



A N

Inaugural Physiological Differtation

O N T H E

C A T A M E N I A:

TO WHICH ARE SUBJOINED,

Observations on Amenorrhœa.

Submitted to the Examination of the

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THE TRUSTEES AND MEDICAL PROFESSORS OF THE
UNIVERSITY OF PENNSYLVANIA,

For the DEGREE of DOCTOR of MEDICINE.

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THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

PHYSICS 350

PROBLEM SET 1

DATE: _____

1. A particle of mass m moves in a circular path of radius r with constant speed v . Calculate the centripetal acceleration and the centripetal force.

2. A block of mass M is pushed up an inclined plane of length L and height h by a force F applied parallel to the incline. Calculate the work done by the force F and the work done by gravity.

3. A spring with spring constant k is stretched by a distance x . Calculate the work done by the spring force.

4. A particle of mass m moves in a straight line with constant acceleration a . Calculate the change in kinetic energy over a distance d .

5. A block of mass M is pushed up an inclined plane of length L and height h by a force F applied parallel to the incline. Calculate the work done by the force F and the work done by gravity.

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To BENJAMIN RUSH, M. D.

*Professor of the Institutes and Clinical Medicine,
in the University of Pennsylvania,*

WHOSE character is not less esteemed for literary accomplishments, than morality and benevolence, and to whom this University is much indebted for his vast fund of facts and many ingenious and new speculations,

This Dissertation,

Is gratefully inscribed,

By his Friend,

THE AUTHOR.



GUSTAVUS RICHARD BROWN, M. D.

S I R,

SINCE the practice of Dedication is meant to designate esteem and friendship, permit me to inscribe the following Dissertation to you; if it merits your approbation, alone, I shall feel myself amply compensated. Consider it as the fruit of a study commenced under your auspices,

And believe me to be,

Your Friend,

THE AUTHOR.

To JOHN THOMSON MASON.

S I R,

IMPRESSED with the most lively sense of Gratitude to your deceased father, whose memory I revere, I cannot in silence overlook the son of my patron and friend ; permit me, then, as an acknowledgement for the particular care and attention shewn me at an early period, to dedicate this Dissertation to you,

And believe me,

Your Friend,

THE AUTHOR.

INAUGURAL DISSERTATION.

I.

THE uterus is situated in the hypogastric region, is a hollow viscus, and is designed to receive the first rudiments of the foetus, which it retains until its parts are completely evolved, and is fitted to make its first appearance on the theatre of the world. The nerves of the uterus are principally derived from the intercostal ; its arteries from the hypogastric and spermatic. These arteries are so ramified through the substance of the womb, which is of a lax, spongy consistence, that they form a very considerable part of its substance. When the substance of the uterus is divided after a lucky injection of the uterine arteries, it appears to be nearly all vascular. When we meditate on this structure, surprise at the great quantity evacuated *at some times* may cease, and we may discover astonishment that the

A discharge

discharge is not more often immoderate, when we reflect that it proceeds from the open mouths of perhaps a half million of vessels. This organization so curious and interesting is evidently necessary to enable the system to effectuate that phenomenon called the menses.

II.

FROM the mouths of the uterine arteries that discharge of blood called the catamenia is poured fourth. This flux appears designed for the support of that condition of the uterus which enables it to retain and support the impregnated ovum.

III.

THE menses is a discharge of pure arterial blood from the uterine arteries. They appear at puberty, and return at stated periods, and cease in advanced life. Though the various morbid affections to which the sex is liable, interrupt the course and vary the quantity, they are generally absent during pregnancy and lactation: They are considered as peculiar to the human female. *

IV. Con-

* Some have asserted that a certain species of monkey menstruate, but this is doubtful.

IV.

CONSTITUTION, climate, and modes of living, alter very considerably the period at which this healthy evacuation first makes its appearance. As this period is established at puberty, the eruption will be earlier or more late, as the human structure is sooner evolved under the warm breezes of a mild, *or* retarded by the cold of a northerly climate. The menses appear later in those of a rigid fibre, are more painful and tedious, than in others of a more lax habit, and whose constitutions are less bordering on torpor of the nervous, and rigidity of the muscular systems.

V.

IN countries near the torrid zone the catamenia appear as early as the eighth or ninth years. In the Icy regions they are retained to the 20th and 25th years. In this temperate climate they generally manifest themselves about the 13th or 14th years.

VI.

As the menses indicate the maturity of the system, and as the maturity of this is necessary to generation, and as premature venery is highly injurious to the constitution, the laws of most nations have determined at what age females are marriageable. This is much influenced by climate, &c. In Persia, India, and other countries contiguous to the torrid zone, marriages are celebrated at the eighth or ninth year. Marriages in this country are never celebrated until the female attains to fourteen, and the male to sixteen, years of age.

VII.

THE first travellers over the northern countries, whose observations have been published, affirm that the females of those northern countries do not menstruate. But the most respectable authority has since shewn, that the females of Lapland and Kamschatka, and all the diminutive race of the Esquimaux, diffused over such immense tracts of land near the frigid zone, obey this universal law of the human female

male

male œconomy. Though the menses in these countries appear late, continue a short space of time, and return after long intervals, and although they flow from certain women only during the summer, while there is an abundance of aliment; yet among these nations they are no less necessary to conception and the health of the system, than among the inhabitants of more temperate climates, and any deviation from the laws of the climate produces similar affections to those which occur to females nearer the torrid zone. A variety frequently occurs in the different situations of the same country. Haller mentions a perceptible difference in the women inhabiting a higher or lower situation of the same kingdom. He observed the appearance of the catamenia in certain low and warm districts as early as the eighth year of age; but in more mountainous and northern districts as late as the twentieth and twenty-fifth years. In these United States a variety is observable agreeable to the variety of country and modes of living. Though they appear generally about the 13th or 14th year in this country, I have seen one instance of their occurring as early as the ninth year. Van Swieten has observed that the females of Holland menstruate more copiously than other
 women

women inhabiting the same latitude. This he ascribes to the use of the foot-stove so common among them; indeed I conceive this practice can have much influence on the discharge. Modes of living no doubt influence the time of appearance, the quantity, and the duration of the catamenia. The use of warm chambers and soft beds often increase the evacuation: 'Contrary circumstances produce contrary effects.

VIII.

THE earlier the evacuation begins the sooner does it discontinue, and vice versa. Females inhabiting very southern latitudes attain to maturity at the ninth year, are mothers at fourteen, or sooner, past child-bearing at twenty-five, and exhibit strong marks of old age at thirty. It has been observed that in very northern climates, women bear children at the advanced age of sixty.* In the United States of America the menses generally cease on or about the 45th year, at which time the women generally cease to breed.

IX. THE

* Dr. Monro's Lectures on Physiology.

IX.

THE appearance of the menses is usually announced by the following symptoms. The strongest marks of puberty now manifest themselves, the manners alter, the voice becomes changed, the mammæ swelled and turgid, and the pubes now shew the first marks of covering. To these succeed heat and redness of the genital system, sometimes to a degree bordering on nymphomania. The system now becomes affected with languor and lassitude, vertigo and head-ach, and various pains are also felt in the hypogastric and lumbar regions: The eyes now become languid and dull, a blue colour appears below the orbits: A ferous discharge now breaks forth from the uterus which relieves the afflicted fair.

X.

THESE symptoms only appear when the menses are about to become established. Many months and even years are consumed before this is effected. These symptoms, commonly precursors to the event, occur month-

ly, though generally with some alleviation in proportion as the ferum becomes more tinged with blood. The discharge becomes, at length, pure arterial blood. The eyes now acquire their wonted brilliancy, the lips become tinged with an agreeable red, the cheeks bloomy, gaiety and chearfulness succeed to languor and despondency; and now the fair one, resplendent with joy, through all nature diffuses her charms.

XI.

THE evacuation may be divided into three stages, the beginning, height and decline. It commences first ferous; this gradually becomes more coloured, until pure arterial blood comes forth. In the decline the blood becomes mixed with ferum, which gradually increases until pure ferum is again evacuated.* This ferous discharge, diminishes gradually, until a final stop is put to the evacuation. The system, at this time, often becomes affected with various disorders, as vertigo, dispepsia, apoplexy and syncope.

XII. THE

* This is not the case with all women—some evacuate pure arterial blood to the last.

XII.

THE menstrual period when once established, becomes uniform, unless interrupted by pregnancy, lactation, or disease; though it is various, as has been before mentioned, from climate and modes of life. The discharge usually returns once in twenty-seven or thirty days, and rarely continues longer than five or six, and seldom shorter than two days. A deviation less frequently takes place in the time of recurrence, than in the quantity, or time of continuance.

XIII.

IT is difficult to ascertain, precisely, the quantity evacuated at one menstrual period, as it is impossible to come at an actual measurement. Experiments to ascertain the quantity have been proposed, and indeed really made with a sponge; but as part of the blood may be absorbed, as the orifice is stopped up by the sponge, it must be but an inaccurate experiment. The usual quantity for a healthy female of a moderately lax fibre is from three to

six ounces. Luxurious living, warm chambers, and a sedentary life, very much alter the quantity.

XIV.

IT may not be improper in this place to enumerate the opinions that have been entertained of the nature of the catamenia. They have been supposed of so deleterious a nature, as to extinguish the life of a male, and destroy the germination of plants. This certainly is giving the evacuation more poisonous power than any thing in nature possesses. Haller mentions that gardeners would not allow their wives or daughters to approach a plant, if recently set, if their catamenia were flowing. The Italians harboured a notion that the breath of a woman during that period would kill silk worms. La Motte retains the idea of these women being deleterious, but with some limitation; he only suspects those with red hair—He relates a story of a servant maid whose hair was red, spoiling a cask of wine and half a hog, by having access to the former during her menstruation, and salting the latter at the same period, which soon putrified. Indeed, I think La Mottés red head-
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ed fervant man, would have been equally destructive to his wine and pork. The improbability of these tales destroys entirely their credit.

XV.

THE idea of menstrual blood being poisonous appears to have arisen from laws and institutions of the Oriental nations. The particular source of this error first arose among the Jews: they were fond of cleanliness, and converted their customs into religious ceremonies—Their Legislator enjoined purifications as a part of religion. After the most ordinary and necessary duties of life, they were compelled to have recourse to purifications. These purifications were thought particularly necessary to menstruating females. If a male touched the bed on which the female lay, he was thought impure for some time. The poor female was after this period unclean for seven days. It is not to be wondered at, that such opinions prevailed among the vulgar after a strict adherence to the above customs.

XVI.

THE menfes are apt to become acrid by long retention in the folds of the vagina ; and if copulation is performed in this fituation, the male often contracts a difeafe fimilar to Gonorrhœa, but this generally ceafes fpontaneoufly in a few days. Perhaps this difcharge from the male urethra might have given rife to the rigor of the Jewish customs refpe&ing the fair fex. But now, when fci&ence and civilization have banifhed fuperftition and bigotry, the greateft ornaments of the human race, are no longer confidered as mere convenient utensils, the former ridiculous customs are done away, and women perform their domeftic and focial pleafures without any fufpicion of harbouring a natural poifon.

XVII.

THE caufe of the menftrual flux has given rife to many fpeculations among Medical Philofophers. Some of them have been engaged refpe&ing minute inquiries into the proximate caufe of menftruation ; but the results of their
 investiga-

investigations afford nothing satisfactory on the subject, and all I can do will be to enumerate some of those which appear most plausible.

XVIII.

IT has been said that the tides are caused, the growth of vegetables accelerated, and the human system much influenced by the moon, as in mania, epilepsy, &c. The moon also has been supposed to be the cause of the menses, as they appear at the interval of a lunar month. But this last hypothesis is built on a tottering basis. As the influence of the moon is extended to all the animal creation, why is it exerted on the human female alone, and not extended to the inferior order of animals? If the catamenia are the effect of lunar influence, why do they occur at puberty, and cease in advanced life? Would not the moon exert its influence on all the females inhabiting the same latitude, the same country, the same city, the same hospital, and all the sisterhood, inhabiting the same convent, at one time, and would not the catamenia return at exactly stated periods? Finally,

nally, would not all women become pregnant nearly on the same day of the month?

XIX.

FERMENTATION has been supposed the cause of the menses; but the idea of fermentation going on in the living animal blood has been entirely done away by the learned and ingenious Dr. Gustavus Richard Brown of Maryland, in a dissertation published at Edinburgh, *de ortu animalium caloris*.

XX.

THE experiments of Spallanzani fully evince that fermentation does not go on even in the Stomach; and when this is admitted, it cannot be supposed that any can take place in the uterine arteries. The idea of fermentation in the living body is inconsistent with the laws of the animal economy, and indeed with reason. What power can act by inducing fermentation once a month? If fermentation is the cause of the evacuation, I will ask, what stops the process when once commenced? This error first arose among the Chymists.

XXI.

ON the other hand, the mechanic sect have supposed it occasioned by the depending situation of the uterus. To this opinion let it suffice to say, that some women confined to bed for many years menstruate freely and copiously. I know one instance of a woman, in the Royal Infirmary of Edinburgh, who menstruated freely though she had been confined to bed nine years. She was much subject to menorrhagia.

XXII.

UNIVERSAL plethora has been supposed the cause of the phenomenon. But when we consider the lax cellular texture of the lungs more easily admitting of a determination than any other part of the body, we might more reasonably expect hemoptysis than catamenia. Nay, when the system has been reduced much below its natural plethoric state by hemorrhage even the morning of an expected eruption, still the menses flow.

XXIII. ANOTHER

XXIII.

ANOTHER modern opinion is, that of a partial plethora of the uterine vessels. For this opinion there are many advocates. If uterine plethora produces catamenia, why do they appear at puberty, and cease in advanced life? Wounds of the inferior extremities, from which considerable hemorrhages proceed, seldom prevent the flux, though they are inflicted immediately before the evacuation is to come forward.

XXIV.

IT has been conjectured, and with confidence asserted, that the uterine veins are of a firmer texture than the arteries, and this texture, by retaining the venous blood, produced plethora in the arteries. In my humble opinion, it must be difficult indeed to ascertain the comparative difference between vessels in a lifeless and collapsed state; though by the assistance of microscopes some difference might be suspected, the conclusion drawn cannot be just; for great is the difference between animate and inanimate

animate matter. A substance, endowed with life, exhibits various phenomena peculiar to itself, and vice versa.

XXV.

ANOTHER modern theory is, that the blood discharged, is not simple blood, but a secreted fluid. Shew one secretion that returns at stated times, and I will admit the menses to be of the same nature. The urine is discharged at certain times, yet the secretion of it incessantly goes on. Bile becomes, at particular times, more abundant than usual, still the secretion is carried on, during a healthy state, with uniformity. Passions of the mind, and irritating substances, produce a preternatural flow of tears, yet the secretory function is uniformly continued to preserve the humidity of the eye.

XXVI.

How can any glandular function be performed only at stated times, while the structure of the gland remains entire, and the supply of blood is uniformly the same? An attempt to prove the menses a secretion, only

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removes

removes the truth the farther off, and involves the subject in additional obscurity.

XXVII.

AFTER delivering the various opinions on the subject of catamenia, I cannot conceal my astonishment, that the cause of menstruation should yet remain an object worthy of investigation. Let us, for a moment, suppose it proven to demonstration, that it depended on lunar influence, on a ferment, on a position of the uterus, on general or on partial plethora, and, lastly, on a true secretion. Permit me to ask, what practical advantage could follow? As the labours of the learned have been fruitless, success on this point cannot be expected: And, if we judge of the future by the past, the cause of menstruation will ever remain hidden in the recesses of obscurity.

XXVIII.

IN all probability all we shall ever know on the subject, is, that it is pure arterial blood, which proceeds from the mouths of those uterine arteries which open into the cavity of
the

the uterus. This fact is supported by the combined testimony of the most celebrated anatomists Europe and America afford. This structure being discovered by no theoretic author, anxious to make it the basis on which he might rear an elegant superstructure, but delivered in the form of a simple truth, has obtained the credit of all physiologists. Indeed it has been proven by injection *—inversions of the uterus also demonstrates this fact, as the blood can then be seen to proceed from the open mouths of the uterine vessels.

XXIX.

EVERY medical man must acknowledge that the menses are indispensably necessary to the health of the female, and the propagation of the human species. Though the discharge is in so many respects inconvenient, as being subject to excess and deficiency, either of which will destroy both the health of the system and the power of procreation. When we contemplate on these inconveniencies to which the human female is alone subject, in a philosophic

* Mr Fyfe's private Demonstrations on Anatomy, Edinburgh.

fophic view, we might be led to conclude that they are but imperfectly finished animals. In a superstitious light, we might suppose the discharge meant as a curse on the sex for the fall of man.

XXX.

WE come now to a part of the subject, which Physicians have more generally agreed on—*the uses of menstruation.*

XXXI.

THE menses are designed, principally, to preserve and keep up a state of tonic union between the uterus and ovaria, to give to the uterus that condition which capacitates it to retain the impregnated ovum; to carry a sufficient quantity of blood for the support and evolution of the fœtus in utero; and to support the health and welfare of the female œconomy. The discharge may serve other purposes, but they are merely secondary.

XXXII.

CONCEPTION never appears before the menses, and never after they have ceased—
this

this a strong mark of the wisdom in all natural institutions ; for, during both periods, the system is incapable of affording a sufficient degree of nourishment for both mother and foetus.

XXXIII.

RARELY, or never, is coition prolific immediately before menstruation ; and the true and final cause of the evacuation is, doubtless, to effectuate pregnancy. Few would become pregnant were the intervals shorter. Sapient nature has so organized the human female œconomy, that women, unless affected by disease, may become pregnant almost at any time.

XXXIV.

COITION, immediately succeeding the discharge, is often fruitful ; but the time, of all others the most critical, is a day or two after the flood has ceased—a space of several weeks is necessary to form the adhesion of the ovum to the uterus—were the menses to occur at shorter intervals, the ovum would frequently be lost.

XXXV.

XXXV.

THOSE females afflicted with menorrhagia, fluor albus, or amenorrhœa, are generally unfruitful—and this state of the system, so inconsistent with the female œconomy, is the only cause of sterility which the art of medicine can remedy. Obstructions of the fallopean tubes; imperfections of the ovaria, and various other morbid affections of the internal parts, are not to be discovered by human sagacity, and, if discovered, admit of no cure. Ninety-nine of an hundred cases of sterility proceed from irregularities of the menses; and, in ninety-nine cases of an hundred, we may promise a cure of barrenness, when it proceeds from these causes*.

XXXVI.

THOSE women who are subject to an hemorrhage vicarious to the menses, are sterile, though the evacuation be monthly; for, since the blood does not pass through the uterine vessels,

* Dr Gregory's Lectures on the Practice of Medicine, Edinburgh.

vessels, they lose their activity and tone. Do not the ovaria sympathise with the uterus and partake of its morbid affections? Can conception ever take place when the ovaria and uterus are not in perfect unison with each other?

XXXVII.

SOME females of robust constitutions, and rigid fibre, are called viragos. These from constitution menstruate sparingly, or none at all. They are also, with few exceptions, found to be barren—In what manner is this to be explained? Can rigidity of muscular fibre communicate a similar state to the arterial system? Are the arteries endowed with muscular fibres and muscular properties?

XXXVIII.

THOSE females are the most prolific from whom the menses flow regularly, and appear neither too soon nor too late. In temperate climates, where the menses flow most regularly, the number of inhabitants is generally in proportion to the fruitfulness of the soil. Women

men of the east are prolific—those of the north the contrary. Persia and India abound in inhabitants—Tartary and Lapland have few. The women of Persia and India menstruate regularly and easily—Those of Lapland and Greenland, late and scanty, and, consequently, are not very prolific.

XXXIX.

How wisely has nature ordered all things. India and Persia are fertile and abound in inhabitants. Russia, Lapland, and Kamtschatka are inhospitable and barren, and have, comparatively speaking, but few inhabitants. The north was called the hive of nations, because their numbers had gradually increased until the productions of the soil were insufficient for their support. Hence they migrated to more fruitful countries, and excelled the inhabitants, enervated by luxury and ease, both in valour and numbers.

XL.

A NURSE cannot give suck to more than one child, with convenience, at the same time ;

time ; and, during the period of lactation she ought not to conceive; for which purpose nature has so wonderfully established the female œconomy, that when the catamenia cease, the breasts swell ; and, during the flow of the milk, the menses are absent. During pregnancy the vessels of the uterus are active and distended—those of the mammæ are flaccid and quiescent. When pregnancy and the lochial flow have terminated, the breasts become distended, and the milk soon manifests itself. If the mother does not give suck to the infant, the menses soon resume their wonted course. But, when the mother performs that natural function, the menses do not flow ; and, during this period, the woman does not become pregnant, though, indeed, exceptions to this have been mentioned on the records of medicine.

XLI.

THE mother cannot afford sufficient nourishment for the child at the breast, and the fœtus in utero at the same time. During pregnancy the milk alters in its nature, and becomes an improper nourishment for the child.

Pregnancy and lactation are functions entirely opposite. A nurse, desirous to become pregnant, should discontinue the office of giving suck.

XLII.

THE length of time for giving suck is prescribed by nature ; for, so soon as the infant, by the assistance of teeth is enabled to chew food, it ought then to be weaned ; for, at this time, the infantine system requires a more substantial nourishment, and the milk begins to acquire new qualities.

XLIII.

IT cannot have escaped observation, that the human female is apt to become impregnated soon after menstruation. Other females are incapable of conception only during the venereal rage, when the uterine system is excited.

XLIV.

IN infancy, the ovaria are small in size ; and in females of advanced years they are diminished

nished and contracted. They are remarkably full in brute animals, when they are in season. Do not the ovaria, in a particular condition of activity, by their stimulus, dispose to venery, and is it not this particular state of the ovaria that gives the female venereal appetites? Does not the female system fall into a leucophlegmatic and lax state, which gives predisposition to dropsy and many other diseases when the stimulus of this state of activity of the ovaria and uterus is absent? The illustrious Cullen has offered a conjecture when treating of amenorrhœa, and supposes that a certain state of the ovaria in females prepares and disposes them to the exercise of venery about the period when the menses first appear. This must, evidently, be the state of activity abovementioned.

XLV.

SINCE menstruation is of this nature, it is proper that the same function should be wanting in animals of an inferior class. If they were endowed with the faculty of menstruating, they would enjoy an uninterrupted fecundity, now the privilege of man alone.

XLVI.

AMENORRHÆA or obstructed catamenia, so frequently met with, and so often destroying the health and happiness of the female, by inducing diseases grievous in their nature; and, what is still of more serious consequence to mankind, barrenness---I will shortly mention, but would happily embrace an opportunity of a more ample detail, would the nature of this dissertation allow it.

XLVII.

ANY interruption of the menstrual discharge constitutes the disease now under consideration, except that interruption, or temporary cessation, the consequence of pregnancy or lactation. During the absence of the catamenia, from either of these causes, the female system is freed from those symptoms which so constantly attend an unnatural obstruction.

XLVIII. As

XLVIII.

As the flow of the catamenia depends on a state of tone in the uterine arteries capacitating them to propel forward their contents, any power that takes away or diminishes that state, will produce the disease. The powers that effectuate this are numerous—as cold, fear, great exertions of the system, penurious diet, warm chambers, soft beds, late hours, excess in venery, the use of ardent spirits, of tobacco, tedious and lingering labours, frequent abortions, &c.

XLIX.

THE symptoms commonly attendant on this disease, are—sluggishness in motion, and some inability to perform it, acid eructations, gastrodynia, nausea, loss of appetite, distension of the stomach from flatus, sometimes a desire for chalk, leucophlegmatic appearance over the whole body, dematous swellings of the lower extremities, vertigo, headach, pains felt in the hypogastric and lumbar regions, particularly at the menstrual period, alvus constricta,

constricta, the pulse becomes much accelerated upon sudden emotion, to which the sex are liable, palpitation and syncope, when either of these occur, hysteric symptoms generally supervene, and sometimes to such a degree as to form hysteria in its exquisite character.

L.

As the cause of this disease is atony in those arteries which, in a healthy state, pour forth the menses, the indication of cure is to remove this state of debility. But another cause of obstructed menses has, and I think with propriety, been assigned, that is a constriction of the mouths of the arteries. This is more especially the effect of cold, and the exposure of the system to a humid atmosphere, and the feet to a damp ground. Here the indication of cure is very different. When the obstruction from the last cause is accompanied by symptoms of pyrexia, as it frequently is, blood letting, and an antiphlogistic regimen generally remove the complaint in a short space of time. When dyspnæa attends the fever, which it does very frequently, venesection

nefection is more particularly indicated, and may be repeated occasionally.

LI.

TO answer the first indication of cure, the physician should always have in view the state of atony of the uterine vessels. This state is presumed to be always present, and communicates, by sympathy, a general laxity of fibre and leucophlegmatia.

LII.

THE healthy tone may be restored by those remedies called tonics by writers on the materia medica—such as cold bathing, the use of chalybeate waters, and the various preparations of iron usually kept in the shops. Peruvian bark and iron combined, forms an excellent medicine. Also, iron combined with the various vegetable bitters and aromatics. Iron in its different forms merits particular attention, for seldom does the patient recover without the liberal use of this valuable emmenagogue.

LIII.

THE tone of the uterine arteries may also be excited by remedies that act more immediately on the uterus, as venery, when admisible—Cantharides seem also to act on this viscus by consent; also aloes, warm fomentations applied to the hypogastric region, though this should only be applied at the menstrual period. Pediluvia, bodily exercise and the exercise of gestation, compression of the external illiacs. Van Swieten mentions cures being effected by this practice. Though I have seen it several times practised in the Royal Infirmary of Edinburgh—I have never seen good effects result from it. The general action of the system may be excited by electricity.

LIV.

CANTHARIDES have been much used as an emmenagogue, and so far as my observation has extended, it has been of considerable efficacy. When exhibited in the form of tincture, in small doses, repeated two or three

times a-day, and especially when the above tonics are employed, I have seen it produce the most desirable effects.

LV.

WHEN the practice of medicine was guided by the vague and hypothetical fancies of Physicians, and during the period the humoral pathology was so much cherished in the Schools of Medicine, when the phenomena of diseases were explained on the principles of acrimony, morbid matter, and Lentor, this disease served its turn to convince the learned and ingenious Physicians of old that *Lentor*, the *Boerhaavean* hobby-horse, really did exist, and was the cause of diseases.*

LVI.

THE mistaken cause of this disease led the advocates for the Humoral Pathology to a practice not less fallacious than their theory, viz. the use of mercury for the cure of amenorrhœa. This medicine was administered with

* Vide Boerhaave—Van Swieten's *Commentaries*.

with a view to open the arteries obstructed by an impermeable matter, *Lentor*; that the use of mercury is always unsafe or inefficacious in this disease I will not assert; but, that the indiscriminate use, for a length of time, is a practice to be depended on, I can positively deny.

LVII.

SINCE the expulsion of the humoral Pathology, Physicians have sought for a different source to explain the phenomena of diseases, viz. changes in the *solidum vivum*, this has given rise to a more rational practice and one more generally attended with success.

T H E E N D.

