conceive:—The same is said of the weasel, or ermine?

According to Aristotle it is false; for though pigeons do kiss by the beak, yet they do not couple this way, nor conceive. And because the weasel carries its young ones from place to place in its mouth, they are of that opinion; wherefore Aristotle says, whatever goes in at the mouth is consumed by digestion, and if the seed should go in at the mouth, then would it be consumed by digestion, and not be sufficient for propagation.

Of the Seed of Man or Beasts.

How and of what cometh the seed of man?

There are divers opinions among philosophers and physicians on this point. Some say it is a superfluous humour of the fourth digestion; others say, that the seed is pure blood flowing from the brain, concocted and whitened in the testicles; some again say, it is the superfluity of the second or third digestion; but Aristotle says, that the seed is always the superfluity of the last nutriment, that is, of blood dispersed throughout the body, and comes chiefly from the heart, liver, and brain. An argument in favour of this is, that those parts are greatly weakened by casting seed, and therefore it appears that carnal copulation is not good; but some think, if moderately used, it is very wholesome.

Why is a man's seed white, and a woman's red?

It is white in man by reason of his great heat and quick digestion, being rarefied in the testicles; but a woman's is red, because it is the superfluity of the second digestion, which is done in the liver; otherwise, it is because the terms corrupt the undigested blood, and hath its colour.

Doth the seed of a man come from the parts of the body, or from the humours?

Some say from the parts of the body; and that we can prove, because we find a lame man begets a lame child; and

if the father hath a scar, the child hath one also, which could not be if the seed did not fall from the parts of the body. Some say it comes from the humours, by reason it is made of the last nutriment, and that it is no part but a humour. As for lameness or scars, that proceeds from the imagination of the mother at the time of carnal copulation.

How comes the imagination of the mother to bring forth a blackamoor, as Albertus Magnus reports of a queen, who, in the act of carnal copulation, imagined a black being painted and in her sight?

Avicen says, the imagination of a fall makes a man tall, and the imagination of a leprosy makes a man a leper; so in this the imagination is above the forming power, and therefore the child born followeth the imagination, and not the power of forming and shaping, because it is weakest.

Doth the man's seed enter into the substance of the child?

The seed of both father and mother go into the substance of the child in the womb, as cream goeth to the substance of the cheese. Yet this opinion doth not seem to be of force, according to our author and other philosophers; we say the seed doth not go into the substance of the child, and it is proved thus, because that so the matter and the efficient cause should be all one, which is against the philosopher. The consequence is good, because the seed is the efficient cause of the being, and therefore is not the material cause of the child. This is proved another way. As there is the self same material cause of the nourishment and generation, so we have our being and nourishment of the same matter; but the seed cannot be the material cause of nourishment, according to Averrois, therefore not of the being: and as both seeds are shut up in the womb, so that of the man disposes and prepares the woman's to receive the form, perfection, or soul, which being done, it is converted into a humidity breathed out by the pores of the matrix.

How come females to have monthly courses?

Because they are cold in respect of men, and because all their nourishment cannot be converted into blood, a great part whereof turns to menses, which are expelled monthly: I mean every woman in health, and of thirteen years old, seldom before; nay, some distempered women have them not at all.

For what reason do they not come before thirteen?

Because young women are hot and digest all their nourishment, therefore have them not till that age.

For what reason do they leave off at about fifty?

Some answer, that old women be barren, and therefore they cease; but a better answer is, that then nature is weak in them, and therefore they cannot expel them by reason of

their weakness: there is also great store of humidities bred in them, which lie in a lump; this causes them to be troubled with coughs, and other infirmities. At these times men should refrain from their use.

Why have not breeding women the menses?

Because that then they are turned into milk, for the nourishment of the child; and if a woman with child have them it is a sign she will miscarry.

Why are they termed menstrea?

From the word *menses*, a month; because it is a space of time which measures the moon, as she ends her course in 29 days and 14 hours. Now the moon hath dominion over most things; and by reason the menses are humid, they are called *menses profusivum*, for moist things both increase and decrease as the moon does.

Why do they continue longer with some than others, with some six or seven, but commonly with all three days?

The first are colder, therefore they increase most in them, and consequently are longer in expelling; other women are more hot, and therefore they have fewer, and are sooner expelled.

Where are the terms retained before they run?

Some say in the matrix or womb; but Averrois says, the matrix is the place for generation, and that those terms further not generation at all. Therefore he asserts, that there are certain veins about the back bone which retain them; a sign of which is, those women, at that time, have great pains in their back.

Are the menses which are expelled, and those of which the child is engendered, all one?

No, because the one is unclean and unfit for that purpose, but the other very pure and clean, therefore fittest for generation.

Why do those go with child when they have the terms upon them bring forth weak and leprous children?

Because they are venomous, so the cause appears in the effect, as the effect carrieth the likeness or the cause; therefore such a child must needs be ill disposed of body.

Why have not women these at one and the same time, but some in the new moon, some in the full, and others at the wane?

By reason of their several complexions; and though all women (in respect of men) are phlegmatic, yet some are more sanguine than others, some more choleric; and as moons have their quarters, so have women their complexions, the first sanguine, the second choleric. One of a sanguine complexion hath her terms in the first quarter, a choleric in the second, a melancholic in the third, and so on.

Why have the sanguine theirs in the first quarter?

Because, saith Galen, every such thing added to such a thing doth make it more such; therefore the first quarter of the moon increaseth blood in a sanguine complexion, and then she expels it.

How do they come at the end of the month?

Because then most women are phlegmatic, and the last quarter is phlegm. Or else it proceeds from defect, and therefore cold works then do multiply the matter, and so multiplied, is then expelled.

How happens pain and grief at that time?

Because it is like the pain of the stranguary, in making water drop by drop; for the stranguary, by reason of the drink undigested, offends the subtle passage of the urine, as happens after bathing; so the menses, undigested and of an earthy substance, hurt the passage by which they go.

Why do women easily conceive after their menses?

Because the womb being cleansed, they are better prepared for conception.

Why do women look pale when they are upon them?

Because then the heat goes from the outward parts of the body to the inward, to help nature to expel their terms, which deprivation of heat doth cause a paleness in the face. Or else it is because the flux is caused of raw humours, which, when they run, make the face colourless.

Why do they at that time abhor their meat?

Because nature labours more to expel their terms than to digest, and therefore, if they should eat, it would remain raw in the stomach.

Why are some women barren and cannot conceive?

According to physicians, for divers reasons: first, because it proceeds sometimes of the man, who may be of a cold nature, so his seed is unfit for generation; secondly, because it is waterish, and so doth not stay in the womb; thirdly, by reason the seed of them both has not a like proportion, as if the man be melancholy and the woman sanguine, or the man choleric and the woman phlegmatic; for it is evident in philosophy, that the agent and the patient ought to have the same proportion, else the action is hindered.

Why do fat women seldom conceive with child?

Because they have a slippery womb, and the seed will not stay in: or else because the mouth of the matrix is very strait and the seed cannot enter in, or if it does, it is so very slowly that it grows cold in the mean time, and unfit for generation.

Why do those of very hot constitutions seldom conceive with child?

Because the seed in them is extinguished or put out, as water cast into the fire; wherefore we find that women who vehemently desire the flesh seldom conceive with child.

Why are whores never with child?

By reason of divers seed, which corrupt and spoil the instruments of conception, for it makes them so slippery that they cannot retain seed. Or else it is because one man's seed destroys another, so neither is good for generation. Alberthus says, the best thing to help conception is to take the matrix of a hare beaten to powder, and put into drink.

Why have some women long and slender children, and others short and thick?

Because, as Galen and Averrois say, the child is formed according to the dimensions of the womb: wherefore, because some women have a long and narrow womb, their children are long and slender; others, on the contrary, short and large, therefore their children be short and thick.

For why doth a woman conceive twins?

According to Galen, because there are several cells or receptacles in the womb, wherefore they may naturally have so many children at once as there falls seed in those cells; there are three in the right side and three in the left: in the right side boys are engendered, in the left girls; and in the midst of these cells or chambers there is another, where in the ancients asserts the hermaphrodites to be engendered; if a woman should have more than two children at once, it should be rather miraculous than natural.

Why are twins but half men, and not so strong as other men?

By reason the seed which should have been for one is divided into two, and therefore they are weakly, and in truth do not often live long.

Of Hermaphrodites.

How are hermaphrodites begotten?

There are seven cells in the womb, three on the right side, three on the left, and a seventh in the centre, into which the seed falls; an hermaphrodite is said to be begotten in this manner, because nature doth always tend to that which is best, therefore she doth always intend to beget the male, and not the female, because the female is only for the male's sake; therefore the male is sometimes begotten in all its principal parts: and yet through the evil disposition of the womb, and the inequality of the seed, nature cannot perfect and end the male, she brings forth the female too, And therefore the natural philosopher says, an hermaphrodite is im-

potent in the privy parts of man, as appears by experience.

Why doth not nature dispose in him two secret parts of man or two of a woman : but one of a man, and one of a woman ?

Because nature would then make one of them in vain but that is against the philosophers, who say that God and nature make nothing in vain.

Is an hermaphrodite accounted a man or a woman ?

It is to be considered in which member he is fittest for the act of copulation ; if he be fittest in the woman's, then it is a woman, if in the man's, he is a man.

Should he be baptized in the name of a man or woman ?

In the name of a man, because names are given *ad placitum*, and therefore he should be baptized according to the worthiest name, because every agent is worthier than its patient.

Shall he stand in judgment in the name of a man or woman ?

According to the law, he should first swear before he be admitted to judgment, which secret part he can use, and so is to be admitted according to the use and power of that part.

Of Monsters.

Doth nature generate monsters ?

She doth, for if she did not, she would then be deprived of her end. For of things possible she doth always purpose to bring forth that which is most perfect and best ; but in the end, through the evil disposition of the matter, and influence of some special constellation, not being able to bring forth that which she intended, she brings forth that which she can. As it happened in Albertus' time, when, in a certain village, a cow brought forth a cow half a man, then the countryman suspecting a shepherd, would have burnt him with the cow ; but Albertus being skilful in astronomy, said, that this did proceed from a special constellation, and so delivered the shepherd from their hands.

Be they one or two ?

You must look into the heart, add if there be two hearts there be two men.

Why is a man born sometimes with a great head and six fingers on one hand, or with four ?

It proceeds of superfluity and abundance of matter : when there is too much matter, then he is born with a great head, or six fingers ; but if there be want of matter, then there is some part too little, or less than it ought to be.

Of Infants.

Why are some children altogether like the father, some like the mother, some to both, and some to neither ?

If the seed of the father do wholly overcome that of the mother, the child doth wholly resemble the father; but if the mother's predominates, then it is like the mother; but if he be like neither, that doth happen for many causes; sometimes through the four qualities, sometimes through the influence of some heavenly constellation. Albertus gives an example, and saith, that there was on a time a good constellation for begetting of hogs, and a child was then begotten and brought forth, which had a face like a hog; and according to this, divers sorts of monsters are brought forth.

Why are children oftener like the father than the mother?

That proceeds of imagination of the mother in the act of copulation, and therefore, by reason of the strong imagination in the time of conception, the children get the disposition of the father; as appeareth before of the queen which had her imagination on a blackamoor, and of an Ethiopian queen who brought forth a white child, because her imagination was upon a white colour; as is seen in Jacob's skill in casting rods of divers colours into the water when his sheep went to ram.

Why do children sometimes resemble more the grand-fathers and great grand-fathers than their parents?

Because the virtue and force of the grandfather is grafted in the heart of the begetter, and it may be said that sometimes it doth proceed of the similitude of the nutriment, and then the child is formed by the similitude of the grandfather.

Why do children, according to the common course and use of nature, come out of the mother's womb in the ninth month?

Because the child is then fully perfect, or else because some benign planet doth reign, as Jupiter, who is a friend of nature; for according to astronomers, he is hot and moist, and therefore doth temper the malice and naughtiness of Saturn, which is cold and dry: and therefore for the most part children born in the ninth month are healthful.

Why do children born in the eighth month for the most part die quickly; and why are they called the children of the moon?

Because the moon is a cold planet, which has dominion over the child, and therefore doth bind it with its coldness, which is the cause of its death.

Why doth a child cry as soon as it is born?

Because of the sudden change from heat to cold, which cold doth hurt its tenderness. Another reason is, because the child's soft and tender body is wringed and put together, coming out of the narrow and strait passage of the matrix, and especially the brain being moist, and the head pressed and wrinkled together, is the cause that some humours do distil by the eyes, which are the cause of tears and weeping.

The divines say, it is for the transgression of our first father and original sin.

Why doth a child put his fingers into his mouth when he cometh first into the world?

Because that coming out of the womb he cometh out of a hot bath, and entering into the cold puts his fingers into his mouth for want of heat.

How doth a child come into the world out of the womb?

He cometh forth with the head forward; for if he should come with the thighs or arms he would kill himself and the mother.

Of the Young one in the Womb.

How is the young one engendered in the womb?

The first six days the seed hath the colour of milk, but in the six days following a red colour, which is near unto the disposition of flesh, and then is changed into a thick substance of blood; in twelve days this substance is made so thick and sound that it is able to receive shape and form, because it is a fluid or running substance, and sleeping on till its birth: during which time, Bœtius says, it is governed by the planets.

Doth the child in the womb void excrements and make water?

No: and the reason is, because it hath the first digestion, which is in the stomach; he receives no food by the mouth, but it comes to him by the navel; he therefore makes no urine, but sweats, at best but little, and is received in a skin in the matrix, and at its birth is cast out.

Why doth the child come out of the matrix easily after seven, eight, or nine months?

Because, saith Galen, when the fruit is ripe, then the ligaments are broken, and so it falls out.

Of Abortion and untimely Birth.

Why do women that eat unwholesome meats easily miscarry?

Because it breeds putrefied seed in them, which the mind abhorring doth cast it out of the womb, as unfit for that noble shape which is adapted to receive the soul.

Why doth wrestling or leaping cause the casting of the child, as some subtle women have done on purpose?

The vapour is burning, and doth easily hurt the tender substance of the child, entering in at the pores of the matrix. Albertus says, that if the child be near delivery, lightning and thunder will kill it.

Why doth lightning and thunder rather cause young women than old to miscarry?

Because the bodies of young women are full of pores and more tender; therefore the lightning sooner enters into their

body; but old ones have a thick skin, well compacted, therefore the vapours cannot enter.

Why doth much joy cause a woman to miscarry?

Because in the time of joy a woman is destitute of heat, and so the miscarriage doth follow.

Why do women easily miscarry when they are first with child, viz. in the first, second, or third month?

As apples and pears easily fall at first, because the knots and ligaments are weak, so it is of a child in the womb.

Why is it hard to miscarry when they come to the midst of their time, as four, five, or six months?

Because then the ligaments are strong and fortified.

Of Divers Matters.

Why have some women more grief in labour than others?

For three reasons; first, from the largeness of the child; secondly, the midwife being unskilful: thirdly, because the child is dead, and cannot be bowed. From the contrary causes some have less pain.

Why has not man a tail like a beast?

Because man is a noble creature, whose property is to sit; so a beast cannot that has a tail.

Why do such as keep hot houses expel the heat of the furnace better with cold water than hot?

By reason they are contrary qualities, which work very strongly one against the other, therefore the heat is easier expelled from the stone.

Why doth hot water freeze sooner than cold?

Because hot water is thinner, and gives better entrance to the frost.

Why is every living thing dull after copulation?

By reason the act is filthy and unclean; and so every living creature abhors it: when men think upon it they are ashamed and sad.

Why cannot drunken men judge of tastes as well as sober ones?

Because the tongue being full of pores and springs receives great moisture into it, and more in drunken men than in sober; therefore the tongue (through often drinking) is full of bad humours; and because it is so, the faculty of taste is out of order; therefore, through the thickening of the mean, that is, taste itself, drink taken in by drunkards is not presently felt, for to a due feeling it is requisite to have a due proportion of the mean, that is, taste.

Why have melancholy beasts long ears; and why are not those men wise for the most part that have long ears, but those otherwise with short ones?

The ears proceed from a cold and dry substance called a gristle, which is apt to become a bone; and because melancholy beasts do abound with this kind of substance they have long ears.

How comes the other to be half-witted?

Because the minds and souls follow the bodies; for, if the senses of the body be subtle, the soul exercises subtle operations, as well active as speculative; the contrary is in a gross body.

How is the intellectual soul joined to a child in the womb of the mother; and how does the man who begets it make the matter apt and fit to receive the soul?

Divines say, that into a substance sufficiently disposed and made fit, God doth infuse the intellectual soul; and Augustine says the like. The soul in creating is infused, and infusing is created.

Why do hares sleep with their eyes open?

Because they have their eyes standing out, and their eyelids short, therefore never quite shut. Another reason is, they are timorous, and as a safeguard to themselves sleep with their eyes open.

Why do not crows feed their young till they be nine days old?

Because seeing them of another colour they think they are of another kind; meanwhile God feeds them with heavenly dew, as the psalmist saith, He who doth give beasts their food, and young crows which call upon him.

Why are sheep and pigeons mild creatures?

Because they want galls which stir anger.

Why have birds their stones inwards?

Because if they were outward they would hinder their flying and lightness.

How comes it that birds do not piss?

Because that superfluity which would be converted into urine is turned into feathers, for there is much moisture in feathers. Another reason is, they are in continual motion, and moisture in them is dried up by the air.

How come long eggs to be a sign and cause of the male, and flat short ones of the female?

Hippocrates saith, it is the property of heat to ascend from the centre to the circumference of cold; therefore if there be any long eggs, it is a sign they have a great heat, and pass into the substance of the male, for every kind of male is hotter than the female. If the eggs be short and flat, it is a sign the heat is small and undispersed, and goeth into the substance of the female.

How do we hear better by night than by day?

Because there is a greater quietness in the night than in the day; for the sun doth not exhale the vapours by night, but it doth in the day, therefore the mean is more fit and ready; and the mean being fit, the motion is better done by it, which is said to be done by a sound. Another reason is, there are motions of the air and sounds in the day more than in the night, which hinder one another: in the night there is a silence which is opposite to sound, and opposites put one against the other shew better.

Why doth a man laugh sooner when touched in the arm pits than in the other parts of the body?

Because there is there a meeting of many sinews, and the mean we touch (which is the flesh) is more subtle there than in other parts, and therefore a better feeling. And this is true, if that place be touched not too roughly; if you do so then there is not that delight: when a man is moderately and gently touched there, the spirits that are there dispersed run into the face, and thence it causes laughter.

How comes wood burnt to be converted into black coal, and a bone burnt into a white substance?

Because the wood before it was burnt was moist, and so after burning getteth heat accidentally; and that heat is not able to consume all the moisture of the wood, therefore there remaineth some after the burning, which is converted into a black substance, because the humidity of the wood was slimy, and could not altogether be consumed by the fire. But a bone, of its own nature is cold and dry, having but small moisture in it, which the burning doth wholly consume, and so accidentally the moisture being consumed, the body waxeth white.

Why do some women love white men and some black?

Some women have a weak sight, and such delight in black because white doth hurt the sight more than black. Another reason is, because like delight in the like; but some women are of a hot nature, and such are delighted with black, because blackness doth follow heat. Others are of a cold nature, and these are delighted with white, because cold is the mother of whiteness.

Why do men willingly sleep after labour?

Because that through continual moving the heat is dispersed to the external part of the body, which after labour is past, is gathered to the internal parts of digestion, there to digest; and from digestion vapours do rise from the heart to the brain, which do stop the passages, by which the natural heat should be dispersed to the external part; and then the external parts being cold and thick, by reason of the coldness of the brain, sleep is easily procured. And by this it appeareth, that such

as eat and drink too much do sleep much and long, because there are great store of humours and vapours bred in such persons, which cannot be digested and consumed of the natural heat.

Why are such as sleep much evil disposed, and ill coloured?

Because that in sleep much moisture is gathered together, which cannot be consumed, and is expelled in waking, and so doth covet to go out through the superficial part of the body, and especially it resorts to the face, and therefore is the cause of a bad colour, as appeareth in such as are phlegmatic, and who desire more sleep than others.

Why doth it appear to some in their sleep that they eat and drink sweet things?

Because the phlegm drawn up by the jaws doth distil and drop to the throat; and this phlegm is after a sort sweet, and therefore that seemeth so to them.

Why do some dream in their sleep that they are in the water and drowned, and some that they be in the water and not drowned; and this doth happen especially in such as are phlegmatic?

The reason is, because the phlegmatic substance doth run to the high parts of the body, and then they think they are in the water and drowned, and when that substance draweth into the internal parts, then they think they escape. Another reason may be, over much repletion and drunkenness; and therefore, when a man is overmuch filled with meat, the fumes and vapours ascend and gather together, and therefore they think that they are drowned or strangled; but if they cannot ascend so high, then they seem to escape.

May a man procure a dream by an external cause?

Aristotle holdeth that it may be done, if a man doth speak softly in another's ear, and awake him; then from this stirring of the spirits there are thunderings and buzzings in the head, and so they dream of that. And some men have dreams by divine revelation, when it pleaseth God to send any.

How many humours are there in a man's body?

Four: whereof every one hath its proper place in a man's body. The first is choler, which physicians call *stava bilis*, and is placed in the liver. The second is melancholy, called *atra bilis*, whose seat is in the spleen. The third is phlegm, whose place is in the head. The fourth is blood, whose seat is in the heart.

What condition and quality hath a man of a sanguine complexion?

He is fair and beautiful; he hath his hair for the most part smooth; he is bold; he retaineth that which he hath conceiv-

ed ; he is shame-faced ; given to music ; a lover of sciences ; liberal, courteous, and desires no revenge.

What properties do follow a phlegmatic complexion ?

They are dull of wit ; their hair never curls ; they are seldom very thirsty ; they are very much given to sleep ; they dream of things belonging to the water ; they are fearful, covetous, given to heap up riches ; and are weak in the act of venery.

What properties do follow the choleric man.

He is furious and angry ; quarrelsome ; given to war ; pale-coloured and unquiet ; drinks much ; sleeps little ; and desires much the company of women.

What properties do follow the melancholy man ?

He is unquiet ; brown in complexion ; his veins hidden ; he eateth little, and digesteth less ; when he dreameth, it is of dark confused things ; he is sad, fearful, covetous and incontinent, unless he bridle his affection.

What dreams do follow these complexions ?

Pleasant merry dreams do follow the sanguine complexion ; fearful dreams the melancholy ; the choleric dream of children, fighting and fire ; and the phlegmatic dream of water. And this is the reason why a man's complexion is said to be known by his dreams.

What is the reason that if you cover an egg over with salt, and let it lie in it a few days, all the meat within is consumed ?

The great dryness of the salt doth consume the substance of the egg ; but in sand some say they may be kept as long as the mariners please.

Why is the melancholy complexion the worst of all ?

Because it is the dregs of the blood, which is an enemy to mirth, and farthest from the beginning of man's life, and bringeth old age and death, because it is cold and dry.

Why are the phlegmatic for the most part dull of wit ?

Because the vivacity of wit proceedeth of heat, so of cold the contrary, which they are subject unto.

Wherefore doth it proceed that some men die of extreme joy, and some with extreme grief ?

Over great joy doth over much heat the internal parts of the body, and over much grief doth drown and suffocate the heat, the which failing a man dieth.

Why hath a man so much hair on his head ?

The hair of the head proceedeth of the vapours which arise from the stomach, and ascend to the head, and also of the superfluities which are in the brain ; and those two passing through the pores of the head are converted into hair,

by reason of the heat and dryness of the head. And because a man's body is full of humours, and hath more brains than any other creatures, and also more superfluities in the brain, which the brain expelleth, it follows that he hath more hair than other creatures.

How many ways is the brain purged, and other hidden places of the body?

Four: the watery and gross humours are purged by the eyes; melancholy by the ears; choler by the nose; and phlegm by the hair.

What is the reason that such as are very fat in their youth are in danger to die on a sudden?

Such have very small and close veins by reason of their fatness, so that the air and the breath can hardly have free course in them; and thereupon the natural heat, wanting some refreshment of the air, is put out, and as it were quenched.

Why do garlic and onions grow after being gathered?

It proceedeth of the great humidity which is in them.

Why do men feel cold sooner than women?

Because that men, being more hot than women, have their pores more open, therefore the cold doth sooner enter into them than women.

Why are not old men so much subject to the plague as young men and children?

They are cold, and therefore the pores are shut up, and not so open as in youth; and therefore the infectious air doth not penetrate so soon as when they are open, as in youth, by reason of heat.

Why do we cast water in a man's face when he faints or swooneth?

Because that through the coldness of the water the heat may run to the heart, and so give strength.

Why are those waters best and more delicate which run toward the sun-rising?

Because they are sooner stricken with the sun-beams, and made pure and subtile, because the sun hath them long under him, and by that means takes of the coldness and gross vapours which they gather from the ground they run through.

Why have women such weak small voices?

Because their instruments and organs of speaking, by reason they are cold, are small and narrow; and therefore receiving but little air, causeth the voice to be small and effeminate.

Whereof doth it proceed that want of sleep weakens both the brain and the body?

Much watching doth engender choler, which being hot

cloth dry up and lessen the humours which conserve the brain, the head, and other parts of the body.

How doth it proceed that vinegar doth staunch blood?

It proceedeth of its cold virtue, for all cold naturally is binding, and vinegar being cold hath the like property.

Why is sea-water salter in the summer than winter?

It proceedeth from the heat of the sun, seeing by experience that a salt thing being heated becometh more salt.

How do men live longer in hot regions than in cold?

Because they may be more dry, and by that means the natural heat is better conserved in them than in cold countries, because cold doth extinguish heat.

Why is well-water seldom or ever good?

All water which standeth still in the spring, and not heated by the sun-beams, is very heavy, and hath much earthly matter in it; and therefore wanting the heat of the sun is very naught.

Why do men sleep better and more at ease on the right side than on the left?

Because when we lie on the left the lungs lie upon and cover the heart, which is on that side under the pap. Now the heart, the fountain of life, being thus occupied and hindered with the lungs, cannot exercise its own proper operation, being over much heated with the lungs lying on it, and therefore wanting the refreshment of the air which the lungs do give it, (like the blowing of a pair of bellows,) is choaked and suffocated: but by lying on the right side these inconveniences are avoided.

How doth it proceed that the holding of the breath doth cause vexing to cease?

Because the holding the breath doth heat the internal parts of the body; and this heat chaseth away vexation, being nothing else but a cold air within the body.

What is the reason that old men sneeze with difficulty?

Because that through their coldness the arteries are very narrow and loose, and therefore the heat is not of sufficient force to expel the cold. Sneezing is like the combat in the air made by thunder, which is caused by heat and cold.

Why doth a drunken man think that all things about him do turn round?

Because the spirits which serve the sight are mingled with wine, vapours, and fumes; and then the over much heat causeth the eye to be in continual motion, and the eye being round, causeth all things about it to seem to go round.

How doth it proceed that bread made with salt is lighter than that which is made without it, considering that salt is very heavy of itself?

Although bread is heavy of itself, yet the salt dries it, doth make it light by reason of the heat which it hath, which heat doth dry, and the more heat there is in it the better the bread is, the lighter and more wholesome for the body.

Why is not new bread good for the stomach?

Because it is full of moistness, and thick and hot vapours, that corrupt the blood; and hot bread is blacker than cold, because heat is the mother of blackness, and because the vapours are not gone out of it.

Why doth lettuce make a man sleep?

Because they engender gross vapours.

Why do the dregs of wine and oil go to the bottom, and those of honey swim uppermost?

Because the dregs of wine and oil are earthly and not purged before, and therefore being of the nature of earth do go to the bottom: but honey is a liquor which cometh from the stomach and belly of the bee, and there in some sort putrified and made subtle; and by that means that which remains is light and hot, and therefore goes upwards.

Why do cats and wolves eyes shine at night and not in the day?

The eyes of these beasts are by nature more chrystalline than the eyes of other beasts, and therefore shine as they do; but the brightness of the sun doth hinder them from being seen in the day time.

What is the reason that some men when they see others dance do the like with their hands and feet, or by some other gesture of the body?

Because the sight having carried and represented unto the mind that action, and judging the same to be pleasing and delightful, and therefore desiring it, the imagination draweth the likeness of it in conceit, and stirs up the body by the gestures.

Why does much sleep cause some to grow fat and some lean?

Those who are of an ill complexion, when they sleep, do consume and digest the superfluties of that they have eaten, and therefore become fat. But such as are of a good complexion, when they sleep are much more cold, and so digest less.

Why do we suffer hunger better than thirst?

When the stomach hath nothing to consume, it consumeth the phlegm and humours which it findeth most ready and near at hand; and therefore we suffer hunger better than thirst, because the heat hath nothing to refresh it withal.

Why doth the hair fall after a great sickness?

In a long sickness, as an ague, the humours of the head are dried up through over-much heat, and therefore wanting nourishment they fall.

Why does the hair of the eye-brows grow long in old men ?

Because that through their age the bones of the eye-lids are thin, by reason of the want of heat, and therefore the hair doth grow there by reason of the rheum of the eyes. The like doth happen in such as imagine much, because with their heat they draw up the humours to the forepart of the head, where the imagination is placed.

How proceedeth gaping ?

Of gross vapours which occupy the vital spirits of the head, and the senses being cold, maketh them sleepy.

What is the reason that some flowers do open with the sun rising and some with the sun setting ?

Cold doth close and shut, as has been said, but the heat of the sun doth open and enlarge. Some compare the sun to the soul of the body ; for as the soul giveth life, and when it is departed death followeth ; so the sun doth give life and vivifieth all things : the cold bringeth death, withering and decaying all things.

Why doth grief cause men to grow old and grey ?

Age is nothing else but a dryness and want of humours in the body ; grief then causeth alteration, and alteration heat, and heat dryness : age and greyness followeth.

Why are gelded beasts weaker than such as are not gelded ?

Because they have lesser heat, and by that means less force and strength.

PROBLEMS OF

Marcus Antonius Zimaras Sanctipertias.

WHY is it esteemed, in the judgment of the most wise, the hardest thing to know a man's self?

It is because nothing can be known; its form and perfection cannot be found; to know the form and perfection of a man's self, as it comes unto the philosopher, is a matter hard enough, and a man, by the authority of Plato, either is nothing, or if he be any thing, he is nothing but his soul. Or, it is because it cannot be done by a reflected action, and to reflect and look unto himself is a token that he is separated by the flesh: for he who would know himself should be drawn from sensible affections; and how hard this is no man is ignorant of! Or, is it because a man liveth by understanding? But the understanding of a man cannot conceive himself, but after the understanding of senses, which is very hard.

Why was Socrates esteemed the wisest of all Greece by Apollo, seeing that by the opinion of Aristotle he was conversant and busied only about morality, and nothing about nature?

Whether it is because it is more expedient for the commodity and use of man to live well and to contemplate; or because, as it seemeth to Plato, as he has usually professed of him every where, I know one thing, that I know nothing.

How is it that men especially contend in things of wit?

It is because they think that other things which are called goods are the power of another, as the gifts of the body are nature's, and external and worldly goods are subject unto the rule of fortune; whereof it cometh to pass, that every man can easily suffer himself to be overcome in such things, as things not happening through his fault or occasion, but they think wit to be in their own power. Or, is it because they think that the goods of the mind do excel all other goods, and therefore do think it a thing most natural to contend for that which is most excellent? Or, is it because it is a common disease of all men, as it seemeth unto a certain wise man, that every man thinketh himself more learned than he is, and therefore doth desire to perform that which he believeth, without study and labour.

Why do men say that philosophy is naked?

It is because truth is naked, and that there needs no colour of words when we handle a matter of truth; for it belongeth to sophisters to dispute of terms, when the sincere truth is

sought. Or, is it because they do not play the philosopher well, which seek philosophy for gain and ambition, and not for herself? Or, is it because he should be void from all worldly affections who desireth to endear himself in the study of philosophy? for Aristotle doth say the soul is made wise by rest and quietness. And it were easy for philosophers to become rich if they would, as it appeareth by the example of Thales.

Why do men desire to be had in memory after their death, and therefore some make pyramids, statues, images, and divers other tokens and monuments, which they build and leave behind them?

It is because all things, as seem unto Aristotle, do desire to anticipate of some perpetuity and divine being as much as they can; and therefore, if they cannot remain in nature and being, yet they endeavour at least to continue in the opinion and conceit of men. Or else hath custom brought it in so, to stir up such as come after, to the end they should not degenerate from their parents.

What is the cause that men's desires grow without measure about fortune's goods?

It is because natural desires, as Seneca saith, have an end, and such desires which proceed of false opinion have no where to end.

Why do poets always assign and appoint some wise men to be familiar with princes: as Homer doth Nestor with Agamemnon; Euripides, Tiresias with Creon; Hesiodus, Prometheus with Jupiter; and Maro, Achates with Æneas?

It is because that by the law of nature, as Plato saith, wisdom and power doth direct our actions to one end, and, to effect the same thing, love it and seek it.

Why doth Homer, when he makes mention of ambassadors, talk always of the embassy of a commander in bare words?

It is because it is the duty of ambassadors to declare the bare will of the commander, and put his sentence in execution; and therefore it is certain he should add nothing; or else it is because the commandant of him who doth rule, that is, of a wise man, is put into good order, and is presumed to be most perfect; and therefore there should be nothing changed, but his degrees and constitutions are to be judged absolute and perfect.

Why doth Aristotle use exceeding brevity in most hard matters?

Whether because it is the custom of wise men to load their words with sentences, or else to the end that he would be obscure, to scare and keep off rude wits from reading of his works, as it seemeth in the expositors; or whether it is be-

cause that in a hard matter and in a matter of truth many words are suspected, because that truth doth consist in few words; or it is because it seemeth to the wise men in many words there is error often committed.

Why do famous men, in any science, when they do err in any matter, err more dangerously than those which are less famous?

It is because that such, trusting to the heat of their own wit, are drawn far from their own senses, and therefore must needs be deceived. Avicen may serve for a proof of this, who, for all his fame in philosophy, said that a man might naturally be brought forth of the earth; and also the famous Averrois, who thought that a maid might conceive with child in a bath, without knowledge of man.

Out of Aristotle.

Why is a man, being endowed with reason, the most unjust of all living creatures?

It is because man only is desirous of honour, so it comes to pass that every one covets to seem good, and yet naturally shun labour, though he attains no virtue by it; or else it is because the nature of a sophister is rather to seem than to be and not seem; but very few do attain to true virtue.

Why do some in their youth beget girls, and in their middle age, when older, beget boys?

It is because the seed waxeth cold in such as use carnal copulation too often, and therefore in their middle age, when they grow tired, their seed is hotter, and so produceth males.

Why have children or boys pleasure in the act of venery, seeing they do not cast forth seed?

It is, as the philosopher saith, because there is certain ticklings in the letting out the spirit of breath, as it is in such as are of age by casting forth seed.

Why have those least pleasure who use the act of copulation often?

By often using carnal copulation the spirit and seed doth increase and wax cold, therefore not so itching or tickling, which causes delight.

Why doth immoderate copulation do more hurt than immoderate letting of blood?

It is because the seed is fuller of spirit and nutriment, better disposed and prepared for the nurture of the body than the blood; for, says Galen, the seed is the cause of the substantial parts of the body, and of it the body grows and is nourished. And he who is hungry is hurt more by taking away of bread than flower, so the body is more weakened by taking away seed than by letting of blood.

What is the reason those that have a very long yard cannot beget children?

It is because the seed, in going a long distance, doth lose the spirit, and therefore is cold and unfit for generation.

Why do such as are corpulent cast forth little seed in the act of copulation, and are often barren?

It is because the seed of such goes to nourish the body: for the same reason corpulent women have but few menses.

How comes women prone to venery in summer, and men in winter?

Because at that time his testicles hang down and are feebler than in winter; or else because hot natures become lively; for a man is hot and dry, a woman cold and moist, and therefore in summer the strength of men decays, and that of women increases, and she grows livelier by the benefit of the contrary quality. And for the same reason some beasts of a cold nature lie in dens and holes, and through the frigidity of the air receive little or no nourishment, but revive again when heat comes.

How comes man to be the proudest of living creatures?

Whether it is by reason of his great knowledge, or that (as the philosophers say) all intelligent beings having understanding, nothing remains that escapes man's knowledge in particular: or, is it because he hath rule over all earthly creatures, and all things seem to be brought to his arbitrement? Or, shall I answer, that the pride of man proceeds from his not knowing himself? for truly, would he remember that he is but dust and ashes, came naked into the world, born to earn his bread by the sweat of his brow, and after he is born to die, he would abhor pride.

How comes man to understand one thing and do another?

It is because there is in the same science contrary things, or because the office of the mind is to reach at many things, and the appetite tends to only one: and so a man chiefly lives by understanding and reason, but beasts are governed by appetite, anger, and pleasure.

How comes most women's wits unapt to good things, and most prone to naughty?

Because of a privation, which seems to be coupled and joined to her nature: for as a woman is a man's hurt, so the faculty of a privation is always to do mischief.

Why do men say that a woman's first counsel should be chosen?

Because (as we see in things that want reason) their actions and motions are guided to their proper ends by a superior power; for I think that is very true which is said, that there is a Providence which puts into a dishonest heart the desire

of honesty, and in a poor man the desire of wealth, as far as is sufficient. So a woman's understanding, though she know not the reason of good and evil, is sometimes directed by an infallible truth to take some things in hand; but some things they undertake of themselves are to be let alone as weak, and subject to many errors.

How comes it that women desire to go fine, and deck themselves, rather than men?

It is because by nature they are imperfect, so they endeavour to supply their imperfections by art; or else it is because they want the beauty of the mind, to study to adorn their bodies.

How comes it that a tall man is seldom wise?

By reason the largeness of his body proceeds from excess of heat and abundance of humidity. Some wise men think the perfection, accomplishment, and goodness of the operation is perfected by dryness, which doth always go and increase till it brings us to our end; for the constitution of the body originally sprung from the last humidity, but the vehemence and excess of heat overflows the judgment, and hinders quietude.

Why is a multitude of princes naught, as Homer saith?

It is because if the government should dwindle into tyranny, it is better to be under the yoke of one than many: or because that a multitude of rulers seldom regard the good of the public. Hence it proceeds, that if once they disagree, great evil is likely to befall the commonalty: it is easier for one man to be well given than many; in the government of many, there wants not strife, debate, and envy. Wherefore it is justly said, that a multitude of rulers are naught: for which reason let there be but one prince at a time.

Why have beasts their hearts in the middle of their breast, and man his inclining toward the left side?

It is because it should moderate the cold on that side; for Aristotle says, man hath only the left side cold. Or it is, as physicians say, because it should give place to the liver, which is on the right side.

Why doth a woman love that man best who had her maidenhead?

It is because the matter doth covet a form or perfection; so doth a woman the male. Or, it is by reason of shamefacedness: for, as Plato saith, shamefacedness doth follow love. Or, it is because that the beginning of great pleasure doth bring a great alteration in the whole, whereby the powers of the mind are much delighted, and rest immoveable in the same. Hesiod advises to marry a maid.

How comes the night in full moon to be somewhat warm, since the moon is cold by night?

Whether it is because the opinion of the peripateties ought to be preferred, which says, every light heats in that respect it is reflected.

How comes the night in autumn colder than in spring?

It is because the air is very thin, and bodies that are rarified are very apt to receive heat or cold, as it is easily seen in water, for water heated doth sooner freeze than cold, because it is rarified by heat.

Why are bodies sooner hurt with cold in autumn than spring?

It is because the bodies which are accustomed to cold do in spring receive heat, and therefore the moving or mutation is natural, and not surprising. But in autumn they hasten from heat to cold, not being accustomed, and without any mean. Galen says, nature doth not endure sudden changes.

How come hairy people to be more lustful than others?

Because in them is supposed great store of excrements and seed.

How comes it that men who have small heads are naturally angry and testy?

Because when the head is little the brain is so of course; the heat of the heart cannot be moderated with the heat of the brain as it ought to be, and anger proceeds of the boiling of the blood about the heart through some vexation.

Why doth the fundament of a man close after he hath made water?

Because the air runs presently to fill that which is empty, and so the parts of the body are altered by the coldness of the air, which causes trembling.

Why have some died through grief, some through joy, but more through anger?

Because joy cools the very inward guts, grief or sorrow do suffocate and choak the inward parts, and cool the outward, but anger heats both while heat remains; life and nature do so too, because the soul is counted the life and natural heat.

How doth the voice change in people when they begin to have seed?

Because heat is the beginning of seed and blood, as Aristotle saith against the physicians; and thereupon it raiseth that, because the change of the excrements of seed is made in the highest part of the body, the voice being above makes it manifest. And thereupon it is that the voices both of men and women do change when they begin to have seed.

How comes it when a pot full of boiling liquor is seething, that the bottom is cold?

It is because the hot vapours ascend upwards, and therefore, when the uppermost water is hot, the bottom at the same time is cold, by reason of the coldness of the water adjoined to it.

Why is the grain, which we find in the ants holes, and gathered in summer time, gnawed at one end?

It is because they are directed of nature to gnaw and consume that end where the virtue of feeding is, for fear it sprout again; lest by the sprouting and growing they should be deprived of their necessary nutriment.

Why do children love their mother more frequently than their father?

It is because they take great pains with them, or because of the great certainty they have of being born of them.

Why is not the father as well beloved of the son as the son is of the father?

It is, as the wise men say, because love does not go backward, but always forward; because love doth by nature serve such a life to continue the kind; whence it comes to pass, that our natural desire, neglecting things past, looketh to things to come. Or it is (as the philosopher saith) because the father hath somewhat of his in the son, the son nothing of his in the father.

Why are asses more nimble, as the proverb is, when they are young, than at any other time?

Whether it is because their nature and constitution being melancholy from the beginning, it is requisite there should be a temperance with the recompence of contrary qualities; for melancholy by nature is cold and dry, but when they are young they are hot and moist. This also we see in melancholy children; they which in their childhood are of great wit, and before it be looked for are of great wisdom, insomuch that you may hope and promise any thing in time to come, whose wit nevertheless, in progress of time, doth decay and fade. Be, therefore, nothing, to the end thou mayest live.

Why is there no asses in Pontus and Scythia?

It is because their nature is most impatient of cold, as philosophers do say.

Why are clergymen and women most covetous?

It is because the habit of virtue is bred of many actions, and therefore, seeing that priests want wives and children, they are no ways forced to spend their goods, and yet are accustomed to take and receive, and so become covetous; for (as the philosopher doth say) such as every man's actions are, such he doth become. The nature of women (as we have often said) is imperfect, and therefore they think it impossible fully to satisfy themselves; they gather together and keep that

by which means they may help their need; and by industry and art they covet to get that which nature does not give them. And for the same reason, I suppose, old men give themselves to covetousness; for wanting, and being destitute of helps by age and nature, they gripe after the goods of fortune, that with them they may provide for themselves against all wants.

Why do wounds grieve less in war than out of war?

It is because the powers of the soul bend another way; for (as the philosopher doth say) if our minds be strongly fixed on other matters, we do not see those things which are before our eyes; or whether it is by reason of anger, which doth heat the internal and external parts; and, as Aristotle affirms, with the heat the soul works all things; and therefore it happens that the angry man grows but slowly whole after his wound, and therefore also doth less grieve and heat.

Why do we wonder at an eclipse of the sun or moon, and not at the generation of plants and beasts by seed?

Whether it is because our admiration ceaseth in things that are usual, and our minds neglect to search out the truth in such things; but that which happens seldom doth stir us up to wonder, and induceth the understanding to search out the cause.

Why do head-ach, dulness of memory, and an evil disposition of imagination, follow the long retaining of the seed?

It is because it doth hinder and make heavy the brain by excess of seed; or because the seed long kept, gets some venomous quality, and therefore the fume and vapour of it doth hurt the head.

How comes it that priests and monks fear and abhor death more than other men?

It is because they are by nature cold and melancholy; because they perceive themselves to perish utterly; for when they are out of this world, they neither continue in their own nature nor in posterity.

How is it that when trees let fall their leaves and beasts and birds their hair and feathers, they receive them again, but a man becoming bald, his hair groweth no more?

It is because the time of the year doth bring that change of bodies; so that in the first change their floweth an interchangeable course one after another, and beasts receive their feathers and hair, and trees their leaves; but baldness cometh to a man through age, and nature giveth no coming again to age.

Why doth summer end all diseases?

If force and nature be strong it shall find air most fit for solution and digestion, and expulsion of superfluities; if weak

and overthrown, the heat doth overthrow it more. It doth loosen weak bodies, and therefore there cometh nothing unto the sick body but death.

Why if a man put his hands into the water in summer is he colder if the water be moved than when it standeth still?

It is because that part of the water which toucheth his hands is hot by the heat of his hands; for every agent which doth communicate with the patient in the things whereon he worketh, in doing so doth suffer again; and the water being moved, it is necessary that the parts of it which are rarified be scattered abroad, and others more cold succeed them.

Why do some which have an evil complexion of body live longer than some who are of a sanguine and better nature?

Whether it is through bad government and order; or because there is some hidden cause in those dispositions; for, as Averrois saith, the number of the elements is infinite in the works of nature, the which none besides the author of nature doth understand.

What is the cause, as physicians say, that the suffocation of the matrix, which happens to women through strife and contention, is more dangerous than the detaining of the flowers?

Whether it is because that by how much the more an excrement is perfect, so long as it doth continue in its natural disposition, by so much more it is worse when it is removed from that, and drawn to the contrary quality; as is seen in vinegar, which is the sharpest when it is made of the best wine. So it happens, the more men love one another, the more they hate when they fall to discord.

Why doth the land which standeth still seem to move unto such as sail by sea?

It is because the nutriment of the sense of seeing is accidentally moved when the ship is moved, whereby the likeness and similitude of things are perceived and received with the moving.

Why do we love our sight above our senses?

Whether it is (as Aristotle doth say) because it doth shew us the difference of things, or because its knowledge is more drawn from material substance: Or, it is because the divine force of love is placed in that sense.

Why do we not judge a staff to be broken in the water, seeing it doth so appear in the sense of sight?

Whether it is because we perceive by the sense of feeling and touching that the sight doth err: Or, is it because we do not judge with the same power as we do imagine with? An argument of this, because the sun seems to be but a foot round. And by a trick and moving of the finger, one

finger doth seem two, yet we do not yield that they are two.

Why do we put our hands over our eyes, when we would see any thing afar off?

It is because the light should not be dispersed: and so Aristotle saith, that those which have their eyes standing out, cannot see far: and contrary, such as have them hollow in their head, can see far, because the moving of the sight is not scattered.

Why do some people see things near them and not at a distance?

It is through the weakness of the sight, for in such the power of seeing is very weak; therefore they need a strong moving, as in such as have their eyes standing out who cannot see far.

Why do such as would shoot aright wink with one eye?

Because the sight is more strengthened and united, and so fitter to perform this action.

How is it that such as have been long in the dark, if on a sudden they come into the light, are half blind?

It is because nature cannot endure those sudden mutations, or because the spirit of the sight is small and weak, and therefore is glad of the like, and so dissolves when they come into the light. Or else it is because of the desire of that light they wanted before, which, when they behold too earnestly, their sight is weakened; as it happens in some who have a long time endured famine, and then eating greedily, take more than they can digest, and so perish.

How can nothing be the cause of its generation and corruption?

It is because the mover must be before the thing moved, and the engenderer before the thing engendered, or that it is possible to be before itself.

How comes women's bodies looser, softer, and their veins lesser than men's; and why do they want hair?

By reason of their menses, for with them their superfluities go away, which would produce hair, and where the flesh is filled, consequently their veins are more hid than men's.

What is the reason that when we think upon an horrible thing we are stricken with fear?

It is because the conceit, thinking and understanding of things have force and virtue: for Plato saith, the reason of things have some affinity with the things themselves, for the image and representation of cold and heat, in such as the nature of things are, as the philosopher hath said. Or, it is because when we comprehend any dreadful matter, the blood runneth to the internal parts, and therefore the external parts are cold, and shake with fear.

How doth a radish root help digestion, and yet remain undigested itself?

Whether it is because the substance consisteth of divers parts, for there are some thin parts in it which are fit to di-

gest meat, the which being dissolved, there doth remain some thick substance in it, which the heat cannot digest.

Why do such as cleave wood cleave it easier in length than athwart it?

Whether it is because in wood there is a grain if it be cut in length, whereby in the very cutting one part draweth another fast by?

What is the reason that if a spear be stricken on the end the sound comes sooner to one that stands near than to him that stricketh?

Whether it is because (as it hath been said) there is a certain long grain in wood directly forward, filled with air; but cross, or on the side, there is none; and therefore a beam or spear stricken on the end, the air which is hidden receiveth a sound in the aforesaid grain, which serveth for the passage of the air; and therefore seeing the sound cannot go easily out, it is carried into the ear of him who is opposite to him and, those passages do not go from side to side, and therefore a sound cannot be distinctly heard.

Why are there not famous men in every faculty in our age?

It is because the nature of man decayeth in our age; and, as Salinus saith, succession being corrupted, the progeny of our age is worse by birth; or it is because such are not esteemed of by princes; for take away the reward due unto virtue, and no man will embrace it; or it is ordained by nature that men do always complain of the present time.

Why are flatterers in great credit with princes?

It is, as Plutarch saith by the authority of Plato, because they love themselves too much; immoderate love of themselves causeth them to admit flatterers, and to give them credit; or it is, as I think, because they want the light of reason; for among birds, some through the corruption of their nature delight in stinking meat; and whom the day doth blind the night doth lighten.

Why have philosophers for the most part evil conditions?

It is because they are esteemed of princes: or is it because of philosophy itself they are accused of crimes, and think therefore they are compelled to forsake virtue and follow vice? or else, deceived through error, they think they have snatched to themselves some of her rags; and therefore they are by us rather called sophisters than philosophers, for certainly a philosopher should be of a stout courage in all respects and in all fortunes, for they reason badly, and therefore should give themselves unto philosophy, because they would be honoured of princes; and their desire is not ruled by nature but by errors, and they are thrust forward with streams of false credulity.

Why do such as anger wax pale in the beginning, and afterwards grow red?

It is through the desire of revenge for that which grieveth, that the heat and blood are called unto the heart, and therefore of necessity the external parts are pale, when they are determined to put that in execution which they desire, the heat and blood do run into the outward parts, and then they are greatly to be feared and taken heed of.

Why do serpents want a yard and stones?

It is because they want thighs, and therefore do want a yard, and they want stones because of the length of their body.

Why can serpents turn their heads backward, and the rest of the body stand still?

It is because they are made of a winding composition, and have their joints flexible, and made of gristles, and this is the reason in serpents, and also because they may void all those things that hurt them; for having no feet, and being long in body, they cannot easily turn them, whilst they bow against those things which are behind them. It were to no purpose to lift up their head if they could not exercise anger.

Why is a camellion changed into many colours?

Whether it is, as it seemeth to philosophers, because he is the slenderest of all footed beasts engendered of eggs, and is stark cold for want of blood, the cause is to be referred unto the quality of the mind: through overmuch coldness he is of so many colours, or it is the property of fear to bind fast through want of blood and heat.

Why are the thighs and calfs of the legs of men fleshy, seeing the legs of beasts are not so?

It is because men only go upright, and therefore nature hath given the lower parts corpulency, and hath taken it away from the upper; and therefore she hath made the buttock, the thighs, and the calf of the legs fleshy.

Why (as Aristotle doth affirm) are the sensible powers in the heart, yet if the hinder part of the brain be hurt the memory payeth for it; if the fore part, the imagination; if the middle, the cogitative part?

It is because the brain is appointed by nature to cool the heat of the heart, wherefore it is, that in divers of its parts, it serveth the powers and instruments of their heat, for every action of the soul doth not proceed from one measure of heat.

PROBLEMS OF
ALEXANDER APHRODISEUS.

WHY doth the sun make a man black, and make dirt white, and make wax soft and dirt hard?

By reason of the disposition of the substance that doth suffer. All humours, phlegm excepted, when they are heated above measure, do seem black about the skin and die, being full of saltpetre, or salt liquor; when the sun hath consumed its dregs and filth, it doth become white again, and when the sun hath drawn and stirred up the humidity of the wax, it is softened; but in dirt the sun doth consume the humidity, which is very much, and so doth dry it and make it hard.

Why doth black choler coming into the paps or into the shank work a corrosion, or gnawing, or wasting, and in those that are melancholy it doth not work in the like, although it flies into their brain?

Because there are many great veins in the paps by reason of engendering milk, and therefore store of that humour doth run thither: and likewise to the shank, because it goeth downward; but in the brain because it is above, and also because it hath very small veins, small store of choler doth ascend, and which hath only power and force to prick, and not to gnaw and eat. Moreover, the brain is cold and moist, whereby it is after a sort contrary to the disposition of black choler, which doth mortify it. That therefore which is properly called black choler doth breed an eating and gnawing canker in the paps, in the shank a bile or sore hard to be cured, which of eating is called, *Nimades*. In the brain it doth breed a fierce melancholy: but that which is not properly black choler, but melancholy humour, causeth a swelling only, which is like a canker, but doth not gnaw and eat, and doth also breed a quiet and peaceable melancholy.

What is the reason that when we put our finger on the mouth of a waiering pot the water will not run out of the bottom, and the finger being taken away it will run presently?

Because that when the finger is taken away from the mouth of the pot, the air entering in doth thrust down the water, which of its own nature doth go downward, and so goeth out at the bottom. And this is the reason of all mechanical engines and instruments made by air and water, as clocks and hour glasses.

Why doth wine and water given out of season to the sick of an ague cause a distemperance of the brain; for these two are contrary, for the water is cold and the wine is hot?

I say then, that the wine being apt to ascend doth burn the brain at the time it is disturbed and distempered with the ague. And we see also many who are in health, if they use much wine, to be scarce well in their wits. But water doth stop the passages of the body, by which the spirits (which are the instruments of the soul) are dissolved, and so cause them to become thick and gross, and more corrupt and petrefied, which breeds the ague. And oftentimes water being overcome by the ague, becometh its nourishment; as we see in a smith's forge, where a little water doth kindle the fire and make it burn more.

Why have women, and children, and gelded men, shrill and loud voices?

Because that through the abundance of humidity their artery is not stretched wide; and therefore as a small flute or pipe giveth a small slender sound, so of the artery in them that is strait and narrow; for it is the property of heat to make wide and loosen, but women and eunuchs are cold.

Why are children stricken with a planet in the summer?

They are sick of a weak and lingering ague, and their eyes sink hollow in their head, and they become weak and feeble, and sleep very little: and some of them have a flux, because children are tender, and do easily suffer, and have great store of phlegm in the head, as we have said; and therefore the phlegm being overmuch heated with great heats, and also petrefied, doth inflame the ague, whereupon the gristles of the brain are set on fire, and therefore they sleep little; and that fire descending by the arteries of the heart, and setting on fire the lively spirits, doth kindle an ague without putrefaction. And seeing that much choleraises of an ague, thereby it falleth out that the cholera gnaweth and eateth the belly. It is plain that the cause of that alteration is in the brain, because that cooling medicines are applied to the head, and such are good to quench that fire. And some of ripe years are sick of the same disease, that is, such as have phlegm and cholera heaped up in their head, which putrefy by the very breathing thereof, and after a manner, and by the very air, the spirits are set on fire.

Why are round ulcers hard to be cured?

Because they are bred of a sharp cholera, which eats and gnaws, and because it doth run dropping and gnawing it makes a round ulcer, for which reason it requires drying medicines, as physicians assert. Natural philosophers doth say, it comes to pass because there is the beginning where

the mischievous imposthume doth begin; for in a circle there is neither beginning nor end. When they are burned by the physicians they assume another kind of shape.

Why is honey sweet, and yet seemeth bitter to such as have the jaundice?

Because they have much bitter choler all over their bodies, but abounds with the tongue; whence it happens, when they eat honey the humours are stirred, and the taste itself, when it hath found the bitterness of the choler, causes an imagination that the honey is bitter.

Why have very angry men fiery eyes?

Because the blood about the heart is fervent, and the spirit hot, and so being very subtile and pure are carried upwards, and by the eyes, which are clear, they shine, and have bloody vapours that ascend with them, which makes the face red, which Homer, not being ignorant of, says, and his eyes were like a burning flame.

Why doth water cast upon serpents cause them to fly?

Because they are cold and dry by nature, having but little blood, and therefore fly from excessive coldness. And that they be of this quality is plain, because they seek for dens and secret places in the earth, as being warm; and at sun-set shun the air, as being cold; and again in summer, because the bowels of the earth are cold, they find out the warmest places.

Why doth an egg break if it be roasted. and not if boiled?

The reason is, when moisture comes near the fire it heats it too much, and breeds much wind, which being pent up in little room forceth its way out, and so breaks the shell.

The like happens in tubs, or earthen vessels, when new wine is put into them. And too much phlegm breaks the shell of an egg in roasting; the which doth happen in earthen pots too much heated; wherefore the common people wet an egg when they intend to roast it. Hot water, through its softness, doth separate its humidity by little and little, and so dissolves it through the thinness and passages which are in the shells.

Why do men in the act of carnal copulation in a manner wink, and find a like alteration in all the other senses?

Because they being overcome with the effect of that pleasure, do comprehend it the better, winking as it were their eyes. They are not lifted, nor do carry the wind abroad into the air with the senses, whereby they would discern those corporal affections.

Why have some medicines of one kind contrary force, as experience doth teach; mastich doth expel, dissolve, and knit; vinegar both cools and heats?

Because there are some small invisible bodies in them, not by confusion, but by interposition; as sand moistened doth clogg together and seem to be but one body, though indeed there are many small bodies in sand. Since this is so, it is not absurd that contrary qualities and virtues should be hidden in mastich, and nature hath given the law these bodies.

Why do our privities swell when we hurt one of our toes?

Nature warding for those things which belong to the body hastes to assist the part aggrieved: and because she hath the most profitable and nourishing of all the humours, it is requisite when she doth descend to the toe with the blood, and those veins be filled which are about the privy members, called *adness* of the Greeks, which are little round kernels. Therefore immoderate constipation doth cause inflammation and standing up, and that privy member is called *inguem*, borrowing its denomination of the place itself.

Why doth not nature give birds a bladder, or receptacle for urine?

Because they did want moisture to give the matter for feathers to grow, and that they consume with the exercise of flying; neither do they piss at all; and when they drink they void much dung.

Why have children gravel breeding in their bladder, and old men in their kidneys and reins of the kidneys?

Because children have strait passages in the kidneys, and an earthy thick humour is thrust with violence by the urine from the fashion of the moon, even to the bladder, which hath wide conduits or passages that give room for the urine and humour, whereof gravel is engendered to wax thick and seat itself, as the custom of it is. In old men it is the reverse, for they have wide passages in the reins, back; and kidneys, that the urine may pass away, and the earthy humour congeal and sink down; the colour of the gravel shews the humour whereof the stone comes.

Why if the stone do congeal and wax hard through heat, (children are hot, and by the same reason it is done in old men, for there is not so much cold to be granted as there is in ice or snow, through which extreme cold the kidneys would perish,) yet we use not contrary things to dissolve coldness, but light things, as parsley, fennel, and such like?

They say it falleth out that by excessive heat and scorching, the stones do crumble into sand, as in earthen vessels, which when they are over heated or roasted they become sand. And by this means it happens that small stones are voided together with sand in making water. Sometimes cold drinks thrust out the stone, the kidneys being stretched, and casting it out by a greater force, and eases the belly of its burden. Besides

it often happens that an immoderate heat of the kidneys, or of the reins, or of the back (through which the stone doth grow) is quenched with coldness.

Why is the curing of an ulcer or bile in the kidneys or bladder very hard?

Because the urine, being sharp, doth ulcerate the wound, which good and fit medicaments cover the skin. Ulcers are harder to cure in the bladder than in the kidneys, because urine stays in the former, but runs away from the latter.

What is the reason that, in bathing vessels, the hot water, when it is stirred, seems the hotter to us, almost burning our bodies?

Because when we enter those sort of baths the water itself doth suffer, that is, when the water heats our bodies it is made colder by us. We have learnt, that whatever works in generation or corruption, the same (without all doubt) doth suffer: the water then being in some sort cooled, doth not heat alike, and we being accustomed to it, do not feel the heat as we did in the beginning, because it is diminished. If by stirring the water more heat is added, which neither hath yet wrought nor suffered any thing of the body which is in it, that will seem hot and scalding, in regard that it suffers by something, and so by degrees loses its heat as the first did.

How is it, that whatsoever is moved is hotter for it, especially in summer, when the heat of the sun is most intense?

This seems a contradiction to the other, for hot water did seem hotter to us by moving. Therefore it is a common thing for what is moist and principal in any thing (either in quantity or quality) to overcome and change that which is less and weaker; and that which is strong doth somewhat suffer again in doing. Wherefore the hot water, when it is very hot, sticking to the body, cools and does not retain the same quantity. The air then which doth compass us about being hot in summer, like the water compassing our bodies, is somewhat heated by us, who are not hot through the season, it heats us as hot linen garments do, the which being first cold, and then stirred, that air which was before heated by us is driven away, and another not heated succeeds, and seems cold to us.

Why do those sores which breed in the ball of the eyes seem white, when they have left growing and are cold, and others do not seem such as grow out of the ball?

Because through the ball of the eye the sight proceedeth, the which is bright and clear: therefore in the white of the eye, when the wound doth make thick that part of the covering which is like a horn, the spirit of the sight cannot issue out; hence it comes to pass (much of it being got toge-

ther) it makes the wound light and clear, shewing it white; and, because of the quickness of the sight, the spirit cannot get out, and it causes blindness.

Why do chaff and straw keep water hot, and snow cold, which are seemingly contraries?

Because the nature of chaff wants a manifest quality: seeing therefore that of their own nature they can easily be mingled, and consumed with that which they are annexed unto, they easily also take the same nature unto them, and therefore being put into hot things, they are easily hot, and do heat again and keep hot, and contrary being made cold of the snow, and making the snow cold, do keep in its coldness. So wax and oil will easily be consumed, and made one with another thing, and are also without quality, and do help the quality which is mingled with them, as being made one with them.

Why do the stars of heaven seem brightest in the clear winter time?

Because the air either which doth compass us, or that which is highest, is made thin, and purged with winds and showers of rain, and by that means our sight doth see farther and clearer. The like is manifestly seen in running rivers; for such things as are in them are far better seen than in the thick standing puddles of water, where either nothing is seen or but confusedly.

Why have we oftentimes a pain in making water?

Because that sharp choler, issuing out and pricking the bladder of the urine, doth provoke and stir up the whole body to ease the part offended, and to expel the humour moderately. This doth happen most of all unto children, because they have moist excrements, by reason of their often filling.

Why do nurses rock and move their children when they would draw them to sleep?

To the end that the humours being scattered by moving may move the brain: but those of riper years cannot endure this.

Why do some drunkards see double?

Because the muscles of the sight being more or less filled, and from the self-same means weak and feeble, do draw and lift one eye upward and the other downward, and by that means the beams do not look that way at once, but towards divers places and bodies, and therefore each of the eyes using a private office and faculty of seeing, doth cause a double sight.

Why are boys apt to change their voices when about fourteen years of age?

Because that then nature doth cause a great and sudden

change of voice, experience proveth this to be true; for at that time we may see that women's paps do grow great, to hold and gather milk, and also those places that are above the hips, in which the young fruit should remain. Likewise men's breasts and shoulders, which then can bear great and heavy burdens; also their stones, in which their seed may increase and abide, and his privy members, to let out the seed with ease. Further, all the body is made bigger and dilated, as the alteration and change of every part doth testify, and the harshness of the voice and hoarseness; for the rough artery, the wind pipe, being made wide in the beginning, and the exterior and outward part within being unequal to the throat, the air going out at the rough unequal and uneven pipe doth then become unequal and sharp, and after a hoarse, something like unto the voice of a goat, wherefore it has its name called *bronchus*. The same doth also happen to them unto whose rough artery distillation doth flow; it happens by reason of the drooping humidity that a light small skin filled unequally causes the uneven going forth of the spirit and air. Understand, that the windpipe of goats is such by reason of the abundance of humidity. The like doth happen unto all to whom nature hath given a rough artery, as unto cranes. After the age of fourteen they leave off that voice, because the artery is made wider, and reacheth its natural evenness and quality.

How is it that oil, being drank, doth cause one to vomit, and especially yellow choler?

Because that seeing it is light and ascendeth upwards, it provoketh the nutriment in the stomach, and lifteth it up; and so the stomach being grieved, summoneth the ejective virtue to vomit, and especially choler, because that is light, and consisteth of subtle parts, and therefore it is the sooner carried upward; for when it is mingled with any moist thing it runneth into the highest room.

Why doth not oil mingle with moist things?

Because that being pliant, soft, and constipate in itself, it cannot be divided into parts, and so cannot be mingled, neither if it be put on the earth can it enter.

How comes it that water and oil do freeze in cold weather, and wine and vinegar not?

Because that oil, being without all quality, and fit to be compounded with any thing, is cold quickly, and so extremely, that it is most cold. Water being cold of nature, doth easily freeze when it is made colder than its own nature. Wine being hot, and of subtle parts, is not so soon cold, but vinegar being of most subtle parts, suffereth no freezing.

Why do things, contrary in quality, work the same effect?

That which is moist is hardened and abounds alike of heat and of cold. Snow and liquid doth freeze with the cold; a plaister and gravel in the bladder are made hot with the heat. That is so indeed, but by two divers actions. The heat doth consume and eat the abundance of moisture; but the cold stopping and shutting with its over-much thickness, doth wring out the falling humidity, like as a sponge wrung with the hand doth cast out the water which it hath in the pores or small passages.

Why doth a quaking or shivering seize us oftentimes when any fearful matter doth chance, as a great noise or a crack made, the sudden downfall of water or a great tree?

Because that oftentimes the humours being digested and consumed with time, and made thin and weak, all the heat vehemently, suddenly, and sharply flying into the inward part of the body, consumeth the humours which causeth the disease. So treacle hath its effect, and many such like, which are hot and dry, when they are taken after concoction.

Why do steel glasses shine so clearly?

Because they are lined on the inside with white lead, whose nature is shining, which being put to the glass, which is also shining, doth shine much more; and casting its beams through the passages of the glass, doth double that which is in the superficial parts of the glass, and without the body of the glass, and by that means the glass is very shining and clear.

Why do we see ourselves in glasses and clear water?

Because the quality of the sight passing into the bright bodies by reflection, doth return again by the beam of the eyes as the image of him who looketh on it. That qualities do go forth and pass from the face, as it is not absurd, they do shew which remain near unto trees, because they are wont to look green, for the green quality of green leaves passeth to the face of itself; likewise going unto the running water doth make it shew green.

Why do hard dens, hollow and high places, send back the likeness and sound of the voice?

Because that such places, as if by reflection, do return back the image of a sound, for the voice doth beat the air, and the air the place, which the more it is beaten the more it doth beat, and therefore doth cause the more vehement sound of the voice; moist places, and as it were soft, yielding to the stroke and dissolving it, give no sound again; for according to the quality and quantity of the stroke, the quality and quantity of the voice is given, which is called an echo. Some do idly fable that she is a goddess: some say that Pan was in love with her, which without doubt is false. He was some wise

man, who did first desire to search out the cause of that voice, and as they who love, and cannot enjoy their love, are grieved, so in like manner was he very sorry until he found out the solution of that cause: as Endymion also, who first found out the course of the moon, watching all night, and observing her course, and searching her motion, did sleep in the daytime, and therefore they do fable that he was beloved of her, and that she came to him when he was asleep, because she did give to the philosopher the solution of the course of herself. They say also that he was a shepherd, because that in the desert and high places he did mark the course of the moon. And they gave him also the pipe, because that the high places are blown with wind, or else because he sought out the consonancy of figures. Prometheus also, being a wise man, sought the course of the star which is called the eagle in the firmament, his nature and place; and when he was as it were wasted with the desire of learning, then at the last he rested, when Hercules did resolve unto him all doubts with his wisdom.

What is the reason that if you cast a stone into a standing water that is on the utmost parts of the earth it makes many circles, and not if the water be deep in the earth?

Because that the stone with the vehemence of the cast doth pursue and follow the water from every part of it, until the stone come to the bottom; but if there be very great vehemency in the throw, the circle is the greater, the stone going down unto the earth causes many circles. For first of all it doth drive the overmost and superficial parts of the water into many parts, and so going down always to the bottom, again dividing the water, it maketh into another circle, and this done successively until the stone resteth, and because the vehemency of the stone is slackened still as it goes down, of necessity the last circle is smaller than the first, because that with the stone as also with the body the water is divided.

Why do some think that laughter proceeds from the spleen, affirming that it is not like that they laugh as much whose spleen is corrupted, as those whose spleen is sound, but say that such are very sad?

Truly, I think that the cause of laughter is accidental, and not properly the spleen, for if it be sound and perfect, it doth draw from the liver melancholy humours, whereof it proceedeth that when pure blood, without any dregs, doth go through the whole body, and also in the brain, it doth delight both nature and mind; and doth make men merry like unto wine, and bring them to a quietness and tranquillity, and so of laughter is moved.

Why do not males bring forth young ones ?

Because they proceed of divers kinds of beasts, and so then the mixture of seed differing of quality and quantity, begetting a certain other thing, besides that which is first, doth mar and abolish the nature of those things which first were, as the mingling of white and black, abolishing the colour of excrements, breedeth another colour which is dark and dun, which is none at all of the extreme; therefore the engendering quality is abolished, and the aptness of receiving form.

Why are such as are deaf by nature dumb ?

Because they cannot speak and express that which they never heard; some physicians do say, that there is one knitting and uniting of sinews belonging to the like disposition. But such as are dumb by an accident are not deaf at all, for then there ariseth a local passion.

Why do not swine cry when they are carried with their snouts upwards ?

Because, above all other beasts, they bend more than others to the earth. They delight in filth, and that they seek, and therefore in the sudden change of their face they be as it were strangers, and being amazed with so much light, do keep that silence; some say the windpipe doth close together by reason of the straitness of it.

Why do swine delight in dirt ?

As the physicians do say, they are naturally delighted with it, because they have a great liver, in which desire is, as Aristotle saith; the wideness of the snout is the cause, for he hath smelling that doth dissolve itself, and as it were strive with stench.

Why doth an itching arise when an ulcer doth wax whole and heal ?

Because the part which is healed and made sound doth pursue the relic of the humour which remaineth there against nature, and which was the cause of the bile, and so going out through the skin and dissolving itself, doth cause the itch.

Why are those diseases and accidents longest and most grievous which do molest one eye and not both ?

For two reasons; first, because a running fluxion is heaped up at one eye only, for whatsoever is divided into many, is weaker than when entire, and of a lesser force; secondly, because when the whole eye doth make any motion, it often obliges the ailing eye to move too, and the help for any diseased part consists in quietude.

How comes a man to sneeze oftener and more vehemently than a beast ?

Because he uses more meat and drink, and of more different sorts, and that more than requisite, the which when he cannot digest as he would, he doth gather together much air and spirit by reason of much humidity, the spirits being then very subtile, ascending into the head, often forces a man to void it, and so provokes sneezing. The noise caused thereby proceeds from a vehement spirit or breath passing through the conduits of the nostrils, as belching does by the stomach, or farting by the fundament, the voice by the throat, and a sound by the ears.

How comes the hair and nails of dead persons to grow?

Because the flesh rotting, withering and falling away, that which was hidden about the root of the hair doth now appear, and causes an imagination that the hair doth grow, some say it grows indeed, because the dead carcasses are dissolved in the beginning to many excrements and superfluities, by reason of the putrefaction which comes to them. These going out at the uppermost parts of the body by some passages do increase the growth of the hair.

Why doth not the hair of the feet presently grow grey?

For the same reason, because that through great motion they disperse and dissolve the superfluous phlegm that breeds greyness. The hair of the secrets grows very late, because of the heat of that place, and because that in carnal copulation it does dissolve the phlegm also.

Why do many beasts wag their tails when they see their friends, and a lion and a bull beat their sides when they are angry?

Because they have the marrow of their backs reaching to their tail, which hath the force of motion in it, the imagination acknowledging that which is known to them as it were with the hand (as happens to men) doth force them to move their tail. This doth manifestly shew some secret force to be within them, which doth acknowledge what they ought. In the anger of lions and bulls nature doth consent to the mind, and causeth it to be greatly moved, as men do sometimes when they are angry, beating their hands on other parts: when the mind cannot be revenged on that which doth hurt, it presently seeks out some other solace, and cures the malady with a stroke or blow.

Why, if you put hot burnt barley on a horse's sore, is the hair which grows upon the sore not white but like the other hair?

Because it hath the force of expelling, and doth wipe away and dissolve the excrements of phlegm, as likewise all

unprofitable matter that is gathered together through the weakness of the parts or crudity of the sore.

Why doth hair never grow on an ulcer or bile?

The reason is, a man hath a thick skin, as is seen by the thickness of the hair, and since the scar is thicker than the skin itself, it stops the passages from whence the hair should grow. Horses have thinner skins, as is plain by the thick hair; therefore all passages are not stopt in their wounds and sores, and after the excrements which were gathered together have broke a passage through those small pores the hair doth grow.

What is the reason that such as are bitten by a snake, if they are thirsty, quench it by drinking of treacle, which is hot and dry?

I say then, it doth not quench thirst solely by its own quality, but by some mutual sympathy and consent, and natural reason. It is a kind of counter-poison, and a preservative too, being composed of divers sorts of herbs that have some kind of agreement with all the parts of the body, as dictamnium, dittanger, or ginger, hath a proportionable conservative of the heart; agrimony or liver-wort with the liver; stone-wort or finger-fern with the spleen; parsley with the mouth or the belly; hyssop with the lungs; elicampane with the reins of the back; rue with the neck; bitter-wort the brain; and silver montanum with the bladder. Every one of these drawn as it were with the sweetness of honey, doth draw that which is best for his safety; among all of these the blood of some viper is mingled, which has a certain natural disaffection, which we call *antiparium*, a contrary of all natural qualities against every venomous beast and corruptible creature. These being distributed into every part, they suffer nothing to work that effect which doth threaten corruption, for they do resist like awful soldiers, who have taken arms for the defence of their country,

Why is fortune painted with a double forehead, one side bald, and the other hairy?

The baldness signifies adversity, and hairiness prosperity, which we enjoy when it pleases her.

Why have some commended flattery?

Because flattery setteth forth before our eyes what we ought to be, though not what we are.

Wherefore should virtue be painted girded?

To shew that virtuous men should not be slothful, but diligent, and always in action.

Why did the ancients say it was better to fall into the hand of a raven than a flatterer?

Because ravens do not eat us until we are dead, but flatterers devour us alive.

Why have choleric men beards before others ?

Because they are hot, and their pores large and wide.

How comes it that such as have the hickup do ease themselves by holding in their breath ?

The breath retained doth heat the interior parts of the body, and the hickup proceeds from nothing but cold.

How comes it that old men remember well that which they have seen and done in their youth, and forget such things as they see and do in their old age ?

Things learnt in youth have taken root and habitude in the person, but those learnt in age are forgotten, because the senses are weakened in them.

What kind of covetousness is best ?

That of time, when it is employed as it ought to be.

Why is our life compared to a stage play ?

Because the dishonest do occupy the place of the honest, and the worst sort the room of the good.

Why do dolphins, when they appear above the water, denote some storm or tempest approaching ?

Because that at the beginning of a tempest there do arise from the bottom of the sea certain hot exhalations and vapours, which heat the dolphins, causing them to rise up for cold.

How comes things more quiet in the night than in the day ?

The motion of the air, and the coldness of the night is the cause thereof; which coldness continuing hinders the motion.

How came the Romans to call Fabius Maximus the target of the people, and Marcellus the sword ?

Because the one adapted himself to the service of the commonwealth, and the other was very eager to revenge the injuries of his country; and yet they were in the senate joined together, because the gravity of the one would moderate the courage and boldness of the other.

Why does the shining of the moon hurt the head ?

Because it moves the humours of the brain, and cannot afterwards dissolve them.

If water does not nourish, why do men drink it ?

Water causes the nutriment to spread through the body.

Why is sneezing good ?

It purgeth the brain, as milk is purged by the cough.

What are the seats of the affections of the body ?

Joy dwelleth in the spleen, anger in the gall, fear in the heart, and lechery in the liver.

Why is hot water lighter than cold ?

Because boiling water has less ventosity, and is more light and subtle, the earthy and heavy substance being separated from it.

How comes marsh and pond water to be evil?

By reason they are phlegmatic, and do corrupt in summer time, the fineness of water is turned into vapours, and the earthiness doth remain.

Why be studious and learned men soonest bald?

It proceeds from a weakness of the spirits, or because warmth of digestion causes phlegm to abound in them.

Why doth too much watching make the brain feeble?

Because it encreases choler, which dries and extenuates the body.

How come steel glasses better for the sight than others?

Steel is hard, and doth present unto us more substantially the air that receiveth the light.

How doth love shew its greatest force, by making the fool become wise, or the wise become a fool?

In attributing wisdom to him that hath it not; for it is harder to build than to pull down: and ordinary love and folly are but an alteration of the mind.

How comes too much labour bad for the sight?

Because it dries the blood too much?

Why is goats milk counted best for the stomach?

Because it is thick, not slimy, and they feed upon boughs and wood rather than grass.

Why does grief or vexation bring grey hairs?

Because it dries, and age is nothing else.

How comes he to be most merry that hath the thickest blood?

The blood which is fat and thick makes the spirits firm and constant, wherein consists the force of all creatures.

In your opinion, which is the hardest, to obtain the love of a person, or to keep it when obtained?

To keep it, by reason of the inconstancy of man, who is quickly angry, and soon weary of a thing: hard to be got, and slippery to keep.

Why do serpents shun the herb rue?

Because they are cold, dry, and full of sinews, but the herb rue is of a contrary nature.

How comes a capon better to eat than a cock?

The capon loses not its moisture, because he does not tread the hens, and therefore is better.

Why do we smell a thing less in the winter than in the summer?

Because the air is thick and less moveable.

How comes hair to burn so quickly as it does?

Because that hair is dry and cold.

Why is love compared to a labyrinth?

Because the entry and coming in is easy, and the going out impossible, or very hard.

END OF THE PROBLEMS.

ARISTOTLE'S LAST LEGACY.

INTRODUCTION.

WHEN the Almighty Architect of the World had formed the heavens in the beginning, and laid the foundations of the earth, and by his blessed spirit moving upon the abyss, had created a fair and beautiful world out of a rude mass and undigested chaos, and by his powerful fiat had brought into being all the several species of vegetables and animals, and given even to the plants and vegetables to have seed themselves, for the producing their several kinds or forms, and to the animals (which he created male and female) the power of propagating their species, and had not adorned the world with all those beautiful and glorious embellishments, that his omnipotent wisdom and goodness saw fit and requisite for that great guest he designed to bring into it, he at last created man, as a microcosm, or lesser world, to be lord of this greater world; not with a bare fiat only, as he did the rest of his creatures, but called, as it were, a counsel of the sacred Trinity about it, saying, *Let us make man in our own image, after our own likeness, &c.* as the divine historian expresses it; so that man, in his original, is a ray of the Divinity, and the very breath of the Almighty, and therefore it is said, *God breathed into his nostrils the breath of life, and he became a living soul.* Man being thus created and made lord of the world, had in himself at first both sexes, for the text tells us, *Male and female created he them, and called their name Adam;*—but yet till Adam was divided he was still alone; and as every creature had a mate, he was lord of all: so that in paradise itself he seemed to be unhappy, wanting a meet help, and therefore his munificent Maker, resolving to make him completely happy, divides him from himself, that by a more agreeable conjunction he might be united to himself again; and thus, of a part of himself was formed Eve, whom Adam having never seen before, by a sympathy of nature, presently called—*Bone of his bone, and flesh of his flesh.* Adam having thus found a meet help given him by his Creator, was now completely happy; and being blessed by the Almighty, had this law also given him, *to increase and multiply;* he being endowed with a natural propensity thereunto,

and the woman having a plastic power given her by nature, for the formation of the embryo. This natural inclination and propensity of both sexes to each other, with the plastic power of nature, is only the energy of the first blessing and command of the Almighty, which to this day upholds the world.

The mystery of the generation of that noblest piece of creation man, and the unfolding of the plastic power of nature in the secret workings of generation, and formation of the seed in the womb, is the subject of the following treatise: a subject so necessary to be known by all the female sex (the conception and bearing of children being what nature has ordained their province) that many for the want of the knowledge hereof perish, with the fruit of their womb also, who, had they but understood the secret of generation displayed in this book, might have been still in the land of the living.

It is therefore for the use of such that this treatise is compiled; wherein the mystery of generation is not only unravelled, and the abstruse secrets of nature made known, but the obstructions and hindrances of generation are declared, and proper remedies against all the effects of the womb directed.

If any say, there are already books enough of this nature extant, I answer, there are indeed more books of this kind written than can be read by those that most want them; some are so voluminous, that to read them takes up more time most can spare; and besides are written in those abstruse terms, that the female sex (I mean the generality of them) can hardly understand them; whereas this is adapted to their capacities, and suits to their leisure time, consisting of plainness and brevity. And if the last words of men ought to be most heeded, as being the truest index of their minds, and their most correct thoughts, I need not doubt but that *Aristotle's Last Legacy* will find acceptance; his other works, not so correct as this, having been well received. I have no more to say, but that I hope the reader will make a good use of it, and receive that benefit by it which was designed by the writer.

ARISTOTLE'S LAST LEGACY.

FULLY UNFOLDING

The Mysteries of Nature in the Generation
of Man.

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CHAP. I.

Of Virginitie, what it is, its Signs and Tokens, and how a Man may know whether he marries a Virgin or not.

THE great Maker of the universe, that gives all creatures life and being, and power in themselves to propagate their kind or species, even to the end of the world, has to that end created them male and female: and these two of contrary natures and qualities; for in this noble pair, viz. man and woman, the man is hot and dry, the woman cold and moist: and these two different qualities uniting, are ordained by nature for the procreation of children, the seed of the man being the efficient cause, and the womb of the woman the field of generation, wherein the seed is nourished, and the embryo conceived and formed, and in due time brought forth.

Since woman then has so great a part in the generation of man, I shall endeavour to shew how nature has fitted her for it: and because a knowledge of the disease (be it what it will) is half the cure, I will give a brief description of the several parts or members of generation; that so at any time, if any part be affected or out of order, it may sooner be rectified: for if things be not spoken to the understanding, they had as good not be spoken at all; and therefore plainness must be used, yet I hope to do it so as not to cause a guilty blush in the cheek of the fair sex.

And since the first state of woman is virginitie, order and method require that I speak something of that; and in speaking of it, I will first shew what it is, and then lay down some signs and tokens of it; and how it may be known, and then proceed to what I have before promised.

Virginitie is the boast and pride of the fair sex, though they generally commend it to put it off; and that they may the sooner get a good husband, and thereby lose it: and I think they are in the right of it; for, if they keep it too long it grows useless, or at least abates much of its value; a stale

virgin (if such a thing there be) being looked upon like an old almanack out of date. Virginitie is the chief, the best, the prime of any thing, and is properly the integrity of a woman's privities not violated by man nor known by him, it being the property of a virgin not to have known man. But to come a little more close; there is in young maids in the neck of the womb a pendulous production, called the hymen, which is like the bud of a rose, half blown, and this is broke in the first act of copulation with a man, and from thence came the word *deflora*, to deflower; because the taking away of virginitie is called deflowering a virgin: for when this rose-bud is expanded, virginitie is wholly lost.

Certain it is there is in the first act of copulation something that causes pain and bleeding, which is an evident sign of virginitie; but what this is authors agree not: some say it is a nervous membrane or thin skin with small veins, which bleeds at the first penetration of the yard; others say, it is four caruncles or bits of flesh, or little buds, like myrtle berries, and these are plump and full in virgins, but hang loose and flag in those that have used copulation, being pressed by the yard; some have observed a fleshy circle about the *nymphææ* or neck of the womb, with little obscure veins, which makes the membrane not to be nervous, but fleshy.

There is no doubt but that the parts which receiveth the yard is not in women that have used a man as it is in virgins: and yet it is not alike in all, which hath caused that diversity of opinion both in authors and anatomists; for this is not found in all virgins; excess of lust, and desire of man, in some, may break the hymen or *claustrum virginale*; sometimes when it itcheth, they put in their finger, and so break it; and sometimes the midwife breaks it in the birth; sometimes it is done by stopping of the urine, coughing, violence, straining or sneezing; and therefore, if there be no bleeding at the first penetration, it is not always a sign of unchastity, but where there is bleeding, it is an unquestionable sign of virginitie.

Leo Africanus makes mention of a custom with the Africans at their weddings, which was this: After they were married, the bridegroom and the bride were shut up in a chamber, while the wedding dinner was preparing; and an old woman stood at the chamber door to receive from the bridegroom a sheet, having the bloody tokens of the wife's virginitie, which she shewed in triumph to all the guests, and then they might feast with joy; but if there was no blood to be seen, the bride was to be sent home to her friends with disgrace, and the disappointed guests went sadly home without their dinner. But notwithstanding the African custom, I affirm, that some ho-

nest virgins have lost their maidenheads without bleeding, and therefore are not to be censured, as many ignorant men will do, who, for want of this token, cause their wives to lead an uncomfortable life all their days: those coxcombs (though no cuckolds) fancying themselves to have horns on their heads when it is no such matter.

Some make the straitness of the privities to be a sign of virginity; but this is no certain rule, for much depends upon the age, habit of body, and other circumstances; though it cannot but be acknowledged, that women who have used carnal copulation are not so strait as virgins; yet this can be no certain argument of virginity; for after repeated acts of venery, the privities may be made so strait by the use of astringent medicines, that a whore may be sometimes taken for a virgin: and Culpepper mentions a woman that was married, who, desiring to appear a virgin, used a bath of comfrey roots, whereby she deceived those with whom she had to do.

Some there are that make milk in the breasts a sign of lost virginity, not considering there is a twofold milk; the one of virgins is a malady contrary to nature, the other is natural: the first is made of blood that cannot get out of the womb, and so goes to the breasts, being nothing but a superfluous nourishment that is turned into milk by the faculty of the breasts, without the knowledge of man; the other is only when there is a child either in the womb or born; yea, the milk differs very much, both in respect of the blood and diversity of veins that bring it to the breasts; and though both white, yet that of virgins is thinnest, and less in quantity; neither is it so sweet. And therefore if virgins happen to have such milk, they are not for that reason to be deemed unchaste.

Upon the whole matter, when a man marries, and finds upon lying with his wife the tokens of her virginity, he has all the reason in the world to be satisfied he has married a virgin: but if on the contrary he finds them not, he has no reason to suspect her of unchastity, as if she were not a virgin; since the Hymen, or *clustrum virginale*, may be broken so many other ways, and yet the woman be both virtuous and chaste.

And this much I thought myself bound to say in the behalf of the female sex, who are often accused and suspected of dishonesty, when there is no occasion for it.

CHAP. II.

Of the Organs of Generation in Women, with a full Description of the Fabric of a Woman.

IN describing the organs of generation in women, I shall use all possible plainness and perspicuity, and shall not be afraid (since I design nothing but the instruction of the ignorant, for their own good and safety) to speak so as I may be understood by the meanest capacity, and say with the motto of the royal garter, *Honi soit qui mal y pense*.

In the genitals of women there are several parts which must be distinctly spoken of: that which appears to view at the bottom of the belly is the *fissura magna*, or the great cleft or fissure, of an oval form, with hair about it: also the lips, which nature designed to keep the internal parts from cold and dust; these are called by the general name of *pudenda*, from shamefacedness, because a woman is ashamed when those parts are discovered or made bare. The *fissura magna* reaches from the lower part of the *os pubis*, near to the *anus*: But it is closer in virgins than in those who have borne children, and has two lips, which towards the *pubis* grow more full and thick, and meeting upon the middle of the *os pubis*, make that rising hill called *mons veneris*, or the mount of Venus.

The next thing is the *nymphæ*, or wings, which appear when the lips are severed, and are framed of spungy or soft flesh, and of a red colour, two in number, joined in an acute angle, producing there a fleshy substance, composing the *clitoris*, and both in form and colour resembling the comb of a cock.

The *clitoris* is a sinewy and hard body, full of spungy and black matter within: and in form represents the yard of a man, and is subject to erection and falling as that does. This is that which is the seat of venereal pleasure, and gives women delight in the action of copulation; for without this a woman never desires coition, nor hath pleasure in it, nor conceives by it. The *clitoris* sometimes grows out of the body two inches, but this very seldom happens. And some think, that hermaphrodites, or those that have genitals, are only such women in whom the *clitoris* hangs out extremely, and so resembles the form of a yard; and I am almost inclined to be of their opinion, especially considering that the hanging out of the *clitoris* is generally occasioned through extreme lust; and both reason and authority demonstrate that the higher the *clitoris* is in women, the more violent are their desire after coition, and consequently the more lustful.

In the fourth place, under the clytoris, and above the neck of the womb, are the fleshy knobs or carbuncles, placed behind the wings, and are like myrtle berries placed one against the other, in which place is inserted the orifice of the bladder, for the passage of the woman's urine; so that the urine of the woman comes not through the neck of the womb, neither is the passage of the urine common as in men, but particular and by itself.

Near the orifice of the womb, as I said before, there are the carbuncles or fleshy knobs, in number four, in form like myrtle berries; in virgins these are round and plump, but in women that have used copulation they are loose and flagging, and often quite extinguished, so that the inside of the neck of the womb appears smooth; the uppermost of them are largest and forked, the others are below this on the sides, but they all serve to keep back the air or any offensive thing from entering the neck of the womb. These carbuncles are joined together by a thin or sinewy skin or membrane, full of small veins; this membrane hath a hole in the midst of the passage of the monthly courses, about the bigness of the top of one's little finger, in such as are in years fit for marriage; this is that noted skin called hymen, of which I have spoken in the former chapter, and which is a certain sign of virginity wherever it is found, for the first act of copulation surely breaks it; though, as I have said before, it may be broken without the act of copulation, but it is most generally broken by it.

Authors have been of divers opinions concerning this hymen, or mark of virginity; some affirming it to be one thing and some another, but whatever it be, this is an undoubted truth, that it hath certain veins in it which bleed in the breaking, and that bleeding shews it to be then first broken, and consequently the person to be a virgin; and I do believe that all virgins have it at first, it being the mark that God gave to the Hebrews to try their virginity by: and I cannot believe God would give that for a certain sign of virginity which is not always to be found; and though it may be broke without copulation, yet young maidens ought to be very wary of it, since their honour does so much depend upon preserving it. For men are not bound to believe it was broken by accident, though perhaps it might be so; to which end they ought to correct and expel all sharp and corroding humours, which sometimes gnaw it asunder, and also to avoid all violent exercises, which may overstrain them, and by all means touching it with their fingers. I have in the former chapter told you, that the carbuncles or fleshy knobs, together with the Hymen, represents the form of a half-blown rose, from whence to deflower a virgin hath its original.

The next thing to be spoken of is the neck of the womb, which is nothing but the distance that is between the privy passage and the mouth of the womb, into which the yard goes in the act of copulation, which in some women is eight inches in length: its substance without is fleshy, but within skinny, and exceedingly wrinkled, that it may the better retain the seed ejected in the act of copulation, and also that it may dilate and stretch in the woman's labour, that the passage may be the wider for the birth of the child. The length of the neck of the womb is very necessary, for two reasons; the first is, that it may be filled with abundance of spirits, and there be dilated, and for its better taking hold of the penis or yard, great heat being required in such motion, which becoming more intent or requisite in the act of frication, consumes a great quantity of moisture, which there ought to be large vessels to supply; secondly, because the terms or monthly courses make their way through them, on which account women with child sometimes continue their purgations; for although the womb be shut, yet the passage in the neck of the womb, through which these vessels pass, is open.

I will only observe further, that as soon as a man penetrates the pudendum, there appears two little pits or holes; these contain a humour, which being pressed out in the time of copulation, gives great delight to the woman.

Having thus spoken of the organs of generation in women, I will now describe the fabrice of the womb.

The womb is joined to its neck, in the lower part of the hypogastrion, and is placed between the bladder and the straight gut. Its parts are two, the mouth of the womb and the bottom of the womb. The mouth or entrance may both be dilated and contracted, much like a purse; for though in the act of copulation it be big enough to receive the glands or nut, or top of the man's yard, yet after conception it is so closely shut that it will not admit the point of a bodkin to enter, and after this, at the time of delivery, it dilates itself again so wide, that it makes room enough for the child to come forth, which is so wonderful a thing, that all men must acknowledge the wisdom and goodness of our great Creator is eminently to be seen in it.

Its figure is almost perfectly round, and, in virgins, exceeds not the bigness of a walnut, yet after conception dilates itself gradually, so that it is able to contain the child and all its appurtenances.

It is thick in substance, insomuch that it exceeds a thumb's breadth; which after conception is so far from decreasing that it augments very much; and for to strengthen it the more, it is interwoven with fibres overthwart, which is both

strait and winding; and its proper vessels are veins, arteries, and nerves, among which there are two little veins, which pass from the spermatic vessels to the bottom of the womb, and two larger from the hypogastries, which touch both the bottom and the neck, the mouth of the veins piercing as far as the inward cavity.

The womb also hath two arteries on each side of the spermatic vessels and the hypogastries, which still accompany the veins; also divers little nerves that are knit and entwined in the form of a net, and extending to the pudenda, placed chiefly for sense and pleasure, moving by way of sympathy between the head and the womb.

The stones or testicles in women differ in several respects from those of men, and that in relation to their place, form, figure, &c. As to the place, in men they are without the belly, in women within; in men they are oval, and have four skins to preserve them from injuries; but in women they are depressed and flattish, and have but one skin: their substance is also more soft than those of men, and their temperature is colder. Their office is to contain the ovum or egg, according to our modern authors; but the ancients were of opinion that they served to concoct the woman's seed, and have the same office in women as the stones have in men. But as to the woman's having seed, that is strongly opposed by some, and as strongly contended for by others, and therefore I will set down the opinions of both, having first made an end of the description of the several parts belonging to generation in women, which is what I am now upon.

I come now to speak of the spermatic vessels in women, which are divided or distinguished by preparing vessels and carrying vessels: the preparing vessels are the same in number as in men, which are four, two veins and two arteries, not differing from those in a man, but only in their largeness and manner of insertion; the right vein issuing from the trunk of the *Vena Cava* (which is the great vein that receives the blood from the liver, and distributes it by its branches to all the body) under the emulgent vein, which is one of the chief branches of the hollow veins passing to the reins; but the left springeth from the emulgent of the same side. Both the arteries issue from the great artery, called *Aorta*, because it is the noblest and mother of all the rest: these preparing vessels are much shorter in women than in men, because their passage is shorter: the stones of a woman, as I have already noted, lying within the belly, but those of men without; but then what they want in length they have in their various wreathings and contortions, which are more than in men, that the substance they carry may be the better prepared: and

therefore their often turning to and fro, and winding in and out, makes amends for the shortness of the passage. Observe also, that these vessels are not united as they are in men before they come to the stones, but are divided into two branches, whereof the greater only goeth to the stones, and the lesser endeth in the womb, both for the nourishment of itself and the infant, and that part of the courses may pass through those vessels: these spermatic veins receive the arteries as they pass by the side of the womb, and so there is a mixture between the vital and natural blood, that thereby the work of generation might be the better wrought. Thus much for the preparing vessels.

The carrying vessels, called *Vasa Deferentia*, (that is, vessels which carry the seed from the stones to the seminal vessels) arise from the lower part of the testicles, and are in colour white, but in substance sinewy; they pass not straight to the womb, but are wreathed, that the shortness of the way may be compensated by their various turnings and windings; and as they come nearer to the womb they grow broader.

The ejaculatory vessels are two passages on each side of the womb, and hardly differ in substance from the spermatic veins: they rise from the bottom of the womb, but reach not either to the stones, or any other part; but are shut up and unpassable, adhering to the womb as the colon does to the blind gut, winding half way about. Although the stones are at a distance from them, and do not so much as touch them, yet they are fastened to them by certain membranes, much resembling the wings of a bat, through which certain veins and arteries that pass from the end of the testicles have their passage, proceeding from the corners of the horns of the womb to the testicles, being the proper ligaments by which the testicles and the womb are knit together. These ligaments in men are called the *cremasters*, which are the muscles that hold up the stones; of which I shall speak farther, when I treat of the organs of generation in man.

CHAP. III.

Of the Use and Action of the Genitals in the Work of Generation.

THE use of the external parts, commonly called the *pu-denda*, are designed to cover the great orifice, or *pitsora magna*, whose use is to receive the yard in the act of copulation, and to give passage to the child at the birth, and also

a passage for the urine. The use of the wings and knobs like myrtle berries, are for the security of the internal parts, shutting the orifice and neck of the bladder, and by their swelling up to cause titillation and delight in those parts, and also to hinder the involuntary passage of the urine. The action of the clytois in women is like that of the yard in mea, that is, erection; and its outer end is like the glands, or top of the yard, and has the same name; and as the glands in men is the seat of the greatest pleasure in copulation; so this is in women.

The action and use of the neck of the womb is equal with that of the yard, and is occasioned several ways; for, first, it is erected and made strait for the passage of the yard to the womb in the act of copulation; and then, while the passage is repleted with spirit and vital blood, it becomes more strait for embracing the yard; and as touching the convenience of erection, it is two-fold, first, if the neck of the womb was not erected, the yard could have no convenient passage to the womb: and, in the second place, it hinders any damage that may happen through the violent concussion of the yard in the time of copulation.

And as for those vessels that make their way through the neck of the womb, their office is to replenish it with blood and spirits, that so as the moisture consumes by the heat contracted in copulation, it may by those vessels be renewed; but their chief business is to convey nourishment to the womb.

The womb has many properties attributed to it; and the first is the retention of the seed, as the ancients speak, or of the fœcundated egg, as others would have it; and this property is called conception; and, in the second place to nourish and cherish it, till nature has framed the child, and brought it to perfection; and, thirdly, it worketh very strenuously in sending forth the birth, when the time of its remaining there is expired, at which time it stretcheth forth itself in a very wonderful manner.

The use of the preparing vessels is to convey the blood to the testicles, part of which is spent in the nourishment of them, and the production of those little bladders (in all things resembling eggs) through which the preparing vessels run, and are obliterated in them; this is done by the arteries; and as for the veins, their office is to bring back what blood remains from the aforesaid uses.

These vessels (as we have already said) are more short in women than in men, by reason of their nearness to the stones; which defect is sufficiently repaired by the many windings and turnings to which they are subject, dividing themselves

in the middle way into two branches, though not of equal bigness, for one is greater than the other.

The stones in women are of that use, that if they are defective, the work of generation ceases, for though (according to the modern opinion) those little bladders, which are on their outward superface, contain nothing of seed, yet they contain several eggs, (uncertain as to their number, though generally about twenty) one of which eggs being impregnated with the spiritous part of man's seed in the act of coition, descends into the womb, and in the time nature has appointed becomes a living child.

Having thus given an account of the use and action of the genitals in the act of generation, I shall now shew you the opinion of both ancient and modern writers touching the woman's contributing seed, for the formation of the child, as well as the man, which was the opinion of the ancients, but is denied by our modern inquirers into the secrets of nature.

Though it is apparent (say the ancients) that the seed of man is the principal efficient, and beginning of action, motion, and generation, yet that the woman affords seed, and contributes to the procreation of the child, is evident from hence, that the woman has seminal vessels, which had been given her in vain, had she wanted seminal excrecence; but since nature doth nothing in vain, it must be granted they were made for the use of procreation, and fixed in their proper places to operate and contribute virtue and efficacy to the seed; and this, say they, is farther proved from hence, that if women at the years of maturity use not copulation to eject their seed, they often fall into strange diseases, as appears by young women and virgins; and it is also apparent that women are never better pleased than when they are often satisfied this way; which argues the pleasure and delight they take therein; which pleasure and delight they say is double in women to what it is in men; for as the delight of men consists during copulation chiefly in the ejection of the seed, so women are delighted both by the ejection of their own and the reception of the man's.

But against all this our modern writers affirm, that the ancients were very erroneous: forasmuch as the testicles in women do not afford seed, but are two eggs, like those of fowls or other creatures, neither have they any such office as those of men, but are indeed an ovarium or receptacle for eggs; wherein these eggs are nourished by the sanguinary vessels dispersed through them; and from thence one or more (as they are foecundated by the man's seed) are conveyed into the womb by the oviducts; and the truth of this, say they, is so plain, that if you boil them, their liquor will have the

same taste, colour and consistency, with the eggs of birds; and if any object that they have no shells, we answer, that signifies nothing, for the eggs of fowls, while they are in the ovary, nay, after they are fallen into the uterus, have no shell; and though they have one when they are laid, yet it is no more than a fence which nature hath provided for them against outward injuries, they being hatched without the body; but those of women being hatched within the body, have no need of any other fence than the womb.

And they further say, there are in the generation of the fœtus, or conception, or young one, two principles, active and passive; the active is the man's seed elaborated in the testicles out of the arterial blood and animal spirits; the passive principle is the ovum, or egg, impregnated by the man's seed: for to say that a woman has true seed is, they say, erroneous. But the manner of conception is thus: the most spiritous part of the man's seed in the act of copulation reaches up to the ovarium, or testicles of the woman, which contain divers eggs, (sometimes more, sometimes fewer,) impregnates one of them, which being conveyed by the oviducts to the bottom of the womb, presently begins to swell bigger and bigger, and drinks in the moisture that is plentifully sent thither, after the same manner that seeds in the ground suck the fertile moisture thereof to make them sprout.

But notwithstanding all this, Culpepper, in his *Directory for Midwives*, positively affirms, that the testicles or stones of a woman are for the generation of seed; in the act of copulation the woman emits the seed as well as the man; and he says, that to deny it is both against reason and experience. I will not undertake to determine the controversy, but leave the reader to judge for himself, and proceed (having, according to the custom of England, given the women the preference) to describe the organs of generation in man; for although the womb be the field of generation, yet there will be no increase till the seed of man (as the principal efficient in generation) be sown therein.

CHAP. IV.

Description of the Instruments or Organs of Generation in Man.

THE penis or yard of the man, (being the principal instrument of generation) is called so from its hanging without the belly; and it consists of skin, tendons, veins, arteries, sinews, and great ligaments, and is long and round;

and is ordained by nature both for the passage of the urine, and the conveying of the seed into the matrix. It hath some parts common with it to the rest of the body, as the skin and the *membrana carnosâ*, or fleshy membrane; and some parts it has peculiar to itself, as the two nervous bodies; the *septum*, the *urethra*, or *glands*, the four muscles, and the vessels.

The skin, which the Latins call *cutis*, is full of pores, through which the sweat and fuliginous or sooty black vapours of the third concoction (which concocts the blood into flesh) pass out: the pores are very many and thick, but hardly visible to the eye, and when the yard stands not it is flaggy; but when it stands it is stiff; this skin is very sensible, because the nerves concur to make up its being.

The *carnis membrana*, or fleshy skin, is so called because it lieth between the flesh, and passeth in other parts of the body underneath the fat, and sticks close to the muscles, not that there is any fat in the yard, only a few superficial veins and arteries pass between the former skin and this, which, when the yard stands, are visible to the eye. These are the parts common both to the yard and the rest of the body. Now I will speak of the parts peculiar to itself; and, first, of the two nervous bodies.

The two nervous bodies are surrounded with a thick, white, nervous membrane; but are spongy within, and full of black blood; the spongy substance of the inward part of it seems to be woven together like a net, and consists of innumerable veins and arteries; the black blood contained therein is very full of spirits, and the desire of copulation adds heat to them, which causeth the yard to stand; and the hollow spongy intermixture or weaving was ordained on purpose to hold the heat or venereal spirits, that the yard may not fall before it has done its work; these two side ligaments of the yard, where they are thick and round, spring from the lower part of the share bone, and at their beginning are separated the one from the other, and resemble a pair of horns, or the letter Y, where the urethra, that is, the common channel of urine and seed, passeth between them.

The septum is in substance white and nervous, and sinewy, and its office is to uphold the two side ligaments and the urethra.

The urethra is in substance sinewy, thick, soft, and loose, like to that of the side ligaments before mentioned. It begins at the neck of the bladder, and so passeth to the glands: in the beginning of it are three holes, one in the midst, which is largest and receives the urine into it; the other two are smaller, which are sent by each seminal vessel to it, by which it receives seed.

The muscles of the yard are four, two on each side. Now a muscle is an instrument of voluntary motion, without which no part of the body can move itself; it consists of fibrous flesh to make up its body, of nerves for its sense, of veins for its nourishment, of arteries for its vital heat, of a membrane or skin, to knit together and to distinguish one muscle from another; one of each side is shorter and thicker than the other, and their use is to erect the yard and make it stand, and are therefore called erectors; the other are longer and smaller, and their office is to dilate and open the lower part of the urethra, or channel, both for making water and voiding the seed; and these are called accelerators.

The glands is the extreme part of the yard; is soft, and of an exquisite feeling, by reason of the thinness of the skin wherewith it is covered. It is covered with the *præputium*, or foreskin, which the jews were commanded to cut off on the eighth day.

The skin in some men covers the top of the yard quite close, but in others it doth not; which moving up and down in the act of copulation, brings pleasure both to the man and the woman. The ligaments by which the *præputium* is tied to the glands is called *frænum*, or the bridle.

The vessels of the yard are veins, nerves, and arteries; some veins and arteries pass by the skin and are visible to the eye; others pass by the inward part of the yard, the arteries being dispersed through the body of the yard, exceeding the dispersion of the veins, for the right artery is dispersed to the left side; it hath also two nerves, the lesser of which is bestowed on the skin, the greater upon the muscles and body of the yard.

Having thus described the yard, I shall now speak of the stones or testicles, which are so called because they testify or witness for him that has them that he is a man. Their number every body knows to be two; their substance is white, soft and spongy; their form is oval; but their bigness is not alike; for in some they are bigger than others: each stone hath a muscle, because they pull up the stones in the act of copulation, that so the vessels being slackened, may the better void the seed.

The use of the stones is to convert blood and spirit into seed, for the procreation of man, and to add strength, heat and courage to man; as appears from eunuchs, who having lost their stones, are neither so hot, strong, nor valiant as other men.

To the upper part of the testicles are fixed the epidemes, or *pretestæ*, from whence arises *vasa deferentia*, or *ejaculatoria*, which when they come to the neck of the bladder, de-

posit the seed in the *viscula seminales*, which are two, each like a bunch of grapes, that admit the seed into the urethra, in the act of copulation; as for the preparing vessels, they prepare the blood and vital spirits, and carry them to the testicles, where they are elaborated into seed: I have spoken of them in the chapter in which I have treated of the genitals of women; and since they differ so little from those of men, I need not repeat what is there said.

CHAP. V.

Of Conception; and how a woman may know whether she hath conceived or not; and whether of a Male or Female.

THE natural instinct that nature has implanted in men and women to propagate their own species, puts them upon making use of those ways that nature has ordained for that end; which, after they have made use of, the woman many times (through ignorance of her having conceived, or want of that due care which she ought to take,) is little better than a murderer of her own child, though she intends it not: for, after conception, finding herself not well, and through ignorance, not knowing what the matter is, they run to the doctor, and enquire of him; and he knowing nothing but what they tell him, and not thinking of their being with child, gives them strong cathartical potions, which destroys the conception. And some there are, that out of a foolish bashful coyness, though they do know that they have conceived, yet will not confess it, that they might be instructed to order themselves accordingly; those that are so coy may in time learn to be wiser; and for the sake of those that are ignorant, I shall set down the signs of conception, that women may thereby know whether they have conceived or not.

Signs of Conception.

IF under the eye the vein be swelled, that is, under the lower eye-lid, the veins in the eyes appearing clearly, and the eye something discoloured: if the woman has not the terms upon her, nor watched the night before, you may certainly conclude her to be with child; and this appears most plainly just upon her conception: and for the first two months I never knew the sign to fail.

Keep the urine of the woman close in a glass three days, and then strain it through a fine linen cloth, if you find small

living creatures in it, she has most assuredly conceived with child; for the urine which was before part of her own substance, will be generated as well as its mistress.

A coldness and chilness of the outward parts after copulation, the heat being retired to make conception.

The veins of the breast are more clearly seen than they were wont to be.

The tops of the nipples look redder than formerly.

The body is weakened, and the face discoloured.

The belly waxeth very fat, because the womb closeth itself together to nourish and cherish the seed.

If cold water be drunk, a coldness is felt in the breasts.

Loss of appetite to victuals, sour belchings, and exceeding weakness of stomach.

The breasts begin to swell and wax hard, not without pain and soreness.

Wringing or griping pains, like the cramp, happen in the belly, about the navel.

Divers appetites and longings are engendered.

The veins of the eyes are clearly seen, and the eyes seem something discoloured, as a looking glass will shew you. This is an infallible sign.

The excrements of the guts are voided painfully, because the womb swelling thrusteth the guts together.

Take a handsome green nettle, and put into the urine of the woman; cover it close, and let it remain a whole night; if the woman be with child, it will be full of red spots on the morrow: if she be not, it will be blackish.

There are several other rules of this nature, but these are the best, and some of them seldom fail.

Now, because many are mighty desirous to know whether they be with child of a male or female, I will, in the next place, lay down some rules, whereby you may form a judgment in that case.

Signs of a Male Child.

THE woman breeds a boy easier and with less pain than girls, and carries her burden not so heavily, but is more nimble in stirring.

The child is first felt by her on the right side, for the ancients were of opinion that male children lie on the right side of the womb. The woman when she riseth up from a chair doth sooner stay herself upon her right hand than on her left.

The belly lies rounder and higher than when it is a female.

The right breast is more plump, and harder than the left, and the right nipple redder.

The colour of a woman is more clear, and not so swarthy as when she conceives a girl.

The contrary to these are signs of the conception of a female, and therefore it is needless to set them down.

But I will add the following: they have been the result of my own experience, and which I never knew fail.

If the circle under the woman's eyes, which is of a wan blue colour, be more apparent under the right eye, and the veins most apparent under the right eye, and much discoloured, she is with child of a boy; if these marks be most apparent in her left eye, she is with child of a girl.

Again: Let her milk a drop of her milk into a bason of fair water; if it sinks to the bottom as it drops, round in a drop, it is a girl she is with child of; but if it be a boy, it will spread, and swim at the top. This I have often tried, and it never failed.

But before I make an end of this chapter, I shall lay down some rules that women ought to observe in order to conception, and likewise what they should do after conception, to prevent miscarriage.

What Women ought to observe, in order to Conception.

WOMEN that are desirous to have children, in order thereunto must give themselves to moderate exercise; for idleness and want of exercise are very great enemies to generation work; and those that observe it shall find that our city dames, who live high and do nothing, seldom have children, or if they have, they seldom live; whereas the poor women who accustom themselves to labour, have many children, and those lusty. Nor need we wonder at it, if we consider the benefit that arises from moderate exercise and labour; for it opens the pores, quickens the spirits, stirs up the natural heat, strengthens the body, senses and spirits, and comforts the limbs, and helps nature in her exercises, of which the procreation of children is none of the least.

Next to moderate exercise, she must avoid all manner of discontent, and the occasion of it; for discontent is a great enemy to conception; but discontent is not so great an enemy to conception, but contentment and quietness of mind are as great friends to it; for content dilates the heart and arteries, whereby the vital blood or spirit is sufficiently distributed throughout the body: and thence arise such affections as please, recreate and refresh the nature of man; as hope, joy, love, gladness and mirth.

Nor does it only comfort and strengthen the body, but also the operations and imaginations of the mind; for all agree,

that the imagination of the mother works forcibly upon the conception of the child; and therefore women ought to take great care that their imagination be pure and clear, that their children may be well formed.

Another thing that women ought to do in order to conception, is to keep the womb in good order; and to that end, see that the menstrues come down as they ought to do; if they are discoloured, then they are out of order, but if the blood comes down pure, then the woman will be very proper to conceive with child, especially if they use copulation a day or two after their monthly terms are stayed.

Another thing a woman ought to observe that would conceive is, that she use not the act of copulation too often: for satiety gluts the womb, and makes it unfit to do its office. There are two things that demonstrate this; one is, that common whores (who often use copulation) have seldom children; the other is, that those women whose husbands have been long absent, after they come again, conceive very quickly.

And then let the time of copulation be convenient, that there may be no fear of surprise, for fear hinders conception.

And then let the time of copulation be natural, and not stirred up by provocatives: and observe also, that the greater the woman's desire of copulation is, the more subject she is to conceive.

A loadstone carried about a woman causeth not only conception, but concord between man and wife.

Things necessary for Women to observe after Conception.

WOMEN are very subject to miscarriages in the two first months after conception, because then the ligaments are weak, and sooner broken. To prevent which, let the woman every morning drink a good draught of sage tea, and it will do her abundance of good.

But if signs of abortion or miscarriage appear, let her lay a toast dipped in tincture, in case muskadel cannot be gotten, to her navel, for this is very good; or let her take a little garden tansy, and having bruised it, sprinkle it with muskadel, and apply it to the navel, and she will find it much better. Also, tansy infused in ale, like sage ale, and a draught drank every morning, is most excellent for such women as are subject to miscarriages: also take juice of tansy, clarify it, and boil it up into a syrup, with twice its weight in sugar, and let a woman take a spoonful or two of it; in such cases it will be an excellent preservative against miscarriages.

Also let the heat be temperate, sleep moderate, avoiding watching, and immoderate exercise, with disturbing passions.

loud clamours, and filthy smells; and let her abstain from all things which may provoke either the urine or the courses; as also from all sharp and windy meats, and let a moderate diet be observed.

If the excrements of the guts be retained, lenify the belly with clysters made of the decoction of mallows, violets, with sugar and common oil: or make broth of burrage, bugloss, beets, mallows, and take therein a little manna: but, on the contrary, if she be troubled with a looseness of the belly, let it not be stopped without the judgment of a physician, for old uterine fluxes have a malignant quality in them, which must be evacuated and removed before the flux be stayed.

CHAP. VI.

Of Barrenness, with the Remedies against it; and the Signs of Insufficiency both in Men and Women:

HAVING, in the foregoing chapter, treated of conception, with the signs, and given directions to women both before and after conception, I will, in this chapter, treat of the opposite to conception, to wit, *Barrenness*.

If it is a blessing to have children, as undoubtedly it is, then certainly barrenness must be a great curse: and indeed in holy writ it is accounted; and therefore some are threatened that they shall die childless; and the wife of Jacob, even his beloved Rachel, cried out to him, *Give me children or else I die*. It was indeed a passionate expression, and fell out according to her words—for she had children, and died in child-bed. But to the subject in hand, which is barrenness.

Barrenness is threefold, to wit, either natural, or accidental, or against nature.

Natural barrenness is when a woman is barren, though the instruments of generation are perfect both in herself and husband, and no preposterous or diabolical course used to cause it, and neither age nor disease, nor any natural defect hindering, and yet the woman remains naturally barren and conceives not.

Now this may proceed from a natural cause; for if the man and woman be of one complexion, they seldom have children, and the reason is clear: for the universal course of nature being formed by the Almighty of a composition of contraries, cannot be increased by a composition of likes; and therefore, if the constitution of the woman be hot and dry as well as that of the man, there can be no conception; and if, on the

contrary, the man should be of a cold and moist constitution, as well as the woman, the effect would be the same: and this barrenness is purely natural. The only way to help it, is for people before they marry to observe each others constitutions and complexions, if they design to have children; if their complexions and constitutions be alike, they are not fit to come together: for discordant natures make the only harmony in the work of generation.

Another natural cause of barrenness is want of love between man and wife. Love is that vital principle that ought to animate each organ in the act of generation, or else it will be but spiritless and dull: for if their hearts be not united in love, how should their seed unite to cause conception? And this is sufficiently evidenced, in that there never follows a conception upon a rape; therefore, if men and women design to have children, let them take care to live so, that their hearts as well as their bodies may be united, or else they may miss of their expectations.

A third cause of natural barrenness, is the letting of virgins blood in the arm before their natural courses are come down, which is usually in the fourteenth and fifteenth years of their age; sometimes perhaps before the thirteenth, but never before the twelfth. And because usually they are out of order and indisposed before their purgations come down, their parents run to the doctor to know what is the matter, and he immediately prescribes opening a vein in the arm, seeing it was fulness of blood which was the cause offending; so this makes her well at present; and when the young virgin happens to be in the same disorder again, the mother straight runs to the surgeon, who uses the same remedy; by these means the blood is diverted from its proper channels, so that it comes not down to the womb, as in other women, whereby the womb dries up, and the woman is for ever barren. The way to prevent this is, to let no virgin blood in the arm before her courses come down: but, if there be occasion, let it be done in the foot, for that will bring the blood downwards, and by that means provoke the menstrues to come down.

Another cause of natural barrenness is the debility of persons in copulation. If persons perform not that act with all the heat and ardour that nature requires, they may as well let it alone, and expect to have children without it: for frigidity and coldness never produces conception. Of the cure of this we will speak by and by, after I have spoken of

Accidental Barrenness: which is what is occasioned by some morbid matter or infirmity upon the body either of the man or woman, which being removed, they become fruitful. And hence, as I have before noted, the first and great law of the

creation was to *increase and multiply*, and barrenness is the direct opposition to that law, and frustrates the end of our creation: and it is so great an affliction to many to be without children, as to cause man and wife to have hard thoughts of one another, each party thinking the cause is not in them; I shall here, for the satisfaction of all well meaning people, set down the signs and causes of insufficiency, both in men and women: premising this first, that when people have not children, they must not presently blame either party, for neither may be in the fault, but perhaps God sees it not good, for reasons best known to him, to give them any; of which we have divers instances both in sacred and profane history. And although the Almighty, in the productions of nature, works by natural means, yet where he withhold his blessings, natural means are ineffectual; for it is his blessing that is the power and energy by which nature brings her productions forth.

Signs and Causes of Insufficiency in Men.

ONE cause may be, some viciousness in the yard; as if the same be crooked, or any ligaments thereof distorted or broken, whereby the ways and passages through which the seed should flow come to be stopped or vitiated.

Another cause may be too much weakness of the yard, and tenderness thereof, so that it is not strongly enough erected to inject the seed into the womb, for the strength and stiffness of the yard very much conduces to conception, by reason of the forcible injection of the seed.

Also if the stones have received any hurt, so that they cannot exercise their power in producing seed; or if they be oppressed with any inflammation or tumour, or wound or ulcer; drawn up within the belly, and not appearing outwardly: these are signs of insufficiency, and causes of barrenness.

Also a man may be barren by reason of the defect of his seed: as, first, if he cast forth no seed at all, or less in substance than is needful; or, secondly, if the seed be vicious and unfit for generation, as on the one side it happens in bodies that are gross and fat, the matter of it being defective; and on the other hand too much leanness, or continued wasting and consumption of the body destroys the seed, nature turning all the matter and substance thereof into nutriment for the body.

Too frequent copulation is also one great cause of barrenness in men; for it attracteth the seminal moisture from the stones before it is sufficiently prepared and concocted; so if any one by daily copulation do exhaust and draw out all the moisture of his seed, then do the stones draw the moist hu-

mours from the superior veins unto themselves; and so having but little blood in them, they are forced of necessity to cast it out raw and unconcocted; thus the stones, violently deprived of the moisture of their veins, attract the same from the other superior veins, and the superior veins from all the other parts of the body for their proper nourishment, thereby depriving the body of its vital spirits; and therefore no wonder that those who use immoderate copulation are weak in their bodies, seeing their whole body is thereby deprived of its best and purest blood, and also of the vital spirits, insomuch, that many who have been too much addicted to that pleasure, have killed themselves in the very act; and therefore it is no wonder if such unconcocted and undigested seed be unfit for generation.

Gluttony and drunkenness, and other excesses, do also much hinder men from fruitfulness, and make them unfit for generation.

But amongst other causes of barrenness in men, this also is one that makes them barren, and almost of the nature of eunuchs, and that is, the incision or cutting of the veins behind the ears, which, in case of distempers, is oftentimes done; for, according to the opinion of most physicians and anatomists, the seed flows from the brain by those veins behind the ears, more than from any other part of the body; from whence it is very probable, that the transmission of the seed is hindered by the cutting of the veins behind the ears, so that it cannot descend at all to the testicles, or comes thither very crude and raw.—And thus much for the signs and causes of barrenness in men.

Signs and Causes of Insufficiency, or Barrenness, in Women.

ALTHOUGH there are many causes of barrenness in women, yet the chief and principal are internal, respecting either the privy parts of the womb, the seed, or the menstruous blood.

Therefore Hippocrates saith, (speaking of the easy or difficult conception in women) the first consideration is to be had of their species, for little women are more apt to conceive than great; slender than gross; white and fair than ruddy and high coloured; black than pale and wan: those who have their veins conspicuous are more apt than others; but to be very fleshy is evil; to have great swelling breasts is good.

The next thing to be considered is the monthly purgations, whether they have them duly every month, or whether they flow plentifully, are of a good colour, and whether they have them equally every month; for so they ought to be.

Then the womb or place of conception is to be considered; it ought to be clean and sound, dry and soft, neither retracted, nor drawn up, nor prone, nor descending downward, nor the mouth thereof turned awry, nor too close shut. But to speak more particularly.

The first parts to be spoken of are the *pudenda*, or privities, and the womb; what parts are shut and inclosed, either by nature, or against nature; and from hence such women are called *imperforate*; for in some women the mouth of the womb continues compressed, or closed up, from the time of their birth until the coming down of their courses; and then, on a sudden, when their terms press forward to purgation, they are molested with great and unusual pains; some of these break of their own accord; others are dissected and opened by physicians; others never break at all, and then it brings death.

All these Aetius particularly handles, shewing that the womb is shut three manner of ways, which hinders conception: and the first is, when the lips of the pudenda grow or cleave together; the second is, when there are certain membranes growing in the middle part of the matrix within; the third is, when (though the lips and bosom of the pudenda may appear fair and open) the mouth of the womb may be quite shut up; all which are occasions of barrenness, in that they hinder both the use of man, the monthly courses, and conception.

But amongst all the causes of barrenness in women the greatest is in the womb, which is the field of generation; and if the field be corrupted, it is in vain to expect any fruit, let it be never so well sown; for it may be unfit for generation, by reason of the many distempers to which it is subject; as for instance, overmuch heat, and overmuch cold; for women whose wombs are too thick and cold cannot conceive, because coldness extinguisheth the natural heat of the human seed.

Immoderate moisture of the womb also destroys the seed of man, and makes it ineffectual, as corn sown in fens and marshes; and so doth overmuch dryness of the womb, so that the seed perisheth for want of nutriment.

Immoderate heat of the womb is also a cause of barrenness; for it scorseth up the seed, as corn sown in the heat and drought of summer: for immoderate heat hurts all the parts of the body, and no conception can live to be nourished in that woman.

Also, when unnatural humours are engendered; as too much phlegm, tympanies, wind, water, worms, or any such evil humours, abounding contrary to nature, it causes barrenness, as does also the terms not coming down in due order, as I have already said.

A woman may also have other accidental causes of barrenness, (at least such as may hinder her conception) as, sudden frights, anger, fear, griefs, and perturbation of mind; too violent exercise, as leaping, dancing, running, and the like, after copulation. But I will now add some signs whereby those things may be known.

If the cause of barrenness be in the man through over much heat in his seed, the woman may easily feel that in receiving it.

If the nature of the womb be too hot, and so unfit for conception, it will appear by having her terms very little, and their colour inclining to yellowness: she is also very hasty, choleric and crafty, her pulse beats very swift, and she is very desirous of copulation.

If you would know whether the fault lies in the man or woman, sprinkle the man's urine upon one lettuce leaf, and the woman's upon another, and that which dries away first is unfruitful.

Also take five wheat corns, and seven beans, put them into an earthen pot, and let the party make water therein; let this stand seven days, and if in that time they begin to sprout, then the party is fruitful; but if they sprout not, then the party is barren, whether it be man or woman: this is a certain sign.

There are some that make this experiment of a woman's fruitfulness.

Take myrrh, red storax, and some such odoriferous things, and make a perfume of it, which let the woman receive into the neck of the womb through a funnel; if the woman feels the smoke ascend through the body to her nose, then she is fruitful, otherwise barren.

Some also take garlic, and beat it, and let the woman be on her back upon it, and if she feels the scent thereof to her nose, it is a sign of fruitfulness.

Culpepper and others also give a great deal of credit to the following experiment.

Take a handful of barley, and steep half of it in the urine of the man, and the other half of it in the urine of the woman, for the space of twenty-four hours, and then take it out, and set it, the man's by itself, and the woman's by itself; set it in a flower-pot or some other thing where you may keep it dry; then water the man's every morning with his own urine, and the woman's with her's, and that which grows first is the most fruitful, and if one grows not at all, that party is naturally barren.

But now, having spoken enough of the disease, it is high time to assign the cure.

If barrenness proceedeth from the stoppage of the menstrues, let the woman sweat, for that opens the parts, and the best way to sweat is in a hot house.

Then let the womb be strengthened by drinking a draught of white wine, wherein a handful of stinking arrack first bruised, has been boiled; for by a secret magnetic virtue it strengthens the womb, and by a sympathetic quality removes any disease thereof. To which add also a handful of vervain, which is very good to strengthen both the womb and the head, which are commonly afflicted together by a sympathy.

Having used this two or three days, if they come not down, take of calamint, penny-royal, thyme, bettony, dittany, burnet, feverfew, mugwort, sage, piony roots, juniper berries, half a handful of these, or so many of them as can be gotten; let all these be boiled in beer, and drank for her ordinary drink.

Take one part of gentian, two parts of centaury, distil them with ale in an alembic, after you have bruised the gentian roots, and infused them well. This water is an admirable remedy to provoke the terms. But if you have not this water in readiness, take a dram of centaury and half a dram of gentian roots, beat them to powder, and take it in the morning in white wine, or else take a handful of centaury, and half a handful of gentian roots, bruised; boil it in posset-drink, and drink a draught of it at night going to bed. Seed of wild navew, beaten to powder, and a dram of it taken in the morning in white wine, is also very good. But if this does not do, you must let her blood in the legs. And be sure you administer your medicine a little before the full moon, or between the new and full moon, but by no means in the wane of the moon; if you do, you will find them ineffectual.

If barrenness proceeds from the overflowing of the menstrues, then strengthen the womb, as you were taught before, and afterwards anoint the reins of the back with oil of roses, oil of myrtles, or oil of quinces every night, and then wrap a piece of white bays about your reins, the cotton side next your skin; and keep the same always to it. But above all, I recommend this medicine to you: Take comfrey leaves or roots, and clown's wound-wort, of each one handful, braise them well, and boil them in ale, and drink a good draught of it every now and then; or take cassia, cinnamon, lignea, opium, of each two drams; myrrh, white-pepper, galbanum, of each one dram; dissolve the gum and opium in white wine, beat the rest into powder; then make them into pills, by mixing them together exactly, and let the patient take two

pills every night going to bed ; but let not both the pills exceed fifteen grains.

If barrenness proceed from a flux of the womb, the cure must be according to the cause producing it, or which the flux proceeds from, which may be known by its signs ; for a flux of the womb being a continual distillation from it for a long time together, the colour of what is voided shews what humour it is that offends ; in some it is red, and that proceeds from blood putrefied ; and in some it is yellow, and that denotes choler ; in others white and pale, and that denotes phlegm. If pure blood comes out, as if a vein was opened, some corrosion or gnawing of the womb is to be feared. All of them are known by these signs.

The place of conception is continually moist with the humours, the face is coloured, the party loaths meat, and breathes with difficulty : the eyes much swollen, which is sometimes with pain. If the offending humour be pure blood then you must let blood in the arm, and the cephalic vein is fittest to draw back the blood, and then let the juice of comfrey and plantain be injected into the womb. If phlegm be the cause, let cinnamon be the spice used in all her meat and drink ; and let her take a little venice treacle or mithridate every morning : let her boil burnet, mugwort, feverfew, and vervain in all broths. Also half a dram of myrrh, taken in a morning, is an excellent remedy against this malady. If choler be the cause, let her take burrage, bugloss, red roses, endive, and succory roots, lettuce and white poppy seed, of each a handful ; boil these in white wine till one half is wasted ; let her drink half a pint every morning ; to which half pint add syrup of peach flowers and syrup of chicory, of each one ounce, with a little rhubarb ; and this will gently purge her. If it proceed from putrefied blood, let her bleed in the foot, and then strengthen the womb, as I have directed in stopping the menstrues.

If barrenness be occasioned by the falling out of the womb, as it sometimes happens, let her apply sweet scents to her nose, such as civet, galbanum, storax, calamitis, wood of aoes, and such other things as are of that nature, and let her lay stinking things to the womb, such as assafoetida, oil of amber, or the smoke of their own hair, being burnt ; for this is certain, that the womb flies from all stinking, and applies to all sweet things. But the most infallible cure in this case is this : Take a common burdock leaf (which you may keep dry if you please all the year) apply this to her head, and it will draw the womb downward. But seed beaten into powder has also the like virtue ; for by a magnetic power it draws the womb which way you please, according as it is applied.

If barrenness proceeds from a hot cause, let the party take whey and clarify it, then boil plantain leaves and roots in it, and drink it for her ordinary drink. Let her also inject the juice of plantain into the womb with a syringe: if it be in winter, when you cannot get the juice, make a strong decoction of the roots and leaves in water, and inject that up with a syringe; but let it be blood warm, and you will find this medicine of great efficacy. And further, to take away barrenness proceeding from hot causes, take often conserve of roses, cold lozenges made of tragacanth, the confection of tricantelia, and use to smell camphire, rose water, and saunders. It is also good to breathe the basilica, or liver vein, and then take this purge; take electuarium de epithimo de sacco rosarum, of each two drams and a half, clarified whey four ounces; mix them well together, and take it in the morning fasting; sleep after it about an hour and a half, and fast four hours after it; and about an hour before you eat any thing, drink a good draught of whey. Also take lily-water four ounces; mandrogar water one ounce; saffron half a scruple: beat the saffron to powder, and mix it with the waters, and drink them warm in the morning; use this eight days together.

Here followeth some excellent Remedies against Barrenness, and to cause Fruitfulness.

TAKE broom flowers, smallage, parsley seed, cummin, mugwort, feverfew, of each half a scruple; aloes half an ounce; India salt, saffron, of each half a dram, beat and mix well together, and put it into five ounces of feverfew water warm, stop it close, and let it stand and dry in a warm place: and thus do two or three times, one after another: then make each dram into six pills, and take one of them every other night before supper.

A confection very good against barrenness.—Take pistachia, pingles, eringoës, of each half an ounce; saffron one dram; lignum aloes, galingale, mace, caryophylla, balm flowers, red and white behen, of each four scruples; shaven ivory, casia bar, of each two scruples; syrup of confected ginger, twelve ounces; white sugar, six ounces; decoct all these well together in twelve ounces of balm water, and stir it well together, then put to it of musk and amber each half a scruple: take thereof the quantity of a nutmeg three times a day; in the morning, and an hour before noon, and an hour after supper.

But if the cause of barrenness, either in man or woman, be through the scarcity or diminution of the natural seed, then such things are to be taken as do increase the seed, and incite

or stir up venery and further conception ; which I shall here set down, and so conclude this chapter of barrenness.

For this, yellow rape seed baked in bread is very good : also young fat flesh, not too much salted ; also saffron, and tails of stincus, and long pepper prepared in wine ; let such persons eschew also sour, sharp, doughy, and slimy meats, long sleep after meat, surfeiting and drunkenness ; and, as much as they can, keep themselves from sorrow, grief, vexation, and care.

These things following increase natural seed and stir up to venery, and recover the seed again when lost, viz. eggs, milk, rice boiled in milk, sparrows brains, flesh, bones and all : the stones and pizzles of bulls, bucks, rams, and boars ; also, cock-stones, lamb-stones, partridge's, quail's, and pheasant's eggs ; and this is an undeniable aphorism, that whatsoever any creature is addicted unto, they move or incite the man or woman that eats them to the like : and therefore partridges, quails, sparrows, &c. being extremely addicted to venery, they work the same effect in those men and women that eat them. Also take notice, that in what part of the body the faculty which you would strengthen lies, take the same part of the body of another creature in whom the faculty is strong for a medicine. As, for instance, the procreative faculty lies in the testicles ; therefore cock-stones, lamb-stones, &c. are proper to stir up venery. I will also give you another general rule ; creatures that are fruitful, being eaten, make them fruitful that eat them ; as crabs, lobsters, prawns, pigeons, &c.

Authors have set down several ways for the prevention of barrenness ; to carry the herb St. John's wort about them ; which for that cause was called by the ancients, *fuga demonum*, or the devil driver. Also, to carry a loadstone about them, was accounted a great preservative ; as likewise a plaster of St. John's wort laid to the reins ; and lastly, the heart of a turtle dove carried about them ; but these are only for prevention. But you will say, how if prevention comes too late, and the mischief be done already, then the man cannot give his due benevolence ; must the poor man remain helpless, and the good woman go without what she is married for ? No, there is help even in this case also, and the cure is easy : which, though the reader may scruple to believe, yet it has been tried and found effectual : it is no more than this, let the man only make water through his wife's wedding ring, and the enchantment will be broke ; and thus one piece of witchcraft is made to drive out another. But I will here put a period to this chapter.

CHAP. VII.

Of the Pleasure and Advantage of Marriage; of the Impropriety of unequal Matches; and the ruinous Effects of unlaful Love.

WE have hitherto been treating of the generation of man, which is effected by man and woman in the act of coition or copulation. But this can be no ways lawfully done but by those who are joined together in wedlock, according to the institution of the Creator in paradise, when he first brought man and woman together: which being so, it necessarily leads us to treat of the pleasure and advantage of a married life.

And sure there is none that reasonably question the pleasure and advantage of a married life, but that does reflect upon its author, or the time and place of its institution. The author and institutor of marriage was no other than the great Lord of the whole universe, the Creator of heaven and earth, whose wisdom is infinite, and therefore knew what was best for us, and whose goodness is equal to his wisdom, and therefore instituted marriage as what was best for the man whom he had but just created, and whom he looked upon as short of that complete happiness which he had designed him whilst he was alone, and had not the helpmate provided for him. The time of its institution is no less remarkable; it was whilst our first parents were clothed with that virgin purity and innocence in which they were created; it was at a time wherein they had a blessed and uninterrupted converse and communion with their great Creator; and were complete in all the perfections both of mind and body, being the lively image of Him that created them, it was at a time when they could curiously survey the several incomparable beauties and perfections of each other without sin, and knew not what it was to lust; it was at this happy time the Almighty divided Adam from himself, and of a crooked rib made him an helpmate for him; and by instituting marriage, united him unto himself again in wedlock's sacred bands. And this must needs speak very highly in commendation of a married life.

But we have yet considered only the time; now let us consider next what place it was wherein at first this marriage knot was tied, and we shall find that the place was Paradise, a place formed by the great Creator for delight and pleasure; and in our usual dialect, when we would shew the highest satisfaction we take, and give the greatest commendation to a place, we can ascend no higher than to affirm it was like a

Paradise. There are many curious delicacies and delights to please the eye and charm the ear in the gardens of princes and noblemen; but Paradise did certainly outdo them all; the sacred Scripture giving of it this high encomium, it was pleasant as the garden of God. It was in the midst of Paradise, the centre of delight and happiness, that Adam was unhappy while in a single state; and therefore marriage may properly be styled the Paradise of Paradise itself.

I will shew you the love of a good wife to her husband, in an illustrious example of a queen of our own nation.

King Edward the first, making a voyage to Palestine, for the recovery of the Holy Land, in which expedition he was very victorious and successful, took his queen along with him, who willingly accompanied him in all the dangers he exposed himself to. It so happened, that after several victories obtained, which made him both beloved and feared, he was wounded by a Turk, with a poisoned arrow, which all the king's physicians concluded mortal, unless some human creature would suck away the poisoned blood out of the wound; at the same time declaring, that it would be the death of those that did it: upon this the thing was proposed to several of the courtiers, but they all waved this dangerous piece of loyalty; and as well as they pretended to love the king, yet loved their own lives better; and therefore with a compliment declined it: which, when the noble queen perceived, and that the king must die for want of such kind assistance, she, with a braveness worthy of herself, declared she was resolved to undertake this cure herself, and venture her own life to save the king her husband: and so, accordingly sucked the poisonous matter from the wound, and thereby saved the king; and heaven, which had inspired her with that generous resolution, preserved her too, as a reward for her great conjugal affection.

But that which renders marriage such a mormo, and makes it look like such a bugbear to our modern sparks, are those unhappy consequences that too often attend it; for there are few but see what inauspicious torches Hymen lights at every wedding; what unlucky hands link in the wedding ring: nothing but fears and jars, and discontents or jealousies, a curse as cruel, or else barrenness, are all the blessings which crown the genial bed. But it is not marriage that is to blame for this: these things are only the effects of forced and unequal matches; when greedy parents, for the thirst of gold, will match a daughter that is scarce seventeen, to an old miser that is above threescore, can any think they two can ever agree, whose inclinations are as different as the mouths of June and January. This makes the woman (who still wants

a husband, for the old miser is scarce the shadow of one) either to wish, or may be to contrive his death, to whom her parents, thus against her will, have yoked her; or else, to satisfy her natural inclinations, she throws herself into the arms of unlawful love, both of which are equally destructive, and which might both have been prevented, had the greedy inconsiderate parents provided her such a match as had been suitable and proper. A sad truth, of which an instance follows.

There lived in Warwickshire a gentleman of very good estate; who being grown ancient, at the death of his first wife thought of marrying his son and heir, then at man's estate, to the daughter of a neighbouring gentleman, of an ancient family, and a fair estate, who approved of the match, and agreed to give 5000*l.* with his daughter upon her marriage with the young gentleman. No sooner had the father a sight of the young lady, but forgetting his son, he became a suitor for himself; and to obtain her, offered as much money for her (besides the settling a good jointure on her) as her father had promised to give with her to his son. This liberal offer so wrought on the lady's father, that what with persuasions, and what with menaces, he forced his daughter, unwilling to consent, to be married to the old man. But as she was in a manner compelled to this unequal match, so she never lived contentedly with him: for her affections wandering after other men, she gave entertainment to a young gentleman of twenty-two years of age, whom she liked much better than her husband, as one more suitable to her young years; so that she grew impatient for her husband's death, whom she thought every day to live an age too much; and therefore sought to cut that thread of life she was of an opinion nature lengthened out too long; and to that end, having corrupted her waiting woman, and a groom belonging to the stable, she resolved by their assistance, and that of her innamorato, to murder him in his bed by strangling him; which resolution (although her lover failed her, and came not at the time she appointed him, recoiling at the dismal apprehension of a fact so horrid) she executed only by her servants. For watching till her husband was asleep, she let in those assassins, and then casting a long towel about his neck, she caused the groom to lie upon him, that he might not struggle, whilst she and her maid, by straining the towel, stopped his breath. And now, the next thing was how to prevent discovery; and to that end they carried him to another room, where a close-stool was placed, on which they set him and when the maid and groom were gone out, and the coast clear, she made such an hideous out-cry in the house, wringing her hands, and pulling her hair, and weeping

so extremely, that none suspected her; for she alleged, that missing him sometime out of bed, she went to see what was the matter he staid so long, found him dead, sitting on his close-stool; which seeming very plausible, prevented all suspicion of his death. And being thus rid of her husband, she set a greater value on her beauty, and quite shook off her former lover, (perhaps because he had implicitly refused to be an actor in her husband's tragedy) and coming up to London, made the best market of her beauty that she could. But murder is a crime that seldom goes unpunished to the grave: in two years after justice overtook her, and brought to light this horrid deed of darkness. The groom (one of the actors of this fatal tragedy, being retained a servant with the son and heir of the old murdered gentleman, for whom the lady was at first designed) with some other servants attending him to Coventry, his guilty conscience (being in his cups) forced him upon his knees, to beg forgiveness of his master for the murder of his father: and taking him aside, acquainted him with all the circumstances of it.

The gentleman, though struck with horror and amazement at the discovery of so vile an act, yet gave the groom good words, but ordered his servants to have an eye upon him, that he might not escape when he was sober, and had considered what might be the issue of the confession he made; and yet escape he did, for all their vigilance; and being got to the sea-side, was (after three attempts to put to sea, being as often forced back by the winds proving contrary) happily pursued and apprehended by his master, and brought a prisoner back to Warwick, as was soon after the lady and her gentlewoman also, who were all justly executed for that horrid murder: the lady being burnt on Wolvey-heath, and the two servants suffered death at Warwick, leaving the world a sad example of the dismal consequences of doating love, and of unequal matches; for had this lady not been forced (thro' the desire of lucre in her parents) to marry the old knight, but had been married to the son, as was first intended, the old gentleman might have prevented an untimely death, and the young lady lived with innocence and honour.

And though in many such like matches the mischief does not run so high, as to break forth into adultery and murder; but a young lady, from a principle of virtue, and the fear of God, curbs all her natural inclinations, and is contented with the performance of her husband (how weak soever it be, and cold and frigid) and does preserve her chastity so pure and immaculate, as not to let one wandering thought corrupt it; yet even in this very case, her husband, conscious of the abatement of his youthful vigour, and his own weak and im-

becile performance of the conjugal rites, suspects his virtuous lady, and watches over her with Argus' eyes, making himself and her unhappy by his senseless jealousy; and though he happens to have children by her (which well may be, having so good ground to improve on) yet he can scarcely think they are his own. His sleep is disturbed with dreams of cuckoodom and horns, nor dares he keep a pack of hounds for fear Actæon's fate should follow him. These are a few of the sad effects of old men's dotage and unequal matches.

But let us turn the tables now, and see if it be the better on the other side, when a young spark of two and twenty marries a granum of threescore and ten, with a face more wrinkled than a piece of tripe. This I am sure is more unnatural: here can be no increase, unless of gold, which oftentimes the old hag (for who can call her better, that, to satisfy her lecherous itch, marries a young brat of a boy) conveys away before her marriage to her own relations, and leaves the expecting coxcomb nothing but repentance for his portion. Pocket expences she will perhaps allow him, and for these slender wages he is bound to do the basest drudgery. But if he meets with money (which was the only motive of the match, her gold being the greatest cordial at the wedding feast) he does profusely squander it away, and riots in excess among his whores, hoping, ere long, his antiquated wife will take a voyage to another world, and set him again at liberty; whilst the old grand dame, finding her money wasted and herself despised, is filled with those resentments that jealousy, envy, and neglected love can inspire, hoping each day to see him in his grave, though she has almost both feet in her own. Thus every day they wish for each other's death, and which, if it comes not quickly, they often help to hasten.

But these are still excrescences of marriage, and are the errors of people marrying, and not the fault of the marriage itself; for let that be what God at first ordained, a nuptial of two hearts as well as hands, whom equal years and mutual love had first united before the parson join their hands; and such will tell you, that mortals can enjoy no greater happiness on this side heaven.

CHAP. VIII.

*Directions to both Sexes how to manage themselves
in the Act of Coition or Venereal Embraces.*

HAVING shewn, in the former chapter, the pleasures and advantages of marriage, I will now give some directions to new married persons how to manage themselves in the exercise of one of the greatest, most natural, and agreeable pleasures thereof, and that is, their nocturnal or venereal embraces; a pleasure peculiar to a married life, or at least it ought to be so; for it is not permitted to any besides. And let not any think it strange that we pretend to give directions to do what nature teacheth every one, since it is well known that nature has been assisted by art in some of her most noble operations; besides, it is not the bare performing of that act that they are directed to, but the performing of it so that it may be efficacious for the production or generation of man, which our great master Aristotle designs in this his LAST LEGACY to the world. To which purpose, some things are to be observed previous to this act, and some things consequential of it.

First, Things previous to it.

When married persons design to follow the propensities of nature for the production of the fair image of themselves, let every thing that looks like either care or business be banished from their thoughts, for all such things are enemies to Venus, and let their animal and vital spirits be powerfully exhilarated by some brisk and generous restoratives: and let them, to invigorate their fancies, survey the lovely beauties of each other, and bear the bright ideas of them in their minds. And some have thought it necessary, for the more heightening their joys, for the brisk bridegroom to delineate the scene of their approaching happiness unto the amorous bride, in some such heroic rapture as this:

I will enjoy thee now, my fairest: come,
And fly with me to love's Elysium!
Now my enfranchis'd hand, on every side,
Shall o'er thy naked, polish'd ivory slide.
Now, free as ambient air, I will behold
Thy bearded snow, and thy unbraided gold.

No curtain now, tho' of transparent lawn,
 Shall be before thy virgin treasure drawn.
 Now thy rich mine, to my enquiring eye
 Expos'd, shall ready for my mintage lie.
 My rudder with thy bold hand, like a try'd
 And skilful pilot, thou shalt steer; and guide
 My bark into love's channel, where it shall
 Dance, as the bounding waves do rise and fall:
 And my tall pinnace, in the Cyprian streight,
 Shall ride at anchor and unlade her freight.

Having by these, and other amorous arts (which love can better dictate than my pen) wound up your fancies to the highest pitch of desire—

Perform those rites which mighty love requires,
 And with each other quench your amorous fires.

But then, in the second place, when coition is over, some further directions are necessary; and therefore let the vanquished bridegroom (for he must needs be vanquished that has in the encounter lost his artillery) take heed how he retreats too soon out of the field of love, lest he should thereby leave the entrance too open, and some cold should thereby strike into the womb. But after he has given time for the matrix to close up, and made all sure, he may withdraw, and leave the bride unto her soft repose, which ought to be with all the calmness that the silent night, and a mind free from all disturbing care can give; inclining to rest on her right side, and not removing without great occasion, till she has taken her first sleep. She ought also to have great care of sneezing, and avoid coughing if it is possible, or any other thing that causes a too violent motion of the body. Neither should they too often reiterate those amorous engagements till the conception be confirmed; and even then the bridegroom should remember, that it is a market that lasts all the year, and so should have a care of spending his stock too lavishly. Nor would his bride like him at all the worse for it; for women rather choose to have a thing done well than to have it often; and well and often too can never hold out.

CHAP. IX.

The Midwife's Vade Mecum :

*Containing Particular Directions for Midwives,
Nurses, &c.*

THOSE that take upon them the office of a Midwife ought to take care to fit themselves for that employment, with the knowledge of those things that are necessary for the faithful discharge thereof. And such persons ought to be of the middle age, neither too young nor too old; of a good habit of body, and not subject to diseases, fears, or sudden frights; nor are the qualifications assigned to a good surgeon improper for a midwife, *viz.* a lady's hand, a hawk's eye, and a lion's heart; to which may be added, activity of body, and a convenient strength, with caution and diligence, not subject to drowsiness, nor apt to be impatient. She ought also to be sober, affable, courteous, chaste, not covetous, or subject to passion, but bountiful and compassionate. And, above all, she ought to be qualified as the Egyptian midwives of old, that is, to have the fear of God, which is the principal thing in every state and condition, and will furnish her on all occasions both with knowledge and discretion.

When the time of birth draws near, and the good woman finds her travailing pains begin to come upon her, let her send for her midwife in time, (better too soon than too late,) and get those things ready which are proper upon such occasions. When the midwife comes, let her first find whether the true time of her birth be come, for the want of observing this hath spoiled many a child, and endangered the life of the mother; or at least put her to twice as much pain as needful. For unskilful midwives, not minding this, have given things to force down the child, and thereby disturbed the natural course of her labour: whereas, nature works best in her own time and way. I do confess, it is somewhat difficult to know the true time of some women's labour, they being troubled with pains long before their true labour comes, even some weeks before; the reason of which I conceive to be the heat of their reins, and this may be known by the swelling of their legs; and therefore, when women with child find their legs to swell much, they may be assured that their reins are too hot. For the cure whereof, let them cool the reins before the time of their labour with oil of poppies, and oil of violets, or water-lillies, by anointing the reins of their back with them, for such

women, whose reins are over hot, have usually hard labour. But in this case, above all the remedies that I know, I prefer the decoction of plantain leaves and roots; you may make a strong decoction of them in water, and then having strained and clarified it with the white of an egg, boil it into a syrup, with an equal weight of sugar, and keep it for your use.

There are two skins that compass the child in the womb, the one is the *amnios*, and this is the inner skin; the other is the *allantois*, and this is the skin that holds the urine of the child during the time that it abides in the womb: both those skins, by the violent stirring of the child near the time of birth, are broken: and then the urine and sweat of the child contained in them fall down to the neck of the womb; and this is that which the midwives call the waters, and is an infallible sign that the birth is near, for the child is no longer able to subsist in the womb after those skins are broken, than a naked man is in the cold air. These waters, if the child comes presently after them, facilitate the labour, by making the passage slippery; and therefore the midwife must have a care that she force not the waters away, for nature better knows the true time of the birth than she, and usually retains the waters till that time.

Several Medicines to cause Speedy Delivery.

A loadstone held in her left hand. Take wild tansy and bruise it, and apply it to the woman's nostrils. Take also date stones, and beat them to powder, and let her take half a dram at a time in white wine.

Take parsley, bruise it, and press out the juice, and put it up (being so dipped) into the mouth of the womb, and it will presently cause the child to come away, though it be dead, and the after-burden also; besides, it cleanseth the womb, and also the child in the womb, of all gross humours.

Let not a midwife force away a child, unless she is sure it is dead. I once was where a woman was in labour, which being very difficult, her midwife sent for another midwife to assist her, which midwife sending the first down stairs, (designing to have the honour of delivering the woman herself,) forced away the body of the child, and left the head behind; of which the woman was afterwards delivered by a man midwife.

After the child is born, great care is to be taken by the midwife in cutting the navel string, which, though by some is accounted but a trifle, yet it requires none of the least skill of a midwife to do it with that prudence and judgment that it ought. And that it may be done so, you must consider as soon as the child is freed from its mother, whether it be weak

or strong, (for both the vital and natural spirits are communicated by the mother to the child by its navel string); if the child be weak, put back gently part of the vital and natural blood in the body of the child by its navel, for that recruits a weak child; but if the child be strong you may forbear.

As to the manner of cutting the child's navel string, let the ligature or binding be very strong, and be sure do not cut it off very near the binding, lest the binding unloose. You need not fear to bind the navel string hard, because it is void of sense, and that part of the navel string which you leave on falls off of its own accord, in a few days; the whole course of nature being now changed in the child, it having another way ordained to nourish it. It is no matter with what instrument you cut it off, so it be but sharp, and you do it cleverly. The piece of the navel string that falls off, be sure you keep it from touching the ground; remember what I have before told you: and if you keep it by you it may be of use. The navel string being cut off, apply a little cotton or lint to the place, to keep it warm, lest the cold enters into the body of the child, which it will be apt to do if it be not bound hard enough.

The next thing to be done, is to bring away the after-birth, or secundine, else it will be very dangerous for the woman. But this must be done by gentle means, and without any delay, for in this case especially delays are dangerous; and whatever I have set down before, as good to cause speedy delivery and bring away the birth, is also good to bring away the after-birth.

And after the birth and after-birth are brought away, if the woman's body be very weak, keep her not too hot; for extremity of heat weakens nature, and dissolves the strength: but whether she be weak or strong, let no cold air come near her at first; for cold is an enemy to the spermatie parts. If cold gets into the womb, it increases the after-pains, causes swellings in the womb, and hurts the nerves.

If what I have written be carefully observed by midwives, and such nurses as keep women in their lying-in, by God's blessing the child-bed woman may do very well, and both midwife and nurse gain credit and reputation.

For though these directions may in some things thwart the common practice, yet, as they are grounded upon experience, they will infallibly answer the end.

But there are several accidents which lying-in women are subject to, which must be provided against, and these I shall speak of next.

The first I shall mention are after-pains, about the cause of which, authors very much differ; some think they are caused

by the thinness, some by the thickness, some by the sliminess, and some by the sharpness of the blood; but my opinion is, it proceeds from cold and water. But whatever the cause may be, this I know, that if my foregoing directions be observed, they will be very much abated, if not quite taken away. But in case they do happen, boil an egg and pour out the yolk of it, with which mix a spoonful of cinnamon water, and let her drink of it; and if you mix with it two grains of ambergrease, it will be better.

The second accident lying-in women are subject to, is excoriations in the lower part of the womb. To help this, use oil of sweet almonds, or rather oil of St. John's wort, to anoint the part withal.

Another accident is, that sometimes through very hard labour and great straining to bring the child into the world, the lying-in woman comes to be troubled with the hemorrhoids, or piles; to cure this, let her use polypodium bruised and boiled in her meat and drink.

A fourth thing that often follows, is the retention of the menstrues; this is very dangerous, and if not remedied, proves mortal.

But for this, let her take such medicines as strongly provoke the terms; and such are piony roots, dittany, juniper-berries, bettony, centaury, sage, savory, penny-royal, and feverfew.

The last thing I shall mention is, the overflowing of the menstrues. This happens not so often as the foregoing, but yet sometimes it does; and in such cases take shepherd's purse, either boiled in any convenient liquor, or dried and beaten to powder, and you will find it very good to stop them.

Having thus finished my *Vade Mecum for Midwives*, before I conclude, I will add something of the choce and qualifications of a good nurse, that those who have occasion for them may know how to order themselves for the good of the children which they nurse.

Directions for choosing Nurses.

FIRST:—If you would choose a good nurse, choose one of a sanguine complexion: not only because that complexion is generally accounted best, but also because all children in their minority have their complexion predominant. And that you may know such a woman, take the following description of her.

Her stature is of the middle size, her body fleshy, but not fat; but of a merry, pleasant, and cheerful countenance; a fresh, ruddy colour, and her skin so very clear that you may see her veins through it. She is one that loves company, and

never cares to be alone ; never given to anger, but mightily to playing and singing ; and which makes her the fittest person for a nurse, as she very much delights in children. In choosing such a one, you can hardly do amiss ; only let me give you this description, (which you will find very difficult,) get one as near as you can to it, and let these rules further guide you in your choice.

1. Let her age be between twenty and thirty, for then she is in her prime.

2. Let her be in health, for her sickness infects the milk, and her milk the child.

3. Let her be a prudent woman, for such a one will be careful of the child.

4. Let her not be too poor, for if she wants, the child must want too.

5. Let her be well bred, for ill-bred nurses corrupt good nature.

6. If it be a boy that is to be nursed, let the nurse be such a one whose last child was a boy, and so it will be the more agreeable ; but if it be a girl, let the nurse be one whose last child was a girl.

7. If the nurse has a husband, see that he be a good likely man, and not given to debauchery, for that may have an influence upon the child.

8. In the last place, let the nurse take care she is not with child herself ; for if so, she must of necessity either spoil her own, or your's, or perhaps both.

To a nurse thus qualified, you may put your child without danger.

And let such a nurse take the following directions, for the better governing and ordering herself in that station.

Directions for Nurses.

1. LET her use her body to exercise ; if she hath nothing else to do, let her exercise herself by dancing the child ; for moderate exercise causeth good digestion ; and I am sure good blood must needs make good milk ; and good milk cannot fail of making a thriving child.

2. Let her live in good air ; there is no one thing more material than this. It is the want of this makes so many children die in London ; and even those few that live are none of the wisest ; for gross and thick air makes unwieldy bodies and dull wit ; and let none wonder at this, for the operation of the air to the body of a man, is as great as meat and drink ; for it helps to engender the vital and animal spirits, and this is the cause of sickness and health, of life and death.

3. Let her be careful of her diet, and avoid all salt meats,

garlic, leeks, onions, and mustard; excessive drinking of wine, strong beer, or ale, for they trouble the child's body with choler; cheese, both new and old, afflicts it with melancholy, and all fish with phlegm.

4. Let her never deny herself sleep when she is sleepy, for by that means she will be more wakeful when the child cries.

5. Let her avoid all disquietude of mind, anger, vexation, sorrow, and grief, for these things very much disorder a woman, and therefore must needs be hurtful to the milk.

6. If the nurse's milk happen to be corrupted by an accident, as sometimes it may be, by being either too hot or too cold, in such cases let her diet be good, and let her observe the cautions already given her. And then if her milk be too hot, let her cool it with endive, succory, lettuce, sorrel, purslain, and plantain: if it be too cold, let her use smallage, vervain, bugloss, mother of thyme, and cinnamon; and let her observe this general rule, whatever strengthens the child in the womb, the same mends the milk.

Receipts for increasing Milk.

IF the nurse wants milk, the thistle, commonly called our lady thistle, is an excellent thing for her breeding of milk, there being few things growing (if any) that breed more and better milk than that doth; also the hoof of the forefeet of the cow, dried and beaten to powder, and a dram of the powder taken every morning, in any convenient liquor, increases milk.

If a nurse be given to much fretting it makes her lean, and hinders digestion, and she can never have store of milk, nor can what she hath be good. Bad meats and drinks also hinder the increase of milk, and therefore ought to be forborne; therefore women that would increase their milk should eat good meat (that is, if they can get it,) and let her drink milk wherein fennel-seed hath been steeped. Let her drink barley-water, and burrage and spinnage; also goat's milk, cow's milk, and lamb sodden with verjuice. Let her also comfort the stomach with confection of anniseed, carraway and cummin seeds, and also use those seeds sodden in water; also take barley water, and boil therein green-fennel and dill, sweeten it with sugar, and drink it at your pleasure.

Hot fomentations open the breasts, and attack the blood, as the decoction of fennel, smallage, or stamp't mint applied. Or,

Take fennel and parsley, green, each a handful, boil and stamp them, and barley meal half an ounce, grith-seed a dram, storax calamint two drams, oil of lillies two ounces, with which make a decoction.

Lastly, take half an ounce of deer's suet, and as much parsley roots, with some herbs, an ounce and a half of barley meal, three drams of red storax, and three ounces of oil of sweet almonds; boil the roots and herbs well, and beat them to a pulp, then mingle the other amongst them, putting it warm to the nipples, and it will increase the milk.

☞ *And thus, courteous Reader, I have at length finished what I designed, and what I promised, and can indeed truly affirm, that thou hast here those Receipts, Remedies and Directions given unto thee, with respect to Child-bearing Women, and Midwives, and Nurses, that are worth their weight in gold, and will assuredly (with the blessing of God) answer the end, whenever thou hast occasion to make use of them; they being not things taken on trust from tradition or hearsay, but the result and dictates of sound reason and long experience.*

FINIS.













