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THE
WORKS
OF
ARISTOTLE,
THE
Famous Philosopher,
IN FOUR PARTS.

CONTAINING

1. 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.
2. His **EXPERIENCED MIDWIFE**; absolutely necessary for Surgeons, Midwives, Nurses and child bearing Women.
3. His **BOOK OF PROBLEMS**, containing various Questions and Answers, relative to the State of Man's Body.
4. His **LAST LEGACY**; unfolding the Secrets of Nature respecting the Generation of Man.

A NEW EDITION WITH ENGRAVINGS.

NEW-ENGLAND:
PRINTED FOR THE PUBLISHERS.

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1831.

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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 Macedon as the most worthy and proper person in his dominions to be the tutor of his son Alexander, by whose wise precepts and instructions, Alexander became of so great wisdom, judgment, prowess and magnanimity, that he justly obtained the title of the Great. Alexander himself was so sensible of the advantages 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 styled 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 diverse 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 styled 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 hidder from me 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 enquired 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 abovementioned.

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 that excellent treatise 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 HIPOCRATES, and thinking they would be acceptable to my readers, I have added the same by way of supplement, at the end of the **MAS- TER 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 the more 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 their 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, the plastic power of nature, is the only energy of the first blessing, which to this day upholds the species of mankind in the world.

Now since philosophy informs us, that *Nosce teipsum*, 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 auther 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, 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 in 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 women; and then to shew the use of these parts in the act of coition, and how positively nature has adapted them to the end for which she has 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 advantages it brings to mankind.

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

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

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

1st. What conception is: what is prerequisite thereto: how a woman may know when she hath conceived, and whether a boy or a 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 the cure thereof, both in men and women.

5thly. Direct midwives how they could 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.

SECTION I.

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 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 propensions 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 flatish, 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 Urinatiae*, and the seed which it conveys into the matrix, is brought into it from the *Vesiculae 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 *Steptum*; 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 principally of veins, arteries, and nervous fibres, interwoven like a net. And nature has ordained it, that when the nerves are filled with animal spirits, and the arteries with hot and spiritous blood, then the yard is distended, and becomes erect; when the flux of the spirit ceases, when the blood and the remaining spirits are absorbed, or sucked up by the veins, so the penis becomes limber and flaggy.

2. The second internal part is the *Steptum 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 seed and urine are conveyed out; it is in substance soft and loose, thick and sinewy, like that of the 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 at the beginning, the largest of which is in the midst, which receives the urine into it. The other two are smaller receiving the seed into each seminal vessel.

4. The fourth is the Glands, which is at the end of the penis, covered with a very thin membrane, by reason of a *Praeputum* 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 man and woman. The extreme part of this cover, which I call *Praeputium*, and which is so called a *praeputando*, from cutting off, as the Jews were commanded to cut it off on the eighth day. The ligaments by which it is fastened to the glands is called *Fraenum*, 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 instru-

ments of voluntary motion, and without which no part of the body can move itself, consists of fitrous flesh to make up their body: of nerves for the senses; of veins for their vital heat; and 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, if you will open the lower part of the Urethra, both for making water and voiding the seed, and therefore are called Accelerators.

6. The sixth and last things are the vessels, which consists 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 contrary-wise, 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 appendages belonging thereto, which when wanted, renders 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. Membrana Carnosa is the innermost. The proper coats are also two; the outward called Elithoridis or Vaginalis, the inner, Albuginea, into the outward are inserted the Cremasters; to the upper part of the testes are fixed the Epidermis or Paristatae, from whence arise the Vasa Deferentia Ejaculatoria, which when they approach near the neck of the bladder deposit the seed into the Siculae Seminales, 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 those are the Parastetae, 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 thereby defend it from the crimony of the seed and urine. Beside these vessels, by which the blood is conveyed to the testes or of which the seed is made, and the arteries spermaticae,

these are also two, and so likewise are the veins, which carry out the remaining blood, which are called *venae spermaticae*:

And thus those noble parts we see
 For such the parts of generation be;
 And they who 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 for it by nature fitted:
 With highest sense of pleasure to excite
 In amorous combats the more delight;
 For in this work 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
 Janonical 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 *pudenda* (from the shamefacedness that is in woman 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 a pretty store of spongy fat; their use being to keep the internal parts from all annoyances 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 spongy flesh, and the doubling of the skin placed at the sides of the neck; they compass the clitoris, and both in form and colour resemble the comb of a cock, looking fresh and red, and in the act of coition receive the penis or yard betwixt them; besides which they give passage both to the birth and urine. The use of the wings and knobs like myrtle berries, is to shut the orifice and neck of the bladder, and by the swelling up, cause titulation and delight in those parts, and also to obstruct the voluntary passage of the urine.

The next thing is the clitoris, which is a sinewy and hard part of the womb, replete with spongy and black matter within, in the same manner as the side ligaments of the yard suffers erection and falling in the same manner, and both stir up lust and give 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 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 only upon some extraordinary accident. It consists as I have said, of two spongy and skinny bores 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 only differs.

The next thing, is the passage of the urine, which is under the clitoris, and over 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 in particular, and by itself. This passage opens itself into the fissure 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 bespoken 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 largest and forked for that end.

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 *Claustum Virginale*, which I shall treat more at large when I come to show what virginity is. The neck of the womb I call 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 spongy; and there being in this concavity divers folds or orbicular plates 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 *Claustum 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 side 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 emotions requiring great heat, which being more intent by the act of friction consumes a great deal of moisture, in the supplying of which 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 their vessels, because their monthly purgations makes 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 these 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 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 parts of the hypogastrion, being joined to the neck, and is placed between the bladder and the straight gut, so that it is kept from swaying or rolling yet hath its liberty to stretch and dilate itself, and also to conduct 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 so thick in substance that it exceeds a thumb's breadth; and after conception augment 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 hypogastricks, touching the bottom and neck, the mouth of these veins piercing so far as the inward cavity.

The womb besides what I have already mentioned, hath two arteries on both sides the spermatic vessels and the hypogastricks 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 pudenda 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 Peritoneum 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 the most exquisite sense, so, that if it be at any time disordered, either with a schiirrosity, too much hot moisture, or relaxation, the womb is 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 open to a wideness in proportion to the bigness 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 man, for they are likewise four, two vessels and two arteries; their rise and original is the same as in man, 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 arcata. These preparatory vessels are shorter in women than in men, because they have a shorter passage, 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 writhing 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 secundated egg, and this is properly called conception. And then, secondly, to cherish and nourish it, till nature has framed 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 the senses, that no injury accrues to it from thence, retaining in 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 Praeparata 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 in 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 those little bladders which are on their outward superficies contain nothing of seed, as the followers of Galen, &c. erroneously imagine, yet they contain several eggs (about the number of twenty in each testicle,) one of which being impregnated by the most spirituous part of a 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 Ovae 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 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 works be more perfect. The deferentia, or carrying vessels spring from the lower part of the stones, and are in color white, substance sinewy, and pass not through 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 differently 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 muscles of the loins, and so not pendulous as in man. 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. The stones also differ from men's in their form; for though they are smooth in men, they are uneven in women; being also depressed or flatish in them though in men their form is round and oval. They have also in women but one skin, whereas in men they have four. Nature having wisely contrived to fortify these most 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 in 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 that

which egg is to be impregnated by the seed of a man.

It now remains, that I now 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, thro' which certain veins and arteries, passing from the end of the stones, may be said to have their passages, proceeding from the corner of the womb to the testicles, and are accounted the proper ligaments by which the testicles and the womb are united and strongly knit together.

Thus the woman's secrets I've survey'd
 And let them see how curiously they're made,
 And that though they of different sexes be,
 Yet on the whole they are the same as we,
 For those that have the strictest searchers been,
 Find women are but men turned 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 appropriate to Generation.

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

The external parts in a woman'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 intending that orifice to receive the penis or yard in the act of coition, and also to 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 erecting its extreme end being like that of the glands in the men, 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 straight for the passage of the Penis to the womb. Secondly, while the passage is re-

plate with the spirits and vital blood it becomes more straight 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 could have no convenient passage to the womb. The other is, that it hinders any hurt or damage that might ensue through the violent concussions of the yard during the time of copulation.

Then as 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 formed we be,
 Yet betwixt these there is that unity,
 That we in nothing can a greater find,
 Unless the soul that's in the body join'd:
 And sure in this Divine 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.

THOUGH the Architect of the world has been pleased to frame us of different sexes, and for the propagation and continuation of mankind, has indulged us in the mutual embraces of each other, the desire whereof, by a powerful 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 Law-giver; for the holy Jesus hath told us, that in the beginning marriage was 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 the estates, and eternal ruin to 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 transgressors of his law who hath

said "*thou shalt not commit Adultery.*" Whatever is spoken of the vernal pleasure, 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 clove and burthens to those who give up the reins to their unbridled passions. 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 and pull together) that is to be enjoyed on this side of 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 while he wanted such a help mate for him.

The time of the institution is 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 these pleasing sweets till he received his Eve; so that it was a married state which completed his happiness and which was a paradise of pleasure 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 great-

est honor unto him that he has her." For he 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 a man receives in the embraces of a loving wife, than in the wanton dalliance of a deceitful harlot.

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

SECTION III.

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 likewise be necessary to shew the cause of their impetuous desires.

The inclination of virgins to marriage is to be known by many symptoms; for when they arrive at 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 veneral 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, those distempers vanish, and their beauty returns more gay and lively than before. And this strong inclination of theirs may be known by their eager gazing at men, and affecting their company, which sufficiently demonstrates that nature excites them to desire coition. Nor is this the case with young 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 commonly, the menses begins to flow in virgins; at which time they are capable of conceiving and therefore fit for marriage, though it would be much better for themselves and their children if they would not marry till eighteen or twenty; if they are healthy, of strong body, and use themselves to temperance,

they may continue bearing till upwards of 50, though generally leave off between 40 and 50: for the menses flow longer 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 well be termed miraculous.

As for male youth, when they arrive at 16 or between that and seventeen; having much vital strength, they may be capable of begetting children; which ability, by the force and heat of procreating matter, constantly increases till 45, 56, 65, and then begins to flag, the seed by degrees becoming unfruitful, the nature of 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 100 years old to a bride of 30, and had many children by her; but he was a man of so hale a constitution, and carried his age so well that strangers would not have guessed him at above 60. And in Campania; where the air is clear and temperate, it is usual for men of 80 years old to marry young virgins, and have children by them; which shews that age in man, 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 in the cause of generation, is more predominant in men than women; for the monthly purgations of women show 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 in 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 operation.

Thus nature to her children is so kind,
That early they those inclinations find,
Which prompts them on to procreate their kind.
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 those pleasures are only lawful to be enjoyed in a married state; and have also acquainted the 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; on the other hand, some virtuous young virgins, that have come such to their husband's beds, have been accused by the ignorance and credulity of their husbands, to have lost their virginity beforehand, when there has been no such matter; therefore to do right in this case to both parties, my design in this chapter is to show what virginity is, wherein it consists; how many ways it may be lost, and how a man may know that it is so or not; that so women may not be wrongfully censured, or men imposed on.

Virginity untouched and taintless, is the boast and pride of the fair sex. But generally commend at to put it off; for, as 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 loses 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 prime, the best of any thing, and is properly the integrity of a woman's privities, not violated by 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 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 *Deflora*, to deflower; whence the taking of virginity, is called deflowering 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, a 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 plum, and full in virgins, but hang loose or flaggy in those who have used copulation, being pressed by the yard. Some have observed the fleshy circle about the Nymphae, 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 *Claustum Virginalis*, 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 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 accompanied with an effusion of blood, which blood, is called the flower of virginity; and when once broke, it never closes again.

SECTION II.

How Virginity may be lost.

In the former section I have shewn in what virginity consists, and that it is lost at the first penetration of the yard, which may easily be known by its being attended with an effusion of blood upon the rupture of the Hymeneal membrane, or *Claustrum Virginalē*; but I must do the fair sex this justice, to 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; 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 vagina or sheath, which sometimes, even to virgins; or (which all virgins should beware of, for the preservation of their credit, and preventing of suspicion) perhaps the unwary bride has had her menses but a day or two before, in which case both the Hymen and inner wrinkled membranes of the vagina are flabby, weak and relaxed, so that no such rupture or effusion may happen. It were better therefore that when virgins are about to marry, they would fix their wedding day at least six or seven days after the menses have done flowing.

But further, nature hath given greater desires after enjoyment to some than to others, and such, though they abstain from enjoyment, yet so great is their desire after it, that they may break the Hymen or *Claustrum Virginalē*; and sometimes it itches so bad, that they put in their finger, and so break it. Sometimes the midwives break it in the birth; and sometimes it is done by stoppage of urine, coughing, violent straining or sneezing; so that no bleeding at the first penetration of the husband is not always a sign of unchastity, or that another has been there before him, seeing that the hymenial membrane may be broke, so many other ways; but when bleeding does flow, it is undeniable that the person was a virgin, and never knew man before. And indeed, tho' the Hymen may be broke, all these ways mentioned, yet it so rarely happens to be broke any other way, that *Leo Africanus* makes mention of it as a general custom of the Africans at their weddings, that the marriage ceremony being 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 token of the 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 to be sent home again to her friends with disgrace, and the disappointed guests go home without their dinner.

There are others, that make the straightness of the privities a sign of virginity, but this is a very uncertain rule; for this depends much upon the age, habit of the body, and other circumstances. But though women who have used carnal copulation, are not so straight

as virgins, yet this cannot be a certain argument of virginity, because the privities may be made straight by the use of astringent medicines. 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 judge of lost virginity by the milk of the breast; but such perhaps, are ignorant that there is 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, made of blood from the womb; turned into milk by the faculty of the breasts; the other is natural, where there is a child either in the womb or born; yet the milk (though both are white) differs very much both in respect to the blood, and diversity of veins that bring it to the breasts: and that of virgins is thinner, less in quantity and not so sweet: therefore if virgins happen to have such milk, they are not for that reason to be reckoned unchaste.

Upon the whole, the sum of what I have said upon this 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, but if he finds them not, he has not reason to think her devirginated if he finds her otherwise sober and modest; seeing the Hymen may be broken so many other ways, and yet the woman both chaste and virtuous. Only let me caution virgins to take all imaginable care to keep these virgin zones, entire, that so when they marry, they may be such as the great Cæsar wished his wife to be, not only without fault but without suspicion also.

Thus have I virgin innocence survey'd
 And show'd the difference betwixt wife and maid,
 And that their chastity they need not fear,
 Whose virg'n token plainly doth 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.

ARISTOTLE'S MASTER PIECE.

PART II.

The Secrets of Nature display'd in the production of Man
 CHAPTER I.

What conception is; what is prerequisite thereunto; how a woman may know whether she hath conceived, and whether a boy or a girl.

SECTION I.

Of Conception, what it is, &c.

HAVING in the first part of this work, described the instruments of generation in both sexes, and the use for which those instruments were intended by nature, I shall, in the part before me proceed to

show what conception is: the signs and tokens thereof, and what are the prerequisites thereunto; for when once a woman has conceived the work of generation is begun, time, with nature's help, will perfect the work.

Now in conception, that which is first to be regarded, and without which it cannot be, is the seed of the man, that being the active principle, or efficient cause of the foetus, the matter of which is arterial blood, and animal spirits which are elaborated into seed in the testicles, and from thence by proper vessels conveyed into the yard, and the act of copulation it is injected or emitted into the womb.—The next thing is the passive principle, to the foetus (for there must be both in order to conception) and this is an ovum, or egg, impregnated by the man's seed, or being conveyed to it, the womb closes up, that no air may enter therein but the impregnated ovum may swell into a foetus. This is that which is truly and properly conception, and the prerequisites thereunto I shall make the subject of the next section.

SECTION II.

Of the prerequisites to conception.

I have shewn in the former section, that there are two things to be regarded chiefly in conception, to wit, the active and passive principle. This in part shews, that difference of sexes is a prerequisite to conception. So nature has ordained there must be a proper vehicle for the active principle to be injected thereinto and there must also be a passive principle to be impregnated thereby, so the woman has no active principle to impregnate, and therefore, without different sexes, there can be no conception.

But this is not all: for it is not enough that there be different sexes, these different sexes must unite, and there must be coition, in order to conception, and it is coition, or the mutual embraces of both sexes, which nature has made so desirable to each other: which, when authorized in the way that heaven has ordained, there is no need of ravishing; for the fair bride will quickly meet her bridegroom with equal vigor. But since in that there may be overdoing, and such errors committed by their giving way to the impetuosity of their desires, as may be prejudicial to conception, it will not be amiss to give some directions to make this operation the more effectual.

SECTION III.

A word of advice to both sexes: or, Directions respecting the act of Coition or carnal copulation.

Though there are some that desire not to have children, and yet are very fond of nocturnal embraces to whom these directions will be no way acceptable, because it may probably produce those effects which they had rather be without; yet I doubt not but the generality of both sexes, when in the married state, have such a desire to produce the fair image of themselves, that nothing can be more welcome to them than those directions that may make their mutual em-

braces most effectual: and therefore let none think it strange that we pretend to give directions for the promoting that which nature itself teacheth all to perform; since 'tis no solecism for art to be a handmaid to nature, and to assist in her noblest operations. Neither is it the bare performing of that act which we here direct to, but the performing it so as to make it conducive unto the work of generation. And since this act is the foundation of generation, and without which it cannot be, some care ought to be taken, and consequently some advice given how to perform it well; and therein I am sure the proverb is on our side, which tells us that what is once well done, is twice done.—But yet what we shall advance on this nice subject, shall be offered with such caution, as not to give offence to the chastest ear, nor put the fair sex to the trouble of blushing.—What I shall offer will consist of two parts. First, something previous to it; and secondly, something consequential to it.

For the first, when married persons design to follow the propensions of nature, for the production of the fair image of themselves, let every thing that looks like care and 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 if it happens, that instead of beauty there is any thing that looks like imperfection or deformity (for nature is not alike bountiful to all) let them be covered over with a veil of darkness and oblivion. And since the utmost intention of desire is required in this act, it may not be amiss for the bridegroom for the more eager heightening of his joy, to delineate the scene of their approaching happiness to his fair languishing bride in some such amorous rapture as this,

Now, my fair bride, now will I storm the mint,
Of love and joy, and rifle all that's in't.
Now my enfranchis'd hand on every side
Shall o'er thy naked polished ivory, slide,
Freely shall now my longing eyes behold,
Thy bared snow and thy undrained gold;
Nor curtain now though of transparent lawn,
Shall be before thy virgin treasure drawn,
I will enjoy thee now my fairest come,
And be with me to love's elysium,
My rudder with thy bold hand, like a try'd
And skillful pilot, thou shalt steer, and guide,
My bark in love's dark channel, where it shall
Dance, as the bounding waves do rise and fall.
Whilst my tall pinnace in the Cyprian straits,
Rides safe at anchor and unlades the freight.

Having by these and other amorous acts (which love can better dictate than my pen) wound up your fancies to the highest order and desires,

Perform those rights nature and love requires,
Till you have quench'd each other's am'rous fires.

When the act of coition is over, and the bridegroom has done what nature prompted him to do, he ought to take care not to withdraw too precipitately from the field of love, lest he should, by so doing, let the cold into the womb which might be of dangerous consequence. But when he has given time for the matrix to close up, he may withdraw, and leave the bride to her repose, which ought to be with all the calmness possible, betaking herself to rest on the right side, and not removing without great occasion, till she has taken her first sleep. Coughing and sneezing, if possible, should be avoided, or any thing that agitates or causes a motion of the body. These amorous engagements should not be often repeated till the conception is formed. And it may not be amiss to remind the bridegroom, that the fair lasts all the year, and that he should be careful not to spend his stock lavishly, as women, in general, are better pleased in having a thing once well done, than often ill done.

SECTION IV.

How a woman may know when she hath conceived.

After the means made use of in order to conception, according to the directions given before, there is reason to expect that conception should follow; but as things do not always succeed according to desire, so therefore conception does not follow upon coition. For there are many women, especially those newly married, who know not whether they have conceived or not, after coition; which, if they were assured of, they might and would avoid several inconveniences which they now run upon. For after conception a woman finds an alteration in herself, and yet knows not from whence it arises, she is apt to run to the doctor and enquire of him what is the matter, who not knowing that she is with child, gives a strong potion, which certainly destroys conception. There are others, who out of foolish bashful coyness, though they know that they have conceived yet will not confess it, that they may be instructed how to order themselves accordingly. Those that are coy may learn in time to be wise; and for the sake of those that are ignorant, I shall set down the signs of conception, that women may know thereby whether they have conceived or not.

If a woman hath conceived, the vein under her eye will be swelled, (i. e.) under the lower eyelid, the vein in the eyes appearing clearly, and the eyes somewhat discolored; if the woman hath not her turns upon her, nor hath watched the night before, there is a certain sign of her having conceived; and this appears most plainly just upon the conception, and holds for the first two months after. Stop the urine of a woman close in a glass or bottle three days, at the expiration of which time strain it through a linnen rag; if you perceive small living creatures in it you may instantly conclude that

she hath conceived; for the urine, which was before part of her own substance, will be generative as well as its mistress.

A coldness and chillness of the outward parts after copulation, shews a woman to have conceived, the heat being retired to make the conception; and the veins of the breast 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 breasts: she has also a 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 or 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 something 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 on 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 to 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 endeavour to gratify the curiosity of many persons who are very desirous to know whether they are conceived of a male or female. For the satisfaction of such I shall give the sign of a male child being conceived, and the reverse that of a female.

It is then a sign of a male child, when the 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 on the left. Also the belly lies rounder and higher than when it is a female. The colour of the woman is not so swarthy, but more clear than when it is a girl. The right side is 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 burthen not so heavily, but is more nimble and stirring.

I will only as to this, add the following experiments 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 that most is coloured, she is with child of a boy: if the mark is more apparent in her left eye, she is with child of a girl. The other is, let her drop a drop of her milk in 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; for, 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 conceiv'd by these rules you'll see.

CHAP. I.

SECTION. II.

How a Woman should order 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 propagation of mankind. And though several make use of coition to obtain that end, yet we find by experience, that in many it does not succeed, because they order not themselves as they ought to do; for though it must be granted, that all our endeavours 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 want of exercise, and idleness, are very great enemies to the work of generation, and indeed are enemies both to sou and body. Those that shall 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 a moderate exercise and labour; 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 it 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 im-

agination of the mind; which is so much the more necessary; in so much 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 children may be well formed.

Thirdly, women ought to take good 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 discoloured they are out of order, but if the blood comes down pure, then the women will be very prone to conceive with child, especially if they use copulation in two or three days after the monthly courses 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 office. There are two things that demonstrate this; i. e. 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 in. 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 be no fear of surprise; for fear hinders conception. And then it were the best also that the desire of copulation 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 some authors report, that a loadstone carried about a 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 choose
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 has 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 conception. For in the first two months after conception women are very subject to miscarriages, 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 tea (in case muscadell cannot be gotten) to the navel, for this is very good. Or, take a little green tansy, and having bruised it sprinkle it with muscadell, 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 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 clamours 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 that matter all uterine fluxes have a malignant quality, and must be evacuated and removed before the flux be stayed.

CHAP III.

How the child lieth and how it groweth up in the womb of the Mother after conception.

SECTION III.

How the child is formed in the womo 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 that the womb closes up itself to prevent its issuing forth again, and for the securing it from any cold, and all this time it looks like butter or coagulated milk. And it would be 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 becomes blood, or at least resembles it in colour, 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 appearance a round lump. And as in the first creation the earth was void and without form, so in this creating work of divine power in the womb; and this shapeless embryo lies the first mass. But in two days after the principal members are formed by the plastic power of nature, and these principal 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, do grow bigger and bigger. Four days after that, the several members of the whole body appear, and as nature requires, they conjunctly and severally do re-

ceive 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 putting it in its nostrills the breath of life. Thus I have shown the whole operation of nature in the formation of the child in the womb, according to the energy given it by the Divine Creator, Maker and upholder of all things both in heaven and earth.

By some others more briefly, cut 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 after the child is inspired with life, being endowed with a 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 what manner the child lieth 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 this 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. And of the same opinion in this matter was Bartholomius the younger. Columbius is of opinion that the figure of the child in the womb is round, the right arm bowed, the fingers thereof under the ear, above the neck, and the head bowed, so that the chin toucheth the breast, the left arm bowed above both breasts 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 raval, the heel toucheth 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 hath been seen in, hath given occasion to the 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, the hands placed upon the knees towards which the head is inclined forwards so that the chin touches the breast; the spine of the back is at that time placed towards the mother's, the head uppermost, the hands forward, and the feet downwards, and proportionable to its growth it extends its members by little and little, which were exactly formed 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 upper parts of the body the head is turned downwards towards the inward orifice of the womb, tumbling as it were over its head; 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 his 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 omit them.

CHAP. IV.

Of the obstructions of conception; with the cause and cure of Barrenness, and the signs of Insufficiency both in Men and Women.

BEFORE I proceede any further, it is highly necessary that I treat of the instructions 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 swelling 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 what of love in the persons copulation may also hinder conception, and is apparent from those women who 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 virgins letting blood in their arm before their courses come down; these come down in virgins usually in the 14th year of their age, seldom before the 13th but never before the 12th. Now, because usually a young virgining is out of order before the first break down, the mother goes with her to the doctor, who finding that fullness of blood is the occasion of her illness, orders her to let blood in the arm; upon which she becomes well for a time, the superfluous blood being taken away; and the remedy, which is worse than the disorder, 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 forever 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 quality, which the woman ought to have with the man; as, if she be hot, he must be cold; if he be dry, she moist; but if they both are dry or both are of a moist constitution, they cannot propagate, though in this case neither of them may be barren, singly considered; for he or she, now as barren as the barren fig-tree, yet joined with an apt constitution, they 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 might 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
Desires of Venus soon will die.

Such therefore ought to feed upon cock stones and lamb stones, sparrow's, patridge's quail's and pheasant's eggs, for 'tis 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 man that eats them. Therefore patridges, quails, sparrows, &c. being extremely addicted to venery, they work the same effect in those that eat them; and this likewise is worthy to be noted, that what part of the body the faculty is strong, as a medicine; as for instance, the virtus procreativus lies in the testicles: therefore cock stones, &c. are medicinal in this distemper. Let such persons also eat such food as is very nourishing, as parsnips, alisanders, skirds, and pine nuts; and let them take a dram of diasatryon in an electuary every morning. The stones of a fox dried to powder, a dram taken every morning in tent, is also very good in this case; and so also is a dram of satyrion root, 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 neither of them have children, there often arises discontent between them, and both are troubled because they know not whose fault it is. And though authors have left several ways to know whether the man or woman be defective, yet because I cannot coincide in their judgments, I shall pass them by in silence, and rather lay down a few rules that may be depended upon, than many that are uncertain. But I must first premise that women are subject to many infirmities more than men, that the cause of barrenness is oftner on their side than man's. For, if the man has the instrument 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 will 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 bedfellow, let them take a handful of barley, or any other corn that will grow quickly, and steep half of it in the urine of a man and the other half in the urine of a woman during the space of 24 hours, then take it out, and set each by itself in a flower pot or 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 to be barren. Nor let any despise this trial; foreseeing 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 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 seed into the womb, nor can there be in such a case any conception. But this is so plain and easily discerned, that it must needs be obvious to both parties, and the man who finds himself debilitated ought not to marry.

The case cannot be so had with the woman, though she may be barren, but what her husband may make use of her, unless she be impenetrable, which (though it sometimes does) but 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, a thick pulse, her purgations flow little, and that with pain, and yet hath 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 a fumigation of red storax, myrrh, cassiawood, nutmeg, cinnamon, and letting her receive the fume of it into her womb, covering her very close. If the odor passeth through the body up into the mouth and nostrils, she is fruitful. But if she feel not the same 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, and 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 the spirits of the seed enlivened by corroborating applications.

If barrenness proceed from over much heat, let her use inwardly, succory, endive, violets, water lilies, sorrel, and lettuce, white syrups, and conserves made thereof, thus,

Take conserve of borage, violets, succory, water lilies, of each one ounce, half an ounce of conserve of roses: diannagarition frigid, diatrion, fencalon, of each half a dram; with syrup of violets, or of juice of citron make an electuary.

Let her also take of endive, water lilies, borage flowers, of each a handful, rhubarb, myrobalans, of each three drams; with water make a decoction, add to the straining, the syrup relaxative of violets, one ounce, syrup of cassia, half an ounce, manna, three drams: make all into a portion. Take of the syrup of mugwort one 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, mallows, vine leaves, and nightshade; let her also annoint 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 body and mind; but she must use little copulation, but may sleep as much as she will.

If barrenness be occasioned by the predominancy 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 one 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 aniseed, one scruple and a half, jessamine, diaclyon both disnosch diangiang, 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 storos calamint, one ounce; mastic, 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 ponum adoratum to smell to, if she be not hysterical; of the second make a mass of pills, and let her take three every night; of the third make a pessary, and put it up; of the fourth make a fumigation 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, majorum, mugwort, pennyroyal, balm, of each one handful; root of onruiz, fennel, elecampane, of each two drams; anniseed, cummin seed, of each a dram, with sugar and water a sufficient quantity, of which make a syrup, and take three ounces every morning. Then purge with these pills, following, take of pil. ext. two scruples; diagridion, two grains, species decasto, one scruple; make them up into nine pills with syrup of mugwort: Also take spec. diagminæ, diamoschi, diambrae, of each one dram; cinnamon, one dram and a half; mace, cloves, nutmeg, of each half a dram; sugar six ounces, with water of feverfew; make lozenges, to be taken every morning. Likewise let her take of the decoction of sassaparilla and viga aurea, with a good quantity of sage, which is an herb of that virtue, that Cornelius Agrippa honored it with the title of sacra herba, a holy herb; and Dodoneous, 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 anoint the genitals with the oil of anniseed and spikenard. Trochiks to smooth the womb are also very good. To make which, let her take mace, nutmeg, cinnamon, storax, and amber, of each one dram; cloves, laden, of each half a dram; turpentine, a sufficient quantity. Lastly, take the roots of vallerian and elecampane, of each one pound; of gallangal, three ounces; organ, marjorum, betony, mugwort, bay leaves, calanint, of each three handfuls; with water make an infusion, in which let her sit after she has had her courses. 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 goat's milk, extracted with honey: eat often of root Satyrion candied, and of the electuary of diasatryon. Let her also take three sheep's heads, and boil them till the flesh comes from the bones; then take of meloit violets camomile, mercury, orchies, with the roots of each one pound; fenugreek linseed, vallerian roots, of each a handful: let all of these be decocted in the aforesaid broth and let the woman sit in the decoction up to the navel. Also, take of deer's suet half an ounce; cow's marrow, styracis lyquide: of each one dram; or 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 and 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 who 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 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 chapter 3d, sect 2d, where both sexes are shown how to manage themselves in the act of coition, that so by stirring up in the women 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, hysop and calanint, annoint the mouth and head of the womb with musk and civit; and the cause of barrenness being removed, let the womb be corroborated by the following applications.

Make of bayberries, mastick, nutmeg, frankincense, cypress nuts, zadani, galbana, of each one dram: styraets liquidae, 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, lapids hamatitis, of each half an ounce, saugus, draconis, fine bole mastic, 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. And let her eat of erringo roots candied, and make an injection of the juice of the roots of statyriou: 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 would probably be foolish, because the animal faculties of the parents were confused.

CHAP. V.

SECTION I.

How women ought to govern themselves during their pregnancy.

First, let a woman that is with child choose a temperate air, not infested with fogs, and for that reason not near any marshy grounds, rivers, &c. But this cannot be avoided by some, their habitation falling out to be in such places. But those who can live where they please ought to avoid such places, as likewise the going abroad in too hot or too 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 to be very cautious in the manner of her diet, choosing 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 cause abortion. And as all excesses ought to be avoided, so she must take care not only of avoiding immoderate fasting, but likewise 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 avoids all meats which are too hot or too cold, and moist; such as sallads, spices and hot meats 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 wholesome meats are pigeons, partridges, pheasants, larks, veal, mutton or any meat that yields a good juice, and contributes kindly nourishment; as also, such fruit as is 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 upon the stones in a coach, or any other uneven place; and in 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 laughter 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 brief 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 month she ought to abstain; but in the 7th, 8th, and 9th it may freely be permitted, by reason of its opening the passage, and facilitating 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 close, 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 ignot 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 swathband anointed with pomatum, or any other thing of the kind, to keep it

smooth and free from wrinkles. For which end it will be best to take the caul of a kid, and of a sow, of each three ounces; capon grease and goose grease, of each one ounce and a half; having melted them altogether, 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 till it be white: at which time add to it of marrow of a red deer, one ounce, and lay it in red rose water, twelve hours. After the expiration of which you may use it, anointing the swathe and belly.

But if these ingredients are not easy to be had, you may make use of the following lineament, which will do almost as well as the other: take of mutton suet 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 and decotion; take of all sorts of mallows and mother wort each two handfuls; white lilly root three ounces; meliot and cammoile, 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 the womb let her make a quilt in the following manner, and bind it to 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; mastic a dram, angelica seeds two drams, ambergrease two grains, and musk two grains, all of 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 upon the navel, and it will have the desired effect. These things are sufficient to observe during the time of their pregnancy, that neither the 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 Labors, and how Child bearing Women should be ordered in 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, neither subject to diseases, fears or sudden frights; nor are the qualifications assigned to a 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 buisness perhaps require her in another place, lest she should make more haste than good speed. But above all she ought to be quallified with the fear of God, which is the principal thing in every state and condition, and will furnish her on every occasion both with knowledge and discretion. But I now proceed to more particular directions.

SECTION II.

What must be done when a woman's time of labor 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 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 things to force down the child, and thereby disturbed the natural course of her labors, 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 labor, being troubled with pain so long before their true labor 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 to 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 labor, which may be effectually done by anointing the reins of the back with the oil of poppies and violets, or water lillies, and thus may avoid that hard labor which they usually undergo whose reins are hot, that they may the better prevent, let me recommend to you the decoction of plantain 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 in a syrup with its equal weight of sugar, and keep it for use. But since it is so necessary for midwives to know the time of woman's labor ; the following section will rightly inform them.

SECTION III.

Signs by which the true time of a Woman's labor may be known.

When women draw near the time of their reckoning especially with their first child, and perceive any extraordinary pains in the belly, they immediately send for their midwife, as taking it for their labor ; though perhaps those pains which are so often mistaken for labour, are only the cholic, and proceed from the wind, which pains though they come and go, griping the whole belly, are yet without

any forcing downwards into the womb, as is done by those that go before labor. 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 labor 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 directly of the matter; the signs of labor 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 that slime to flow away, which proceeds from the glands, called *prestatæ*.

But when she is presently falling into labor, the signs are great pains about the reins and loins, which coming and retreating by intervals, answer in the bottom of the belly by congruous throes; and sometimes the face is red and inflamed, the blood being much heated by the endeavor a woman makes to bring forth the child: and likewise during the strong throes her perspiration is intercepted, which causes the blood to have recourse to her face; her privy parts are so swollen by the infant's head lying in the birth, which by often thrusting, causes those parts to distend outwards. She is likewise much subject to vomiting, which is also a sign of good labor 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 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 happen always. Also if the humors, which then flow from the womb, are discolored with blood (which is what the midwife calls *shews*) it is an infallible mark of the birth's being near; and then if the midwife put her finger up the neck of the womb, she will find the inward 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 forward, 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 midwife calls the gathering of the womb, to the touch of the fingers resembles those eggs which yet have no shell, but are covered only by a simple membrane. After this 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 presently 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 alantois being broken which contained those waters by the pressing forward of the birth, the child is no more able to subsist long 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 labor, 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 water till the 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.

SECTION IV.

What is to be done at the time of Labor.

When the midwife is satisfied that it is their true time of labor, 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 straight 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 more readily assisted, is much the best way.

And if the laboring woman abounds with blood it may not be improper to let her bleed a little, for by that means she will both breathe the better, and have her breath more at liberty, and likewise more strength to bear down her pain; 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. Likewise 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 and 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

her 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 eflux of the water. And to help it afterwards, let her anoint the woman's privities with emollient oil, hog's grease, and fresh butter; especially if she finds them too hard to be dilated.

Let the midwife also be near the laboring woman all the while and diligently observe her gestures, pains, and complaints, for by this she may guess pretty well how her labor goes forward; for when she changes her groans into loud cries, it is a great sign her birth is near; at which time her pains are greater and more frequent. Let her also sometimes rest herself on the bed, to renew her strength but not too long at a time, for to lie too long at a time will retard her labor, and therefore 'tis better for her to walk about her chamber as much as she can; which that she may the better do, let the good woman support her under her arms, if it be necessary; for by walking, the weight of the child causes the inward orifice of a woman to dilate much sooner than it would do if she lay upon her bed; besides her pains, by walking will be stronger and more frequent, and in consequence her labor 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 be for the present) be much for her benefit, because they further the pains, and provoke downward.

SECTION V.

How 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 draught of wine wherein ditany, red coral, juniper berries, betony, pennyroyal, and feverfew have been boiled, or the juice of feverfew taken in its prime (which is in May) and clarified and so boiled in a syrup, and twice its weight of sugar is very good upon this occasion. Also mugwort used in the same manner, works the same effect. Likewise the stone *Ætitis* held to the privities does in a very 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 linen cloth in it, and put it up, being so dipped in 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, being drank by a woman with child, it cleareth not only the womb, but also the child in the womb, of all gross humours. 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 a 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 effect causing speedy delivery. Take piony seeds 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 featherbed, and let it have thereon a linen cloth in many folds, with such other things as are necessary, which may be changed as the occasion requires it, that so the woman may not be incommoded with 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 the 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 the buttocks, and let her feet be stayed against a log, or some other firm thing. And let two women help her two shoulders, that she may strain out the birth with more advantage, holding in her breath, and forcing herself as much as possible in like manner as when she goes to stool; for by straining, the diaphragm, or midriff, being strongly thrust downwards, necessity 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 part; then 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 in

ward 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 extremity begins to appear without the privy parts, they 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 a laceration through 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 fingers end, which she ought also to keep pared, let her endeavor to thrust the crowning of the womb back over the head of the child. And as soon as it is advanced as far as the ears or thereabout, 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, so either cause her to flood or else break the string, both of 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 losing any time, lest the head being passed, the child stop there by the largeness of the shoulders, and so be in danger of being suffocated in the passage, as it has sometimes happened, for want of care therein. When the head is born, 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 too 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 choaking 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 by the continuance of the woman's throes 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 is not presenting itself 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 the thighs.

SECTION VI.

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 the left hand, joined together, the better to hold it, with which she may only take single hold of it above the left, near the privities, drawing likewise with that very gently, resting a while, with a 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, she 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 with it which has sometimes happened. It is therefore necessary, to assist nature with proper remedies, which are in general, what 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 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 birth, let her take a little white hellebore in powder to cause her to sneeze.—Tansey and the stone *Ætitis*, applied as before directed, is very efficacious in this. 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, constantly brings away both the birth and the 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 VII.

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 matter, 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 herein: 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 in 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 who 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 to the child inwardly.

As to the cutting it short or long, authors can scarce agree about it, nor midwives neither: some prescribe it to be cut at four fingers' breadth, which is at the best but an uncertain rule, unless all fingers were of an equal size. 'Tis 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 of 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 more short is, because they believe it makes them modest, and their parts narrower, which makes them more acceptable to their husbands. But whether this be so or not (which yet some of the greatest searchers into the secrets of 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 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 labor, as also a good pair of scissors, 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 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 ligator 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 straight 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 straight as to cut it in two; and therefore the thread must be pretty thick, and pretty straight knit, it being better too straight 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 some times in less time; but it very rarely carries longer than the eighth or ninth day.

As soon as the navel string is cut off, apply a little cotton or lint in 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 the oil of roses, it will be better: then having put another small rag three or four times double, upon the body of the child, above the navel, lay the string so wrapped upon it that it may not 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 come to fall off before the navel string which you left remaining is fallen off. 'Tis the usual custom of the midwives to put a piece of burnt rag to it; but I would advise them to put a small quantity of bole amonica, because of its drying quality.— Thus much may suffice as to cutting the navel string and delivery of a woman in labor, where the labor is natural, and no ill accident happens. But it sometimes so falls out, that the labor is not only hard and difficult, but unnatural also, in which the midwife must take other measures.

CHAP. VII.

What unnatural Labor is, and whence it proceeds; and what the Midwife ought to do in such Cases.

SECTION I.

What unnatural Labor is.

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

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

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

It is therefore the third sort of labor 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 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 contrary to nature, or to speak more plainly, unnatural.

SECTION II.

Whence hard, difficult and unnatural labor 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 straight, that it must of necessity be dilated at the time of her delivery; the dilation thereof stretcheth the nerves, and from thence cometh the pain; some woman having more pain in their labor than others, proceeds from their having the mouth of the matrix more full of nerves than others.

Hard and difficult labor may proceed either from the mother and child, or from both: It may proceed from the mother, by reason of a general indisposition of her body, or from the indisposition of some particular part, 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 may have the passage too straight, 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 labor to be hard and difficult, because it hinders the true pain which should accelerate it; for which reason, all great and acute pains render a woman's labor very difficult. As when the woman is taken with a violent fever, frequent convulsions, a great flooding, or any other violent distemper especially when the membranes are thick, and the orifice is too straight, or the neck of the womb not sufficiently opened.

Hard labor 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 membrane; also when it is too big either all over, or its head only; or if the navel vessels should be twisted about its neck as 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 labor and great extremity.

In case the midwife finds the woman in difficult labor, she must endeavor to know the particular obstruction or cause thereof, that so she may apply a suitable remedy. When hard labor is caused by a woman's being too young and straight, the passages must be anointed with oil, hog's lard, or fresh butter to relax and dilate them the easier. But if a woman be in years and has hard labor from her first child let her lower parts be anointed to mollify the inward orifice, which in such case (being more hard and callous) does not easily yield to the distension of labor; and indeed this is the

true cause why such women are longer in labor, and why their children in their birth are more subject to bruises than others.— Those who are very lean, and have hard labor from that cause, let them moisten their parts with oil and ointments, to make them 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 pain. Since difficult labor proceeds from divers causes, the midwife must make use of several remedies to women in hard, difficult labor, which must be adapted to the cause from whence it proceeds.

I need not tell the judicious midwife that in case of extremity, when the labor is not only hard, but difficult and dangerous, a 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 will 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 assunder 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 contracted blood that obstructs the passage of the birth, and having greatly made way, let the operator tenderly move the infant, having the hand anointed with sweet butter, or an 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 in bringing forward the birth, that so he may the more easily draw it forth; and that the operator may do it the better, and his held 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 secundine come first; for sometime 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 a 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 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 swift 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 whether 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 case 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 a woman of a dead child, the operator ought to be certain the child is dead, which might be known by the falling of the mother's breasts, the coolness of her belly, the thickness of her urine, which is attended with 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 serving 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 more difficult, because in this case it is only impossible that the child should any ways assist in its delivery, but the strength of the mother does also very much fail her, wherefore the most sure and safe way for him 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 towards the feet, 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 to the bone of the temple towards the eye; or, for want of convenient coming at that, observe to keep the left hand in its place, gently 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 al-

ways drawing when the woman's pains are upon her. The head being thus drawn forth, the operator must, with all speed, slip his hand under the armholes 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 a child when it comes to its 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 the midwife perceiving in what posture the child presents, or that the woman floods, or any other accident happens, by which she finds it not in her power to deliver it, it will be best for her to send for a man midwife in time, rather than put things to the utmost extremity.

CHAP. VIII. SECTION IV.

Directions for child bed Women after delivery.

After the birth and after birth are brought away if the woman's body be very weak keep her not too hot, the extremity of heat weakens nature, and dissolves the strength, but whether she be weak or strong, let no cold 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 swellings in the womb, and hurts the nerves. Therefore if a woman has had very hard labor, it is proper, after delivery, to wrap her in the skin of a sheep, taken as warm as possible, and putting the fleshy sides to her reins and belly; if a sheep's 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 part, 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 must be taken not to apply any remedy to keep back the milk, being of a dissolving nature, it is improper to apply them to the breast during such a disorder, least evil humors should be contracted in the breasts 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 for some time, you may make a restrictive of the yolk of two eggs, a quarter 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, apply it to the breasts, and the pain of these 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 her 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 labor. 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 drachm of spermac. Let her also avoid the light for the first three days, for labor weakens the eye sight. The herb vervain is of singular service to the sight, and may be used any way, either boiled in meat, or drink, 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, penneroyal, 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 a little at a time. 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 talk little, for that weakens her. If she goes not to stool, give a clyster made with the decoction of mallows, and a little brown sugar. After she has lain a week, or 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 case of natural birth as needs at first be done.

SECTION II.

In extremity of unnatural labor.

Let the woman be sure to keep a temperate diet; and take care that she does by no 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 membrane, 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 a 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 calves feet, French barley broth, each somewhat increasing the quantity. And if she intend 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 draw off either by the child or otherwise. In that case likewise, let her have coriander or fennel seed boiled in barley broth; and by that means, 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 a 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 humors to the breast is over, she may then be nourished more plentifully with the broth of pullets, capons, pigeons, partridges, mutton, veal, &c.—which must not be till after eight days at least from the time of the deliver— for by that time the womb will have purged itself, unless some intervening accident should hinder. It will then be expedient to give coo. meats so it be done sparingly, the better to gather strength; and let her during the time rest quietly, and free from disturbance, not sleeping in the day time, if she can avoid it. If there happens any obstructions in the evacuation of excrements, the following clysters may be administered. Take pelitory of the wall, and of both the mallows, of each a handfu; fennel and anniseed of each two ounces; boil them in a 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 clyster wise. But if this does not operate to your mind, then you may take one 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 *formata* and *articulata*; and then it is said to be a conception, but a false one, which puts a difference between a true conception and a mole; and the difference holds good in 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 the parts of that in the whole body, or any particles of the same. There are variety of judgments among authors, about the produ-

ing 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 properly have no seed at all, but only an ovalium, 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 were this granted, it would follow that maids by having their courses stopped, might be subject to the same, which never any yet were. The true cause of this carnous conception, which we call 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) labors to bring forth a vicious conception rather than none; and not being able to bring forth a living creature, generates 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 waxeth 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 they agree, yet they are different in several respects; for a mole may be felt in the womb before the third month, which an infant cannot; the motion of the mole being only by the faculty of the womb, and of the seminal spirit diffused through its substance; for though it has no animal, yet it has a vegetative life: and then the belly is suddenly swelled where there is a mole; but in 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 returns not at all, or at least very slowly. But, to name no more, another 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 or less, according to its being fastened to the matrix, for sometimes the mole hath fallen away in four or five months; and if it remains until the 11th 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 case 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 inconveni-

ced 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. Amongst which, phlebotomy ought not to be omitted; for seeing letting of blood causeth abortion, by reason it takes away that nourishment that should sustain the life of the child, why may not this vicious conception be by the same, deprived of that vegetative sap by which it lives? to which end open the liver vein and the saphana in both feet; fasten cupping glasses to the loins and sides of the belly, which done, let the urinary part first be molified, and the expulsive faculty be provoked to expel the burden. And to loosen the ligatures of the mole, take mallows, with roots, three handful, pellitory, cammomile, violet leaves melliot, roots of fenel, parsley, mercury, of each two handfuls; fenugreek and linseed, 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 ointment. Take amoniati, landani, fresh butter, of each an ounce; and with oil of linseed make an ointment; or, instead of this may be used uaguentum agrippae or dialthæ. Also take aq. bryonæ composito, roots althæ and mercury of each a handful; linseed 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 medicants are very proper which bring down the courses.

Therefore take sat vine, madder, valerian, horehound, sage, hyslop betony, pennyroyal, calamint, hypericon, and with water make a decoction, and give three ounces of it, with an ounce and a 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 labor) 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 a soft tender body, and much more pliable than a child) let the operator bring it away by parts, using a crotchet 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's 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 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, or any burden 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 by figure, situation, magnitude, or number.

They are vicious in figure, when a man bears the character of a beast; vicious in magnitude when the parts are not equal or one part is bigger than another: 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 were seen in a monster born at Ravenna, in Italy, in the year 1570. And lastly 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 deformed monsters, as a punishment for their filthy and corrupt affection, 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 Kecherman, by way of inference, excluded all that were mishapen, because outward deformity of body is often a sign of the pollution of the heart, as a curse laid upon the child for the incontinence of the parents. Let us therefore search out the natural cause of their generation, which according to those who have dived into the secrets of nature, is either in the matter or the agent, in the seed or in the womb. The matter may be in fault two ways, by defect or excess. By defect, when the child hath but one arm or 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, which sometimes produces a depraved figure. Secondly, The evil disposition of the instruments or place of conception, will cause a monstrous birth. And thirdly, the imaginative power at the time of conception, is of such a force as to stamp a character of the thing imagined upon the child; thus a woman at the time of conception, beholding the picture of a blackamoor, conceived and brought forth a child resembling an Ethiopian; and by this the children of an adulteress, though begotten by another man, may have the nearest re-

semblance to her own husband. This power of imagination was well known to the ancients, as 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 in 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 spirted on her face, whereupon she then said that the child would have some blemish on his 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 flowings 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 turpidious 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 understanding, wanting the vivacity and liveliness which those children are endued with who are begotten when women are free from their courses.

There has been some contending amongst authors, whether those who are born monsters have reasonable souls, the result of both sides, at last coming to this, that those who, according to the order of nature, are descended from our first parents by the coition of man and woman, though their outward shape be deformed and monstrous, have notwithstanding reasonable souls; but these monsters that are not begotten by man, but are the product of a woman's unnatural lust, 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.

Some are 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 Caronus* writeth of a maid that was begot with child by the devil; yet as a wicked spirit is not capable of having human seed, how is it possible he should beget a human creature? If they say, that the devil may assume to himself a dead body and enliven

the faculties of it, and thereby make it able to generate; I answer, 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 on blasphemy, to think that the allwise 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 born of a devil.



The first I shall present is a most frightful monster indeed, representing a hairy child. It was covered over with hair like a beast, as the above cut represents. That which rendered it yet more frightful was that its navel was in the place where his nose should have been, and his eyes placed where his mouth should stand, and its mouth was in the place of its chin. It stood erect like the human species, and bore some little resemblance to the human form. It was of the male kind and born in France, in the year 1597.— Whether it was endowed with faculties above the brutes, I never learned.



The above plate represents the figure of a boy, 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. The child lived some years, and although he had four feet he knew not how to walk, by which we may see the wisdom of nature or rather the God of nature, in the formation of the body of man.

Heav'n in our first formation did provide
 Two arms and legs; but what we have beside
 Renders us monsters, and misshapen 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 would choose.



In the time of 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 figure. The heads are so placed that they looked contrary ways, and each had two distinct arms and hands, They would both laugh, speak, cry, and both eat and be hungry together. Sometimes one would speak and the other keep silent; 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 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 carcass.



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 above their heads; the thighs being placed as it were across one another according to the figure. How long they lived I had no account of. Many speculative ideas have been given to the world (from the learned) upon the subject of such monsters or unnatural productions as the above, being endowed with immortal souls. Some have pretended that they have, without assigning any other reason, than that, their being generated by beings of immortality, they would partake of their nature in every respect, although their outward form may differ. Others, have doomed them to the inevitable lot of the brutes.

ARISTOTLE'S MASTER PIECE.

PART III.

Displaying the Secrets of Nature Relative to Physiognomy.

CHAP. I.

SECTION I.

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

PHYSIOGNOMY is an ingenious science or knowledge of nature, by which the inclination and dispositions of every creature are understood; and because some of the members are un compounded and entire of themselves, as the tongue, the heart, &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 dispositions, 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 readers may attain to, I shall set these things in a clear 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 Luna or the Moon; the right ear is in 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 the 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 so absolutely, 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 eyebrow, as Sagittarius does upon the right eye, and Libra upon the right ear; upon the left eye and eye brow Aquarius and Gemini, and Aries 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 among the Signs and Planets; which being carefully attended to, will suffi-

ciently 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 who have understanding know how to apply.

In the judgment that is to be made from physiognomy, there is a great difference betwixt a man and a woman, because, in respect of the whole composition, men more fully comprehend it than women do, as will appear in the following section. Therefore the judgments we pass properly concern a man, as comprehending the whole species, and but improperly the woman, as a part thereof, and derived from the man; and therefore in the judgment about the lines and marks of a face, respect should be had to the sex; for when we behold a man whose face is like unto a woman's: or the face of a woman, who in respect of her flesh and blood is like unto a man, the same judgment is not passed on her, as on a man that is like unto her, 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; therefore respect should be had to other parts of the body, as the hands &c. Now in these common respects, two parts are attributed to a man, and 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 a man and a 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, 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 hard denotes a man to be of a strong constitution, bold secret, deceitful, and for the most part, unquiet and vain, lusting after beauty, and more foolish and wise, though fortune may favor 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 temples 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 apprehension. He whose hair not only curls very much, busheth out, and stands on end, if the hair be white, or yellowish, he is by nature proud and bold, dull of apprehension, soon angry, a lover of venery, given to lying, malicious, and ready to do any mischief. He whose hair rises in the corner of his temples, and also gross and rough is a man highly conceited of himself, inclined to malice, but cunningly conceals it, very courtly, and a lover of new fashions. He who hath much hair that 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, vengeous, and full of envy. He whose hair is extraordinary fair, is for the most part, a man fit for all praiseworthy enterprises, a lover of honor and much more inclined to do good than evil; laborious and careful to perform whatever is committed to his care; secret in carrying on any business, and fortunate. Hair of a yellowish color shews a man to be good conditioned, and willing to do any thing fearful, shamefaced and weak of body, but strong in the abilities of the mind, and more apt to remember than revenge an injury. He whose hair is of a brownish color, and curlth a little is a well disposed man, inclined to that which is good, a lover of peace cleanliness and good manners. He whose hair turns grey 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 hath 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 raiseth in a round, signifies a man liberally merry, of 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 inclined to suits of law, contentions, vain, deceitful, and addicted to follow ill courses. He whose forehead is very low and little, is of good understanding magnanimous, but extremely bold and confident, and a great pretender to love and honor. He whose forehead seems sharp, and pointing up in the corners of his temples, so that the bone seems to jut forth a little, is a man naturally weak and fickle, and weak in his intellectuals. He whose brow upon the temple is full of flesh is a man of a great spirit, proud, watchful, and of gross understanding. He whose brow is full of wrinkles, and hath as it were a seam coming down in the middle of the forehead, is one that is of a great spirit, a great wit, void of deceit, and yet of hard fortune. He who has a full large forehead, and a little round, destitute of hair, or at least that has a little on it, is bold, malicious, high spirited, full of choler, and apt to transgress beyond all bounds and yet a good wit. He whose forehead is long and high, jutting forth, and whose face is figured almost sharp and peaked towards the chin, is one

reasonably honest, but weak and simple, and of hard fortune.
 Who view men well may on their vices hit,
 For some men's crimes are on their foreheads writ;
 But the resolved man outbraves his fate,
 And will be good although unfortunate.

The eyebrows 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 love of beauty, and indifferently inclined to either good or evil.— He whose eyelids bend downwards when he speaks to another man or looks upon him, and who has a kind of skulking look, is by nature a penurious wretch, close in all his actions, of a few words, but full of malice. He whose brows are thick, and have but a little hair upon them, is weak and 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, heavy, suspicious, miserable, envious, and will cheat or cozen you if he can. He whose eye brow hath but short hair, and of whitish color is fearful, easy of belief and apt to undertake any thing.— Those whose eyebrows are black, and the hair of them thin, will do nothing without great consideration, is bold and confident of the performance of what he undertakes, and is not apt to believe any thing without reason for so doing.

Thus by the eye brows woman's minds we know,
 Whether they're white or black or quick or slow,
 And whether they'll be cursed or be kind,
 By looking in 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, addicted to cruelties more than love. But those men whose eye brows are at a lesser distance 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 great felicity; but above all, they are most sure and constant in their friendship.

Great and full eyes either in men or women, 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 intellectuals and yet very conceited of his abilities. He whose eyes are hollow in his head, and therefore discerns excellently well at a distance is one that is suspicious, malicious, furious, perverse in his conversation, of an extraordinary memory, bold, cruel and false, both in words and deed, proud, threatening vicious, envious, treacherous. But he whose eyes are starting as it were 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 with his eyes downwards, is of a malicious nature, very treacherous, unfaithful, envious, mis-

erable, 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 on a squint, is deceitful, unjust, envious, furious, a great liar, and as the effect of all this, miserable.—A wandering eye, rolling up and down, denotes a vain, simple man, lustful treacherous. He or she whose eyes are twinkling, and which move forward or backward, shew the person to be luxurious, unfaithful, presumptuous, treacherous, 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 and deceitful, unkind to his friends, a great concealer of his own secrets, and very choleric. Those whose eyes roll up and down or those who seldom move their eyes, but when they do, draw them inwardly, and 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, shameful perfidious, and much inclined to superstition. They who have eyes like oxen, are persons of good nutriment, but of a weak memory, dull of understanding, and silly in their conversation: but they whose eyes are neither too little nor too big, and inclined to a black, do signify a man mild, peaceable, honest, witty, and of good understanding: and one that, when need requires, is 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 awry.
 But we thereby some secret symptoms may
 Discern of his intention, and foresee
 Unto which paths his steps directed be;
 And this may teach us, goodness more to prize,
 For where one's good, there's twenty likewise.

A long and thin nose denotes a man bold, curious, angry, weak and credulous; easy to be persuaded either to good or evil. A long nose and extended, its tip bending downwards, shews the person to be wise, discreet, officious, honest, and faithful, and who will not be easily overreached. A bottle nose denotes a man to be impetuous in the obtaining his desires, vain, false, luxurious, weak and credulous. A nose broader in the middle, and less towards the end, denotes a vain, talkative person, a liar, and one of hard fortune. He who hath a long and great nose, is an admirer of the fair sex, well accomplished for the wars of Venus, but ignorant of any thing that is good; assiduous in obtaining his desires, and though very ignorant would fain be thought very knowing. A nose sharp on the tip of it, and neither too long nor too sharp, 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, contentious, wedded to her own

humour; and if married, a plague to her husband. A nose very round at the end of it, and having but little nostrils, shows the person to be munificent and liberal, true to his trust, but credulous, proud, and vain. A nose very long, and thin at the end of it, and sometimes round, signifies one bold in his discourses, 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 denoted to be covetous, 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 to be bold, covetous, envious, a liar, and deceiver, vainglorious, contentious, and unfortunate. He whose nose riseth high in the middle, is prudent, politic, courageous, honorable in his actions and true to his word. A nose big at the end shews a person to be of a peaceful disposition, industrious, faithful, and of a good understanding. A very wide nose, with wide nostrils, denotes a man full of apprehension, and inclined more to simplicity than wisdom, and withal contentius, vain-glorious, and a liar.

Thus from the nose our physiognomist
Can smell men's inclinations if we list;
And from its color 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 of an envious, bold, and treacherous disposition; and though dull of understanding yet confident.

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

A great wide mouth shews a man to be bold, warlike, shameless, stout, a great liar, talkative, and a great eater, but dull as to his intellects. A little mouth shews the person to be of a quick and pacific temper, somewhat fearful, but faithful, secret, modest, bountiful, and a little eater. He whose mouth smells of a bad breath, is one of a corrupted liver or lungs, is often times vain, wanton, deceitful, of indifferent intellect, envious, covetous, and a promise breaker. He that hath a sweet breath is the contrary.

Thus from the mouth itself we likewise see
What signs of good and bad may gathered 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, judicious, of a good wit, but somewhat hasty. To have lips well colored, and more thin than thick, shews a person to be good humored, and more easily persuaded to do good than evil. To have

one lip bigger than the other, shews variety of fortunes, denotes a dull sluggish temper, and an indifferent understanding.

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 the party 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 some shorter than others, denote 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, gluttenous, 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 humor in all things; he loves to hear news, and afterwards to repeat it, and is apt to entertain any thing in his own behalf. To have teeth thin and weak, shews a weak, feeble man, one of short life, and of a weak apprehension; but chaste, shame-faced, tractable and honest.

Thus from the teeth the learned can portend,
Whether man'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, of a wavering mind, quickly in a rage, and soon pacified. A 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 men's speech we see
Whether they wise, or whether foolish be;
But from a silent tongue our authors tell
The secret passions within men that dwell.

A great and full voice in either sex, shew them to be of a great spirit, confident, proud and wilful. A faint or weak voice, shows a person of a good understanding, nimble fancy, a little eater, but weak of body and timorous. A loud and shrill voice denotes one sagacious and ingenious, but capricious, vainglorious, and weak, too credulous. A strong voice when a man sings, denotes a strong constitution, a good understanding, ingenious, amorous. A weak and trembling voice, denotes one to be envious, suspicious, slow in business, and fearful. A loud, shrill and unpleasant voice, signifies one bold and valiant, but quarrelsome, injurious, and wedded to his

own humor. A rough and hoarse voice declares one to be a dull and heavy person, of much guts and little brains. Full and yet mild voice, and pleasing to the hearer, shews a person to be quiet and peaceable, thrifty and secret, not prone to anger. A voice beginning low or in the bass, and ending high in the treble, denotes a person to be violent, angry, bold, secure.

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

A thick and full chin, abounding with flesh, shews a man inclined to peace, honest, but slow in invention, and easy to be drawn to good or evil. A peaked chin, reasonably full of flesh, shews a good understanding, a high spirit, and laudable conversation. A double chin, shews a peaceable disposition, but dull apprehension, vain, credulous, and secret in his actions. A crooked chin, bending upwards, and peaked for want of flesh, is, according to nature, a very bad man, proud, imprudent, envious, threatening, deceitful, prone to anger and treachery, and a great thief.

Thus from the forehead to the head we've shewn
How mankind's inclinations may be known;
From which th' observing reader still may find
We're more to evil, than to good inclin'd.

Young men usually have hair begin to grow upon their chins at 15 years of age, 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 can find no open passage by which it may ascend higher, it vents itself in hairs which are called the beard. There are few women that have hair on their cheeks, and the reason is, those humors which cause hair to grow on the cheeks of a man are evacuated by women in their monthly courses, which they have more or less according to the heat or coolness of the constitution; yet, sometimes women of a hot constitution have hair on their cheeks, but more commonly on their lips or near their mouths, where the heat most aboundeth; and 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, shamefaced, mild and obedient; whereas a woman of a more hot constitution is otherwise. But in a man, a beard well composed and thick of hair signifies him good natured, honest, loving, sociable and full of humanity; on the contrary, he that hath little beard, is for the most part proud, pining, peevish and unsociable. They who have no beards, have always shrill and strange squeaking voices, are of a weak constitution, as 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 beard: I might say more,
But prudence bids me this discourse give o'er.

Great and thick ears are certain signs of a foolish person, of bad memory, and worse of understanding; but small, thin ears, shew a person to be of good wit, grave, secret, thrifty, modest, of good memory, and willing to serve his friend. Ears longer than ordinary, signify a bold man, uncivil, vain, foolish, of small industry, but 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, luxurious, of a good stomach, bad understanding, and worse conversation. A very fleshy face denotes a fearful disposition, a merry heart, bountiful and discreet, easy to be entreated, and apt to believe any thing. A lean face, denotes a good understanding, but somewhat capricious and disdainful in his conversation. A little round face shews a person to be simple, fearful, of a bad memory, and a clownish disposition. A plump face and full of carbuncles, shews a man to be a great drinker, vain and daring. A face red and high colored, shews a man to be choleric, and not easily pacified. A long and lean face, shews one to be bold in speech and action, but foolish, quarrelsome, proud and injurious. A face every way of a due proportion, denotes an ingenuous person, fit for any thing, and well inclined. A broad, full, fat face, shews a dull heavy constitution, and that for one virtue has three vices. A plain flat face without any rising, shews a person to be very wise, loving and courtly, faithful to his friend, and patient in adversity. A face sinking down a little, with creases in it, inclining to leanness, denotes a person to be laborious, envious, deceitful, false, quarrelsome, vain, silly, clownish. A face of a handsome proportion, and more inclined to fat than lean, shews a person just in his actions, true to his word, civil, respectful, 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 about the brows and sharper and less towards the chin, shews a man simple and foolish, vain, envious, deceitful and quarrelsome. A face well colored, full of good features, of an exact symmetry and just proportion, is commonly the index of a fairer mind, and shews the person to be well disposed; but yet 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 to be fickle, but malicious, treacherous, proud, and extremely unfaithful. A face well colored, shews the person to be of a praiseworthy disposition, sound complexion, easy of belief, respectful to his friend, ready to do a courtesy, and very easy to be drawn to any thing.

Thus physiognomy readeth in each face,
 But vice or virtue we're most prone to 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 hath still the clearest mind.

A great head, and round withal, denotes a person to be secret, ingenious, laborious, constant and nonest. 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, credulous and envious. To have one's head always shaking and moving from side to side, denotes a shallow, weak, unstable person, given to lying, a great talker, and prodigal in all his fortunes. A big head and broad face shews a man to be courageous, a great hunter after women, suspicious, bold, shameless. A very big head, but not so proportionate to the body, and a short neck and gullet, denotes a man of apprehension, wise, ingenious, of a sound judgment, faithful, true and courteous to all. He is weak, yet apt to learn, but unfortunate in his actions. And so much shall suffice with respect to judgment from the head and face.

CHAP. IX.

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

In the body of a man the head and face are the principal parts, 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. But as to the other parts, not so obvious to the eyes, I shall be much more brief ; yet I would 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 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 he is stiff and inflexible. A short neck shews one to be witty and ingenuous but deceitful and inconstant, and a great lover of peace and quietness.

A lean shoulder bone signifies a man to be weak, timorous, peaceful, not laborious, and yet fit for any employment. Large shoulder bones denote a strong man, faithful, but unfortunate ; somewhat dull of understanding, laborious, contented, a great eater and drinker. He whose shoulder bone seems to be smooth, is moderate and temperate. He whose shoulder bone bends and is crooked inwardly, is commonly a dull person and deceitful.

Long arms hanging down, and touching the knees, denote a man liberal, vain glorious, proud and inconstant. He whose arms are very short in respect to his body, is a man of high and gallant spirit,

and of a graceful temper. He whose arms are full of bones, sinews and flesh is a great desirer of novelties, 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. He whose arms have no hair on them at all, is of a weak judgment angry, vain, wanton, credulous, a deceiver, and very apt to betray his dearest friends.

CHAPTER IV.

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

Being engaged, in this third part to shew what judgments 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 these lines of the hand and which indeed is reckoned the principal is called the line of life; this line encloses the thumb separating it from the hollow of the hand. The next to it 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 fore finger and the middle finger. The line of death is that which plainly appears in a counter line to that of life and is called the after 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 called the Mount of Venus; under each of the fingers are also mounts, each 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 fore finger sways as he thinks fit;
 Old Saturn does the middle finger guide;
 O'er the ring finger Sol does still preside;
 The outside drawn, pale Cynthia does direct,
 And unto the hollow Mars does much inspect;
 The little finger does to Merc'ry fall,
 Which is the nimblest planet of them all,

I proceed to give judgement from the 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 life and health : and it is the same if a double line appear as there sometimes does. When stars appear in this line it signifies great losses and calamities; if on it there be the figures of two G's or a Y it threatens the person with blindness; if it wraps itself about the table line it promises wealth and honor to be attained by prudence and industry. If the line be cut ragged at the upper end it denotes much sickness; if this line be cut by any lines coming from Mount 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.

The table line when broad and of a lively color shews a healthful constitution a quiet contented mind and a courageous spirit; but if it have 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 a good fortune to support it; but if this line be forked at the end it threatens the person shall suffer by jealousies 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.

The middle line has in it often very significant characters. Many small lines between this and the table line threaten the party with sickness, but also give hopes of recovery.—A half cross branching into this line shews honor, riches, and good success in all undertakings. A half moon denotes cold and watery distempers: but a sun or stars promises prosperity and riches. This line double in a woman shews she will have several husbands but no children.

If the lines of Venus happens to be cut or divided near the fore finger, it threatens ruin to the party, and that it shall befall him by means of lascivious women and bad company. Two crosses on this line one near the fore finger and the other bending towards the little finger shew the party to be weak inclined to modesty and virtue; and in women generally denotes modesty.

The liver line if it be straight and crossed by other lines denotes a sound judgment and a piercing understanding; but if it be winding crooked and bending outwards it shews deceit and flattery. If it makes a triangle or quadrangle it shews one to be of a noble descent ambitious of honor and promotion. If this line and the middle line begin near each other it denotes a man to be weak in judgment but if a woman danger by hard labor.

The plain of Mars being the hollow of the hand, most of the lines passing through it are very significant. Being hollow and the lines crooked and distorted it threatens the party to fall by en-

emies. When the lines beginning at the wrist are long within the plain reaching to the brawn of the hand it shews the person to be of a hot and fiery spirit given to quarrelling. If deep large crosses be in the middle plain it shews the person shall obtain honor by exploits; but if a woman that she shall have several husbands and easy labor with children.

The line of death is fatal and threatens with sickness and short life when crosses appear in it. A clouded moon therein threatens a child bed woman with death. A star like a comet threatens ruin by war, or death by pestilence; But if a bright sun appear therein it promises long life and prosperity.

The lines of the wrist being fair denote good fortune but if broken and crossed the contrary.

Thus he that nature richly 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 the end that, when he looks into his hand
 He may upon his guard the better stand,
 And turn his wandering steps another way
 When'er he finds he does from virtue stray.

CHAP. II.

Judgments drawn from the several parts of the body.

A large and full breast, shews a man valiant, but proud, soon angry and hard to deal with. He whose breast is narrow, rising a little in the middle, is by the best rules of physiognomy, of a clear spirit, great understanding, very faithful, clean both in body and mind, yet soon angry and inclined long to keep it. He whose breast is somewhat hairy is very luxurious and serviceable to another. He who hath no hairs upon his breast is weak by nature, of a slender capacity, timorous but of laudible life and conversation, much retired and inclined to peace.

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

He or she whose belly is soft all over is weak, lustful, and fearful of good understanding, an excellent invention, a little eater, of various fortune. He whose flesh is rough and hard is of a strong constitution very bold but proud, vain, and of a cruel temper. He whose skin is smooth, fat and white, is curious vain glorious timorous and malicious.

A thigh full of strong bristly hair inclined to curl, signifies one lustful and fit for copulation; thighs with little hair and tha

soft shews the person to be chaste, having no great desire to veneral pleasure, and will have but few children.

The legs of both men and women have a fleshy substance behind called calves; and now a great calf and large bone and hairy denotes the person to be strong, bold, dull in understanding, slow in business, inclined to procreation, and for the most part fortunate. Little legs and little hair on them shew the person to be weak fearful of a quick understanding and neither luxurious at bed or board. He whose do much abound with hair is lustful, luxurious, strong, but fickle, and abounding with ill humors.

The feet of either men or women if broad and thick with flesh and long in figure, especially if the skin feels hard, of a strong constitution but of weak intellects. But feet that are thin and lean and soft shew a weak body but a strong understanding and excellent wit.

The soles of the feet do administer as plain and evident signs to know the disposition and constitution as the palms of the hands being full of lines by which all fortunes or misfortunes of man or woman may be known and their inclinations appear. But this in general we may take notice of, that many long lines and strokes do presage many afflictions and a very troublesome line attended with much grief care and poverty. 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 are generally strong and venturous; whereas those the skin of whose soles are thin are generally weak and timorous.

I shall now having given an account of what judgments may be formed from the several parts of the body before I conclude give an account of what may be drawn by the rules 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 and speak of the habits of the body as they will distinguish persons.

I. *Of crooked and deformed persons.*

A crooked breast or shoulder or the exuberance of flesh in the body either of a man or woman signifies the person to be extremely parsimonious and ingenious, and of great understanding, but very covetous, deceitful, malicious, and of a bad memory; either extremely virtuous or vicious, seldom in a medium. 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, dull of apprehension, given to loitering, and slow of belief.

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

Every man or woman hath a certain gait or motion. For a

man to be shaking his head or using any light motion with his hands or feet whether he stands sits or speaks is superfluous unnecessary and unhandsome: and such, by the rules of physiognomy are vain unwise unchaste detractors unstable and unfaithful. He or she who have little motion when discoursing with any one is for the most part wise well bred frugal faithful industrious and fit for any employment. He whose posture is forwards or backwards mimical is thereby denoted to be a vain silly person dull of wit and very malicious. He whose motion is lame and limping or otherwise imperfect or that counterfeits an imperfection is denoted to be envious malicious false and detracting.

IV. *Judgments drawn from the stature of a man.*

Physiognomy draws also several judgments from the stature of a man; such as, if a man be straight and upright inclined rather to leanness than to fat it shews him to be bold cruel proud clamorous hard to pleas and harder to be reconciled when displeas'd very frugal deceitful and malicious. To be of a tall stature and corpulent with it denotes him to be not only handsome but valiant also; altho' of no extraordinary understanding, and which is worst of all ungrateful. 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 humors. He who is thick and short, is vain envious suspicious shallow of apprehension easy of belief, and long before he forgets an injury. He who is lean and short but upright is by the rules of Physiognomy wise and ingenious bold and confident a good understanding but of a deceitful heart. He who stoops as he goes not by age but custom is laborious a retainer of secrets, but very incredulous. He that goes with his belly stretched forth, is forcibly merry, 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 on foot, a lean man to be a fool, a handsome man not proud, a poor man not envious, a whitely man not wise, one that talks through the nose to speak without snuffing, a knave no liar, an upright man not to walk straight, one that dwells when he speaks not crafty and circumventing; a man of a hot constitution not lustful, one that winks at another with his eyes not false and deceitful, one that knows how to shuffle his cards ignorant how to deal them, a rich man prodigal, a sailor and hangman 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, a bailiff or catchpole not to be a merciless villain, a hostess not to over reckon you, and an usurer to be charitable; then say you have found a prodigy or men acting contrary to the course of their nature,

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

A vomit for 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 the apoplectic powder.

For spitting of blood.

Take of conserve of comfrey, and of hops, of each an ounce and a half, conserve of roses three ounces, dragon's blood a drachm, species of hyacinth two scruples, red coral a drachm; 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 drachms; burnt hartshorn, one drachm cinnamon and red saunders of each half a drachm make all for a subtle powder and take half a drachm.

For the bloody flux.

Take a drachm of powder of rheubarb, in a sufficient quantity of conserve of red roses, early in the morning, and at night take of torrefied or roasted rheubarb half a drachm, diaschordium a drachm, and a half liquid laudunum, cydoniated a scruple. Mix them and make a bolus.

For an inflammation of the lungs.

Take currant water ten ounces, water of red poppies three ounces, syrup of poppies one ounce, pearl prepared, a drachm; 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 lignumvithæ, 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 thing in the morning, fasting for two hour

after; another at four o'clock in the afternoon, and a third at going to bed.

For worms in children.

Take wormseed half a drachm, flower of sulphur a drachm, sulphuric acid half a drachm; mix and make a powder, give as much as will lie upon a silver three-pence night and morning in treacle or honey. For grown persons add a little aloe rosatum, and so make them up into pills, three or four may be taken every morning.

A Diet drink for the Vertigo or swimming of the Head.

Take small ale, and boil it in the leaves of the mistletoe of the apple tree roots of male peony and peony flowers; then put it into a vessel of four gallons, in which hang a bag of half a pound of peacocks dung, and two drachms of cloves bruised; drink it as a common drink.

For fevers in children.

Take of crab's eyes one drachm, cream of tartar half a drachm, white sugar finely powdered, the weight of both; mix them well together, and give as much as will lie upon a silver three-pence in a spoonful of barley water or sack whey.

For a headache of long standing.

Take the juice of powder of distilled water of hogs lice, and continue the use of it.

For the Gripes in children.

Give a drop of the oil of anniseed in a spoonful of penada, milk, or any thing you shall think proper.

For an Ague.

Take the common bitter drink, without the purgatives, 2 quarts salt of wormwood, 2 ounces of saffron a drachm. After a vomit or convenient purge, take half a pint of this three times a day, in the morning fasting, mid day and at night.

For the Cholic.

Take anniseed, sweet fennel, coriander, carraway seeds two drachms each, cummin seed a drachm, rasped ginger a small quantity, bruise all in a mortar, and put them into a quart of Nantz brandy, to infuse three days shaking the bottle three or four times a day, then strain it; take two or three spoonfuls in the fit.

For the palpitation or beating of the heart.

Take powder of crabs eyes, burnt hartshorn, red coral, of each a drachm, 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.

Lozenges restorative in Consumption.

Take pine nuts prepared two drachms and a half, green fustic two drachms and a half, green fustic two drachms, species diambre two scruples, cinnamon and cloves half a drachm each, galangal a scruple, nutmegs two scruples, white ginger half a drachm. Xilo aloes half a scruple, with four ounces and a half of sugar dissolved in

rose water, and of the species make a confection in lozenges.

Against Aches and pains in the Joints.

Take powder of camopetys and gentsan, of each 5 drachms dried, leaves of rue three ounces; make all into a fine powder after due purging, give a drachm of this night and morning, in a spoonful of white wine.

For spots and pimples in the Skin.

Take black soap two ounces, 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 twice a day, that is 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 armoniac dissolved in vinegar of squills. Take four at a time early in the morning, fasting two hours after. You may take them once a week.

A distilled water for a confirmed Phthisic.

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

For vomiting or Looseness.

Take of Venice treacle one ounce, powder of tormentillee roots contrayerva, pearl and prepared coral, of each a sufficient quantity, with 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 one pound of the roots of English rheubarb sliced, the rinds of four oranges sliced, filings of steel one pound, fresh strawberries six pounds, three quarts of white wine; let them stand in infusion for some time, distill all according to art. Take 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, two drams each, crabs eyes one ounce, cochineal a scruple; mix and make a powder. Take half a drachm three times a day, or every four hours, keeping your bed and sweating upon it.

For a violent Toothache.

If the teeth be hollow, nothing cures but drawing, but if occasioned through a defluxion of humors, 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 humor, stop the defluxion, and consequently remove the pain.

For saint Anthony's Fire.

Bleeding surmised, take frog spawn water, plantain water, half

a pint each, sugar of lead two drachms; mix and shake the bottle till the salt is dissolved. Dip a linen cloth in this water and bathe the part affected; it cools wonderfully.

For the Black Jaundice.

Take flowers of sal amoniac diancum, and extract of gentian, of each a drachm; salt amber a scruple; gum ameniac dissolved in vinegar of squills suffices; make a mass of small pills, take it three or four mornings and evenings.

For the Rheumatism proceeding from the scurvey.

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 Convulsive Cough in Children..

After a gentle vomit and purge, apply a blister to the nape of the neck; but if the distemper be obstinate, cut an issue in the neck or arm; keep them close to a diet drink of shavings of ivory, saunders, and some diuretic ingredients. But if a specific you may have cup-moss in powder every day in boiled milk, and the decoction of hyssop, with a little castor and saffron.

EXPERIENCED MIDWIFE.

PART I.

GUIDE FOR CHILD BEARING WOMEN.

INTRODUCTION.

I have given this book the title of the Complete and Experienced Midwife, both because it is chiefly designed for those that 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 and is therefore the more to be depended upon. A midwife is the most necessary and honorable 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 operation of nature, nor with what tools she works, she 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 is produced, it is very necessary that all midwives should be acquainted with them, that they may the better understand their business, and assist nature as there shall be oc-

casion. 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 should be necessitated to speak plainly, that so I may be understood, yet I shall do it with that modesty that none shall have 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 maly pense;*" or, "Evil to him that evil thinks."

CHAP'TR I.

An Anatomical Description of the Instruments of generation in Men and women.

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, to wit, male and female; the operations of which are by action and passion, and herein the agent is the seed, and the patient blood: whence we may easily collect, that the body of man being generated by action and passion, he must needs be subject therunto 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 discreet midwife may be well acquainted with their several parts, and their various operations, as they contribute to the work of generation. And, in doing this, I shall give the honor of precedence to my own sex, and speak first of the parts of generations in man, which shall 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.

I. The first are the vassa præparentia, or preparing vessels, which are in number four, 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 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 rise 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 descension 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 color of, from red to white, so that the stones may both have a fit matter to work upon and do their work more easy; for which reason, the interweaving reacheth down to the very stones and pierceth in their substance.

3. The stones are the third thing to be spoken of, called also testicles; in Latin, *Testes*, that is, witnesses, because they witness 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 humor 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 the strongest seed. Each of these stones hath 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 slackned may the better void the seed. These muscles are weakened both by age and sickness; and the stones then 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 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 color white, and in substance nervous or sinewy; and form a certain hollowness which they have in them, are also called 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 backside of the bladder, between it and the right gut; and when they come near the neck of the bladder they are joined to the semi-

nal galls, which somewhat resembles 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 declared, they fall into the glandula prostrata, which are the vessels ordained to keep the seed, and which are next to be spoken of.

5. The seminal vessels called gradulum seminale, are certain kennels 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; the 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 the caruncle or skin as quicksilver through leather; and yet the pores of this skin are not discernable unless in the anatomy of a man who had some violent running in the reins when he died, and then they are conspicuous, those 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 conveyance 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 called Cutis, is full of pores, through which the sweat and fuliginous or sooty black vapors 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 flaggy; 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 the fleshy skin, it is so called, not because its body is fleshy skin, but because it lies between the flesh and passeth into other parts of the body underneath the fat, and sticks close to the muscle; 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 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 be necessary to speak particularly. And,

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 cause the yard to stand; and that is the reason that both veneral 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, Ps. cxxxii. 6. Now this hollow, spongy intermixture or weaving was so ordered by nature, on purpose to contain the spirit of veneral 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 Sceptum Lucium, 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 part 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 glands. It has in the beginning of it three holes, of which the largest of them is in the midst, which 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 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 others being longer and smaller, their office is to dilate

the lower part of the Urethra, for making water, and emitting the seed; upon which account they are called Accelerators.

5. That which is called the glands 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 Præputium, or foreskin, which in some men cover 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; this Præputium, or foreskin, is tied to the glands 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 part 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; and shall, therefore in the next place, proceed to describe those of women, so that the industrious midwife may know how to help them in their extremities.

SECTION II.

Describing the Parts of Generation in Women.

Whatever ignorant persons may imagine, or some good women think, they are unwilling those private parts which nature has given them should be exposed, yet it is in this case absolutely necessary: for I do positively affirm, that it is impossible truly to apprehend 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 hath 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; 1st. Of the Privy Passage; 2d. Of the Womb; 3d. Of the Testicles, or Stones; 4th. 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 con-

cealed, and cannot be seen, unless the 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 color like the comb of a cock.

3. In the uppermost parts, 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 falling as a man's yard, in proportion to the desire a woman hath in copulation; and this also is that which gives a woman delight in copulation; for without this a woman hath neither a desire to copulation, and 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 those 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 that, yet it is certain, 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 of the inward parts of the great lips, immediately under the Clitoris; the use whereof is to cover the orifice of the urine, and defend the bladder from the cold air; so that when a woman pisseth, she contracts herself so, that she conducts out the urine without suffering it to spread along the privities, and often without even wetting the lips; and therefore these small membranous wings are called *Nymphæ*, because they govern the woman's water. Some women have 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 hanging flaccid when virginity is lost. In virgins they are joined together by a thin and 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 in any other way; and it is from the pressing and bruising the 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, 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 time of their labor. Their use is to straighten 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 a 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 Myrtiforms 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 humors, which sometimes happens to young virgins, because in them it is the thinnest. It is also done by the unskilful applying of bestaries to provoke the *cerms*, &c. But these things happen so rarely, that those virgins do thereby bring themselves under a just suspicion.

6. There is next to be spoken of 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, skinnny and very much wrinkled within: and 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, squeezing, or pressing made by the yard in copulation, the pleasure may be mutually augmented. The external, or outmost membrane is red and fleshy like the muscle of the Fundament, surrounding the first, to the end of the yard may be better closed within it; and it is by means of this membrane that the neck adheres the stronger to both 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 that are grown aged, if they have been given much to venery, it is almost become grisly.

7. Having spoken of the privy passage, I come now to speak of the womb or matrix, its parts are two; the mouth of the womb and the bottom of it. The mouth is an orifice at the entrance into the womb, which may be dilated and shut together like a purse; for though in the act of copulation it is big enough to receive the glands of the yard yet after conception it is so close shut that it

will not admit the point of a bodkin to enter ; and yet again at the time of a woman's delivery it is opened so extraordinary that the infant passeth 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 of a substance very thick and close ; but when she is with child, it is shortened, and its thickness diminisheth, in proportion to its distension : and therefore it is a mistake of some anatomists to affirm, that its substance waxeth thicker a little before a woman's labor ; 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 natural for were it otherwise, there would not be so many bastards gotten as there are ; nor would some married women have so many children were it at their own choice, but they would hinder conception, though they would be willing enough to use copulation ; for nature has attended that action with something pleasing and delightful, that they are willing to indulge themselves in the use thereof, notwithstanding the pains which they afterwards endure : and the hazard of their lives which often follow it : And this comes to pass not so much from any inordinate lust in women, as for that the great DIRECTOR of nature, for the increase and multiplication of mankind, and even for 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 parts surrounding it ; it is therefore seated in the middle of the *Hypogastrium* (or the 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 it is placed in the lower part of the belly for the conveniency of copulation, and of a birth's being thrust out at the full time.

It is of 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 none ; but in women of a good stature, and well shaped (it is as I have said before) from the entry of the privy parts to the bottom of the womb, usually about eight, but the length of the body of the womb alone does not exceed three inches,

and the breadth thereof is nearly about the same, and 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 the woman 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 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 primitive seat. Hence also it is enabled to expel any noxious humors which may 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 more particularly taken care of (for as the seed of plants can produce no fruit, nor spring, unless sown in ground proper to waken 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 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 similarly parts, that is of membranes, veins, arteries and nerves. Its membranes are two, and they compose the principal part of its body; the utmost of which ariseth from the *Peritonium* or cawl, and is very thin, without smooth, but within equal that it may the better cleave to to the womb, as it were fleshy and thicker than any thing else we meet with in the body when a 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 sasier 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 it were 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 it in the womb, that during its pregnancy, it shall not be obliged to open itself for the passing away those excrementious humors, 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 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 *Peritonæum* 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 ejaculators 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 grain, together with the production of the *Peritonæum*, which accompanies them through the rings and holes of the oblique and transverse muscles of the belly where they 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 that 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 distension. But besides the 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 is therefore absolutely necessary for the conversation 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 blood, as it doth every month by the evacuation of blood, as when a woman is not with child. And thus much shall suffice for the description of the womb, in which I have been the larger, because, as I have said before, it is the field of generation.

3d. 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 are not for the same use, and indeed are different from those in men, in several particulars; as 1st, in place, being within the belly, whereas in men they are without. 2dly, in figure, being uneven in women, but smooth in men. 3dly, in magnitude, being lesser in women than in men. 4thly, they are not fixed in women by muscles, but by ligatures. 5thly, they have no prostrates or kernels, as men have. 6thly, they differ in form, being depressed or flattish in women, but oval in men. 7thly, they have but one skin, whereas men have four: for the stones of men being more exposed, nature has provided for them accordingly. 8thly, their substance is more soft than in men. And, 9thly, their temperature is colder than men. And as they differ in all these respects, so they do in their use, for they perform not the same action as men's, as I shall shew presently. As for their seed, 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 seed as those do in men, but it is a great mistake; for the testicles of women are as it were no more than two clusters of eggs, which lie there to be impregnated by the moist, spiritous particles, or animating effluvia conveyed out of the womb through the two tubes, or different vessels. But, however, the stones in women are very useful, for where they are defective, generation work is at an end. For though these little bladders, which are on their superficies, contain nothing of seed, yet they contain several eggs, resembling the eggs of birds, (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.

4th. I am now to speak of the spermatic vessels in women, which are two, and are fastened in their whole extent by a membraneous 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 breadth at least; and being disposed after the manner of the miseraic veins, are trained along the membraneous 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 run 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 avoric or testicles are impregnated by the seed of the man, they descend through these two vessels into the womb, where 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 wreathing and windings in and out, make amends for the shortness of their passage. The vessels are not united before they come to the stones, but divide themselves into two branches, the largest whereof only passes through the testicles, the lesser to the womb, both for the nourishment of itself and the infant in it. I further observe, that these spermatic veins receive the arteries as they pass by the womb, and so there is a mixture between natural and vital blood, that so the work might be 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 by; 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, and are in color white, and in substance sinewy, and pass not the womb straight, but wreathed with several turnings and windings, as was said of the spermatic vessels, that so the shortness of the way may be likewise recompensed 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 corns 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 opinions, and so pass on.

SECTION III.

Of the differences between the 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, yet briefly, the arguments on each side, leaving 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 contribute virtue and efficacy to the seed. And this (say they) is further proved from hence. That if women, at years of maturity, use not copulation to object their seed, they often fall into strange diseases, and 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 there; which pleasure, 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 the seed, so women are delighted both in the emission of their own, and the reception of the man's.

But against all this 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 men, but indeed are an Ovarium, or receptacles for eggs, wherein these eggs are nourished by the sanguinary vessels dispersed through them; and from thence one or more fecundated by the man's seed, are conveyed into the womb by the oviducts. And the truth of this, say they, is plain, that if you boil them their liquor will have the same taste color, and consistency, with the taste of bird's 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 are fallen into uteras, 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 Fœtus, or young ones, 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; to say that women have true seed, say they, is erroneous. But the manner of conception is this; The spiritous part of men's seed, in the act of copulation, reaching up the ovarium or testicles of the woman, which contain diverse eggs, sometimes more and sometimes fewer, impregnates 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 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 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 man and woman, 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. III.

Of conception; what it is; the signs thereof, whether conceived of a male or female; how women are to order themselves after conception.

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 false conception, moles or other strange matter. Now there are three other things principally necessary in order to 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 her womb. What they alledge of pullets laying eggs, without a cock's 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 little, if copulation did not follow. I confess I have heard of some subtle women, who to cover their sin and shame have endeavored to persuade some persons that they were never touched by men 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 sent his seed in it, which was drawn and sucked into her womb

as she pretended. But such stories as those 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 desire to the action; without which, it would not be very easy for man born for the contemplation of divine mysteries to join himself by way of coition to a woman, in regard of the uncleanness of the part and of the action; and on the other side, if women did but think of those pains and inconveniencies 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 beforehand but the pleasure of enjoyment. So that it is from this voluptuous itch that nature obligeth both sexes to this congression. Upon which the third thing followeth of course, to wit, the emission of seed into the womb in the act of copulation. For the woman having received this prolific seed into her womb, and retained 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; the several faculties which are in the seed it contains, being reduced by its heat from power into action, 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, of 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 shew,

SECTION II.

The signs of Conception.

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

1. If a woman has been more than ordinary 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 not to flow down from the womb, as it used to do before, for that 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 affected before, and hath often nauseatings and vomittings 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 breast 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 looks redder than formerly, and the breasts begin to swell, and grow harder than usual, especially if this be attended with pain and soreness.

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

9. If under the lower eye-lid the veins be swelled, and appear clearly, and the eye something discolored, it is a certain sign she is with child unless she have her menses at the same time upon her, or that she hath sat up the night before. This sign has never failed.

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 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 full 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 the terms. For after conception, nature makes use of that blood (for the accomplishing of her work,) by its nourishing 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 it is not the having them always 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 avoid it in the usual way. Whence

the Experienced midwife may learn there are a 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 of a 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 conceived are,

1. When a woman at her rising up is more apt to stay herself upon her right hand than 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 color is more clear, nor is she so swarthy as when she has conceived a female.
7. Observe a circle under her eye, which is a pale and bluish color; and if that under her right eye be most apparent; and most discolored, she hath conceived a son.
8. If she would know whether she hath conceived 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 is round as it drops in, and sinks to the bottom, it is a girl. This last is an infalible rule. And in all it is to be noted, that what is a sign of 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 pretermit all that others say of the causes of twins; and whether there be any such thing as superfetations, or a second conception in women, 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 shew how such as have conceived ought to order themselves during their pregnancy, but they may avoid those inconveniencies 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 month's sickness, being all that time in expectation of many inconveniencies, which such a situation 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 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 conception, observe a good diet, suitable to her temperament, 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 filthy smells; for sometimes the stink of a candle not well put out may cause her to come before her time: and I have kuown the smell of charcoal to have the same effect. Let her also avoid smelling of rue, mint, pennyroyal, 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 prescribe an exact diet for them. Only this I think advisable, that they may use of 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, and in such quantity as may be sufficient for herself and the child which her appetite may in a great measure regulate; for it is alike hurtful for her to fast too long, as to eat too much, and therefore rather eat too little and often, especially let her avoid eating too much at night; because the stomach, being too much filled, compresseth the diaphragm, and thereby causes difficulty of breathings. Let her meat be easy of decoction, such as the tenderest parts of beef, mutton, veal, sows, pullets, capons, pigeons and patridges, either boiled or roasted, as she likes best: new laid eggs are also very good for her; and let her put into her broths 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, and such as is taken out of rivers and running streams. Let her eat quinces, or marmalade 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, salt things, and all things that tend to provoke the terms, such as garlic, onions, olives, mustard, fennel, with pepper, of all spices, except cinnamon, which in the last three months is 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 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 has conceived, she ought to abstain from all violent motion or exercise, whether in walking, riding on horseback or in a coach. Let her also abstain from venery, to which after conception, she has usually no great inclination, lest there be a mole or superfœtation; which is the 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 meats of good juice and easy concoction, and let 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 fastings, thirst, watching, mourning, sadness, anger, and all other perturbations of the mind. Let none present any strange or unwholesome things to her, not so much as name it, and so either cause her to miscarry, or the child have some deformity on that account. Keep her belly 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 burage, burloss, and red roses, two ounces each; balm citron peel, and mirohalans candied, each an ounce: extract of wood aloës a scruple; pearl prepared half a dram, red coral, 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 use the following Rules.

Take pearls prepared a dram; red coral prepared and ivory each half a dram, precious stones, each a scruple; yellow citron peels, mace, cinnamon, cloves, each half a dram, saffron a scruple,

wood aloes half a scruple ; ambergrease six drans, and with six ounces of sugar, dissolved in rose water, make rouls. Let her also apply strengtheners to the navel, of nutmegs, mace, mastic, made up in bags, or a toast dipped in malmsey, sprinkled in powder of mint. If she happens to desire clay, chalk, or coal (as many women with child do) give her beans boiled with sugar ; and if she long for any thing which she cannot obtain let her presently drink a large draught of pure cold 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 until 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 may be drawn from the shoulders and arms especially if she has been accustomed to bleed. Let her take care of lacing herself too straightly but give herself more liberty than she used to do ; for, enclosing her belly in too straight 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 women from bleeding, unless in extraordinary cases ; but when this month is passed, 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 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 uses 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 coloquintia scamony, nor turbith ; she may use cassia, manna, rhubarb, agaric, and senna diacidonium, purgans is the best with little of the electuary of the juice of roses.

Rules for the Fifth, Sixth, and Seventh Months.

In those months child bearing women are often troubled with coughs, heart beating, fainting, and watching, pains in the loins, 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 humours 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 a vapour that go to it by the arteries or from blood that aboundeth, and cannot get out at the womb, but ascends and oppres the heart ; and in this case, cordials should be used both inwardly and outwardly. Watching is from sharp, dry vapours that trouble the 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 almond and 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 strengthen the ligaments of the womb, and parts adjacent, let her hold it up with swathing bands 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, full 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 away the nourishment of the child; but it proceeds from the weakness of the child that draws it not, abortion of the child often follows, or hard travail, or else she goes beyond her time. But if it flows by the inward veins of her 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 great caution, and give her astringents such as the following. "Take pearl prepared a scruple; red coral two scruples, mace, nutmegs, each a dram, cinnamon, half a dram; make a powder, or with sugar rouls;" or, give this powder in broth; "Take red coral a dram; precious stones half a scruple; red saunders half a dram; sealed earth and tormentil roots, each two scruples with sugar of roses and mants Christi, with pearl five drams, make a powder. You may also strengthen the child at the navel; and if there be a cacochim, alter the humours, and evacuate, if you may do it safely; you may likewise use amulets on her hands and about her neck. In a flux of hemorrhoids, let her drink hot wine with a toasted 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, 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 pers pottage warm with a little salt and sugar supped 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 amointed

with oxphredium (which is a liquid medicine made with vinegar and rose water) mingled with a little salt.

Rules for the Eighth Month.

The eighth is commonly the most dangerous and 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 of the sharp humours, after the belly, are accustomed to weaken their spirits and strength, they may well take before meat an electuary of diarrhodan or aromaticum, restium or diamargarton and as they will loathe and nauseate their meat, they may take green ginger condited with sugar, or the rinds of citrons and oranges condited; and often use honey for the strengthening of the infant. When she is not far from her labor, let her use every day seven roasted figs before meat and sometimes lick a little honey but let her beware of salt and powder meat, for it is neither good for her nor her 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 the natural heat. Let her take heed of stooping, 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 perishes. 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 her meat, as also the yolk of eggs, flesh and broth of chickens, birds, partridges, and pheasants; astringent and roasted meats, with rice and hard eggs, millet, and such like other things are proper; baths of sweet water with emolient herbs, ought to be used by her this month without intermission. And after the bath let her belly be annointed with the oil of roses and violets; but for her privy parts, it is fitter to annoint them with the fat of hens, geese, or ducks, or with oil of lillies, and the decoction of linseed and penugreek, boiled with oil of linseed and marshmallows, or with the following liniment.

“Take of mallows and marshmallows, cut and shred, of each an ounce; of linseed one ounce; let them be boiled from twenty ounces of water to ten; then let her take three ounces of boiled brog of oil of almonds, and oil of flourdeluce, of each one ounce; of deca suet three ounces; let her bathe with this, and annoint herself with it warm.”

If for fourteen days before the birth she do every night and morning bathe and moisten her belly with muscadel and lavender water the child will be much strengthened thereby. And if every day she eat toasted bread, it will hinder anything from growing

to the child. Her privy parts may be also gently stroaked down with formentation.

“Take 3 ounces of linseed; of mallows and marshmallows sliced, of each one handful; let them be put into a bag and boiled immediately; and let the woman with child every morning and evening take the vapor of this decoction in a hollow stool, taking great heed that no wind nor air come to her in any part, and 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 any more than ordinary pain let her use every day the following.

Take mallows and marshmallows of each one handful; camomile, herd, mercury, maiden hair, of each one handful; of linseed four ounces: let them be boiled in such a sufficient quantity of water as may 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 above half an hour lest her strength languish and decay, for it is better to use it often than to stay too long in it. And thus I have 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 shown 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.

CHAPTER I.

Of the parts proper for the Child in the Womb: how it is formed there, and the manner of its situation therein.

In the last chapter I shewed what conception was, how accomplished, its signs, and how she who hath conceived ought to order herself during the time of her pregnancy. Now before I 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 how it is formed and the manner of its situation and decumbiture there; without the knowledge of which, 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 umbilicum, or navel vessels, and the secundem; 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 Umbilicum 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 this 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 thence 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 alantois. Anatomists do very much vary in their opinions concerning this; some denying any such thing to be in the delivery of women, and others affirming it; but experience testifies there is such a thing. For Bartholomew Cabrolis, 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 of his navel many months together, 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 Volchia Coitas, quotes another such in a maid of thirty four years, at Nuremburg in Germany. These instances, though they happen but seldom, are sufficient to prove that there is such a thing as an urachos in men. These four vessels before mentioned, viz. 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 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 may 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 whole of the navel and some other physical use, &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 name 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 milt, or spleen, soft, red, and tending something to

blackness, and hath 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 Alantois 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 Alantois, of which there is a great dispute among the anatomists; some saying 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 know what they read. There is none 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 parts of the body. Arteries proceed from the heart, are in continual motion, and by the motion quicken the body. Nerve is the same as sinew, and is that by which the brain adds sense and motion to the body. Placenta properly 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 mothers 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 Alantois 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 into the womb to the Alantois. I now proceed to

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 the 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 the 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 of 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 that is formed is the amnion, the next the chorion; and they enwrap the seed round as it were a curtain. Soon after this (for the seed thus shut up in the womb 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, 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 body hath something to nourish it, whilst it performs the rest of nature's work, and also blood administered to every part of it to form flesh.

This vein being formed, the 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, and 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, and 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 or fleshy mass abounds with spirits, yet it remains undistinguishable without any form, and may be called a rough draught of the fœtus 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 say 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 womengo to the full time of nine months both with male and female. But at this time of thirty days, (or some will have it 45) the outward parts may be also seen exquisitely elaborate, and distinguished by joints, and from this 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 thence forward the blood flowing every day more and more to the womb, not by intervals, like their courses, but continually, it grows bigger and stronger in 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 spongy, 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 sucks in the nourishment at its mouth. Hippocrates affirms that the child sucks in nourishment and breath by its mouth from the mother, for which he gives two reasons: 1st. That it will suck as soon as it is born, and must have learnt to suck before. 2nd. Because there are excrements found in the guts as soon as it is born. But neither of these reasons are sufficient to prove his assertions; for as to the first, "that the child will suck as soon as it is born," it is from natural instinct; for take a young cat that never saw her dam catch a mouse, and yet she will catch mice herself as soon as she 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 new born, are not excrements of the first concoction, which is evident, because they don't 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 nourishment by the mouth, I do affirm that the child receives its nourishment in the womb by the navel, and, that it should be so, is much more consonant to truth and reason; which being granted, it will easily follow that the nourishment the child receives, is pure blood convey-

ed into the liver by the navel vein, which is a branch of the *vena porta*, or great vein, and passes to the smallest veins of the liver. Here this blood is made most pure, and the thicker and rawer part of it is conveyed to the spleen and kidneys, and the thick excrement of it to the guts, which is that excrement found there so soon as they are 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 said.

Explanation of the different parts of the Womb, &c.—together with the manner of the Child's lying therein.

- A. The portion of the Chorion dissected and removed from its proper place.
- B. A portion of the Amnios.
- C. The Membrane of the Womb dissected.

- D. The placenta, being a fleshy substance endued with many small vessels by which the infant receives its nourishment.
- E. The varication of the vessels which makes up the navel string.
- F. The navel string, by which the umbelical vessels are carried from the Placenta to the navel.
- G. The infant as it lieth perfect in the womb near the time of delivery.
- H. The insertion of the umbelical vessels into the navel of the infant.

SECTION II.

The different positions in which the Child is found in the Womb, during the time of the woman's pregnancy.

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 in what fashion it lies there; and this may arise in a great measure from the different figures that the child is found in, according to the different times 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 before, for another. Hippocrates affirms, 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 its knees and its face between them; so that each eye toucheth each thumb, and his nose betwixt his knees. And Bartholinus was also of the same opinion. Columbus describes the posture of the child thus: "The right arm bowed, the fingers were under the ear and above the neck; the head bowed down, so that the chin toucheth the breast, the left arm is propped up by the bending of the right elbow, the legs are lifted up so 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 leg is lifted up to the breast, the back lying outward. And thus much shall suffice concerning the opinion of authors.

I will now shew the several situations of the child in the womb according to the different times of pregnancy, by which those that are contrary to nature, and are the chief cause of all labours, will be more easily conceived by the understanding midwife. It ought therefore, in the first place, to be observed, that the infants, as well male as female, are generally situated in the midst of the womb; for though sometimes to appearance a woman's belly seems higher on the 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 round figure a little oblong, having the spine moderately turned inwards, the thighs folded, and a little raised, to which the legs are so joined that the heels touch the buttocks. The arms are 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 and the head uppermost, the face forwards, and the feet downwards: proportionably to its growth, it extends its members by little and little, which were exactly folded the first month. In this posture it usually keeps till the seventh month, and then by a natural propensity and disposition of the upper part of the body, the head is turned downwards towards the inward orifice of the womb, tumbling as it were over its head, so that then the feet are uppermost, and the face towards 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 its passage into the world at the time of its mother's labour which is then not far off: (and indeed several children turn not 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 so disturb one another that they seldom come both in the same posture at the time of labor, but one will come with the head, and another with the feet, or perhaps lie across, and sometimes one of them will come right. But however the child may be situated in the womb, or to whatever posture it presents itself at the time of birth, if it be not with its head forward, as I have before described, it is always against nature: and the delivery will occasion the mother more pain and danger and require greater care and skill from the midwife than when the labor is more natural.

CHAP. IV.

A Guide for Women in travail shewing what is to be done when they fall in labor, in order for their delivery.

The end of all that we have been treating of, is the bringing forth of a child into the world, with safety both to the mother and to the infant. The whole time of the woman's pregnancy may very well be termed a kind of labor; for, from the time of her conception, to the time of her delivery she labors under many difficulties; is subject to many distempers, and in continual danger, from one cause

or another, till the time of birth comes, and when that comes the greatest labor and travail comes along with it, insomuch, that then all her others are forgotten, and that only is called the time of her labor; and to deliver her safely is the principal business of the midwife. To assist her herein, is the chief design of this chapter. The time of the child's being ready for its birth, when nature endeavors to cast it forth, is that which is properly the time of a woman's labor. And since many women, especially of their first chil, are mistaken in their reckoning, and so, when they draw near their time, take every pain they meet with for the labor, when it is not so, which often proves prejudicial and troublesome to them, I will in the first section of this chapter, set down some signs, by weich a woman may know when the true time of her labor is come.

SECTION I.

Signs of the true time of a woman's labor.

When women with their first child, percieve any extraordinary pains in their belly, they immediately send for their midwife, taking it for their labour; and then if the midwife be not a skilful and judicious woman, she will without further inquiry, take it for granted, and so go about to put her into labor before nature is prepared for it; which may endanger the life both of the mother and the child by breaking both the amnois and chorion. These pains which are often mistaken for labor, are removed by warm clothes laid on the belly, and the applications of a clyster or two by which those pains which precede a true labour, are rather furthered than hindered. There are also other pains incident to women in that condition from a flux in the belly, which are easily known by the frequent stools which 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 humors, 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 glands called Prostatae. These are signs preceding labour; but when she is presently falling into labor, the signs are great pains 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 blood being much heated by the endeavors a woman makes to bring forth her child, and likewise because during these strong throes her respiration is intercepted, which causes the blood to have recourse to her face; also her privy parts are swelled by the infant's head lying in the birth, which by often thrusting, causes those pains to descend outwardly, and is much subject to vomiting, which is a sign of good labor 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 always happen. When the humors which flow from the womb are discolored with blood the midwives call it Shows, and it's an infallible mark of the birth's being near; and then if the midwife put her finger 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 to 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, whom 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 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 the birth is very near, this being the most certain sign that can be; for the amnios and alantois being broken which contain those waters, by pressing forward of the birth; the child is not 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 labor by making the passage slippery: and therefore let no midwife (as some have foolishly done) endeavor 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 admitted: and what those are I shall shew in another section.

SECTION II.

How a woman ought to be ordered when the time of Labor is Come.

When it is known that the time of a woman's labor is come by the signs laid down in the foregoing section of which those that are most to be relied on are pains or throes in the belly, forcing downwards the womb, and a dilation of the inward orifice, which may be perceived by touching it with the finger and 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 with the finger discover the parts which presents as

said before, especially if it be the head of the child, by its roundness and hardness. If these things concur, and are evident, the midwife, may be sure it is the time of her labor; and care must be taken to get all things ready that are necessary to comfort the woman in that time, and the better to help her, be sure to see she be not straight 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. The benefit accruing hereby will be, to excite the gut to discharge itself of its excrements, that so the rectum being emptied, there may be more space for dilation of the passage; likewise to cause the pains to bear the more downwards; through the endeavours she makes when she is at stool; and in the mean time, all other necessary things for her labor should be put in order, both for the midwife and the child. To this end some 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 breast more at liberty, and likewise more strength to bear down the pain: 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 her 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 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 the finger, to know whether the waters are ready to break, and whether the birth will soon follow, let her also anoint the woman's privities with emollient oil, hog's grease and fresh butter, if she finds they are hard to be dilated. Let the midwife be all the while near the laboring woman, and diligently observe her gestures, complaints, and pains, for by this she may guess pretty well how her labor advanceth; because when she changeth her ordinary groans into long cries, it is a sign the child is very near the birth; for at that time the pains are greater and more frequent. Let the woman likewise by intervals rest herself on the bed to regain her strength, not too long, especially if she be little, short and thick, for such women have always worse labor, 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 the arms, if it be necessary, for by this mean 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 labor will not be near so long.

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

When the waters of the children 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 labor, 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 easily) the passage remains dry, by which means the pains and throes of the laboring 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 present, 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 in 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 deliver, if nature be not wanting to perform its 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 admitted; to which purpose, let her make use of pennyroyal, dittany juniper berries, and coral, betony, 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 tansey bruised and applied to the privities or an oil of it so made and used as you were taught before. The stone *Ætites* held to the privities is of extraordinary virtue and instantly draws away both child and after

burden, but care must be taken to remove it presently, or 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 loadstone, or as the loadstone the North Star.

There are many other things that physicians affirm are good in this case among which are, an ass's or an horse's hoof hung near the privities; a piece of red coral hung near the said place; a load stone helps much, held in the woman's left hand, or the skin which a snake hath cast 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 in 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 let her take half a drachm of them in white wine at a time.
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) being drank by a woman with child, it cleanseth not only the womb, but the child in the womb of all gross humors.
5. A scruple of castorum in powder, in any convenient liquor, is very good to be taken in such case; and so also is two or three drops of spirit of castorum in any convenient liquor; also eight or nine drops of spirit of myrrh, given 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 piony 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 swallows nest, and dissolve it in water, strain it, and drink it warm; it gives delivery with great speed and much ease.

Note, this also is general, that all things that move the terms are good for making the delivery easy; such as myrrh, amber in white wine, or lily water, two scruples; or a drachm; or cassia lignea, dittany, each a dram, cinnamon half a dram, saffron a scruple, give 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 drachm, dittany, amber, of each half a drachm, cinna-

iron, boras, of each a drachm and a half, saffron a scruple, and give her half a drachm, or give her some drops of hazel in a convenient liquor; or two or three drops oil of cinnamon in vervian water. Some prepare the secundine thus; take the navel strings and dry it in an oven; take two drachms of the powder, cinnamon a drachm, saffron half a scruple, with juice of savin make troches; give two drachms, or wash the secundine in wine and bake it in a pot; then wash it in enlivening water and wine; take half a drachm of it; long pepper gagangal, of each half a drachm: plantain and endive seed, of each a drachm and a half; lavender seed four scruples; make a powder; or take laudunum two drachms, storax calomine, benzoin, of each half a drachm; 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 drachms; saffron a drachm; with oil of orts make a pessary.

An ointment for the Navel.

Take oil of kier two ounces, juice of savin an ounce, of leeks and mercury, each half an ounce, boil them to the consumption of the juice; and galbanum dissolved in vinegar half an ounce, myrrh two drachms, storax liquid a drachm round birth wort, sowbread, cinnamon, saffron, a drachm; 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 Dramarg.

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 labor 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 her attempting it, brought away the child, but left the head of the infant behind 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 be rather termed butchers than midwives. But supposing the woman's labor to be natural, I will next show what the midwife ought to do in order to her delivery.

CHAP. V.

Of natural labor; what it is; and what the midwife is to do in such a Labor.

SECTION I.

What natural labor is.

There are four things to demonstrate a woman's labor natural: the first is that it be at the full time; for if a woman comes before her time, it cannot be properly termed natural labor, 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 the 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, making that which should be a time of life, the death both of the mother and the child.

Having thus told you what I mean by natural labor, I shall next shew how the midwife is to proceed here, in order to the woman's delivery. When all the foregoing requisites concur, and after the waters are broke of themselves, let the laboring 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 clothes in many folds, with such other things as are necessary, and may be changed according to the exigence requiring it, that so the woman may not be incommoded with the blood, waters, and other filth, which is voided in labor. The bed ought to be so 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 is 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 sink 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 to the end, that her rump should have more liberty to retire back, and let her feet be stayed against 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 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 meantime, let the midwife endeavour to comfort her all she can, exhorting her to bear her labor 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, have no rings upon her hand, and anoint it with oil or fresh butter, and therewith, dilate gently the inward orifice of the womb, putting her fingers ends into the entry thereof and 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 part 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 the 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 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 fingers ends (which she must be sure to keep close paired) 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 then entangled about the 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, whose delivery may thereby be rendered difficult. It must also be carefully heeded that the head be not drawn out strait, but shaking it a little from one side to the other, that the shoulders may sooner and easier take their place immediately after it be past without losing any time, lest the head being past, the child be stopped there by the bigness of the shoulders, and so come in danger of being suffocated and strangled in the passage, as it sometimes happens, for want of care therein. But as soon as the head is born, if there be need, she may slide in her fingers under the arm pits, 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 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 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 more children in the womb; for sometimes a woman may have twins that expected it not; which the midwife may easily know by continuance of pain 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 the entry of the womb, and finds there another water gathering, and a child in it pressing to the passage; and if she finds it 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 times doubled and the other end fastened 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 the first; after which it will be necessary to fetch away the after birth, or births. But of that in another section; after first shewing what is to be done to the new born infant.

SECTION II.

Of the cutting off 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 shows none of the least art or skill of a midwife to do it as it should be. In doing this the midwife ought observe, 1st the time; 2d the place; 3d the manner; 4th the event.

The time is, as soon as ever the infant comes out of the womb, whether it brings part of the after burden with it or not; for sometimes the child brings into the world a piece of the amnion upon its head, and is what the good woman calls the caul, and ignorantly attributes 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 brows, 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 that recruits a weak child; but, if the child be strong, the operation is needless. Only let me advise 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 scarce agree whether the navel string should be cut long or short; some prescribing it to be cut off at four fingers

breadth, which is at best but an uncertain rule, unless all fingers were of a 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 therefore midwives generally leave a longer part of it to a male than to a female, because they would have the male well provided for the encounters of Venus; and the reason they give that they cut that of the females shorter is, because they believe it makes them modest, and their privities narrower, which makes them more acceptable to their husbands. Mizaldus was not of this opinion, and therefore he ordered the navel string to be cut long both in male and female children; because said he 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 of her having children. I will not contradict these opinions of Mizaldus that experience has made good. The one 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 involuntary making of water all its life time. The other is, that a piece of the child's navel string carried about one, so as to touch his 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 crown 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; and with this thread so accommodated, (which the midwife must have in readiness before the woman's labor, as also a good pair of scissors, 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 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 squeeze 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 does, a new knot must be made with the rest of the string. You need not fear to bind the navel string very hard, because they are 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 carries 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 have told you that Mizaldus gave, which experience has justified.

As to the last thing mentioned, which is the event or consequence of what follows cutting off 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 should 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 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 armoniac 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 ouraen.

A woman cannot be said fairly to be 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 labor, which sometimes proves more dangerous than the first; and how to bring it safely away, without prejudice to her, shall be my business to show in this section.

As soon as the child is born, before the midwife either ties or cuts the navel 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 it she may draw moderately, and with her right hand she may only take 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, extended 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 especially 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 need be a very skilful person that undertakes it, lest the womb to which this burden is sometimes very strongly fastened, be drawn with it, as it sometimes happens. 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 bringing away the after birth, that you make use of to bring away the birth; for the same care and circumspection is needful now that was then.

2. Consider the laboring 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 broth, also a little wine and toast in it, and other comforting things will be necessary.

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

4. Tansy and the stone *Ætitis*, applied as before directed, is also of good use in this case.

5. If you take the herb *vervian*, 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 of sugar (having clarified it) and a spoonful or two of that given to the woman is very efficacious to bring away the secundine; and *feverfew* and *mugwort*, have the same operation taken as the former.

6. *Alexander* boiled in wine, and the wine drank; also sweet cicily, *angelica* roots, and *masterwort*, are excellent remedies in this case.

7. Or if these fail, the smoke of *marygolds* 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 should add in the case. Boil *mugwort* in water till it be very soft; then take it out, and apply it in a manner of a poultice to the navel of the laboring 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 thus much shall suffice to be spoken of in bringing away the after burden in all natural labors.

SECTION IV.

Of laborious and difficult Labors, and how the midwife is to proceed therein.

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

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

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, accelerates the birth and hastens the delivery.

Some have asked the reason why 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 straight that it must of necessity be dilated at the time of the womans delivery, the dilating thereof stretches the nerves and from thence comes the pain. And therefore the reason why some women have more pain in their labor than others, proceeds from their having the mouth of the matrix more full of nerves than others, as skilful anatomists do easily discover.

But to proceed, the best way to remove these difficulties that occasion such hard pains and labor 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 labor 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 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 or short or deformed, as crooked women, who have not a breath enough to help their pains, and to bear them down, and persons that are crooked having sometimes the bones of the passage not well shapen the cholic also hinders labor, by preventing the true pains, and all great and acute pains, as when the woman is taken with a violent fever, great flooding, frequent convulsions, bloody flux, or any other great 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 not sufficiently open, the passages are pressed and strained by tumors 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 the membranes being too thin. The womb may also be out of order with respect to its bad situation, or conformation, having its neck too strait, hard or callous; which may easily be so naturally, or may come by accident, being many

times caused by a tumor, a posthume, ulcer or superfluous flesh.

As to hard labor occasioned by the child, it is when the child happens to stick to a mole, or when it is so weak that it cannot break the membranes, or 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 hydropical, 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 one or two more. And in 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 labor, I will now show the industrious midwife how she may administer some relief to the laboring woman under these circumstances. But it will require understanding and judgment in the midwife, when she finds a woman in difficult labor, to know the particular obstruction, or cause thereof, and so a suitable remedy may be applied. As for instance, when it happens to 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 peritonium breaks with the skin from the privities of the fundament. But if a woman be in years with her first child, let her lower parts be anointed to modify the inward orifice, which in such a case being more hard and callous, doth not easily yield to the distension 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 humps or bruises on their heads. Those women that are very small and mishapen should not be put to bed, at least till their waters are broke but rather kept upright, and assisted to walk about the chamber, by being supported under their arms; for by that means they will breathe more freely, and bear their pains better than on the bed, because there they lie all in a heap. As for those that are very lean, and have hard labor 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 compassed 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 broth's and a little wine with a toast in it. If she fears her pains, let her be comforted, assuring her that she will not bear many more, but be delivered in a little time. 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 operation whereof I shall relate in the section of unnatural labors. If she be costive, let her use clysters, which may also help to dispel the cholic, at these times, very injurious because attended with useless pains, and because such bear not downwards, and so help not to forward the birth. If she finds an obstruction or stoppage of the urine, by reason the womb bears too much on the bladder, let her lift up the 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 in the 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 straight, 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 come forward into the passage, and ready to follow 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 emolient 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 places. 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 to it 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 no means; for the infant having 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 laboring with a dead Child.

When the difficulty of labor 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, or 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 stinking settling at the bottom.
4. No motion of the child can be perceived; for the trial whereof put her hand into 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 the 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 woman takes the following perscription:

“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 drank 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 in this case, it will refresh the child, and give her ease; for cinnamon refresheth and strengtheneth the child in the womb.

Now, if upon trial, it be found the child is 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 as many of them as you can get, viz. dittany, betony, pennyroyal, sage, feverfew, century, ivy leaves and berries. Let her also take sweet basil in powder, half a dram at a time, in white wine; and her privities be anointed with the juice of garden tansy; or if you take tansy in the summer, when it may 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 a careful midwife 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 labor. And here I cannot but again recommend the stone *Æties*, held near the privities, whose

magnetic virtue draws the child any way with the same facility as the loadstone draws iron.

Let the midwife also make a strong decoction of hyssop with water, and give the woman to drink it very hot, and it will, in a little time, bring away the dead child. A decoction of the herb masterwort, used as above, works the same effects. The roots of polipodium stamped well, warmed a little, and bound on the sides of her feet, will soon bring away the child either alive or dead.

If as soon as she is delivered of the dead child, you are in doubt that part of her after birth is left behind, for in such cases, being often, it may come away piece meal, let her continue drinking the same decoction, till her body is cleansed.

The following medicines stir up also the expulsive faculty; but in this case they must be made stronger because the motion of the child ceaseth.

Take savin, round birthwort, troches of myrrh, assaram roots, cinnamon, half an ounce, saffron a scruple, give a dram with savin water. Or, take borax, savin, dittany; each an ounce; myrrh, assaram roots, cinnamon, saffron, each half a dram make a powder give a dram.

But she may purge first, and put her in an emollient bath anointing her round about the womb with oil of lillies, sweet almonds, Jamomile, hen and goose grease. Also foment to get out the child, with a decoction of mercury, orris wild cucumbers, achus, broom flowers. Then anoint the privities and loins with ointment of sowbread; Or,

Take coloquintida, agarac, birthwort, each a dram, make a powder, add armoniac dissolved in wine, ox gall, each too drams, with oil of kier make an ointment. Or, make a fume, with asses' hoofs burnt, or gallianum, or caster, 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, woodmyrtle, St. John's wort, each half an ounce; spermaceti two drams, deer's 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, and then the midwife ought, without delay, to send for an expert and an able man midwife, to deliver her by manual operation; of which I shall treat more at large in the next chapter.

CHAPTER VI.

In shewing the duty of a midwife, when the woman's labor is unnatural, it will be requisite to shew in the first place what I mean by natural labor; for it is natural to a woman to bring forth children in pain and sorrow. 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, but error dilates itself into infinite variety; so there is but one proper right and natural posture in which children come to birth; but there are as many wrong and unnatural ways, 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 and 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 follow not in a straight line it is a wrong and difficult birth. Now there are four general ways a child may come wrong; 1st, when any of the fore parts of the body first present themselves, 2dly, when by an unhappy transition, any of the hinder parts present themselves. 3dly, when either of the sides. Or, 4thly, when 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 confine myself only to treat of these four more general wrong ways.

SECTION I.

How to deliver a Woman of a dead child by natural operation.

The last section of the last chapter treated of the delivering of a woman of a dead child, and 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 thereto, 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 the saving of hers. Let him also tell her, for her encouragement, that he doubts not, by the blessing of God, to deliver her safely, and that the pain arising thereby will not be so great as she fears. And then let him endeavor 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, let her be placed cross the bed, that he may operate the easier; and let her lie on her back with her hips little higher than her head, or at least the body equally placed, when it is necessary to put back or turn the infant to give it a better posture; being thus situated, she must fold her legs so as her heels be towards her buttocks; and her thighs spread, and held 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, and also to prevent her catching cold. Then let him anoint the entrance of the womb with oil or fresh butter, if necessary, that so 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 do his endeavor to fetch it away as soon as possible 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, that it be not separated from the body; which may be effected the more easily, because the child being very rotten and putrified, 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 section third of this chapter for that purpose. But when the head coming first, is so far advanced that it cannot well be put back it is better to draw it forth so, than to torment the woman too much by putting it back to turn and bring it by the feet; but the head being a part round and slippery, it may so happen that the operator cannot hold it with his fingers by reason of its moisture, 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 up 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, and let him fasten it there, giving it a good hold upon one of the bones of the skull, that it may not slide; and after it is well fixed he may therewith draw it forth keeping the ends of the fingers flat upon the opposite side, the better to help disengage it, and by shaking 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 hand under the armpits, the child may be quite delivered. And then the after burden fetched, being careful not to pluck the navel string too hard, lest it break as often happens when it is corrupted.

If the dead child come with the arm up to the shoulders so extremely swelled that the woman must suffer too great a violence to have it put back 'tis then the best to take it off at the shoulder joints by twisting it three or four times about, which is very easily done by reason of the softness and tenderness of the body. After the arm is so separated and no longer possessing the passage, the operator will have more room to put up his hand into the womb to fetch the child by the feet and bring it away.

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

SECTION II.

How a Woman must be delivered when the Child's feet come first.

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

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

I know indeed that in this case 'tis the advice of several authors to change the figure, and place the head so that it may present the birth, and this council I should be very inclinable to follow, could they but also shew how it must be done. But it will appear very difficult, if not impossible to be performed, if we will 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 the womb is open enough to admit the midwife's hand into it, or else by anointing the passage with oil or hog's grease, to endeavor to dilate by degrees, using her fingers to this purpose, spreading one from the other, after they are together entered and continued 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 entry 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 it be but one foot, she ought to consider whether it is the right foot or the left, and also in what fashion it comes; for by that means she will sooner come to know where to find the other which as soon as she knows and finds, let her gently draw forth with the other; but of this she must be especially careful, viz. 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 be easily 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 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 be 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 slippery, because of the vicious humors which are all over it, and prevent one's taking hold of it, which being done, she may take hold under the hips so 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 stopped 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 on the body when the breast and arms are forth in the manner we have said, and draws it with turning it in proportion on 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, desire the woman at the same time to bear down, that so at drawing the head at that instant may take its place, and not to 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 endeavor only to draw forth the child by the shoulders lest she sometimes 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 passages 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, endeavoring to despatch it 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 I have 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 putrified and corrupted, that with the least pull the body separates from the head, and remains alone in the womb, and cannot be brought away but with a manual operation and difficulty, it being 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 one after the other, left the operation unfinished as not able to effect it, after the utmost efforts of their

industry skill and strength, so that the woman not being able to be delivered perisheth. To prevent which fatal accidents for the time to come let the following operation be observed.

When the infant's head separates from the body, and is left behind whether through putrefaction or otherwise, let the operator immediately whilst the womb is yet open direct up his right hand to the mouth for no other hold can there be had; and having found it let him put one or two fingers into it by little and little holding it by the jaw; but if that fails as sometimes it will when putrified 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 harrow 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 towards 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 convenient 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 linnen or fillet slip, of above 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 them so put it up with 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 by the two ends together; it will be easily drawn forth the fillet not hindering the least passage, because it takes up little or no place.

When the head is thus fetched out of the womb care must be taken that not the least part of it be left behind and likewise to cleanse the woman well of her after burden if yet remaining. Some have questioned whether the child's head remaining yet in the womb, or the after birth ought to be brought away first; 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 also 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 then go about to separate it from the womb, it might then cause a flowing which would be augmented by the violence of the operation; the vessels to which it is joined remaining for the most part open as long as the womb is distended, which the head causeth while it is retained in it, and cannot close till this strange body be

voided, and then it doth by contracting and compressing itself together, as has been more fully before explained. Besides the after birth remaining thus cleaving to the womb during the operation, prevents it from receiving easily either bruise or hurt.

SECTION IV.

How to deliver a Woman when the side of the Child's Head is presented to the Birth.

Though some may think it a natural labor when the child's head may come first, but yet if the child's head presents not the right way, even that is an unnatural labor and therefore though the head comes first, yet if it be the side of the head 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 pain continue to bear the child, which it is impossible, unless the head be rightly placed, 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 therefore render it more difficult to thrust it back, which must be done in order to place the head in the passage right 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 to the shoulders, that so by thrusting them back a little into the womb, sometimes on the 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 his 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 put forwards the child's birth as when the labor is natural.

Some children present their face first, having their heads turned back, in which posture it is extremely difficult that the child should be born; and if it continue so long, the face will be swelled, and withal black and blue, 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 rapidly, in order to place it in a better posture. But this blackness will wear away in three or four days, often anointing it with oil of sweet almonds. To deliver the birth, the same operation must be used as in the former, when a child comes with the side of the head: 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 its head; which if it does, it is usually one or both its hands, and this hinders the birth because the hands take up part of that passage which is little enough for the head alone; besides that happens, they generally cause the head to lean on one side: and therefore this position may be very well styled unnatural. When the child presents itself 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 a little lower than her hips, must put and guide back the infants 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.

There is none but will readily grant, that when the hands and feet of an infant present together, the labor must be unnatural, because it is impossible a child should 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 where 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 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 having placed the woman in a convenient posture, that is to say, 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 labor, though somewhat troublesome, yet is much better when the child presents only its hands; for the child must be quite turned about before it can be drawn forth; but in this, they are rea-

dy presenting themselves, and in this, there is not so much to do, but to lift and thrust back a little the upper part of the body, which is almost done of itself by drawing it along by the feet.

I confess there are many authors that have written of labors who would have all wrong births 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 ; for if they had the least experience herein, they would know that it is very often impossible, at least if it were to be done, that violence must necessarily be used in doing it, that would very probably be the death of mother and child in the operation ; I would therefore lay down as a general rule, that whensoever 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 try to put it in the natural posture, and place the head foremost ; for the great endeavors necessary to be used in turning the infant in the womb do so much weaken both mother and child, that there remains not afterwards strength enough to commit the operation to the work of nature, for usually the woman has no more throes or pains fit for labor, after she has been so wrought upon ; for which reason it would be very difficult and tedious, at least ; 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 labor, and the child be often brought alive into the world, who otherwise would hardly escape death. And thus much shall suffice to be said of unnatural labors ; for by the rule already given a skilful artist will know how to proceed in any posture in which the child presents itself.

SECTION VII.

How a woman shall be delivered that has Twins, which present themselves in different postures.

We have already spoken something of the birth of twins in the chapter of unnatural labor ; for it is not an unnatural labor barely to have twins, provided they come in a right position (that is as in single birth.) But when they shall present themselves in divers postures, they come properly under the denomination of unnatural labors ; and if when one child presents itself in a wrong figure it makes it much more so when there are several, and renders 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 so filled with them, that the operator can hardly introduce his hand without much violence, which he

must do, if they be to be turned to thrust back, to give them 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 that but one is felt; that many times the midwife knows not that there are twins till the first is born, and that she is going to fetch away the after birth. In the 5th chapter, wherein I treated of natural labor I showed how a woman should be delivered of twins, presenting themselves both right and therefore before I close this chapter of unnatural labor, 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 endeavoring to place it right, even though it was somewhat inclining towards it, it has been already tired and weakened by the birth of the first as well as its mother, that there would be greater danger of its death than likelihood of its coming out of the womb that way.

But if, when the first born is born naturally, the second should likewise offer its head to the birth, it would then be best leaving nature to finish what she has so well begun; and if nature should be too slow in her work, some of these things mentioned in the 4th chapter to accelerate the birth may be properly enough applied; and if after that, the second birth should be yet delayed, let a manual operation be deferred no longer: but the woman being properly placed, as has been before directed, let the operator direct his hand gently into the womb to find the feet, and so draw forth the second, 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 broke, 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 the 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, which might be if it were not duly considered, taking the right foot of the one and the left of the other, and so drawing them

together, as if they 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 two or three feet of several children, presenting together in a passage, and taking two of the forwardest, a right and a left, and sliding his hands along the legs and thighs up to the twist, if forwards, or the buttocks, if backwards, he finds they both belong to the 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, wherever it is, as soon as may be, observing the same rules, as if there were but one, keeping the face downwards, with every circumstance directed in the 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 has 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 has been before shown. If the children present any other part than the feet, the operator may follow the same method as is directed in the foregoing section, where the several unnatural positions are carefully treated of.

SECTION VIII.

Directions for child bearing Women in their lying in.

In the fourth, fifth, and sixth chapters, we have treated at large of women's labor, and how they may be safely delivered both in natural and unnatural labors. Having therefore thus brought the good woman to bed, I will in this 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 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 the 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 drachm 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 more good in two days, having no offensive taste, though very pleasant virtues. And this is no more than what she stands in need of, for her lower parts being so greatly distended to the birth of the infant, it is good

to endeavor the prevention of an inflammation there. Let therefore be 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 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 come near her at first; for cold is an enemy to the spermatie 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 not, and let her eat but a little at a time. Let her avoid the light for three or four days, and longer if she be weak, for labour weakens her eyes exceedingly, by a harmony between the womb and them. Let her avoid great noises, sadness and troubles 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, or if you suspect any of the after burden to be left behind, which may sometimes happen) make her drink of feverfew, mugwort, pennyroyal, and mother of thyme, boiled in white wine, sweetened with sugar.

Pananda 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 use cinnamon in all her meat and drink 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 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 polipodium, 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 first common and usual accident that troubles women in their lying in, is after pains; the causes whereof some affirm to be one thing, some another; but it is most certain that they proceed

from cold and wind contained in the bowels with which they are filled after labor, because then they have more room to dilate, than when the child was in the womb, by which they were compressed and also because the nourishment and matter contained in them and the stomach, has been confusedly agitated from side to side during the pains of labor, and could not be well digested, whence this wind is afterwards generated, and by consequence the gripes which the woman feels running into her belly from side to side, according as the wind moves, and sometimes 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 yet ver-via taken in any thing she drinks, will be effectual as the other.

2. Give the lying in woman, immediately after delivery oil of sweet almond and syrup of maidenhair, mixed together. Some prefer oil of walnuts, provided it be made of nuts that are very good, but it tastes worse than the other. This will lenify the insides 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 and 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 not drink what is too cold; and if they prove very violent, hot cloths, from time to time, must be laid on her belly, or a pancake fried in walnut oil may be applied to it without swathing her belly so strait; and for the better evacuating the wind out of the intestines, give her a clyster, repeating it as often as necessity requires.

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

6. Take tar and barrows grease, of each an equal quantity, boil them together, and whilst it is boiling add a little pidgeon's dung to it. Spread some of this upon a linen cloth, and apply it to the reins of her back; and it will give her speedy ease.

Lastly, let her take half a dram of bayberries beaten into a powder in a draught of mustard or tent.

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

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

2. Let her use pollypodium 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, toast it and having bruised it all together, apply it to the fundament.

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

5. 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 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, betony, savory, featherfew, centaury, juniper berries, peony roots.

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

3. Gentian roots beaten into a powder, and a drachm of it taken every morning in wine, is an extraordinary remedy.

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

5. Take twelve piony seeds, and beat them into a very fine powder, and let her drink them in a draught of hot carduus posset, and let her sweat after. And if this last medicine dont 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 menses is another accident incidental to child bed women.

1. Take shepherd's purse either boiled in any convenient liquor or dried and beaten into a powder, and it will be an admirable 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 into powder, and a drachm of them taken every morning in a spoonful of red wine, or in the 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 part of the womb, are often occasioned by the violent distension and separation of the four caruncles in woman's labor. For the healing whereof,

As soon as the woman is laid, if there be only simple contusions and excoriations, 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's wort twice or thrice a

day, also, some foment the parts with barley water and honey of roses, to cleanse them from the excrements which pass. When the woman makes water, 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 those great commotions her body suffered during her labor, which affected all the parts, and it is then mixed with many other humors. Now this clotting of milk does, for the most part, proceed from the breasts not being fully drawn, and that either because she hath too much milk, and that the infant is too small and weak to suck 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 looseth the sweetness and the 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 as we see runnet put into ordinary milk turns it into curds. This curdling of the milk may be also caused by having taken a great cold, and not keeping the breasts covered.

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

But if the case be such that the woman neither can nor will be a nurse, it is then necessary to empty the body by bleeding in the arm; besides drawing down the humors, 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 use the following liniment.

A Liniment to scatter and dissipate the milk.

That the milk flowing back to the breasts may without offence be dissipated, use this ointment: "Take pure wax two ounces, linseed oil half a pound, when the wax is melted, let the liniment be made wherein linen cloths must be dipped and laid upon the breast; and when it shall be dispersed, 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 who cannot nurse their own children; but if a swelling in the breasts of those who give suck, arises from abundance of milk, and threatens an inflammation, 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 shown how the lying in woman should be ordered, it is now high time to take care of the infant, to whom the first service that should be performed for it, is the cutting of the navel string of which I have spoken at large before.

SECTION I.

What is to be done to the new born infant, after cutting the navel string.

When the child's navel string has been cut according to the rules before prescribed, let the midwife cleanse it from the excrements and filth it brings into the world with it, of which some are within the body as the urine in the bladder, and the excrement found in the guts; and others without, which are thick, whitish and clammy, proceeding from the slimeness of the waters; there are children sometimes so covered over with this, that one would say they are 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 cods or privities; which parts must be gently cleansed with a linen rag or soft sponge dipped in this lukewarm wine. If this clammy or vicious excrement stick so close that it will not be easily washed off from these places it may be fetched off with the 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 cleaned 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, whether there be any bruise or tumor on the head, whether the mould be not overshotten; also whether the scrotum, if a boy, be not blown up and swelled; and in short whether it has suffered any violence in any part of its body, and whether all its parts be well and duly shaped, that suitable remedies may be applied, if any thing be found not right. Nor is it enough that all be right without, and the outside of the body 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 conduit of the urine and the 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,

males and 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 the excrements, but not so soon as the urine. If the infant does not ordure the first day, then put up into 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 to 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 in swathing cloths, and when she dresses the head, let her put small rags behind the ears to dry up the filth that engenders there, and also in the folds of the armpits and groins, and to swathe it, having wrapped it up warm in bed blankets; only take care that they swathe not the child too straight, especially about the breast and stomach, that it may breath 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; let the head be kept steady and strait, with a stay fastened on each side of the blankets and then wrap the child up in mantles and blankets to keep it warm. This swathing of the infant is very necessary, to give its body a straight figure which is most decent and proper for a man, and to accustom him to keep upon his feet, and not walk upon all four as most other animals do.

CHAP. IX.

New born children are subject to so many distempers, that daily experience shews us there are not above half the children that are born who live till they are three years old; which is occasioned by the tenderness of their bodies, and feebleness of their age which binders them from expressing the incommodities they labor under, any otherways than by their cries. The business of this chapter therefore will be to discover the indispositions to which they are subject with the remedies proper for them.

SECTION I.

Of gripes and Pains in the bellies of young Children.

This I mention 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 therewith that they cry night and day, and at last die of it. This comes, for the most part, from the sudden change of their nourishment, for having always received

it from the umbilical vessels whilst in their mother's womb, they come to change, on a sudden, not only the manner of receiving it but the nature and quality of it, as soon as they are born, for instead of purified blood only, conveyed to them by means of the umbilical vein, they are now obliged to be nourished with their mother's breastmilk, which they suck with their mouths, and from which are engendered many excrements causing gripes and pains, and that not only because it is so pure as the blood with which it was nourished in the womb, but because the stomach and intestines cannot yet make a digestion. It is also caused sometimes by a tough phlegm, and sometimes by worms; for physicians affirm, that worms have been bred in children even in their mother's belly.

The remedy therefore must be suited to the cause; if it proceed from the too sudden changes of nourishment, the remedy must be to forbear giving the child suck for some time, lest the milk be mixed with phlegm; 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 for a small cataplasm, the powder of rue and wormwood, coliquintida, aloes, 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 purges new born babes from green cholor and stinking phlegm, and if it be given with sugar pap it always the griping pains of the belly; also annoint the belly with oil of dill, or plitory stamped with oil of camomile to the belly.

SECTION II.

Of Weakness in new born Infants.

Weakness is an accident that many children bring into the world along with them, and is often occasioned by the labor 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 signs of life is attended with so much weakness, that it looks like a return from death and that they are still upon the borders of that kingdom.

In this case the best way to help the infant is to lay him speedily in a warm bed and blankets, and carry him to the fire, and then let the midwife sup up a little wine, and spout it into his mouth, repeating it often if there be occasion. Let her apply linen to the breast and belly, dipped in wine, and then let the face be uncovered, that he may breath 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 chafe every part of his body well with warm clothes, to bring back

the blood and spirits, which being retired inward through a 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, he will cry stronger and stronger.

SECTION III.

Of the fundament being closed up in a new born infant.

Another effect that new born infants are liable to, is to have their fundament closed up, by means whereof they can neither evacuate the new excrements engendered by the milk they suck, nor that which was amassed in their intestines, whilst in their mother's belly, which is certainly mortal without a speedy remedy. There have been some female children who have had their fundament quite closed and yet have voided the excrements of the guts by means of 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 notice that the fundament is closed two ways; either by a single skin, thro' which one may discover some black and blue marks, proceeding from the excrements retained, which one of 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 without by which its true situation may be known. When there is nothing but the single skin which makes the closure, the operation is very easy, and the child may do very well; for then an apertion 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 afterwards may not grow together, taking great care not to prejudice the sphincter or muscle at 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 Pomphelix observing to cleanse the infant of his excrements and dry it again as soon and as often as he evacuates them that so the apertion may be prevented from turning it to 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 so much the more difficult; and when it is done, the danger is much more of the infant's escaping it. And then if it be a female and that sends forth its excrements, by the way I have mentioned before it is better not to meddle than by endeavoring to rem-

edy an inconvenience to run an extreme hazard of the infant's death. But when there is no vent to the excrements without which death is unavoidable there 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 forwards, that it may be open enough to give free vent to the matters there contained, being especially careful of the sphincter; after which, let the wound be dressed according to the method directed.

SECTION IV.

Of the Thrush or Ulcer 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 humors 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 arise from thence biting vapours, which form 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 the putrefaction is easily augmented, and for that, the remedies applied cannot lodge there being soon washed away by spittle. But if they arise from too hot a quality in the nurse's milk, care must be taken to temper and cool, prescribing her cool diet bleeding and purging her also if there be occasion.

Take lentilies husked, powder them and lay them upon the child's gums; or take mellidium in flower, 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 them with a little verjuice or juice of lemons, as well to loosen and cleanse the vicious humors 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 the means of a small fine rag fastened to the end of a little stick, and dipped therein, wherewith 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 be also kept open, that the humors being carried to the lower parts, the vapors 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 do their work speedily, that the evil qualities that cause them being thereby corrected, their malignity may be prevented; and in this case touch the ulcers with plaintain waters sharpened with the spirits of vitriol, for the remedy must be made sharp, according to the malignity of the distemper. It will be unnecessary to purge these

ill humors out of the whole habit of the child, by giving half an ounce succory with rheubarb.

SECTION V.

Of pain in the ears, inflammation, moisture, &c.

The brain in infants is very moist and many excrements which nature cannot send out at its proper passages; they get often to the ears, and there cause pains, flux of blood, with inflammation, and matter with pain; and in children it is hard to be known, having no other way to make it known than by constant crying; you will also perceive them ready to feel of their ears themselves, but will not let others touch them if they can help it; and sometimes you may perceive the parts about the ears to be very red. These pains, if let alone are of dangerous consequence, because they bring forth watching and epilepsy, for the moisture breeds worms there, and fouls the spongy bones, and by degrees incurable deafness.

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

SECTION VI.

Of redness und inflammation of the buttocks, groin and thighs of an Infant.

If there be not great care taken to change and wash the child's beds as soon as they are fouled with the excrements, and to keep the child very clean, their 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 follow 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 dry, clean and warm beds and clouts, as often and soon as it has fouled and wet them, either by its urine or excrements, it will be sufficient, and as to the second the taking off the sharpness of the child's urine that must be done by the nurse's keeping up a cooling 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 part 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 lukewarm milk. The powder of a post 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 Unguentum, 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 vomitings 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: for the stomach, not used to meat and milk being taken too much, 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 annatropy or consumption for want of nourishment.

To remedy this, if 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 shown before; cleanse the child with honey of roses, and strengthen its stomach with syrup of milk and quinces made into an electuary. If the humor be hot and sharp, give the syrup of pomegranates, currants and coral; and apply to the belly the plaster of bread, the stomach cernte, or bread dipped in hot wine: or take oil of mastic, quinces, mint, wormwood, each half an ounce; of nutmegs by expressions, half a drachm, chemical oil of mint three drops. Coral hath an occult principle 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 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, at last 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 with that which makes the eye move. In the breeding of their teeth first they feel an itching in their gums when 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 their 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 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 much hotter, and that they are much changed, crying every moment, and cannot sleep, or but very little at a time, the fever that follows, breeding of teeth comes from choleric humors, inflamed by watching, pain and heat. And the longer teeth are breeding, the more dangerous it is, so that many in the 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, i. e. the preventing of 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 humor from falling too much upon the inflamed gums, let the child's belly be kept always loose by gentle clysters, if it be bound: though often times 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.

As to the other, which is to assist in cutting of 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, to let the child have a virgin wax candle to chew upon; or anoint the gums with the mucilage of quince made with mallows water, or with the brains of a hare; also foment the cheeks with the decoction of Althea, and camomile flower and dill, or with the juice of mallows and fresh butter. If the gums are inflamed, add juice of 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 not extraordinary violent, such are in a better state of health than those that are bound. This flux, if violent, proceeds from divers causes; as 1st. From breeding teeth, and is then commonly attended with a fever, in which the concoction is hindereu: and the nourishment corrupted. 2. From watching.

3. From pain. 4. From stirring of the humors 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 teeth it is easily known, for the signs in breeding of teeth will discover it. If it be from external cold, there are signs of other causes. If from a humor flowing from the head, there are signs of a catarrh, and the excrements are frothy. If crude and raw humors are voided, there is wind, belching, and phlegmatic excrements. If they be yellow, green and stink, the flux is from a hot and sharp humor. It is best in 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 a fever, it is very bad.

The remedy in this case has 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 a hard concoction. If the child suck not, remove the flux with purges, such as leave a blooding quality behind them; as syrup of honey, of 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 quinces, myrtles, coral, mastic, hart's horn, red roses; or powder of myrtles, with a little Sanguis Draconis. Also anoint with oil of roses, myrtles, mastic, each two drachms, with oil of myrtles and wax, make an ointment. Or take red rose, moule, each a handful, cypress roots two drachms; make a bag, boil 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 mastic, and the quinces, with mint water. Use outwardly, mint, mastic cummin; or, take rose seeds an ounce, cummin and annisseed, each two drachms; with oil of mastic, 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 humors are bred in the brain that cause it, either from the parents, or from vapors or bad humors, that twitch the membranes of the brain; it is also sometimes caused from other distempers, and from bad diet; likewise the tooth ache, when the brain consents, causes it and so does a sudden fright. As to the distemper itself, it is manifest, and well enough known 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, 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, misleote, of the oak, elk's hoofs, mans skull, amber, each a scruple, musk two grains; make a powder. The best part of the cure is taking care of the nurses diet, which must not be disorderly by any means. If it be from corrupt milk, provoke a vomit, 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 the worms. If there be a fever, respect that also, and give coral smaraged, and elks hoof. In the five epileptic water, as lavender water and rub with oil of amber, or hang a piony root, elks hoof smaraged coral, about 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 the remedy whereof, in the fit wash the body, especially the back bone, with the decoction of Althea, lilly root piony and camomile flowers, and anoint it with man's and goose grease, oil of worms, oris, lilies, turpentine, mastic, storax, and calamint. The sunflower is also very good boiled in water to wash a child.

EXPERIENCED MIDWIFE.

PART II.

Containing proper and safe Remedies for curing of all those distempers that are peculiar to the Female sex, and especially those that have obstructions to the bearing of children.

Having finished the first part of this book, and I hope therein amply made good my promise to the reader, I am now come to treat of the distempers peculiar to the female sex; in which it is not my design to enlarge, or 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 that keep them from being so. For each of which distempers I have laid down such safe and proper 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 more diametrically opposed to 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; against this second part: for though I have promised to treat here in 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, that without treating of it so, I shall not be able to make good the old proverb, of setting the saddle on 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 or disease, or 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 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 other's constitution and complexion, if they design to have children. If their complexions, and constitutions be alike, they are not fit to come together, for the discordant nature makes the only harmony in the work of generation.

Another natural cause of barrenness is the want of love between the man and wife. Love is that vital principle that ought to inspire 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 evidently evinced in that there never follows conception on a rape; therefore if men and women design 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 expectation.

A third cause of natural barrenness is virgins letting blood in the arm before their natural courses come down, which is usually in the fourteenth or fifteenth year of their age; sometimes perhaps before the thirteenth, but never before the twelfth. And because usually they are out of order and indisposed before the purgation come down, their parents run to the doctor to know what is the matter, and he straightway opens a vein in the arm, as if it was fulness of blood was the cause of offending, and 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, and he directly uses the same remedy; and by these means the blood is diverted from its proper channel that it comes not down the womb as in another woman; and so the womb dries up, and the woman is forever barren. The way to prevent this is to let no virgin blood in the arms before her courses come down well; but if there be occasion, let her blood 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 in copulation, if persons perform not that act with all the heat and ardor that nature requires, they may as well let it alone, and expect to have children without it, for frigidity and boldness never produce 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 since (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 the law, and frustrates the end of our creation; and that it is a great affliction to divers persons to be without children, and often causes man and wife to have hard thoughts of one 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 this first, that when people have no 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 unto himself) to give them any; of which we have divers instances in history. And though the Almighty in the productions of nature, works by natural means, yet where he withholds his blessing, natural means are ineffectual; for it is the blessings, which is the power and energy by which nature brings forth her production.

SECTION II.

Causes and signs of insufficiency in men.

One cause may be in 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 strong enough erected to inject seed into the womb; or 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 drawn up within the belly, and not appearing outwardly, these are signs of insufficiency, and cause 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 being defective, and on the other side too much leanness, or continual wasting of consumption of body destroys the seed; nature turning all the matter and substance thereof into nutriment of 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 the seed, then do the stones draw the moist humors 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 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 body is thereby deprived of the best and purest blood, and of the spirit, insomuch that many who have been too much addicted to that pleasure, have killed themselves in the very act, and therefore it is not wonder if such unconcocted and undigested seed be unfit for generation.

Gluttony drunkenness and the other excesses do also much hinder men from fruitfulness and make them unfit for generation.

But among other causes of barrenness in men this also is one that makes them barren and almost the nature of eunuchs and that is the incision or the cutting of their veins behind their ears which in case of distempers is often times 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 come thither very crude and raw. And thus much for the signs and causes of barrenness in men.

SECTION III.

Causes and signs of insufficiency or barrenness in women.

Although there are many causes of barrenness of women yet the chief and principal are internal respecting either the privy parts, the womb or menstrous blood.

Therefore Hipocrates saith (speaking of either 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 colored; black and wane; those that have their veins conspicuous are more apt to conceive than others; but to the very flesh is evil; to have great swelled breasts is good.

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

Then the womb or place of conception is to be considered; it ought to be clean sound dry and soft, not retracted or drawn up; not proud 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 privities and the womb; which parts are shut and enclosed either by nature or against nature; and from hence such women are called imperfores; and in some the mouth of their 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 it brings death.

And all these *Ætius* 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 among 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 in 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 cold extinguishes the heat of the 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 the seed perisheth for want of nourishment. Immoderate heat of the womb is also a cause of barrenness for it scorseth up the seed as corn sown in drought of summer; for immoderate heat hurts all the parts of the body so as no conception can live in the woman. And when unnatural labors are engendered as too much phlegm tympanies wind water worms or any such evil humors abounding contrary to nature it causes barrenness; as does all the terms coming down in due order as I have already said.

A woman may have other accidental causes of barrenness (at least such as may hinder her conception) as sudden frights, anger grief, perturbation of the mind; too violent exercise as leaping dancing running 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 overmuch 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 her having her terms very little and the color 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 defect is in the man or in the woman, sprinkle the man's urine upon a lettuce leaf, and the woman's upon another, and that which dries away first is unfruitful. Also take five wheaten corns, and seven beans, put them into an earthen pot, and let the party make water therein, if these begin to sprout, after standing seven days, then the party is fruitful, if not, they are barren whether it be man or woman. This is a certain sign.

Some make this experiment of a woman's fruitfulness; they take myrrh, red storax, and some odoriferous things and make a perfume, which the woman is to receive into the neck of the womb through a funnel; and if the woman feels the smoke ascend, through her body to the nose, then she is fruitful otherwise not. Some also take garlic and beat it, and cause the woman to lie 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 in the urine of the woman, for the space of twenty four hours, and then take it out, and set each by itself, in a flower pot or some other thing: water the man's every morning with his own urine, and the woman's with hers, and that which grows first, is the most fruitful; and if one grow 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 proceeds from stoppage of the menses, let the woman sweat, for that opens the parts; and the best way to sweat it 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 therein. To which add also a handful of vervian, 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 calac mint, pennyroyal, thyme, betony, dittany, feverfew, burnet, 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 drank for her ordinary drink.

Take one part of the gentia root, two parts of centory, 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 drachm of centory, and half a drachm of gentian roots bruised, boiled in posset drink, and drink a draught of it at night going to bed. Seed of wild navew beaten to powder, and a drachm of it taken in the morning in white wine, also is very good; but if it does not do, you must be let blood in the legs. And be sure you administer your medicines a little before the full of the moon, or between a new and full moon, by no means in the wane of the moon; if you do you will find them ineffectual.

If barrenness proceed from the overflowing of the menstrues, then strengthen the womb, as you were taught, and afterwards anoint the reins of the back with oil of roses, oil of myrtle, oil of quinces every night, and then wrap a piece of white baize 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 blown wound wort, of each a handful; bruise them well, and boil them in ale, and drink a good draught of it now and then. Or take cinnamon, cassia lignea, opium of each two drachms myrrh, white pepper, galbanum, of each one drachm; dissolve the gum and opium in white wine and beat the rest into powder; then make it into pills, by mixing them together exactly, and let the patient take two pills every night going to bed, but let not the pills exceed fifteen grains.

If barrenness proceed from a flux of the womb, the cure must be according to the cause producing it, 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 color of what is voided shews what humor 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, and

if a vein were opened, some corrosion or gnawing of the womb is to be feared. All these are known by these signs.

The place of conception is continually moist with the humors, the face is ill colored, the party loathes meat, and breathes with difficulty, the eyes are much swollen, which is sometimes without pain. If the offending humor be pure blood then you must let blood in the arm, and the cephalic vein is the fittest to draw back the blood, and then let juice of plaintain and comfrey be injected into the womb. If phlegm be the cause, let cinnamon be used in all her meats and drinks, and let her take a little Venice treacle or mithridate every morning. Let her boil mugwort, featherfew, and vervian in all her broths. Also half a drachm of myrrh taken every morning is an excellent remedy against this malady. If choler be the cause, let her take burage, buglass and roses, endive and succory roots, lettuce and white poppy seed, each a handful; boil these in white wine till one half be wasted; let her drink half a pint every morning, to which add syrup of peach flowers, and syrup of chicony, of each an ounce with a little r̄heubarb, and this will gently purge her. If it proceed from putrefied blood, let her be bled in the foot, and then strengthen the womb as I have directed in stopping of the menses.

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, galbum, storax calamitis, wood of aloe and other things of that nature; and let her lay stinking things to the womb, such as assafoetida, oil of amber, or the smoke of her own hair burnt; for this is a certain truth, that the womb flies from all stinking, and cleaves to all sweet things. But the most infallible cure is this, take common burdock leaves (which you may keep dry all the year) apply these leaves 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. But the seed beaten into powder draws the womb which way you please according as it is applied.

If barrenness proceed from a hot cause, let the party take whey and clarify it, then boil plaintain leaves and roots in it and drink it in her ordinary drink. Let her also inject the juice of plaintain into the womb with a syringe; if it be in winter, when you cannot get the juice, make a strong decoction of the leaves and roots in water, and inject that up with a syringe; but let it be but blood warm, and you will find this medicine of great efficacy. And further take often conserve of roses, cold lozenges made tragacanth, the confectiōns of traisantali, frequently smell camphor, 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 use this purge. Take electuarum de epithimo de succo rosarum, of each two drachms 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 lilly water four ounces, mandrogry 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.

Excellent remedies against Barrenness, and to cause fruitfulness.

Take broom flowers, parsley seed, cummin, mugwort, featherfew, of each half a scruple; aloes half an ounce; India salt, saffron, of each half a dram; beat and mix them well together, and put it to five ounces of featherfew water, warm, stop it up 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 day before supper.

For purging medicine against barrenness; take conserve of benedicta lax, one quarter of an ounce; dipsisillo, three drams, electuary de suco rosatum, one dram; mix them together with featherfew water, and drink it in the morning. About three days after the patient hath taken a purge, let her blood four or five ounces in the median or common black vein in the right foot; and then take, for five days one after another filed ivory, a dram and a half in featherfew water; and during the time, let her sit in the following bath an hour together, morning and night. Take wild yellow rapes, daucas, balsam wood and fruit, ashleys, of each two handfuls; red and white bhen, broom flowers, of each a handful; musk three grains, amber saffron, each one scruple; boil all in water sufficiently; but the musk saffron amber, and broom flowers must be put into the decoction after it is boiled and strained.

A confection very good against barrenness. Take pistachi, piugles, eringos, of each half an ounce, saffron one dram, lignum aloes, galsingade, mace balm flowers, red and white bhen, each four scruples, shaven ivory, cassia bark each to scruples; syrup of confected ginger twelve ounces, white sugar two ounces; decoct all of these well together, in twelve ounces of balm water, and stir it well together; then put to it musk and amber, each a scruple. Take thereof the quantity of a 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 conclude the 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 sails stincus, and long pepper prepared in wine. But avoid sour, sharp, doughy and slimy meats, long sleep after meat with surfeiting and drunkenness, and as much as they can keep themselves from sorrow.

These things following increase the natural seed and stir up venery and recovers the seed again when it is lost, viz. eggs, milk, rice boiled in milk, sparrow brains, flesh, bones and all; the bones and pizzles of bulls, bucks, rams and bears: also cock stones, lamb stones, partridges, quails and pheasants eggs, for this is an undeniable aphorism, that whatever any creature is addicted unto, they move or excite the woman or man that eats them to the like: and therefore partridges quails, sparrows, &c. being 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, 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 make them fruitful that eat them; as crabs, lobsters, prawns pigeons &c. The stones of a fox dried and beaten to a powder and a dram taken in the morning in sheeps milk; and the stones of a boar taken in the 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 near as they can: for *sine cerere et libero friguit venus* an old proverb which is, without 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, annis seeds, also onions stewed, garlicks, leeks yellow rapes fresh bugwort roots oringo roots ginger confected &c. Of fruits; hazle nuts cypress nuts pistachi almonds and marmpana made thereof. Spices good to increase seed, are cinnamon cardanum galengal long pepper cloves ginger saffron assafoetida take 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, let him to strengthen it use the following ointments. Take wax oil of bevercod marjorum gentle add oil of coflus of each a like quantity mix it into an ointment, and put to it a little musk and with it anoint the yards cods, &c. Take of house emmets three drams oil of white sesanum oil of lilies of each an ounce: pound and bruise the ants and put them to the oil and let them stand in the sun six days, then strain out the oil and add to it uphorbium one scruple pepper and rue of each one dram; mustard seed half drachm. Set this again all together in the sun two or three days then anoint the instruments of generation therewith. So much for this chapter.

CHAP. II.

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 sown; it is therefore not without reason that I intend in this chapter to set the several distempers to which the womb is obnoxious, and proper and safe remedies against them.

SECTION I.

Of the hot distempers of the womb.

This distemper consists in the excess of heat; for the heat of the womb is necessary for conception, but if it be too much it nourisheth not the seed, but disperseth its heat, and hinders conception; this preternatural heat is, sometimes from the birth, and makes them barren; but if it be accidental it is from hot causes that bring the heat and the blood to the womb it arises from medicines, and from too much hot meat drinks and exercise. Those that are troubled with this distemper, have but few courses, and those yellow black burnt or sharp, have hair at times in their privities; they are very prone to lusts and are subject to the headache, and abound with choler. And when the 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 opened for the flux of the terms. Therefore inwardly use coolers, such as succory, endive, violets, water lilies sorrel, lettuce, sanders, and syrups, conserves made thereof. Also take conserve of succory, violets, water lilies, burrage each an ounce: conserves of roses half an ounce, diamargation frigid, diafrasontal, 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, gourd of 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 cold distempers of the womb.

This distemper is the reverse of the foregoing, and equally an enemy to generation, being caused by cold quality abounding to excess and proceed from too cold air, rest idleness and cooling medicines. It may be known by an aversion to lechery; 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 galangal cinnamon, nutmegs, mace, cloves each two drachms; ginger cubebs zedory cardanum, each an ounce; grains of Paradise long pepper each half an ounce; beat them and set 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 distil them. Or you may use this; Take cinnamon, nutmegs, cloves, mace, ginger, cubebs, cardamums, grains of Paradise, each an ounce and a half, galengal six drachms of long pepper, half an ounce zedony five drachms 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 then 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 lillies rue angelica, bays cinnamon cloves, mace, and nutmeg. Let her diet and air be warm, her meat of easy concoction seasoned with annisseed fennel and thyme and let her avoid raw fruits and milk diets.

SECTION III.

Of the inflammation of the Womb.

The inflammation of the womb is the stretching of it be wind called by some the wind mole the wind proceeding from a cold matter whether thick or thin contained in the veins of the womb by which the weak heat thereof is overcome and it 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 lying in women are exposed to it. The wind is contained either in the cavity of the vessels of the womb or between the tunicles and it may be known by the 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 conception, let them observe the signs of women with child laid down in the first part of the book; and if one sign be wanting, that may suspect it to be an inflammation, of which this is a farther sign, that in conception the swelling still increaseth also, if you strike upon the belly in an inflation, there will be a noise, but not so in the case there be conception. It also differs from a mole, because in that there is a weight and hardness in the belly; and when they move from one side to another, they feel a weight moving, 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 womb is more pent up.

This distemper is neither of any 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 diaphonicon

with a little castor and sharp clysters that expel wind. If this distemper happens 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 the child bearing and her terms come down sufficiently, and that she has fulness of blood, let the *sephæna* vein be opened; after which let her take the following electuary; take conserve of betony, rosemary, of each an ounce and a half, candied eringoes, citron peels candied, each half an ounce, diachulum, galgenal, each a dram, oil of anniseed six drops, and with syrup of citrons make an electuary. For outward application make a bataplasm of rue, mugwort, camomile, dill, calimints, new pennyroyal; thyme, with oil of rue, kier, and camomile; and let the following clysters to expel wind be put into the womb: Take agnus, castus, rue calamint each an handful; anniseed, castus, cinnamon each two drams, boil them in wine to half a pint. She may likewise use sulphur, baths and spawn water, both inward and outward, because they expel wind.

SECTION IV.

Of the dropsy of the Womb.

This is another morbid effect of the womb, proceeding from water as before mentioned did from wind, by which the belly is so swelled, that it deceives many, causing them to think themselves with child, when indeed they are not. This is an unnatural swelling raised by the gathering together of waters, from moisture mixed with the terms, and 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. The signs of this distemper are the lower part of the belly, with the privities, puffed up and pained; the feet swell; the natural color of the face decays; the appetite is disparted; 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 part 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, linseed, camomile and althæ, then let the humour be prepared with syrup of stoeshus, calament, mugwort, both sorts, with the distilled waters, or decoction of nodder, marjorum, sage, orange, speerage pennyroyal and betony; and let her purge with *seana* argarie, rhubarb and cliterian. Take calamints, mugwort lovage roots, pennyroyal each an handful; *savilia* pugil; madler root, angelica, of each an ounce; boil them in water, and

sweeten with sugar. Or if she like it better make broth of the same. Also take specirsm, diambec, diamesciduleis diacalamenti diacinnimoni diacini, troce de myrrh of each two drams, sugar one pound; with betony 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 there with oil of Iroos. Let the lower parts of the belly be covered with a plaister of bayberries or with a cataplasm made of cummin, camomile and briony roots, adding thereto cow's and goats dung. For injection into the womb take asarum roots three drams, pennyroyal calamint each half a handful savin a pugil, machoacan a dram; anniseed, cummin each half a dram. Boil and take six ounces strained with oil of edder and orris, each an ounce; and inject it into the womb by a metrenchita; and let the air be hot and dry. Moderate exercise may be allowed, but much sleep is forbidden. She may eat the flesh of patridges, larks, chickens, mountain birds, hares, comes, &c. and drink wine mixed with a little water.

SECTION V.

Of the inflammation of the womb.

This is a tumor 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, purifies 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 tumors with heat and pain in the regions 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 diaphragma, 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 humors flowing to the womb be

repelled; for the effecting of which after the belly hath been opened by the 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 if it be from the terms stopt, you may. The opinion of Galen is that the blood may be diverted by bleeding in the arm or cupping the breasts and that it may be by the opening an ancle vein and cupping upon the hips. Then purge gently with cassia rhubarb senna and mirobolans half an ounce, barley water a sufficient quantity; make a decoction, dissolve it in syrup of succory, with rheubarb two ounces, pulp of cassia half an ounce oil of anniseed two drops and make a potion. At the beginning of the disease annoint the privities and reins with oil of roses and quinces. Make plaisters of plantain linseed barley meal mellilot fanugreek and white of eggs; and if the pain be vehement add a little opium. For repellers and aodynes take Venus navel purslain lettuce houseleek vine leaves each a handful boil them in wine; 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 navel and plantain, each half an ounce; take of fenugreek mallow roots decocted figs linseed barley meal dove's dung turpentine each three drams; deer's suet half a dram opium half a scruple and with wax make a plaster. After it is ripe break it by the motion of the body coughing sueezing or else by cupping and pessaries; as take rue, half an handful figs an ounce pigeons dung, orris root, 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, orris, birthwort, myrrh, turpentine and alum, take new milk boiled a pint, 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 cold seeds, whey and syrup of violets. Let her drink barley water, or clarified whey, and her meat be chickens and chicken bread, boiled with endive, succory sorrel burgless and malows.

SECTION VI.

Of schirosity and Hardness of the Womb.

A swelling in the womb neglected, or not perfectly cured often produces a schirosity 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 earthly humour, (as unnatural 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 of pain. This distemper is most usual in women of a melancholy constitution, and also such as have been cleansed from their menses, or from the reten-

tion of the lochia, or after purging; it is likewise sometimes caused by eating corrupt meat; or those inordinate longings called pica, to which breeding women are often subject; and lastly, it may also proceed from obstruction and ulcers 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 humours 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 schirosity 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 because the native heat in those parts being almost smothered, it is hard to be restored again.

For the cure of this, first prepare the humor with syrup of burrage, succory, epicymum, and clarified whey; which being done, take of these pills following, according to the strength of the patient: take hieca, pica six drachms and a half, agaric; lapislazuli, ablutisalis Indœ coloquintida, of each one drachm and a hal; mix them and make pills. The body being purged, proceed to mollify the hardness as followeth; anoint the privities and the neck of the womb with the following ointment; take oil of capers, lillies, sweet almonds jessamin, each an ounce; mucilage fenugreek, althæ, ointment of althæ, of each six drachms: amoniacum dissolved in wine an ounce, which with wax make into an ointment. Then apply below the navel diochylon fernelli; and make emulsions of figs, mugwort, mallows, pennyroyal, althæ, fennel roots, mellilot, fenugreek, and linseed boiled in water; but for injection, take bdellium dissolved in wine, oil of sweet almonds, lillies, cammomeile each two ounces marrow of veval bones and hen's grease each an ounce, with the yolk of an egg. The air must be temperate; and as for her diet, let her abstain from all gross vicious and salt meats, such as oil fish cheese &c.

SECTION VII.

Of the straightness of the Womb and its Vessels.

This being seated in the vessls of the womb and neck thereof, is an obstruction to the bearing of children, as it hinders both the flowing of the menses and conception. The cause of this straightness is thick and tough humors, that stop the mouth of the veins and arteries; these humours are bred of gross or too much nourishment; when the heat of the womb is so weak that it cannot attenuate the humor which by reason thereof either flow from the whole body, or are gathered into the womb. Now, the vessels are made closer or strait several ways; sometimes by inflammation, schirrous or other tumors; sometimes by compressions or by a scar or flesh, or membrane that grows after the wound. The signs by which this is

known, are 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 by humors, it is hard to be cured; if it is only from the disorderly use of astringents, it is more curable; if it be from a schirrous, or other tumors 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 drachm; rosemary pennyroyal calamint betony flowers each an ounce; cestus cinnamon galergal each half an ounce; saffron half a drachm, with wine. Or take asparagus roots parsley roots each an ounce; pennyroyal calamints each a handful; wall flowers dill flowers each two pugils; boil strain and add syrup of mugwort an ounce and a half. For a fomentation take pennyroyal mercury calamint marjorum mugwort each two handfuls; sage rosemary bays cammomile flowers each an handful; boil them in water and foment the groin and the 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 hindrance to conception. Sometimes the womb falleth to the middle of the thighs nay almost to the knees, and it 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 peritoneum and two below that are nervous round and hollow: it is also bound by the great vessels by veins and arteries and to the back by nerves. Now the place is changed when it is drawn away or when the ligaments are loose and it falls down by its own weight. It is drawn on one side when the menses 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 and the 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 or connection of the fibrous neck and the parts adjacent and that 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

tumor within the privities it is nothing else but a descent of the womb: but if there be a tumor like a goose egg and a hole at the bottom there is first a great pain in the parts to which the womb is fastened as the loins the bottom of the belly and the ossacrum which proceeds from the breaking or stretching of the ligaments but a little after the pain abates; and here is an impediment in walking; and sometimes blood comes from the breach of the vessels and the excrements and urine are stopt and then a fever and convulsion ensueth which often times proves mortal, especially if it hapens to women with child.

For the cure of this distemper first put it up before the air alter it or if it be swollen or inflamed; and thereby first of all give a clyster to remove the excrements; then lay her on her back with her legs abroad and thighs lifted up and head down; then take the tumor 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 fenugreek cammomile flowers bayberries 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 red hot iron before it and making a show as if you intended to burn it; but first sprinkle upon it the powder of mastic frankincense and the like. Take frankincense mastic two drachms; sarcocol steeped in milk a drachm; mummy pomegranate flower sanguis draconis each half a drachm; 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 the juice of ascacia, with powder of fanguius galbanum bdellium. Also apply a cupping glass with great flame under the navel or paps or to both kidneys and apply this plaster to the back. Take opponix two ounces storax liquid half an ounce, mastich frankincense pitch bole each two drachms then with wax make a plaster; or laudunum a drachm wood aloes, cloves spikes each a drachm; ash colored ambergrease four grains musk half a scruple; make two round plaisters to be laid on each side of the navel; make a fume of snail skin salted or of garlic and let it be taken in the funnel. Use also astringent fomentations of bramble leaves plaintain hosetail myrtle each two handfuls wormseed two pugils pomegranate flowers half an ounce, boil them in wine and water. For an injection take comfrey roots an ounce rupture wort two drachms, yarrow, 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 drachm myrrh half a drachm: make a powder for two doses and give it with sharp wine. Or take zedoary parsnip seed crab eyes prepared each a drachm; nutmeg half a drachm and give a drachm 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 rollors 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 that 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 such as are of drying astringent and glewing qualities such as rice starch quinces pears and green cheese; but let summer fruits be avoided, and let her wine be astringent and red.

CHAPTER III.

Of 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 woman 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 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: which is only to be understood with respect to the redundancy thereof being an excrement 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 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 ailment of the fleshy parts. If any ask if the menses be not of a hurtful quality how can it have such venomous effects, as if it fall upon trees and herbs, it makes 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 the rigidity be the cause why women cannot digest all their last nourishment, and by consequence have those monthly purgations how comes it to pass may some say, that they are of so cold a constitution more than men? Of this I have already spoken in the chapter of barrenness; it is chiefly thus. The author of our being has laid an injunction upon men and women to propagate their kind, and hath also so 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,) therefore the man is hot and dry and the woman cold and moist. It is therefore necessary that the woman should be of a cold constitution because in her is re-

quired a redundancy of matter for the nourishment of 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 unnaturally render the provision of the infant to be the destruction of the parent. Now these monthly purgations usually begin about the 14th year, and continue till the 45th or 50th year; yet not so constantly, but that oftentimes there happens a suppression, which is sometimes natural and sometimes morbid. When they are naturally suppress, it is either in breeding women, or such as give suck; but that which is morbid must be the subject of the following section.

SECTION. II.

Of the suppression of the Monthly Courses.

The suppression of the terms which is morbid, is an interception of that accustomed evacuation of blood which should come from the matrix every month, and which proceeds 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, thro' their heat and strength of nature digest and consume all their best nourishment; but women of this constitution are rather to be accounted anthropophageæ, that is women eaters, than women breeders because they consume one of the principles of generation which gives a being to the world, i. e. 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 a dysenteria, evacuations; chronicle and continued diseases. But secondly the matter may be vicious in quality, as if it be sanguineous, phlegmatical, melancholic; each of these if they offend in grossness, will cause an obstruction in the veins.

The womb may also be in fault divers ways: as by the narrowness of the veins and passages, by a posthumous, tumors, ulcers, and by overmuch cold or heat, the one vitiating the action, and the other consuming the matter; also by an evil composition of the uterine parts by the neck of the womb being turned aside; and sometimes, though but 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 labor, violent motion, whereby the matter is so consumed, and the body is so exhausted, that there is no redundant blood remaining to be expelled; whence 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 from 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 of the disease are

pains in the head, neck, back, and loins, with weariness of the whole body, but especially of the hips, and legs, by reason of a confinement which the womb hath in those parts; if the suppression proceeds from cold, it causeth a heavy sluggish disposition, a pale color, 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 taking it, it causeth the woman to feel a bearing pain in 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, epilepsies, apoplexies, frenzies, melancholy, passions, &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 phlethropic effect, it will therefore be best in the midst of the humor, two days before the wonted evacuation, to 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 humor must be prepared and made flexible with syrup of stœchus, horehound hyssop, betony, maidenhair, of each one handful, make a decoction and take thereof three ounces, of syrup of mugwort succory maiden hair, mix each half an ounce, and after she comes out of the bath, let her drink it off. Then purge pilld Agaric, Elephang, Coch; Fœdit Galen in this case commends Pilula de Aiera cum coloquintida; for as they are proper to purge the humor offending, so they open the passage of the womb. If the stomach be overcharged let her take a vomit, but let it be so prepared as to act both ways, lest the humors should be too much turned back, by working only upwards; to which end, take trochisk of agaria, two drachms, infuse them in three ounces of oximel, in which dissolve benedict, laxat, half an ounce, and of the electuary diasarum one scruple; and let her take it after the manner of a purge. When the humor 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; and with juice of smallage, after supper going to bed. Also, administer to the lower parts suffumigations of amber unctions injections and incisions; make suffumigations of amber, galbanum, melanthum, bayberries mugwort, cinnamon nutmegs cloves, &c. Make pessaries of figs and the leaves of mercury bruised, and rolled up in lint. Make injections of the decoction of mercury; betony origin, mugwort and figs and inject it into the womb by an instrument for that purpose. For unction, take ladant, oil of myrrh, of each two drachms; oil of lillies, almonds capers cammomile, of each half an ounce, and with wax make an

ungent with which let the place be anointed. Let the air be hot and dry, 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 sanguineous excrement proceeding from the womb and exceeding in time and quality. I call it sanguineous because there are two ways by which the blood flows forth, 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 hemorrhoides 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 humors this immoderate flux does sometimes unburden nature of her load and is not to be stopped 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 births, falls, &c. The internal cause may be three fold, 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 instruments, 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 the blood, whereby the passes are dilated, and the faculty weakened, that it cannot retain the blood; secondly by falls, blows, violent motions, breaking of a vein, &c.

This inordinate flux may be known by the appetite being decayed, the decoction depraved, and all the actions of the body weakened; the feet swelled, the color of the face changed, and a general feebleness possesseth the whole body. If it comes by the breaking of a vein in the body, is sometimes cold, the blood flows forth on heaps and that suddenly, with great pain; if it come 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 the blood she feels a great heat scalding the passage it differs from the other two in that it flows not so suddenly, nor so copiously as they do. If it be 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 color; if it be choleric, it will

be yellow, if melancholy black, if phlegmatic, waterish and whitish.

The cure of this consists in three particulars. 1st. In repelling and carrying back the blood. 2dly. In correcting and taking away the flexibility of the matter; and thirdly corroborating the vein 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 at once, but at several times, for thereby the spirits are less weakened, and the retraction so much greater. Apply the cupping glasses to the liver that the reversion may be in the fountain. To correct the flexibility of the matter, cathartics moderated with astringents may be used. If it be sharpness of blood, consider whether the corrosion be by salt phlegm, or adus choler; If by salt phlegm prepare with syrup of violets, wormwood, roses, citron peels, succory, &c. and then take this purgation; Mirobolans, chervel, half an ounce trochisks of agaric one dram with plantain water make a decoction, add thereto syr. rosardux three ounces and make a portion. If by a dust choler prepare the body with syrup of roses, myrtles, sorrel purslain mixed with water of plaintain, knotgrass and endive then purge with this potion: Take rinds of mirobolans, 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 half an ounce, syrup of roses one ounce and make a potion. If the blood be waterish and unconcocted, as it is hydropical bodies, and flows forth by reason of the tenury to draw off the water will be profitable, to which end purge with agaric elaterium and coloquintida. Sweating is also very proper in this case for by it the matter offending it is taken away, and the motion of the blood is carried to the outward parts.—To procure sweat, use cardanum water with mithridate or the decoction of gacium does also greatly provoke to sweat; and pills of sassaparilla, taken every night at going to bed, are worthily recommended. If the blood flows from the opening or breaking of a vein, without any evil quality of itself, then ought corroboratives to be applied, which is the thing to be done in this inordinate flux; bole armoniac 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 mastick two drams olibani tinct. de careble, of each one dram, balanstium one scruple, make a powder; with syrup of quinces make it into pills, and take always before meats.

SECTION IV.

Of Terms coming out of Order either before or after the usual Time.

Both these shew an ill constitution of body. Every thing is beautiful in its order, in nature as well as in morality, and if the or-

der of nature be broke, it shews the body to be out of order. Of each of these effects briefly.

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 increaseth 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 and flow sooner by reason of a fall or stroke, or some violent passion which the parties themselves can best relate. If it be from heat, thin and sharp humors, 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 the body. It is more troublesomethan dangerous but hinders conception and 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, for 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 causes are thickness of the blood and the smallness of its quantity with the straitness of the passage and weakness of the faculty either of these single, 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 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 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 larger diet and very little exercise. If the blood be thick and foul, let it be made thin and the humors mixed therewith be evacuated. It is good to purge after the courses have done flowing and to use calomels; and indeed the oftener she purge the better. She may also use fume and pessaries, applying cupping glasses without scarification to the inside of the thighs and 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 menstrous blood but accidentally many other excrements, which is a dilation of a variety of corrupt humors 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, both less in quantity and whiter and thicker in quality, and coming at a great distance; it is different also from those night pollutions, which are only in sleep and do proceed from the imagination of venery. The cause of this distemper is either promiscuously in the whole body, by a cacochymia, 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 those choleric superfluities which are engendered in the liver, and then the matter is yellow; sometimes in the spleen, not defeating 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 white, 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 into the liver, it might be converted into blood, for phlegm, in the ventricle is called nourishment half digested; being corrupted, although 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 color which it had in the ventricle. The cause also may be in the veins, being overheated whereby the spermatical 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 body shortness and stinking breath loathing of meat, pain in the head, swelling of the eyes, melancholy humidity, flowings from the womb, of divers colors as redish, black, green yellow white, it is known from the overflowing of the courses, in that it keeps no certain period and is of so many colors, all which do generate from blood.

For the cure of this, it must be by method adapted to the case; and as the causes are various so must be the cures.

If it be caused by the distillation from the brain, take syrup of betony, stechas and marjorum, purge with piloch; make napalie of the juice of sage hysop, betony, negella with one drop of oil of cloves, and a little silk cotton. Take elect. dinath aromant rosar, diambre, diamoschi, dulcis of each one dram, nutmegs half a dram at night going to bed.

If the matter flowing forth be redish open a vein in the arm if not apply ligatures to the arms and shoulders. Some have cured this distemper by rubbing the upper parts with crude honey; and so Galen says he cured the wife of Boetius.

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 pill deagaric, de harmodac, de hiera dyacolcoynthid foetida. Take of elect. aromot ros two drams, citron peels dried, nutmeg, long pepper of each one scruple, diagalinga one dram, fantah albia, ling aloes, of each half a scruple, sugar six ounces, with mint water make lozenges of it, and then 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 3 drams of the electuary of diarum. Some physicians also allow of the diuretical means, of opium, petroselinum, &c.

If the matter of the disease be melancholius prepare with syrup of maiden hair, ephithimum, polipody, burage bugloss, fumetory heart's, and syrup by santium, which must be made without vinegar, otherwise it will rather animate the disease, than strengthen nature, for melancholy is increased by the use of vinegar; and by Hipocrates, silvius and Aventinus, it is disallowed of as an enemy to the womb and therefore not to be used in uterin diseases.

Purges of melancholy are Pilulæ eumartæ pilulæ Indicæ pilulæ de lap. Lazuli diosena, and confection fiamech. Take stampd prunes two ounces senna one dram, epithimum pollypody; fumetory of each a dram and a half sour dates one ounce with endine water make a decoction, take of it four ounces, add unto it confections hamech three drams, manna three drams, or pilldæ indatum, phil, sætidarum agarici trochiscati of each one scruple, lapidiz, lazuti five grains, with syrup of erinthimum make pills and take one every week.

If the matter of the flux be choleric, prepare with syrup of endive violets of succory, roses and purge with miarbolans manna rheubarb cassia; take of rheubarb 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 spicerium discrintasod diatragacant frig diarrhod. Abbatis diaconh of each one 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 betony, featherfew, 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 the myrrh of featherfew mugwort nutmegs mace amber ligni aloes storax red roses of each an ounce with mucil-

lage of tragacanth make trochisks cast them on the coals and smother the womb therewith. Fomentation may be also made for the womb of red wine, in which has been decocted mastic, fine bol balutia red roses. Drying diet is best because this distemper usually abounds, with phlegmatic and crude humours. Inmoderate sleep is hurtful, but moderate exercise will do well.

Thus I have gone through the principle diseases 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 more general use, being willing to put into every one's power, that has occasion for it, to purchase this rich treasure at an easy rate.

EXHIBITION MUSEUM

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ARISTOTLE'S
BOOK OF PROBLEMS,

WITH OTHER

ASTRONOMERS,
ASTROLOGERS

PHILOSOPHERS,
PHYSICIANS, &c

Wherein are contained divers Questions and Answers touching the state of man's Body, together with the reason of divers wonders in the creation: the generation of Birds, Beasts, Fishes, and Insects; and many other problems on the most weighty matters, by way of Question and Answer

TO THE READER.

READER,

THESE PROBLEMS having been printed very often, and finding so general an acceptance, divers books have been hoisted into 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 hath imprinted his own image so lively, that no power whatsoever is able to blot it out; so his image and similitude is the soul and understanding. And notwithstanding all the perfections which man hath in himself, few or none take delight in such studies, or is careful to know the substance, state, condition, quality, or use of the parts of his own body, although he be the honor of nature, and more to be admired than the rarest wonder that ever happened. I have therefore published this little book written by Aristotle, the deepest philosopher of his age who taught 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 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.

1st. It proceeds from the will of the Creator. And although the answer be true, yet it seemeth not to be of force, because that so all questions might be easily resolved.

2dly. I answer, that for the most part, every workman doth make his first work worse, and then his second better so God created all beasts before man, gave them their face looking down on the earth, & then he created man as it doth appear in Genesis, unto whom he gave an upright shape lifted into heaven because it is drawn from divinity but this derogates from the goodness of God who maketh all his works perfect and good.

3dly. It is answered that man only among all living creatures is ordained to heaven and therefore hath his face elevated and lifted up to heaven because that despising worldly and earthly things he ought to contemplate on heavenly things.

4thly. That the reasonable soul is like unto angels and finally ordained to enjoy God as appears by Averro's *de anima* and therefore he hath a figure looking upwards.

5thly. 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.

6thly. It is answered that naturally there is given unto every thing and every work that form and figure which is fit and proper for its motion. As unto heaven roundness to the fire a pyramidal form that is broad beneath and sharp towards the top which form is most apt to ascend. And so man has his face up to heaven to behold the wonder of God's works.

Why is the head of beasts hairy?

The answer according to the opinion of Const. is that the hairs are the ornament of the head and of the brain and the brain is purged and evacuated of gross humours by 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 all the body of man there is nothing drier than the hairs; for they are drier than bones as Albetus magnus doth affirm because that some beasts are nourished with bones but no beast can digest feathers or hair but do void them

undigested; they being too hot for nutriment.

2dly. It is answered that the brain is purged four manner of ways; of superfluous watery humours by the eyes from melancholy by ears of choler by the nose and of phlegm by the hair and that is the intent of the physician.

Why hath men longer hair on their heads than other living creatures.

Arist. *degenerat anim.* say men have the moistest brain of all living creatures from which the seed proceedeth which is converted into the long hair of the head.

2dly. It is answered, that the humours of man are fat do not become easily dry and therefore the hair groweth longer in man than in beasts whose humours easily dry.

Why doth the hair take deeper root in man's skin than in any other living creature?

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?

1st. Because women are moister than men and phlegmatic, and therefore there is more matter of hair in them; 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 not ascend whereby the humour which breedeth the hair doth increase. And Albertus says that if the hair of a woman in the time of their flowers be put into dung a venomous serpent is engendered of it.

2dly. Because women want beards and 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 and gross, some subtil and soft; therefore the hair which groweth out of a thick and gross skin is thick and gross, and that which groweth out of a subtil and soft skin is fine and soft. When the pores are open much humour cometh forth which engenders hard hair; but when the pores are strait then here groweth soft and fine hair. Aristotle shews that women have softer hair than men because their pores are more shut and straight by reason of their coldness.

Of the Head.

Why is man's head round?

Because it is most fit to receive any thing into it as Aristotle doth affirm *Lib. de cos* 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 part 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 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 fore part of the head or brain and therefore it lifeth up itself that the creeks or cells of the imagination may be opened and that the spirits which help the imagination, are fit for that purpose having their concourse thither may help the imagination.

Why doth a man when he museth or thinketh 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 the cell is open to the end that the spirits which perfect the memory should enter in.

Why is not the head fleshy, like unto the other parts of the body ?

Because that according to Aristotle the head would be too heavy and would not stand steadfastly; 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 to Constant, by reason of evil humours which proceed from the stomach, ascend up to the head and disturb the brain and so cause the pain in the head. And 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 ache doth proceed from drinking strong wine of fuming meats as garlic or onions and sometimes of phlegm in the stomach whereof spring quotidian fevers.

Why have women the headache more than men ?

Albertus saith it is by reason of their monthly terms which men are not troubled with and so a moist unclean and venomous fume is dissolved the which seeking passage upward doth cause the headache.

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 colors which the white color can best do because it is most simple.

Why are all the senses in the head ?

Because as Albertus saith the brain is there on which all the senses do depend and are directed by it and by censequence it maketh all the spirits to feel and by it all the membranes are governed.

Why cannot a man escape death if the brane or heart be hurt ?

Because the heart and brain are two of the most principal parts which concern life; therefore if they be hurt there is no remedy left for the cure.

Why is the brain moist ?

Because it may easily receive an impression which moisture can best do, as it appeareth in wax, which doth easily receive the print of the seal when it is soft.

Why is the brain cold ?

This is answered two ways; first because that by this coldness it may clear the understanding of a man, and make it subtil. Secondly, that by the coldness of the brain, the heat of the heart may be tempered.

Of the Eyes.

Why have you but one nose and two eyes ?

Because our light is more necessary for us than the smelling. And therefore it doth proceed from the goodness of nature that if we receive any hurt or loss of one eye, that yet there should one remain; into 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 procedeth from the wauc of fire and from the assembling and meeting together of light and humor; the eyes are lightened by reason of the sun, which doth lighten the easy humor of the eye, and purge it, and in the absence of the sun those humors become dark and black, and therefore the sight is not so good.

Why doth the bluish grey eye see badly in the day time and well in the night ?

Because saith Aristotle, greyness is light and shining of itself, and the spirits with which we see are weakened in the day time, and strengthen in the night.

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 stars look through a trunk with one eye. This matter is handled in the perspective arts and the reason is as doth appear in the book of Causes, because that every virtue and strength united knit together, is stronger than itself dispersed and scattered. Therefore all the force of seeing dispersed in two eyes, the one being shut is gathered into the other, and so the light is fortified in him, and by consequence he doth see better and more certainly with one eye being shut than both open.

Why is the sight recreated and refreshed by a green color as this verse sheweth.

Fens speculum gramen oculis sunt aleviamen.

Because the green color doth meanly move the instrument of sight, and therefore doth comfort the sight; but this doth not black nor white colors, because the colors do vehemently stir and alter the organ and instrument of the light, and therefore make the greater violence but by how much more violent the thing is which is felt or seen, the more it doth destroy and weaken the sense, as Aristotle doth teach. *Lib 2 de animal.*

Of the Nose.

Why doth the nose stand out further 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 (according to Constant.) it is 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 Boetus saith, *de descrip schol.*

Why hath a man the worst smell of all living creatures as, it doth appear, *Lib. de animal.*

Because the man, as the commentator saith, in respect to this quality, hath the most brain of all creatures; and therefore by that exceeding coldness and 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, who do not smell at all.

Why do men sneeze.

Because that the expulsive virtue of power, and the sight should thereby be purged, and the brain also from superfluities, because that 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 mendicants 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 humors, which cannot be purged.

Why do such as are apoplectic not sneeze; that is, such as are subject to bleed.

Because the passages or ventricles of the brain are stopped in them, and if they could sneeze, their apoplexy would 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 rather doth hinder sneezing than provoke.

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 unseemingly that the teeth should always be seen. Another answer is, that the teeth are of a cold nature, and would therefore soon be hurt, if they were not covered with lips. Another moral 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 hear and see much. And withal, Aristotle doth say that the hearing and the sight 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, although Avicen doth hold that digestion is made in the mouth. 3. Because that the air drawn into the hollow of the mouth for the refreshing of the heart is made more pure and more subtle. And for many other causes which shall hereafter appear.

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 writing so without the lips no voice can be well formed.

Why do men gape?

The gloss upon the last part of Hippocrates' Aphorisms saith, that it proceeds of wearisomness, as when a man sitting among such as he doth not know whose company he would willingly be rid of. Besides gaping is caused of the thick fume and vapors which 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 seeth another 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; and so a man gapes through imagination when another man doth gape.

Of the Teeth.

Why have they only, among all other bones, the sense of feeling?

Because as Avicen and Galen say, they discern heat and cold which hurt them, which other bones need not.

Why have men more teeth than women?

By reason of the abundance of heat and blood, which is more in men than in women.

Why doth the teeth grow to 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 be 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 are the fore teeth sharp, and the cheek teeth broad?

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; and the office of the other to chew the meat, and therefore they are broad in fashion, which is fit for that purpose.

Why do the fore teeth grow soonest?

Because we want them sooner in cutting than the other in chewing.

Why do teeth of human creatures grow black in old age?

This proceedeth of the corruption of meat, and the corruption of phlegm and a naughty choleric humor.

Why are colt's teeth yellow and of the color of saffron when they are young and grow white when they are old?

Aristotle saith that a horse hath abundance of watery humors in him, which in his youth are digested and converted into grossness; but in old age heat is diminished and the watery humors remain, whose proper color is white.

Why did nature give living creatures teeth?

Aristotle saith (*Lib. de generat. Animal*) to some to fight with 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, as it appeareth by the commentary in the book *de Animal*.

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 making it ready for the first digestion; and therefore the tongue is full of pores, because many have passage through it.

Why doth the tongue of such as are sick of agues, judge all things bitter.

Because the stomach of such persons are filled with cholick humors 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 fault be not in the meat.

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 doth some stammer and lisp.

This happeneth from many causes, sometimes through the moistness of the tongue and brain, as in children which cannot speak plainly, nor pronounce many letters. Sometimes it happeneth by reason of the shrinking of certain sinues, which are corrupted with phlegm; for such sinews there be which go to the tongue.

Why are tongues of serpents and mad dogs venomous.

Because of the malignity and tumosity of the venomous humor which doth predominate in them.

Why is a dog's tongue fit and apt for medicine and contrarywise an horses 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 tumour in his tongue, with the which by licking he doth heal the contrary is in a horse.

Why is the spittle white.

By reason of the continual moving of the tongue, whereof heat is engendered, which makes this superfluity white as is seen in the froth of water.

Why is the spittle unsavory 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 Alvicin, it is well digested and made subtile.

Why do some abound in spittle more than others.

This procedeth of a phlegmatic complexion which doth predominate in them, and therefore the physicians say that such should take care of a quotidian ague, which ariseth from the predominancy of phlegm. The contrary is in those that spit because heat a-

bounds in them, which consumes the humidity of the spittle; and so the defect of spittle is a sign of a fever.

Why is the spittle of a man that is fasting more subtle than one who is full.

Because 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 a man.

From the froth of the lungs, which according to 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 great motion of lust, therefore there is engendered in them much frothy matter.

Why have not birds spittle?

Because they have very dry lungs, according to Aristotle in his fifth book *de Animal*.

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 savor badly and corruptly.

The answer according to physicians is, because the peccant matter lieth in the head; but if he vomit, then the matter is in the stomach: but if he piss much, then the matter is in the passage of the urine; but if he begin to have seed, then it is in the vessels of the seed, and according to physicians do purge them.

Why doth the tongue lose sometimes the use of speaking.

The answer is out of Hippocrates. That this doth happen through a palsey or apoplexy, that is a sudden effusion of blood and of a gross humor, and sometimes also by an infection of *spiritus animalis* in the middle 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 persons are made manifest.

Of the Roof of the Mouth.

Why are fruits before they are ripe, of a naughty relish or bitter and after 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 humidity is subtle through heat of the sun, and such fruits are commonly sweet; but before they be ripe, and 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 or any other.

Because nature is delighted with sweetness; the reason because a sweet thing is hot and moist; and through the heat 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 to eat nothing 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 gently 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 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 his book *De Molu 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 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 is seen and this is proved by experience because that in winter, we see our breath for coldness of air doth bind the breath mixed with fumosities, and so it is thickened and made gross, and by consequence is seen.

Why have some stinking breath.

The reason 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 the lepers is so infected, that it doth poison the birds that are very 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 them the instruments vocal 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 some imposthumus of the throat, or rheum gathering in the neck.

Why have females of all living creatures, the shrillest voice, a crow only excepted, and a woman shriller than a man and a smaller.

According to Aristotle, by reason of the composition of the

veins, the vocal arteries of voice is formed, as appears by a similitude, because a small pipe sounds shriller than a great. And also in women because the passage where the voice is formed, is made narrow and straight, 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 heat. 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 slender sound.

Why doth the voice change in men and women; in men at 14, in women at 12, in men when they begin to yield their seed; in women when their breasts begin to grow.

Because then saith 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 and loosed which gives a great sound, He proves it another way, because creatures that are gelded, as eunuchs, caprons &c. have faster and more slender voices than others by reason they want stones.

Why do small birds sing more and louder than great ones, as appears in the lark and nightingale.

Because the spirits of small birds are subtle and soft, and the organ conduit, straight, as appeareth in a pipe, and therefore follow easily any note, and sing very soft.

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 the spirits are moved throughout all the body with the aforesaid appetites and desires. And generally speaking, the females are colder than the males.

Why do bees, wasps, flies, locusts, and many other such like insects, make a noise, seeing they have no lungs, nor instruments of the voice.

According to Aristotle, there is in them a certain small skin, which, when the air doth strike, it causeth the sound.

Why do not fish make a sound.

Because they have no lungs, but only gills, nor yet a heart; therefore they need not the drawing in of the air, and by consequence they make no noise, because that a vocal is a percussion of the air which is drawn.

Of the Neck.

Why hath a living creature a neck.

Because the neck is the supporter of the head, and therefore the neck is the middle between the head and the body to the intent that by it, and by 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 very hot, might be separated from the brain.

Why do some beasts want necks as serpents and fishes.

Because such beasts want a heart, and therefore they want 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 before the backbone is joined to the brain in 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 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 hath a short neck, and is therefore strong.

Why is the neck hollow, and especially before and about the tongue.

Because there is two passages, whereof the one doth carry the meat into the nutritive instrument as to the stomach and liver, and is called of the Greek *Oesophagus*.

Why is the artery made of rings and circles.

The better to bow and give a sounding again.

Why doth a chicken move a good space after his head is cut off and a man beheadeth never stirreth.

Because a chicken and such like, have straight sinews and arteries the spirit of moving continueth long after the head is cut off; but men and many beasts have long and large sinews and arteries, and therefore the motive 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, and do any manner of work.

Why are his arms round.

For the swifter and speedier work, because that figure is fittest to move.

Why are his arms thick.

Because they should be strong to lift and bear burdens, or thrust and give a strong blow; so their bones are thick, because they contain much marrow, for else they would be easily corrupted and marred; but marrow cannot so well be contained in small bones as in great.

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, as Hippocrates doth teach *lib. Prognost.*

Why do the arms become small and slender in some sickness, as in madmen and such as are sick 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 humors do concur and run thither to give succor and help to the aforesaid grief. For when the head doth ache, all the humors of the arm doth run into the head, and therefore the arms become small and slender, because they want their proper nutriment.

Why have brute beasts no arms.

The fore feet are instead of arms, and in their place, or else we may answer more fitly, because all beasts have some parts for their defence and to fight with as the wolf his teeth, the cow her horns, the horse his hinder feet, birds their beak and wings, but only man hath his arms.

Of the Hands.

For what use hath a man his hands, and an ape also which is like unto a 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, i. e. using the left hand as the right.

By reason of the great heat of the heart; for that 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 have 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 keep the things received.

Why have every finger three joints and the thumb but two.

The thumb hath three, but the third is joined unto the arm, therefore it is stronger than the other fingers.

Why are the fingers of the right hand nimbler than the fingers of the left, as Agideus saith.

It proceedeth from the heat which doth predominate in those parts, which causeth great agility.

Why are the fingers thicker before meat than after, as Albertus saith.

Because a man who is fasting, is full of bad humors, which puff up the parts of the body, and fingers also; but when the humors are expelled through meat, the fingers become more slender. And for the same reason, a man who is fasting, is heavier than when

he hath meat in his belly, as is most plain in fasters. Another reason may be given, because that after the meat the heat is departed from the outward parts of the body into the inward to help digestion, and the outward and the external parts become slender; but after digestion is made, the blood turneth again to the exterior parts, and then they become great again.

Why are some great again.

Because the heart sendeth out heat into the right side but more into the left, and doth also work a slenderness and subtilty on the left side.

Of the Nails.

From whence do nails proceed.

Of the fumes and humors which are resolved and go into the excrements of the fingers and they are dried through the power of the external air, and brought to the hardness of a horn.

Why do the nails of old men grow black and pale.

Because the heat of the heart decayeth, which decaying their beauty decayeth also.

Why are men judged to be of good or evil complexion by the color of the 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 they be yellowish or black they signify melancholy.

Why do white spots appear in the nails.

Through mixture of a phlegm with the nutriment.

Of the Breast.

For what reason is the breast hollow.

Because there is the seat of the spirital and ærial members which are most noble, as the heart and lights; and therefore because these might be kept from hurt, it was necessary that the breasts should be hollow.

Why hath man the broadest breast of all living creatures.

Because the spirits in men are weak and subtle, and therefore do require a spacious place wherein they are contained as the breast is.

Why are the breasts of beasts round.

Because they are in continual motion.

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 in the lion and bull, but in women cold predominates, which naturally tends downwards, and therefore women often fall on their backside, because the hinder parts are gross and heavy, by reason of cold ascending thither; but a man commonly falls on his breast, by reason of its greatness and thickness.

Of the Paps and Dugs.

Why 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 converted into the matter and substance of milk.

Why are the paps below the breasts in beasts and above the breast in women.

Because a woman goeth 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 as great breasts and paps as women.

Because a man hath no monthly terms, and therefore hath no vessel deputed for them.

Which paps are best for children to suck, great or little ones, or the mean between them both.

In great ones the heat is dispersed, and there is no good digestion of 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, because every mean is best.

Why do the paps of young women begin to grow about 13 or 15 years of age as Albertus saith.

Because the flowers have no course to the teats by which the young one is nourished, but follow their ordinary course and therefore wax soft.

Why hath a woman who is with child of a boy, 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 pap and make it hard.

Why doth it shew weakness of 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 therefore weak.

Why doth the hardness of the paps betoken the health of the child in the womb.

Because the flowers are converted into milk, and that milk doth sufficiently nourish the child, and thereby the 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 one pap is sufficient, or two; but beasts have many young ones and therefore so many teats.

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 much moisture which proceeds from the flowers doth run into the paps which at other seasons remaineth in the womb, and is expelled by the place deputed for that end.

By what means doth the milk of the paps come to the matrix or womb.

According to Hipocrates, 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 it should void excrements also.

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 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 thicker, but such as go with a girl hath not so much, and therefore the milk is undigested, watery, and thin, and it 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 color is red, and being boiled is white. Another answer is, every humour which is engendered of such parts of the body, is made like unto that part in color where it is engendered, as near as it can be, but because the flesh of the paps is white, therefore the color of the milk is white.

Why doth a cow give milk more abundantly than other beasts.

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 has much of this monthly blood she has much milk.

Why is not milk wholesome.

According to the opinion of Galen it is for divers reasons; 1st. Because it doth curdle in the stomach, wherefore an evil breath is bred. But to this Hipocrates gives this remedy, saying if the third part of it be mingled with running water, then it is not hurtful. 2dly, Because the milk doth sour in the stomach, and breeds evil humours which infect the breath.

Why is milk bad for such as have the headache.

Because it is easily turned into great fumosities, and hath much terrestrial substance in it which ascending doth cause the headache.

Why is milk fit nutriment for infants.

Because it is a natural and usual food, and they were nourished by the same in the womb.

For what reason, are the white meats made of a new milked cow good.

Because milk at that time is very spongy, and does as it were, purge.

Why is the milk nought for the child, if the woman use carnal copulation.

Because in times 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 doth do hurt to 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.

Why do physicians forbid the eating fish and milk at the same time.

Because they are phlegmatick and apt to produce a leprosy.

Why have not birds and fish milk and paps.

Because paps would hinder the flight of birds: fish also have neither paps nor milk, but the females cast much spawn on which the male touches with a small gut; which causes their kind to be infinite in succession.

Of the Heart.

Why are the heart and lungs called lively parts of the body.

From the word Spiritus, which signifies breath, life, soul, and because the vital spirits are engendered in the heart. Yet that's 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 and animal spirits in the brain.

Why are the lungs light, spongy and full of holes.

That the air may the better be received in them for cooling the heart, and expelling humours because the lungs are the fan of the heart; and as a pair of bellows is raised up by taking in the air, and sunk by blowing it out, so likewise the lungs draw in the air to cool the heart and to cast it out lest through too much of the air drawn in the heart should be suffocated.

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 are no part for themselves, but for the heart; and therefore it were superfluous for those creatures to have lungs who have no hearts; but nature is never wanting in things necessary nor abounds in superfluities.

Why do such creatures as 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. falcons and sparrow-hawks.

Why is the heart in the midst of the body.

Because it should impart life to all the parts of the body and therefore it is compared unto the sun, which is placed in the midst of the planets, to pour light upon them all; therefore the Pythagoreans styling the heavens a living creature, say, the sun is the heart thereof.

Why only in men is the heart on the left side.

To the end that the heart should mitigate the coldness of the spleen, for the spleen is 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 as Aristotle saith, *de juvent et senect*, the heart is the origin of life, and without it no part can live. According to the philosopher, of the seed retained in the matrix there is first engendered a small skin which compasseth the seed, whereof first to the heart is made of the purest blood; then of blood not so pure, the liver; and 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 is speedily carried into other parts of the body, which gives courage and boldness.

Why are creatures with a small heart timorous as the hare.

The heart is dispersed in such and not able to heat the blood that cometh to it, and so fear is bred.

How comes it that the flesh of the heart is so compact and knit together.

It is because in a thick compact substance heat is strongly received and united, as appears in other things; and because the heart with its heat should moderate the coldness of the brain, it is made of that hard flesh which is 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 heat best, because it should mitigate the coldness of the brain.

Why is the heart the beginning of life.

Because in it the vital spark is bred, which is the heat of life, and therefore according to the opinion of Augustine the heart hath two receptacles, the right and left; the right hath more blood than spirits, which spirits are engendered to give life, and vivify the body.

Why is the heart long and sharp like a pyramid.

A round figure hath no angles, therefore the heart is round for fear any poison or hurtful matter should be retained in it; and as Aristotle affirms, because that figure is fittest for motion.

How comes the blood to be chiefly 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 heat 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 which answers it, as it appears in eels and fish which have the back bone instead of a heart.

Why doth the heart beat in some creatures when the head is cut off, as appears in birds and hens.

Because the heart is what lives first and dies last; and therefore beats more than any other parts.

Why doth the heat of the heart sometimes fall of a sudden, as in those who have falling sickness.

This proceeds from a defect of the heart itself and of certain small skins with which it is covered, 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 humors go out of the stomach that hurts the heart and parts adjoining, it causes this fainting. The disposition of the heart is known by the pulse, for, 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 round.

Because in it the food is first concocted or digested, as it were in a pot, that what is pure, may be separated from that which is not and therefore according to the quantity of the food the stomach is enlarged.

Why is the stomach round.

Because if it had angles and corners, food would remain in it, and breed humors, so a man would never want agues; which humors nevertheless are 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, and so is the stomach, when it is full, but when empty, it is drawn together, and therefore nature provides those sinews.

How comes the stomach to digest.

Because of the heat which is in it, which comes from 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 that by digestion the pure is separated from the impure.

For what reason does the stomach join the liver

Because the liver is very hot, and with its heat helps digestion, and provokes an appetite.

Why are we cold commonly after dinner.

Because then the heat goes to the stomach to further digestion, and so other parts become cold.

Why is it hurtful to study soon after dinner.

Because when the heat labors to help the imagination, it ceaseth from digesting the food; so that people should walk some time after meals.

How come women with child to have an inordinate desire of eating coals, ashes, and such like.

It flows from the humors of the stomach; and because women with child have corrupt humors, therefore they desire the like things.

How cometh the stomach slowly to digest fat meat.

Because it swims in the stomach. Now, the best digestion is at the bottom of the stomach, where the fat descends not; 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 it is not well the others are evil disposed. Another answer is that 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 do digest for three causes, first growing, then for the restoring of life; and lastly, for conversation of life, as Hippocrates and Galen do say; else we answer that young men are hot and dry, and therefore, heat doth digest more, and of consequence they desire more.

Which is the 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 counsel 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 remain-

eth undigested, and so breeds hurt; and therefore a light and short supper is best.

How comes some men to evacuate clear meat.

By reason of the weakness of nature and expulsion; which disease is called Lienteria.

Of the Blood.

Why is it necessary that every living thing that hath blood hath also a liver.

According to Aristotle, 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 is 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 as appears in Aristotle, *Lib. Meteor.*

How comes women's blood to be thicker than men's.

Their coldness thickens, binds, congeals, and joints it together.

How comes the blood in all parts of the body through the liver and by what means.

Through the principal veins, as the veins 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. 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 is divers colors.

How doth the leprosy proceed from the liver.

Because it doth greatly engender the brains, and breeds the falling sickness and apoplexy.

Why is it hurtful to drink much water.

Because one contrary doth hinder and expel another; for water is very cold, and lying so on 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 causeth 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 labor presently after dinner.

For three reasons; first, because motion hinders the virtue and power of digestion; secondly because stirring immediately after dinner causeth 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 go to sleep, therefore should walk a little that the food may go to the bottom of the stomach.

Why is it good to stir after dinner.

It makes a man well disposed, fortifies and strengthens the natural heat, causing the superfluity in the stomach to descend; wherefore Avicenn says, such as neglect this exercise, fall into inflammation of the heart.

Why is it wholesome to vomit as some say.

Because it purges the stomach of all naughty humors, expelling them, which would breed agues if they should remain in it. Avicenn 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 through the body.

Of the Gall and Spleen.

How come living creatures to have a gall,

Because choleric humors are received into it which, through their acidity, help the guts to expel superfluities, also it helps digestion.

How comes the jaundice to proceed from the gall.

The humor of the gall is bluish and yellow, therefore when its pores are stopt, the humors 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, ass, or cow, a gall.

Though these creatures have no gall in one place, as in a purse or vessel, yet they have one dispersed in small veins.

How comes the spleen to be black.

It is occasioned by a terrestrial and earthy matter of black color, as Aristotle says. Another reason is, according to physicians, the spleen is the receptacle of melancholy, and that it 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 contrarywise, men that have but a small spleen are fat.

Why does the spleen cause men to laugh.

Isidorus says, we laugh with the spleen, we are angry with the gall, 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, proceeds from the spleen, gall, liver, lungs and brain.

The reason is the spleen draws much melancholy it, being

its proper seat, which melancholy proceeds from sadness, and is there consumed, and the cause failing, the effect doth so likewise.

Of Carnal Copulation.

Why do living creatures use carnal copulation.

Because it is most natural to beget their like; for if copulation were not, all procreation had sunk ere now.

What is this carnal copulation.

It is a mutual 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.

Why is this action good in those who 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; besides the seed of a man retained above its due time, is converted into some infectious humor.

Why is immoderate carnal copulation hurtful.

Because it destroys the sight, dries the body, and impairs the brain; often causes fevers, as Avicen and experience shew; it shortens life too, as is evident in the sparrow, which by reason of its often coupling, lives but three years.

Why doth carnal copulation injure melancholy or choleric men, especially 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 fat substance which by nature is necessarily expelled. Though Aristotle affirms, that every fat creature has but little seed, because the substance turns to fat.

Why do not female brute beasts covet carnal copulation after they are great with young.

Because then the womb or matrix is shut and desire doth cease.

Why should not the act be used when the body is full.

Because it hinders digestion, and it is not good for a hungry belly because it weakens him.

Why is it not good after birth.

Because then the pores are open, and the heat disperses through the body, yet after bathing it cools the body very much.

Why is it not proper after vomiting or looseness.

Because it is dangerous to purge twice in one day, but so it is in this act the reins are purged, and the guts by the vomit.

Why are wild beasts furious when they couple, as appears in asses which bray; and harts who are mad almost as Hippocrates says.

Their blood is kindled with desire and nature labors also to expel superfluities in them, which dispose them to anger and madness therefore the act done they are tame and gentle.

PROBLEMS OF ZIMARAS

Sanctipertias.

Why is it esteemed in the judgement 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 cometh 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 is it because it cannot be done by a reflected action, and to reflect and look unto himself as a token that he is separated by the flesh: for he who would know himself should be drawn from sensible affections; & how hard this is no man is ignorant of. Or is it because a man liveth by understanding; but the understanding a man cannot conceive of 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 men to live well and contemplate; or because it seemeth to Plato that he was usually professed of him every where, I know one thing that I know nothing.

Why do men especially strive and 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 may 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 doth think himself more learned than he is, and therefore doth desire to perform that which he believeth without study and labor.

Why do men say philosophy is naked.

It is because truth is naked, and that there needs no color 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, it is because they do not play the philosopher well, who seek philosophy for gain and ambition and not for herself. Or, it is because he should be void from worldly affections, who desires 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 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 seems unto Aristotle, to desire to participate 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 custom hath brought it in so, to stir up such as comes after, to the end they should not degenerate, from their parents.

What's the cause why men's desires grow without measure about fortune's goods.

It is because natural desires, as Seneca saith, have an end, and such desires, as proceed of false opinion have no where to end.

Why do poets always assign and appoint some wise men to be familiar with princess; as, Homer doth Nestor, with Agamemnon; Euripides, Tiresius with Creon; Hesiodus, Prometheus with Jupiter; and Maro, Achates and Æneas.

It is because that by the law of nature, as Plato doth say wisdom and power to 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 commandment 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 decrees and constitution are to be judged absolute and perfect.

Why does 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 fear and keep off rude wits from reading of his works, as it seemeth in the expositors; or whether it is because that in a hard matter of truth, many words are suspected, because that truth doth consist in

few words; or it is because it seemeth to wise men, in many words there is error often committed.

Why do famous men, in any science, when they do err in any matters, err more dangerously than those who 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 that great famous Averrois, thought that a maid might conceive a child in a bath without the knowledge of a man.

PROBLEMS OF ALEXANDER

Aphrodisiens.

Why doth the sun make men 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 measures, do seem black about the skin, but dirt being either full of saltpetre or salt liquor, when the sun hath consumed its dregs, and filth doth become white again; 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, cause a corrosion or gnawing; and in those who are melancholy, it doth not, but flies into the brain.

Because there are many great veins in the paps by reason of the engendering milk, and therefore store of that humour doth run thither. But in the brain because it is above and also because it hath very small veins and store of choler doth ascend, and which hath only power and force to prick and not to gnaw and eat. Moreover, the brain is hard 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 brain it doth breed a man fierce and melancholy, but that which is not properly black choler but melancholy humour, causeth swelling only, which is like a cancer but doth not gnaw and eat, and doth also breed a quiet and peaceable melancholy.

For what reason will not the water run out of the bottom of a wateringpot, when we put our finger on the mouth of it, and the finger being taken away the water runneth presently.

Because 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 downwards, and so goeth out at the bottom. And

this is the reason of all mechanical engines and instruments made to go by air, as clocks and hour glasses, made by water.

Why doth wine and water given out of season, to the sick of an ague, cause a distemper of the brain, when the water is cold and the wine is hot.

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 are dissolved, and so causes them to become thick and gross, and more corrupted and putrefied, 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 fiercer.

Why have women, 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 does the artery in them that is straight and narrow; for it is the property of heat to make wide and loosen, but eunuchs and women are cold.

Why are children stricken with the planet in the summer time.

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 so easily suffer; and having great store of phlegm in the head, and that phlegm being overmuch heated, and also putrefied, 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; and seeing that much choler arises of an ague thereby it falleth out that the choler gnaweth and eateth the belly. It is plain that the cause of that alteration is in the brain, because that cooling medicines are applied unto the head, and such as are good to quench that fire. Some of riper years are sick of the same disease, *i. e.* such as have phlegm and choler heaped up in their head, which putrefies by the very breathing thereof, and after a manner, the spirits are set on fire by a fiery air.

Why are round ulcers hard to be cured.

Because they are bred of sharp choler, which eats and gnaws, and because it doth run, for when it doth run, for which reason it requires drying medicines as physicians assert. Natural philosophers say it comes to pass because there is beginning where the mischievous imposthume doth begin, for in a circle there is neither beginning nor end. When they are burned by physicians they doth assume another kind of shape.

Why is honey sweet to all men, and yet seemeth bitter to such as have the jaundice.

Because they have much bitter choler all over their bodies, but it abounds with the tongue, whence it happens when they eat honey the humors 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 angry men fiery eyes.

Because the blood about the heart is fervent, and the spirit hot and so being very subtle and pure, and carried upwards, and by the eyes, which are clear they do shine, and have bloody vapors 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 from us.

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. At sunset they 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 so breeds much wind, which being pent up in a little, forceth its way out, and so breaks the shell. The like happens in tubs or earthen vessels, when new wine is put into them. 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, though it softens, doth separate its humidity by little and little, and so dissolve it through the passage that are in the shell.

Why do men in the act of carnal copulation, in a manner wink, and find a like alteration in all senses.

Because that being overcome with the effect of that pleasure, they do comprehend it better, winking as it were with their eyes. They are not lifted up, nor do carry the wind abroad into the air with the senses, whereby they would discern those corporeal affections.

Why have some medicines of one kind, contrary force as experience doth teach, mastic doth expel, dissolve, and so knit vinegar both cools and heats.

Because there are some small invisible bodies of them, not by confusion but by interposition; as sand moistened doth clog 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 mastic, and nature hath given the law to these bodies.

Why do our privities swell when we hurt one of our toes.

Nature caring for those things which belong to the body, hastens to assist the part grieved, and because she hath the most profitable and nour-

ishing of all the humors, it is requisite when she doth descend to the toe with the blood, that those veins be filled which are about the privy members.

Why doth nature give birds a bladder, or receptacle for urine.

Because they do want much moisture to give the matter for feathers to grow, and that they do consume with the exercise of flying; neither do they piss at all, and when they drink they void very much dung.

Why have children gravel breeding in their bladder, and old men in their kidneys and reins of the kidneys.

Because children have straight passages in the kidneys, and an earthly thick humor is thirst 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 humor, 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 of the reins, back and kidneys that the urine may pass away and the earthly humor congeal and sink down; the color of the gravel shews the humor whereof the stones come.

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 the excessive heat and scorching, the stones do crumble into sand, as in earthen vessels, which when they are overheat or roasted, 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 stones, the kidneys being stretched, and casting out by a greater lask, and easing the belly of its burden. Besides it often happens that an immoderate heat of the kidneys, or of the reins of the back (through which the stone doth grow) is quenched with coldness.

Why is the curing an ulcer or bile in kidneys or bladder very hard.

Because the urine being very sharp, doth exulcerate the wound while good and fit medicaments would 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 hotter to us, almost burning our bodies.

Because when we enter these sorts of bath, the water itself doth suffer that is, when the water heats our bodies, it is made colder by us. We have learned that whatever works in generation of corruption, the same, without all 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 begining, because it is diminished. If by stirring the water, more heat is added, which neither hath yet wrought or suffered any thing of the body which is in it, that will seem very 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 violent.

This seems a contradiction to the other: for water did not seem hotter to us by moving. Therefore, it is a common thing for what is most and principal in any thing either in quantity or duality, 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 hot body cools, and does not retain the same quality. 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 hot through the season it heats us as linen garments do 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 iess gnawing, and are cold, and others do not seem so that grow out of the ball.

Because through the ball of the eye, the sight proceedeth, 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 together, it makes the wound light and clear, shewing it white; and because of the quietness of the sight, the spirit cannot go out, it causes blindness.

Why doth 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 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 in hot things, they are easily hot and do heat again, and keep hot, and on the 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 do help the quality which is mingled with them as being made one with them.

Why do the stars and heaven seem clearest in the bright wintertime.

Because the air either which doth compass us or that which is the highest is made thin and purged with winds and showers of rain and by this means our sight doth see both further and clearer. The like is manifestly seen in running rivers; for such things as are in them are far better seen than thick standing puddles of water, where either nothing is seen or confused.

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 to ease the part offended and to expel the humor moderately. This doth happen mostly to children because they have most excrements by reason of their often filling.

Why do nurses rock and move their children when they would have them sleep.

To the end the humors being scattered by moving, may move the brains; but those of more years cannot endure this.—

Why do some drunkards see double.

Because the muscles of the sight being more or less filled and by the self same means weak and feeble do draw 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 there each of the eyes using a private office and duty of seeing doth cause a double sight.

Why are boys apt to change their voices about fourteen years of age.

Because that then nature doth cause a great and sudden change of age; 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 bear them great and heavy burdens. Also their stones in which their seed may increase and abide, and their privy members, to let out the seed with ease. Further; all the whole body is made larger and dilated, as the alteration and change of every part of the body do testify, and the harshness and hoarsness; for the rough artery, the windpipe being made wide in the beginning, and the exterior and outward part within equal to the throat, the air going out at the rough unequal and uneven pipe, doth become unequal and sharp and after a sort hoarse like unto the voice of a goat wherefore it has its name *Brenchus*. The same doth happen to them unto whose rough artery distillation doth flow. It happens by reason of the drooping humidity, that a light small 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 such, as nature has given a rough artery, as unto Cranes. After the years of fourteen, they leave off that voice, because the artery is made wider, and reacheth its natural evenness and quality.

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 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 hands of a raven, than a flatterer.

Because the ravens don't eat us till we are dead, but flatterers devour us alive.

Why have choleric men beards before others.

Because they are hot, and the pores large and wide.

How comes it that such as have the hiccup, do ease themselves by holding their breath.

The breath retained doth heat the interior parts of the body, and the hiccup 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 things as they see and do in their age.

Things learned in youth have taken root and habituate in the person, but these 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 the tempest, there do arise from the bottom of the sea certain hot exhalations and vapors which heat the dolphins, causing them to rise up and seek for cold.

Why are 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 continues and hinders the motions.

How comes the Romans to call Fabius Meximus 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 brevity of the other.

Why does the shining of the moon hurt the head.

Because it moves the humors of the brain, and cannot afterwards resolve them.

If water do nourish, why do not men drink it.

Water causes the merriment to spread through the body.

Why is sneezing good.

It purgeth the brain, as milk is purged by the cough.

Where is the seat of the affections of the body.

Joy dwelleth in the spleen, anger in the gall, fear in the heart, lechery in the liver.

Why is hot water lighter than cold.

Because the 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 the water is turned into vapours, and the earthiness doth remain.

Why are studious and learned men soonest bald.

It proceeds from a weakness of the spirits, or because warmth of digestion causes the phlegm to abound in them.

Why doth much watching make the brain feeble.

Because it increases choler, which dries and extenuates the body.

Why are steel glasses better for the sight than others.

Steel is hard and doth present unto us more substantially the air which receiveth the light.

How doth love show its greatest force, by making the fool to become wise, or the wise become a fool.

It attributes 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 labor to be bad for the sight.

Because it dries the blood too much.

Why is goat's milk accounted best for the stomach.

Because it is thick, not slimy, and they feed upon boughs and wood rather than grass.

Why do grief and vexation bring grey hairs.

Because it dries, and age is nothing else.

How is he the most merry that hath the thickest blood.

The blood when it is fat and thick makes the spirit 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 his moisture, because he does not tread the hens, and therefore is better.

Why do we smell a thing less in winter than in summer.

Because the air is thick and less moveable.

How comes hair to burn so quick as it does.

Because the 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.

THE END.

ARISTOTLE'S
LAST LEGACY.

UNFOLDING THE MYSTERIES OF NATURE

In the Generation of Man.

TREATING,

I. Of Virginity, its Signs and tokens, and how a Man may know whether he has Married a Virgin or not.

II. Of the organ of Generation in Women, with a Description of the womb.

III. Of the use and Action of the Genitals in the work Generation.

IV. Of Conception; and how to know whether a woman has Conceived, and whether of a Male or female.

V. Of the Pleasure and Advantage of Marriage; with the unhappy Consequences of unequal Matches and Miseries of Unlawful Love.

VI. Of Barrenness, with Remedies against it; and the signs of the Insufficiency both in Men and Women.

VII. Directions to both Sexes how to manage themselves in the act of coition, or their Veneral Embraces.

VIII. A Vade mecum for midwives and Nurses; Containing particular Directions for the faithful Discharge of their employments.

IX. Excellent Remedies against all Diseases incident to Virgins and Child Bearing Women, fitted for the use of Midwives, &c.

INTRODUCTION.

WHEN the Almighty Architect of the world had formed the heaven in the beginning, and laid the foundation 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 of themselves for producing their several kinds or forms and to the animals (which he created male and female) the power of propagating their species, and had 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 council 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; So that man, in his original, is a ray of the divinity and the 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 every creature had a mate, he was lord of all; so in paradise itself he seemed to be unhappy, wanting a help meet and therefore his munificent Maker resolving to make him completely happy, divided himself, from himself, that by a more agreeable conjunction, he might be united to himself again; and so 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: And Adam having thus found a help meet given him by his Creator, he 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 propension thereunto, and the woman having a plastic power given her by nature for the formation of the embryo. His natural inclination and propension 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 that which nature has ordained their province) that many for want of the knowledge hereof perish, with the fruit of their womb also, who had they but understood the secrets of generation displayed in this book, might have been still in the land of the living.

'Tis therefore for the use of such 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 hinderances of generation are declared, and proper remedies against all the defects of the womb directed.

ARISTOTLE'S LAST LEGACY.

FULLY UNFOLDING THE MYSTERIES OF NATURE
IN THE GENERATION OF MAN.

*Of Virginitv, what it is, its Signs and Tokens, and how a
Man may know if he marries a Virgin.*

The great maker of the universe, that gives all creatures life and being, and a power in themselves to propagate their kind, even to the end of the world, has to that end created them male and female and these of contrary qualities; for, in this noble pair, 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 formed, and in due time brought forth.

Since women then have so great part in the generation of man, I shall endeavour to shew how nature has fitted them for it; and because a knowledge of the disease is half the cure, I will give a brief description of the several parts or members of generation, that so if at any time, any part be affected, or out of order, it may be sooner rectified. And although I must use plainness, yet I hope to do it so as not to cause a guilty blush on the cheek of the fair sex.

And since the first state of woman is virginitv, 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, how it may be known, and then proceed to what I have before mentioned.

Virginity 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, for if they keep it too long, it grows useless, or at least abates much of its value; a stale virgin being looked upon like an old almanack out of date. Virginity, the chief the best, the prime of any thing, and is properly the integrity of woman's privities, not violated by man or 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 maidens, in the neck of the womb, a pendulous production called 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 the word *deffiora*, to deflower, because the taking away virginity is deflowering a virgin, for when the rose bud is expanded, virginity is wholly lost. Certain it is, there is in the first act of copulation something which causeth pain and bleeding, which is an evident sign of virginity, but what this is authors agree not. Some say it is a nervous membrane or thin skin with small veins which bleed 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 such as have used copulation. 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.

There is no doubt but that the part which receiveth the yard is not in women that have used a man as in virgins, and yet it is not alike in all, which hath caused a diversity of opinions 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; sometimes the midwives break it in the birth; and sometimes it is done by stopping of the urine, coughing, violent straining or sneezing and therefore, if there be no bleeding at the first penetration of the yard, it is not always a sign of unchastity; but where there is bleeding it is an unquestionable sign of virginity.

Leo Africanus makes mention of the custom of the Africans at their weddings, which was this; after they were married, the bridegroom and the bride were shut up in a chamber whilst 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 virginity, 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 sent home with disgrace, and the disappointed guests was sent home sadly without their dinner. But notwithstanding the African custom, I affirm that some honest vir-

gins have lost their maiden heads without bleeding, and therefore are not to be censured for want of this token, as some ignorant men may do and cause their wives to live an uncomfortable life all their days, fancying themselves to be cuckholds when there is no such a matter.

Some make the straitness of the privities to be a sign of virginity, but tis is no certain rule, for much depends upon the age, habit of body, and other circumstances. Tho' it cannot but be acknowledged, that women that 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 straight by the use of astringent medicines that a whore may be sometimes taken for a virgin. Culpepper mentions a woman desiring to appear a virgin, used a bath of comfrey roots whereby she deceived those with whom she had to do.

Upon the whole when a man marries, and finds, upon lying with his wife the token of her virginity, he has all the reason in the world to be satisfied he has married a virgin; but 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 clastrum virginated, may be broken so many other ways, and yet the woman be both virtuous and chaste.

And thus much I thought myself bound to say in 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 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 to speak so as I may be understood by the meanest capacity, since I design nothing but the instruction of the ignorant, for their own safety, and shall say with the motto of the royal garter *Honi soit qui maly 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 clift or fissure of an oval form, with its 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 *annus*; 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 *os pubis*, make that rising hill called *mons Veneris* or the mount of Venus.

The next thing is the *nymphæ*, or wings which appears when

the lips are severed and are framed of spongy or soft flesh, of a red color, two in number, joined in an acute angle producing there a fleshy substance composing the clytoris, and both in form and color resembling the comb of a cock.

The *clitoris* is a sinewy and hard body full of spongy 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 act of copulation. For without this a woman neither desires coition, nor hath pleasure in it nor conceives by it. The clytoris sometimes grows out of the body two inches, but this very seldom happens. And some think that hermaphrodites, or those that have the genitals, are only such women in whom the clytoris hangs out extremely, and so resemble the form of a yard. And I am almost inclined to be of their opinion, especially considering that the hanging out of the clytoris, is generally occasioned through extreme lust; and both reason and authority demonstrate that the higher the clytoris in women the more vehement their desires are carried 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 caruncles, placed behind the wings, and are like myrtle berries placed one against another 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 through the neck of the womb neither is the passage of the urine common as in men but particular by itself.

Near the orifice of the womb, as I have said before, there are the caruncles, or fleshy knobs, in number four, in form like myrtle berries; in virgins they are round and plump, but in women that have used copulation, these are loose and flapping, and often quite undistinguished, so that the inside of the neck of the womb appears smooth; the uppermost of them is large 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 caruncles or knobs are joined together by a thin or sinewy skin or membrane, full of small veins; this membrane hath a hole in the midst for 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 it may be broken without the act of copulation, but is most generally broken by it.

The next thing to be spoken of is the neck of the womb which 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 woman's labour, and 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: 1st. that it may be filled with abundance of spirits and there be dilated, for its better taking hold the penis or yard, great heat being required in such motion which becoming more intense or exquisite by the act of friction, 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 woman 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 further observe, that as soon as man penetrates the pudendum, there appears two little pits or holes, these contain an humor, which being pressed out in the time of copulation, gives great delight to a woman.

Having thus spoken of the organs of generation in women, I will now describe the fabric 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 be both dilated and contracted much like a purse, for tho' in the act of copulation it be big enough to receive the glands, nut or top of the man's yard, yet after conception, it is so close 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 that the wisdom and goodness of our creator is eminently to be seen in it.

Its figure is almost perfectly round, and in virgins doth not exceed the bigness of a walnut, yet after conception, it 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 to strengthen it more it is interwoven with fibres over ahwart, which are 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 hypogastrics, which touch the bottom and the neck; the mouth of the veins piercing as far as the inward cavity.

Also the womb hath two arteries on each side of the spermatic vessels, and the hypogastrics which still accompany the veins, also divers little nerves that are knit and entwined in the form of a

net; and extended to the pudenda, placed chiefly for sense and pleasure moving by way of sympathy between the head and womb.

The stones and 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; 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 their ovum or egg, according to our modern authors; but the ancients were of opinion, that they served to connect the woman's seed, and had the same office in women as the stones have in men; but as this of the woman's having seed is strongly opposed by some and as strongly contended for by others, I will therefore set down the opinions of both, having first made an end of the description of the several parts belonging to the organ of 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 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 springing from the emulgent of the same side. Both of the arteries issue from the great artery called the 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 make amends for the shortness of the passage.

The carrying vessels called *vasa de farentia*, (this is vessels which carry that seed from the stones to the semina vessels,) arise from the lower part of the testicles, and are in color white, but in substance sinewy; they pass not strait to the womb, but are wreathen, that the shortness of the way be compensated by their various turning and windings and as they come next the womb, they grow broader.

The ejaculatory vessels are two 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 are impassable adhering to the womb as the collar does to the hind gut winding half way about.

CHAP. III.

Of the use and action of the genitals in the work of generation.

The use of the external parts commonly called the pudenda, are designed to cover the great orifice and the use of that 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 do cause titillation and delight in those parts and also to hinder the involuntary passage of the urine. The action of the clytoris in women is like that of the yard in men, which is erection, and its outer end is like the glans or top of the yard, and has the same name and as the glans in men is the greatest pleurure in copulation, so is this 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 straight for the passage of the yard to the womb in the act of copulation; and then whilst the passage is repleted with spirit and vital blood, it becomes more straight for embracing the yard: and the convenience of erection 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 time of copulation.

And as for these vessels that make their way through the neck of the womb their office is to replenish it with blood and spirit that so as the moisture consumes by the heat contracted in copulation it may by those vessels be renewed; but their chief buisness is to convey nourishment to the womb.

The womb has many properties attributes to it; the first is the retention of the seed; as the ancients speak of the secuadated egg as others would have it: and this properly is called conception: and 2dly to cherish and nourish it till nature has framed the child and brought it to perfection and 3dly it worketh 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 there obliterated in them; that is done by the arteries; and as for the veins their office is to bring back what blood remains from the aforesaid uses.

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 in their outward superficies contain nothing of seed, yet they contain several eggs, (uncertain as to their number, though generally about twenty) one of which being impregnated by spirituous part of man's seed in the act of copulation descends to the womb and to 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 the ancients and moderns touching the woman's contributing seed for the formation of the child, as well as the man's; which was the opinion of the ancients, but is denied by our modern authors.

Though it is apparent say the ancients that the seed of a man is the principle 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 excrement but since nature doth 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 farther proved from hence, that if women at the years of maturity use not copulation to eject the 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 pleasure and delight say they, is double in women to what it is in men, for as the delight of men consists 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 authors affirm, that the ancients were very erroneous; for as much as testicles in women do not afford seed, but are two eggs, like those of fowls; neither have they any such office as those of men but are indeed an ovarium, a receptacle for eggs; wherein these 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, they will have the same taste color and consistency, with the taste of birds eggs.

But notwithstanding all this Culpæper in his directory for midwives positively affirms, that the testicles or stones of a woman are for generation of seed, and for to deny this, 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 accor-

ding to the custom of Britain, given women the preference) to describe the organs of generation in man.

CHAP. IV.

Of the Instruments or Organs of Generation in man.

The penis or yard of the man (being the principle 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; it 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 fleshy membrane; and some parts it has peculiar to itself as the two nervous bodies; the septum the urethra, or glans, the four muscles, and vessels.

The skin which the Latins call *eutis*, is full of pores thro' 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 flabby but when it stands it is stiff. The skin is very sensible because the nerves concur to make up its being.

The carn is membrane or fleshy skin, 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 part peculiar to itself, and first of the 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 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 fail 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, nervous and sinewy, and its office is to uphold the two side ligaments and the urethra.

The urethra is 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 large in the midst, which 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. 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 knit together, and so 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 called erectors; the others 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 in the extreme part of the yard are soft, and of an exquisite feeling by reason of the thinness of the skin, wherewith it is covered. It is covered with the preptium, or foreskin, which the Jews were commanded to cut off on the eighth day.

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 greater upon the muscles and body of the yard.

Having thus described the yard, I shall now speak of the stones or testicles, so called, because they testify that he is a man.

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 eunuch's, who have lost their stones, who are neither so hot, strong nor valiant as other men.

CHAP. V.

Of Conception; and how a Woman may know whether she hath conceived or not, and whether a Male or Female.

The natural instinct implanted in men and women to propagate their own species, puts them upon making use of those ways nature has ordained for that end, which after they have used, the woman many times, through ignorance of her having conceived, or want of that due care she ought to take is little better than the murderer of her own child, though she intends it not; for after conception, finding herself not well, and not knowing what the matter is, she runs to a doctor, and inquires of him and he knowing nothing but what she tells him gives her a strong cathartical potion, which destroys the conception. And some there are out of foolish bashful coyness, though they know they have conceived, yet will not confess it, that so 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.

If under the eye the vein be swelled, *i. e.* under the lower eyelid the veins in the eyes appearing clearly, and the eye something discoloured; if she has not her terms upon her, nor watched the night before, you may certainly conclude her to be with child. This appears most plainly, just upon her conception, and the first two months I never knew this sign to fail.

A coldness and chillness of the outward parts after copulation, the heat being retired to make conception. The tops of the nipples look redder than formerly. The veins of the breast are more clearly seen than they were wont to be. 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 cold water be drank a coldness is felt in the breast. 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. 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 they may make a judgment in that case.

Signs of a Male Child.

A woman breeds a boy with much less pain than a girl, and does not carry her burden so heavily, but is more nimble in stirring.

The child is first felt by her on the right side, for the ancients are of opinion that male children lie on the right side of the womb. The woman when she riseth up from a chair, doth readier 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. The color 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 be most apparent under the right eye and the veins most apparent in her right eye, and then most dissolved, she is with child of a boy; if the mark be most apparent in her left eye, she is with child of a girl.

What Women ought to observe in order to conception.

Women that are desirous to have children, in order thereunto, must give themselves moderate exercise; for idleness and want of exercise are very great enemies to generation work; and those that observe it shall find that your city daines who live high and do nothing seldom have children or if they have they seldom live; whereas the poor women who accustom themselves to labor have many children and those lusty. Nor need we wonder at it, if we

consider the benefit that comes by 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.

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 discolored, then they are out of order, but if the blood come down pure, then the woman will be very prone to conceive with child, especially if they use copulation a day or two after the 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.

And then let the time of copulation be convenient, that there may be no fear of surprise, for fear hinders conception.

And 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 soon broken. To prevent which let the woman every morning drink a good draught of sage ale and it will do her abundance of good.

But if signs of abortion or miscarriage appear let her lay a toast dipped in teat, (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 a little muskadel and apply it to the navel, and she will find it much better.

Also let the air be temperate, sleep moderate, avoid watching and immoderate exercise, with disturbing passions, loud clamors and filthy smells: and let her abstain from all things which may provoke either the urine or the courses and also from all sharp and windy meats and let a moderate diet be observed.

CHAP. VI.

Of barrenness, with 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 the women both before and after conception, I will in this chapter treat of the opposite to conception, to wit, barrenness.

Barrenness is threefold to wit, either natural accidental or against nature.

Natural barrenness is when a woman is barren though the instruments of generation are perfect both in herself and her husband, and no preposterous and diabolical course used to cause it, and neither age nor disease nor any natural defect hindering, and yet the woman remains unnaturally barren, and conceive 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.

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 spiritless and dull, for if their hearts be not united in love, how should their seed unite to cause conception.

A third cause of natural barrenness, is the letting of virgin blood in the arm before their natural courses are come down, which is usually in the fourteenth and sixteenth years of their age, sometimes perhaps before the thirteenth but never before the twelfth.

The way to prevent this, is to let no virgin blood in the arm before her courses come well down; but, if there be occasion, in the foot, for that will bring the blood downward, 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 ardor nature requires, they may as well let it alone, and expect to have children without it; for frigidity and coldness never produce conception. Of the cure of this we will speak after I have spoken of accidental barrenness, which is occasioned by some mor bific matter or infirmity upon the body, either of the man or woman, which being removed they become fruitful.

Causes and signs 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 passage, 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 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 their proper gift in producing seed; or, if they are oppressed with any inflammation or tumor wound or ulcer, drawn up within the belly, and not appearing outwardly, these are signs of insufficiency, and cause of barrenness.

Gluttony and drunkness, and other excesses, do also 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 eunuchs, and that is the incision, or cutting of the veins behind the ears, which in case of distemper 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, the transmission of the seed is hindered by cutting off the veins behind the ears, so that it cannot descend at all to the testicles, or come thither very crude and raw. And thus much for signs of barrenness in men.

Causes and signs of Insufficiency, or Barrenness in Women.

Although there are many causes of barrenness in women yet the chief and principle are internal respecting either the privy parts of the womb, the seed or menstruous blood.

Therefore Hipocrates saith (speaking of either the easy or difficult conception in women) the first consideration ought 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 colored, black than pale and wan; those which 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; if they flow plentifully are of a good color, 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, not retracted or drawn up nor prone nor descending downward, the mouth thereof turned awry, nor too close shut.

But to be more particular.

The first parts to be spoken of are the Pudenda or privities and the womb; when these are shut and enclosed either by nature or against nature, 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 untill the coming down of their courses; and then of a sudden, when their terms press forward to their purgation, they are molested with great unusual pains. Some of these break of their own accord, others are dissected and opened by a physician; others never break at all and then it brings death.

All these Actis particularly handles, shewing that the womb is shut up three manner of ways, which hinders conception; first when the lips of the pudenda grow or cleave together; second when there are certain membranes growing in the middle part of the matrix within; third when (through 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 among all the causes of barrennes in women the greatest is in the womb, which is the field of generation; & if the field be corrupted it is in 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 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 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, as sudden frights, fear grief and perturbation of the mind; too violent exercises as leaping, dancing, running after copulation, and the like.

But I will now add some signs whereby we may know those things.

If the cause of barrenness be in man through overmuch 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 color 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 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.

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 she feel the smoke ascend through the body to her nose then she is fruitful, otherwise barren.

Some also take garlic and beat it, let the woman lie on her back upon it, and if she feels the scent thereof ascend to her nose it is a sign of fruitfulness.

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

Take a handful of barley and steep half of it in the urine of a man and the other half in the urine of a woman for the space of twenty four hours and then take it out and set 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 hers and that which grows first is the most fruitful and if one grow not at all that party is naturally barren.

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

If barrenness proceeds from stoppage of the menses let the woman sweat for that opens the part 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 certain magnetic virtue it strengthens the womb and by a sympathetic quality removes any disease thereof. To which add 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 pennyroyal thyme betony 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.

If barrenness proceeds from the overflowing of the menstrues then strengthen the womb, as you were taught before, and afterwards annoint 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 baze about your reins the cotton side next your skin and keep the same always to it. But above all I commend this medicine to you; take comrey leaves or roots clowns wound wort of each one handful bruise 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 proceeds from a flux of the womb, the cure must be according to cause producing it 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 color of what is voided shews what humor it is that offends; 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 corrision or knawing of the womb is to be feared. All of them are known by these signs.

The place of conception is continually moist with the humors the face is colored, the party loaths meats and breaths with difficulty; the eyes are much swollen which is sometimes with pain. If the offending humor 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 the spice used in all her meats and drinks; and let her take a little venice treacle or mithridate every morning, let her boil mugwort, featherfew and vervain in all broths. Also half a dram of myrrh taken every morning is an excellent remedy against the malady. If cholor 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 pint every morning; to which half pint add syrup of each flowers and syrup of chickory, of each one ounce with a little rhubarb; and this will gently purge her. If it proceed from putrified blood, let her bleed in the foot, and then strengthen the womb, as I have 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, styrax calamints, wood of aloes and such other things as are of that nature and let her lay stinking things to the womb, such as asafetida, oil of amber, or the smoke of her own hair 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. Bur 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 proceed from a hot cause, let the party take whey and clarify it, then boil plainain leaves and roots in it, and drink it for her ordinary drink. Let her also inject the juice of plainain into the womb with a syringe. If it be in the 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 to be of great efficacy. And further, to take away barrenness proceeding from hot causes, take often conserve of roses, cold lozenges, made of tragacanth, the confectiō of tricantelia, and use to smell camphire, rose water and saunders. It is also good to bleed the basilica, or liver vein, and

then take this purge: take electuarum de epithimo 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 after it four hours; and about an hour before you eat anything drink a good draught of whey. Also take lily water four ounces; mardrogar water one ounce, saffron half a scruple; beat the saffron to powder and mix it with the water 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 featherfew, of each half a scruple; aloes half an ounce; Indian salt saffron, of each half a dram, beat and mix them well together: and put into five ounces of featherfew 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 every other night before 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 the tails of stinctus, and long pepper prepared in wine; let such persons eschew also sour, sharp doughy, and slimy meats, long sleep after meat surfeiting and drunkenness, 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, mix 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 partridges quails and pheasants 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 to 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 such as lobsters spawn pigeons &c.

Of the pleasures and advantage of Marriages ; with the unequal Matches, and the ruinous effect of unlawful Love.

We have hitherto been treating of the generation of men, which is effected by man and woman in the action 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 bro't man and woman together. Which being so it necessarily leads 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, that does but 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 just created, and whom he looked upon as short of that complete happiness which he had designed him while he was alone and had not the help mate provided for him. The time of its institution was no less remarkable ; it was while 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 Creator ; and were complete in all the perfections both of body and mind, being the lively image of him that created them ; it was at a time when they curiously surveyed 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 an help mate 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 this marriage knot was first tied, and we shall find the place was Paradise, a place formed by the great Creator for delight and pleasure ; and in our usual dialect, when we should show the highest satisfaction we take in, 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 scriptures speaking of its high encomiums. It was pleasant as the gardens of God. It was in the midst of Paradise, the centre of delight and happiness, that Adam was unhappy while in a single state ; 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 to our own nation.

King Edward I. making a voyage to Palestine for the recovery of the Holy Land in which expedition he 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 poisonous 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 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 herself to undertake his cure, 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 did inspire 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 and jealousies, or else, barrenness are all the blessings which crown the genial bed. But it is not marriage that is to blame for this, the 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 three-score, can any think they two can ever agree, whose inclinations are as different as the months 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 her 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 neighboring gentleman of an ancient family and fair estate, who

approved of the motion 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 lady, but forgetting his son became a suitor for himself; and to obtain her he offered as much money for her (besides the settling her 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 with persuasion and with menaces, he forced his daughter unwillingly 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 wandered 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; that she grew impatient for her husband's death, therefore sought to cut that thread of life she was of 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 enamorado, to murder him in his bed by strangling him; which resolution (although her lover failed her, and came not at the time appointed 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 both withdrawn and the coast clear, she made such a hideous outcry in the house, wringing her hands and pulling off her hair, and weeping so extremely that none suspected her: for she alledged 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 seemed very plausible prevented all suspicions of his death. And being thus rid of her husband, she set a great value on her beauty, and quite shook off her former lover (perhaps because he had implicitly refused to be an actor in her husbands 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 first designed) with some other servants attending him to Coventry, his guilty conscience (he 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 a fact, yet gave the groom good words but ordered his servants to have an eye upon him, that he might not escape when sober; and yet escape he did for all their vigilance and being got to the seaside he attempted three times to put to sea, but was as often forced back by the contrary winds; where being pursued and apprehended by his master he was brought back a prisoner to Warwick, as was soon after, the lady and her gentlewoman also, who were all executed for that horrid murder. The lady was burned on Wolveyheath, and the two servants suffered death at Warwick; leaving the world a sad example of the dismal consequences of doting love, forced marriages and unequal matches.

And though in many such like matches, the mischief does not run so high, as to break forth into adultery and murder, but the young lady from a principle of virtue and the fear of God, curbs her natural inclinations, and preserves her chastity yet either in this very case, her husband, conscious of the abatement of his youthful vigor, and his own weak imbecile 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 may well be having so good ground to improve on) yet can scarcely think they are his own. His very sleep is disturbed with the dreams of cuckoldom and horns; nor dares he keep a pack of hounds for fear Aacæon'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 better on the other side, when a young spark about two and twenty marries a granum of three score 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 one can call her no better, that marries a young boy to satisfy her lecherous itch, conveys away before her marriage, to her own relations, and leaves the expecting coxcomb nothing but repentance for his portion. Pocket expenses, perhaps she will allow him, and for those 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 leave him to his liberty: whilst the old grandame finding her money wasted, and herself despised, is filled with those resentments that jealousy, envy, and neglected love can give, hoping each day to see him in his grave, though she has almost both feet in her own; thus they each day wish for each other's death, which, if it comes not quickly, they often help to hasten.

But these are still excrescences of marriage, and are the errors the people marrying, and not the fault of marriage itself. For let that be what God as first ordained a nuptial of two hearts, as well as hands, whom equal years and mutual love has first united, before the persons join their hands, and such will tell you that mortals can enjoy no greater happiness on this side of heaven.

CHAP. III.

Directions to both Sexes, how to manage themselves in the act of Coition, or Venereal Embraces.

Having shewed in the former chapter the pleasures and advantages of marriage, I will now give some directions to the 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 our most noble observations; besides it is not the bare performing of that act that they are directed it is, 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 last legacy to the world. To which purpose some things are to be observed previous to this act and some things consequent upon it.

CHAP. IX.

The Midwife's Vade Mecum; Containing particular directions for Midwives, Nurses, &c.

Those who 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, and of good habit of body, nor subject to diseases, fears or sudden fright nor are the qualifications assigned for 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 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, nor 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 in 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 the 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 the birth be come,

for want of observing this has 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 midwife's not minding this, have given things to force down the child, and thereby disturbing the natural course of her labor; 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 labor, they being troubled with pains so long before their true labor comes, in some weeks before the reason of which I conceive to be the heat of the reins, and this may be known by the swelling of their legs; and therefore when women with child find their legs swell much, they may be assured that their reins are too hot. For the cure thereof, let them cool the reins before the time of their labor, 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 labor. But in this case, above all the remedies that I know, I prefer the decoction of plaintain 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 equal weight in sugar, and keep it for your use.

There are two skins that compass the child in the womb the one is the amnois, and this is the inner skin; the other is the alantois 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 the 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 midwives call the water; and this is an infallible sign that the birth is near; so the child is no longer able to subsist in the womb, when those skins are broken, than a naked man is in the cold air. These waters, if the child comes presently after them facilitate the labor, by making the passage slippery; and therefore the midwife must have a care that she force not her water away, for nature knows better the true time of the birth than she, and usually retains the water till that time.

Several medicines to cause speedy delivery.

A loadstone held in her left hand, take wild tansey and bruise it and apply it to the woman's nostrils. Take date stones and beat them to powder, and let her take half a dram of them in white wine at a time.

Take parsely, 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 after burden also; besides it cleanseth the womb, and also the child in the womb of all gross humors.

Let no midwife ever force away a child, unless she be sure it is dead. I once was where a woman was in labour, which being very hard, her midwife sent for another midwife to assist her

which midwife sending the first down stairs, and designing to have the honor herself, forced away the body of the child, and left the head behind, of which the woman was forced afterwards to be delivered by a man midwife.

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 delays, 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 good also to bring away the after birth.

Having thus finished my *Vade Mecum* for midwives, before I conclude, I will add something of the choice and qualifications of a good nurse, that, those who may want them, may know how to order themselves for the good of their children which they nurse.

First, then, if you would choose a good nurse, choose one of a sanguine complexion, not only because that complexion, is generally thought 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 of the middle size, her body fleshy, but not fat, and of a merry pleasant and cheerful countenance; a fresh ruddy color, 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 make her the fittest part for a nurse, and very much delights in children. In choosing such an one you can hardly do amiss only let me give you this caution if you cannot get one exactly of 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 20 and 30 for then she is in her prime. 2. Let her be in health, for sickness infects her 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 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, be such an one whose last child was a boy, and so it will be more agreeable, but if it be a girl let the nurse be one whose last child was a girl. 7. If the nurse have 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 be not with child herself; for if so, she must of necessity either spoil her own child, or yours perhaps. To a nurse thus qualified you may put your child without danger. And let such a nurse observe 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. The want of this makes so many children die in London; and even these few that live are none of the wisest; for gross and thick air makes unwieldly bodies, and dull; and let none wonder at this, for the operation of the air to the body of 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 filth with phlegm. Let her never deny herself sleep when she is sleepy, for by that means she will be more wakeful when the child cries. Let her avoid all disquiets of mind, anger vexation, sorrow and grief, for these things very much disorder a woman, and therefore must be hurtful to the milk. If the nurse's milk happens to be corrupted by any 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 cautions already given her. If her milk be hot let her cool it with endive, succory, lettuce, sorrel, parslain, and plaintain; if it be too cold, let her use beverage, vervain bugloss, mother of thyme and cinnamon; and let her observe this general rule, whatsoever strengthens the child in the womb, the same attends the milk. If the nurse wants milk the thistle commonly called our lady thistle is excellent 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 fore feet of a cow, dried and beaten to powder, taken overy morning in any convenient liquor, increaseth the milk.

Remedies, for increasing Milk.

If a nurse be given to much fretting, makes her lean and hinders digestion, and she can never have a store of milk, nor what she has be good. Bad meats and drinks, also hinder the increase of milk, and therefore ought to be foreborn and 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, burrage and spinnage; also, goats milk and lamb sodden with verjuice: let her also comfort the stomach with confection of annis seed, caraway and cummin soeds sodden in water; also take barley water and boil therein fennel and dill and sweeten it with sugar, and drink it at your pleasure.

Lastly take half an ounce of deer's suet and as much parsley roots with the herbs an ounce and half of barley meal, three drams of red storax three ounces of oil of sweet almonds; boil the root and herbs well and beat them to a pap and then mingle the other amongst them and put it warm to the nipples it will increase the milk.

And thus Courteous Reader I have at length finished what I designed and promised and can truly affirm that thou hast here those Receipts and Remedies and Directions given unto thee with respect to child bearing women midwives and nurses that they 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 things taken not on trust from tradition or hearsay but the result and dictates of sound reason and long experience.

FINIS.





