The above, although in separate uses, are all open and on the ground-floor, and extend the whole length of the building.

Mixing-room—shaft	3 ft. by 3 ft.
Fanlight to open	4½ 3½
Filling-room, up stairs—two shafts	{ 5 4
	{ 4 3½
	{ 5 4½
Three fanlights to open	{ 4 3½
	{ 3½ 3½

Five windows, all of which open about 4 ft. each way.

Drying-room—four windows, all of which open, and no one employed in that room, except two, who take in to dry, and fetch out when dry.

These rooms extend the whole length of the building.

ART. IX.

On the Causes and Treatment of Abortion and Sterility: being the Result of an extended Practical Inquiry into the Physiological and Morbid Conditions of the Uterus, with reference especially to Leucorrhæal Affections and the Diseases of Menstruation. By JAMES WHITEHEAD, F.R.C.S., Surgeon to the Manchester and Salford Lying-in Hospital.—London, 1847. 8vo, pp. 426.

WE now proceed to examine the latter portion of Mr. Whitehead's treatise, in which alone the title of the work is strictly appropriate.

Statistics of abortion. There are few facts better known in midwifery, than that abortion is a frequent accident of pregnancy, and that it is more common in the early months, between the third and fourth, than at any other time. But this simple statement of an acknowledged truth is not enough for Mr. Whitehead; who brings some very ponderous-looking statistical tables, with a striking of averages, to bear upon it; with the only result, however, of rather muddling these facts, and encumbering and obscuring the truth. Mr. Whitehead frames a table from the experience of 541 married women in Manchester, to show that the average age at which child-bearing commenced was $21\frac{1}{2}$ years,—that the average period of conception was $2\frac{1}{2}$ months after marriage,—and then comes the practical corollary, that “a wife in this climate, placed in favorable circumstances and in the enjoyment of health, may expect to bear children during twenty years,—namely, from the age of $21\frac{1}{2}$ to $41\frac{1}{2}$.” What witch told Mr. Whitehead this? But we would put it to him whether, when he ventures to derive a general conclusion from numbers—the conclusion having the apparent precision and the incontrovertible accuracy which is the main value of the arithmetic,—he is quite sure that a larger number, say 50,000 instead of 500, would not yield a different result? In this table he has taken the females from the Manchester and Salford Lying-in Charity, and from his private practice, as the representatives of the women throughout England; and we hardly know how many more countries the word climate may include. Surely, he might as well strike an average of the number of fish in the Atlantic, from the contents of a small pond in his neighbourhood. Our own conviction is, that the results of statistics of this kind are fluctuating results; and the facts and truths, which they

profess to substantiate, bear with them the monstrous paradox and fiction of being fluctuating truths and varying facts. This same source of fallacy belongs generally to Mr. Whitehead's statistics. He collects the histories of 2000 pregnant women (a most arduous task, and most praiseworthy in him), and he infers, as an average, that 37 per cent. of mothers abort before the age of 30 years; and that 87 per cent. of married women, who have reached the final menstrual crisis, have aborted during the child-bearing period. Mr. Whitehead, himself, thinks that the first is rather under the real average, and that the numbers from which he derives the last conclusion are "perhaps too limited." It is not without having ourselves endeavoured to work out conclusions on which we might confidently rely, on the very subjects which have engaged Mr. Whitehead's attention, and with a field at our command perhaps even larger than his, that we make these remarks. But the sources of error, particularly those which are inseparable from the testimony of the female, multiply as the inquiry proceeds; and what is doubtful, or even false, gets so mixed up with what is true, that it is difficult and almost impossible, on a large scale, to separate and record the latter alone.

Causes of abortion. Our author uses the term abortion in its widest sense; implying an escape of the ovum, before the full period of uterogestation is accomplished, whether it takes place at the first month, or the eighth month, or any intermediate period. The causes of this most common accident of human pregnancy have been recorded with much care by most practical writers on the subject. Numerous predisposing and accidental causes have been particularized, and are well known. Of the predisposing causes, some attach to the mother, and others to the fœtus or its appendages. Of the former, those deserving the most study are connected with lesions of the utero-placental circulation, the poison of syphilis, and the diseases of the body and neck of the uterus. The latter, in Mr. Whitehead's opinion, less frequently originate in the fœtus, as a primary inherent morbid action, than are occasioned by some faulty state or disease of the uterus itself.

"I can state, without hesitation, that in five out of every six instances of what are denominated 'blighted ova,' disorganized placenta, and hypertrophy or other abnormal condition of the membranes, organic disease of the uterus has been met with; and this, on inquiry, was generally proved to have existed at a period anterior to that from which the defect discovered in the aborted organs could reasonably date its commencement. There appears to be no reason for doubting, that not only disease of the product of conception, but also arrest of development, and consequent organic deficiency or malformation, are the direct result of a faulty condition of the organ or of the constitution upon which its growth and existence depend, and not the effect of any inherent imperfection, or of merely fortuitous causes." (p. 252.)

The influence of aloetic or strong cathartic medicines in disturbing the ovum and causing abortion, has been always included amongst the *accidental* causes; but Mr. Whitehead, with great truth, we think, entertains some doubt as to this result, unless some powerful predisposing causes are coincidentally present. The most alarming symptoms, he says, are sometimes induced by the use of the bitter-apple, savin, rue, foxglove, and other drugs, administered with criminal intention, without in the least degree disturbing the function of the uterus during pregnancy. Even the ergot of rye is by no means uniform in its action. Mr. Whitehead relates a case

in which abortion was successfully induced by it at the fifth month in a woman with great deformity of the pelvis. "It was given in three successive pregnancies; and, in each instance, labour-pains came on after eight or ten doses, and expulsion was effected at the end of the third day. It was perseveringly tried in a fourth pregnancy, in the same individual, and failed completely."

The following table of 378 cases of abortion, arranged so as to show the probable causes of the accident, or the diseased states associated with it, affords a brief epitome of this part of Mr. Whitehead's treatise (p. 256):

"Causes of, and conditions associated with Abortion, in 378 cases."

Accidental agencies	44
Placenta prævia	8
Constipation of the bowels	3
Retroversion of the uterus	3
Incurable disease	1
Vascular congestion	15
Disease of the lower part of the uterus	275
Obscure causes	29."

The first five divisions are but briefly discussed, and do not contain anything worthy of comment. We think that Mr. Whitehead ought not to speak quite so positively of a central implantation of the placenta over the os uteri being "almost invariably" attended by abortion before the fifth month; for our own experience does not accord with this positive assertion. Placental presentations, however, are hardly to be included within the subject of abortion, and we shall forbear, therefore, for the present, to speak further upon them.

Congestion of the uterine circulation. We believe that a congested state of the utero-placental circulation, and an extravasation of the mother's blood beyond its proper limits, is a far more frequent cause of abortion than Mr. Whitehead's table seems to show. Mr. Whitehead himself thinks that "its real average is somewhat greater;" and we cannot help fancying that many of the cases of abortion with disease of the os and cervix uteri were really *caused* by a repletion of the venous system of the womb. We might refer to Dr. Ingleby's work on 'Uterine Hemorrhage,' for a very good account of this subject; and we would express our conviction that, as a cause of early abortion, it prevails to a far greater extent than is generally admitted or supposed. A very interesting case (xxvii) is recorded by Mr. Whitehead, which expresses very graphically the symptoms, treatment, and probable cure of this source of miscarriage; and incidentally mentions a mode of relieving the painful venous swellings about the anus and vulva, which is well worthy of attention. The first five pregnancies in this patient terminated in abortion between the fourth and sixth months. "Each of these abortions had been preceded by distension of the abdomen, pain of the loins, piles, swelling of the labia pudendi, throbbing of the hypogastrium, and convulsive struggles of the foetus in utero." In her sixth pregnancy she fell under the care of Mr. Whitehead, who met these symptoms by moderate venesection, repose, and anodynes, the effect of which was for a time successful. They recurred at two subsequent periods during the same pregnancy, and were again successfully combated in like manner; and the patient was delivered of a

well-grown but still-born child, nearly at the full term of gestation. In a seventh pregnancy the same symptoms recurred twice, and were again relieved in the same manner; and a well-grown living child was brought into the world at the full time. The same symptoms recurred in an eighth and ninth pregnancy, each of which was brought to the same favorable conclusion, though the local congestions were more aggravated; but these, although scarcely at all benefited by topical bleeding, were so completely and instantaneously relieved by the application of a solution of nitrate of silver, that (as Mr. Whitehead was afterwards informed) the question of his integrity became a matter of serious discussion among the patient's friends, who inquired, naturally enough, why this remedy had not been earlier adopted.

By far the most important part of Mr. Whitehead's treatise on Abortion, which he appears to have worked at with much diligence, and to have elucidated with great general success, is that which treats of diseased states of the uterus, particularly of its vaginal portion. It must be acknowledged that this subject has not, until lately, received that attention which it so deservedly merits; and we think that Dr. James H. Bennet is fairly entitled to the credit of having taken the initiative, in bringing it before English practitioners. The importance and frequency of these complaints of the cervix, and their general treatment, were well known in France before Dr. Bennet's book appeared; and to our own knowledge several obstetric practitioners, both in London and Dublin, had noted and even figured the appearances of the os and cervix under different states of inflammation and ulceration. The use of the speculum, which at first was kept back by its supposed indelicacy, was being generally adopted; the diseases of the cervix, which are rendered by its aid so perfectly obvious, were beginning to be understood; and Dr. Bennet's book came out at the very nick of time, so that he singly took possession of the ground, which, in a short time, would probably have been occupied by more than one independent observer. We make this remark, because it appears that Mr. Whitehead, like Dr. Bennet, had learned, as a pupil at the French hospitals, the value of the employment of the speculum in uterine disease; and it had suggested to him an extended, and we may fairly add an original, inquiry into this class of complaints.* Mr. Whitehead's treatise is laid out upon a much broader scale than Dr. Bennet's; a far larger collection of materials has been necessary to compose it; and had he been contented to publish his cases, as they arose, in a weekly journal, with clinical remarks attached to them, he might have gained some brief reputation for priority of observation; but he would have missed his great object of writing a substantial and systematic work. The influence which the diseases of the cervix exercise on the gravid womb, in occasioning a premature expulsion of its contents, has been dwelt upon by Dr. Bennet in some papers and lectures published in the '*Lancet*;' but in justice to Mr. Whitehead, we feel bound to say that his chapters on this subject bear intrinsic evidence of a long-continued, patient investigation, worked out by his own industry, after his own design, and altogether unsupported and uninfluenced by any other observations than his own.

* Since the above was written, we have seen a correspondence in the *Lancet* between Dr. Bennet and Mr. Whitehead; and the communication of the latter gentleman appears to confirm the opinion we have expressed.

The great prevalence of disease of the cervix in pregnant women, and its connexion with abortion, may be judged of by Mr. Whitehead's observation, that it was found to exist in 275 out of 378 cases. These numbers are startling; and, we must candidly admit, far exceed our own experience on the subject. We have so constantly found sterility accompany ulceration of the cervix, that, although we have been long aware of the frequent occurrence of exceptional cases, we were hardly prepared for so formidable an array on the other side. Mr. Whitehead appears, however, to have examined almost all these women by speculum, either before, or within three or four weeks after, the abortion took place. But it strikes us at once, that the disease of the cervix in those who were examined after abortion, was probably, in a majority of cases, induced by the abortion, and were not the cause of the accident. We have so constantly noticed ulceration of the cervix follow and to be dated from an abortion, and the stretching which the cervix, in its undeveloped state, undergoes during abortion so readily accounts for it, that, like Dr. Bennet, we have looked upon this kind of relation as established. We cannot help thinking that there has been some confounding of cause and effect in Mr. Whitehead's cases. No less, however, than one hundred and forty-one of these women suffered the same symptoms in a second, and, in some cases, a third pregnancy, and by a preconcerted arrangement, were again seen and examined by Mr. Whitehead. When disease invades the uterus, there are some signs which are pathognomonic, and others which are accidental, affecting the general health.

"Of the former class are: 1st. Leucorrhœal discharges, whether these be simply of a mucous character, or mixed in variable quantity with pus, sanies, or blood,—provided the latter be not the natural product of menstruation; accompanied, 2dly, with an indefinable, deep-seated aching of the lower belly. 3dly. A fixed pain of peculiar character, on one or both sides of the body, near the groin, occupying the situation of the inguinal canal, and being, generally, unaccompanied with swelling. 4thly. Aching of the loins, implicating the region of the kidneys and upper part of the os sacrum. 5thly. An involuntary and uncontrollable inclination to compress the lower abdominal viscera, by an effort which is expressively denominated 'bearing-down.' 6thly. Rigors, lassitude, and remittent feverishness." (pp. 279-80.)

1. Our author devotes a chapter to a full consideration of these symptoms; and particularly to the first, leucorrhœa. He notices two varieties of this discharge; viz. mucous leucorrhœa, and purulent leucorrhœa. The former appears under two aspects: first, as a glairy, transparent discharge, like white of egg, which has an alkaline reaction, and is furnished principally by the cervix of the womb; and, secondly, as a perfectly white, opaque discharge, about the thickness of cream, and intensely acid, which is the product of the mucous membrane of the vagina. Purulent leucorrhœa is more frequent during pregnancy; it is a product of suppurative inflammation; it has an alkaline reaction, except when neutralized, or even rendered faintly acid, by a free mixture with vaginal mucus; it has a yellowish or greenish colour; and it stains the linen deeply, the stains not being easily removed. This form of leucorrhœa marks the presence of hypertrophy or ulceration of the cervix uteri; and it is this condition of the uterus which is a common cause of abortion. A question of great practical interest, is whether purulent leucorrhœa may occasion symptoms like

bleorrhagia in the male; and Mr. Whitehead, like most men who have examined the question practically, does not hesitate, from his own experience, to answer in the affirmative. Its effect on the conjunctiva of infants is well known; and some interesting examples are related by Mr. Whitehead. But to decide the former question by experiment, he collected some of the matter from the surface of a granulating sore of the cervix, fourteen days after delivery, in a lady whose infant had purulent ophthalmia; and he applied this under the upper eyelid of a full-grown terrier dog.

"At the end of the first day, the eye appeared dim, dull, and heavy; and there was slight vascular fulness. At the end of the second day there was evidence of inflammatory turgescence, the eyelids being swollen, and the ocular conjunctiva suffused: the animal appeared wishful of shunning the light. On the fourth day there was violent inflammation of the whole conjunctiva, with a plentiful secretion of a greenish, yellow pus. This affection was soon subdued by the application of the solid nitrate of silver, and subsequently by an opiate and aluminous collyrium." (p. 319.)

2. The second symptom, viz. deep-seated aching of the hypogastric region, is not a fixed pain, and is not increased by pressure; but it is felt sometimes behind the pubes, at others on one or other iliac fossa, sometimes between the two, and at others it is referred to the sacrum.

3. Fixed pain of one or both groins occupying the situation of the inguinal canal. We quite agree with our author in regarding these as nervous pains, connected with the round ligaments. It is, as he says, sometimes a dull aching pain, at others a stabbing pain; sometimes well defined and within a small compass, at others more extended and less distinct. We have often heard it spoken of as 'like a gathering,' but it is "generally traceable along the ramifications of the musculo-cutaneous, inguino-cutaneous, and external pudic nerves," and there is not any swelling or soreness, or pain on pressure. With reference, however, to the absence of swelling, Mr. Whitehead relates an exceptional case, in which a lady who had inflammatory induration of the anterior lip of the uterus, with disorder of the general health, complained, amongst other symptoms, of a deep-seated pain in the left inguinal region, and a painful swelling, the size of an orange, in the left side of the abdomen, which came on suddenly and simultaneously with pain of the stomach and palpitation. On one occasion Mr. Whitehead had the opportunity of examining this tumour, which he found to be the size of a pullet's egg, and situated half way between the left inguinal canal and the umbilicus. It disappeared under pressure and friction; and he convinced himself that it was caused by cramp of one of the inter-tendinous divisions of the rectus muscle on that side of the body. Mr. Whitehead looks upon this sign as "unerringly symptomatic of inflammation, ulceration, or induration of the anterior labium, or of the corresponding part of the cervix uteri." We know this symptom well; but although we have met with it in the latter cases, we have seen it well marked in hysterical women suffering only from vaginal leucorrhœa, with irregular or deficient menstruation. We lately saw a case of this kind, in which the so-called tumour had imposed on a medical friend; but it turned out to be nothing more than a gathering up of the lower compartment of the rectus muscle, which subsided when a warm sedative poultice was applied over it. We may mention that we have found these inguinal pains much relieved, when severe, by making a caustic

issue over the external abdominal ring, and dressing it afterwards with an ointment containing morphia.

4. Our author cites the anatomical arrangement of the nerves, which Dr. Lee thinks that he has made out, as explaining the lumbar, sacral, renal, hip, and thigh pains, which so constantly attend uterine diseases. He mentions, also, "an acute, smarting, or stabbing pain of the coccyx," or a central perineal pain, involving the lower fibres of the sphincter ani muscle, and accompanied with a compressing—but not a tenesmic—effort; and he regards it as a sign of "inflammation of the posterior labium uteri, or of fissured ulceration of the same part, or of one of the commissures."

5. The effort of "bearing-down" is a sign of uterine disease, which pressure alleviates. It is aggravated by moderate distension of the bladder, or feculent accumulation in the rectum; and the instinctive effort to strain procures for a time a sense of relief.

6. Rigors, lassitude, and remittent feverishness are looked upon by Mr. Whitehead as a sign of the blood being contaminated with pus.

"That the purulent product of uterine disease is constantly liable to be returned into the circulation, is sufficiently proved by the fact, that, after its formation, it is detained, for an indefinite period, upon the surrounding mucous surfaces, in which the process of absorption is always in active operation; and the constitutional irritation which is generally set up under these circumstances, bears forcible evidence of such transference having been effected. The condition of the system thus created, eminently predisposes it to violent attacks of disease from comparatively trivial causes, against which it has no adequate power to contend; and acute inflammatory affections and fever are more frequently attended with disastrous consequences, and arrive at a speedier issue, in constitutions thus tainted than in others." (pp. 298-9.)

Diseases of the gravid uterus considered as causes of abortion. Mr. Whitehead enumerates ten diseases of the uterus as particularly occasioning abortion; and he has arranged them according as they predispose to abortion at an early or a late period of gestation. This classification, as he says, is purely arbitrary. The following are the diseases:—

1. *Inflammation and superficial erosion* of one or both labia, and the external and internal surface of the cervix. Abortion usually at the seventh, eighth, or ninth month of pregnancy.

2. *Varicose ulceration*, generally affecting the back part of the anterior labium. It mostly causes abortion after the period of quickening.

3. *Œdema of the womb*. Abortion sometimes occurs at the latter months of pregnancy.

4. *Fissured ulceration*, with inflammatory hypertrophy of the labia. It predisposes to abortion about the middle period of pregnancy.

5. *Induration of the cervix*. Abortion at the third or fourth months of pregnancy.

6. *Endo-uteritis*. Abortion frequently during the first few weeks, or in the second or third month of pregnancy.

7. *Follicular ulceration* sometimes constitutes the leading feature of uterine disease in cases of abortion.

8. *The gonorrhœal virus*. The inflammation it occasions implicates the labia and adjacent cervix, and is especially liable to be extended to the lining membrane of the uterus. It is a frequent cause of abortion at an

early or late period, according to the extent and severity of the affection.

9. *Syphilitic disease*, in its primary, secondary, and tertiary stages, is capable of producing abortion at any period of the process; but most frequently, perhaps, at the sixth and seventh months.

10. *Prolapsus uteri*.

These diseases are fully and separately described by our author; and the treatment of each is included in the cases which illustrate them. The first of these diseases is very common, occurring in twenty-six per cent. of Mr. Whitehead's cases. He has described the appearance of the cervix, as we have often seen it, most accurately; and he observes that its perfect cure may be long delayed. The ulcer heals from its outer edge, and the margin towards the os uteri is the last to cicatrize; and if this be left uncured, the ulcer may again spread. Mr. Whitehead notices that inflammation of the neck and lips of the uterus without abrasion may occur as an acute disease during pregnancy; being attended with constitutional disturbance, aching of the pubes, and irritable bladder. The affected surface has an erysipelatous look; the cuticle appears tense and shining, but it sometimes breaks and peels off, leaving patches of excoriation, which suppurate, and not unfrequently pass into the granulating ulcer. We quite agree with Mr. Whitehead, in thinking that this is a common cause of the superficial red ulcer of the cervix. The treatment requires attention to constitutional remedies, which ought to be of a sedative and alterative kind; depletion by leeches, if the patient's strength will bear it; and the application of nitrate of silver to the sore at short intervals. Mr. Whitehead notices the immunity from danger, either to the mother or child, in the application of caustics to the lower part of the uterus during pregnancy: a fact which Dr. Bennet had quite established.

Mr. Whitehead thus admirably describes the *varicose ulcer*.

"It is generally met with in women of the bilious temperament and hard fibre, who have been subject to piles and profuse menstrual discharges, and to derangement of the biliary organs. The premonitory condition of the parts consists in a hardened and hypertrophied state of the cervix, which is traversed in various directions by a number of tortuous, dark-coloured trunks, about the thickness of a probe or a crow's quill, raised above the surrounding surface. Larger and more prominent points are here and there noticed, indicating the situation of inosculation of one branch with another; and, generally, at one of these points the ulcerative process is set up, which soon extends through the coats of the vessel, and escape of blood, in greater or less abundance, immediately ensues. The ulcer, which is not long after in being developed, presents an uneven, livid aspect, with irregular margins, near which a few tortuous vessels may be seen ramifying; it now secretes a quantity of pus, and often has small, dark clots of blood or fibrin, the size of a pin's head, lying loose upon the surface. It usually occupies but one labium, the anterior more frequently than the posterior; but sometimes the whole circumference of the cervix is implicated." (p. 324.)

Mr. Whitehead remarks that the lesion of the veins of the cervix sometimes extends itself, inducing a general uterine phlebitis, which almost inevitably occasions abortion. We do not know this disease ourselves as occurring during pregnancy; and we wish that Mr. Whitehead had related the case or cases, on which he founds this important remark. The varicose ulcer causes much local and constitutional distress; and the discharge which accompanies it is at first glairy, then brownish and purulent.

Spurious menstruation, during pregnancy and lactation, is said to arise from it; labour is complicated with hemorrhage; and the lochia are profuse, and last for several weeks beyond the ordinary time. The treatment, according to our author, includes bleeding from the arm and local bleeding by leeches or cupping; the patient should strictly keep the recumbent posture; and 3 to 5 grains of calomel, with hyoseyamus or opium, followed by a saline aperient, should be given. The local treatment consists in applying to the ulcer a strong solution of nitrate of silver; which is to be changed, after the acute symptoms have subsided, for the solid caustic. The discharge of blood is to be arrested by a strong solution of sulphate of zinc, with vin. opii and tincture of matico, applied directly to the diseased surface. "And this applies equally in all cases of passive hemorrhage, when the discharge is furnished from ulcerated surfaces, as well as in other chronic discharges, whether sanguinolent, purulent, mucous, or watery, issuing from the neck of the uterus." We may add, for ourselves, that gallic or tannic acid in solution, or incorporated with some ointment, in the shape of a vaginal suppository, have proved the most generally useful remedies for this purpose. This form of ulcer, in our opinion, when seen during pregnancy, is a local exponent of a general congestion of the uterus; and we believe that a simple granular ulcer may assume the characteristic marks of a varicose ulcer to the sight merely, from the placenta being fixed and formed near the neck of the uterus.

Edema of the neck of the uterus does not often occur,—only in about 4 per cent. of Mr. Whitehead's cases; and our author very justly regards it as of no great importance in itself; but it marks a strong tendency to serous effusion into the cellular tissue and the large cavities. He associates this condition of the cervix with a dropsical state of the amnion; and he explains the watery discharges which occur at the latter months (the false waters as they are termed), as exuding from numerous points on the surface of the swollen cervix. That this fluid is not an accumulation between the amnion and chorion, as was formerly supposed, is the recorded opinion of M. Naegeli, who regards it as a product of the uterus. Mr. Whitehead does not notice the tendency to convulsions, which œdema, not only of the womb but of the upper parts of the body, so decidedly foretels; and the presence of albumen in the urine, with which, during the latter months of pregnancy, this condition is often associated. The treatment indicated is moderate general bleeding; with calomel, and digitalis, and saline aperients, combined or not with quinine. We would add, exercise in the open air, a spare unstimulating diet, the exhibition of James's powder or antimonial wine, as a substitute (in our opinion) for digitalis, and the warm bath.

The fissured ulcer is an ulcer with an hypertrophied and hardened cervix, marked with clefts or fissures in its substance. This ulcer may last for years, and is a frequent cause of habitual abortion. The purulent discharge which accompanies it, becomes mixed with blood, as soon as the expansion of the uterus extends itself as far as the diseased parts; and in this way, we suppose, it becomes another source of spurious menstruation. The treatment in this and in the next disease, viz. *induration* of one or both labia, consists in local depletion, in the exhibition of alteratives, with the use of astringents and caustics to the diseased parts. Induration of the cervix causes dysmenorrhœa. Mr. Whitehead found nitrate of

silver too feeble a caustic to cure this hardening, and he substituted successfully the acid nitrate of mercury. We would recommend him to employ potassa fusa, which we have found more manageable and useful than any other agent. Iodine with mercury, either painted in a liquid form over the cervix, or used as a suppository, is of much service when there are no acute symptoms or an ulcerated surface.

We have already made some remarks on *endo-uteritis*, and we again repeat that we believe Mr. Whitehead has perfectly mistaken the pathology of this disease. He thus describes the state of the lining membrane of the uterus in a female who had been a martyr to dysmenorrhœa. "The lining membrane of the uterus was soft, turgid, injected of a gray colour, and the whole surface was studded with raised spongy tufts of different sizes, in the form of grayish-looking granulations." It is the presence of the raised spongy tufts which, if the membrane be examined carefully under water, will be seen to give it an appearance exactly similar to that of the decidua vera at an early stage of its formation.

Follicular ulceration. The glands which are immediately concerned in this form of inflammation and ulceration, are those on the surface of the cervix externally; and a distinction in function and anatomical construction is implied, although hardly expressed, by our author, between these glands and those placed internally, in the cavity of the cervix. If we are right in this supposition, we find, in one particular at least, the views which we have promulgated and enforced in our own sphere, quite in accordance with Mr. Whitehead's. "I have strong reasons," says Mr. Whitehead, "for believing that the function of these glands is intimately, if not solely, concerned in the phenomena of the venereal orgasm." For some time past we have entertained the same conviction. We believe that, under sexual excitement, they act in concert and sympathetically with the ovaries; and that, towards the close of the act of coitus, they yield their fluid, which, like the secretion from the succenturiate glands, dilutes the semen, and tends to liberate the spermatozoa. The cases which we have seen, where these glands have been inflamed, forming a number of scattered red points on the surface of a tumid cervix, have shown, in our opinion, the secondary effects of an action which has commenced in the ovaries, although seen in the lower part of the womb. Mr. Whitehead's observations have led him to think that anatomically the nabothian glands "consist of an erectile tissue, inclosing a number of cells or tubes, which probably have a fascicular arrangement and are highly organized." But this is not a subject for conjecture. If Mr. Whitehead be right, he ought to be able to speak definitely about them; and by artificial injection, as well as by microscopic examination, to make them out clearly. The glands which are contained within the folds of the ribbings of the channel of the cervix, are easily enough seen and examined after death. They are simple caecal tubes, set deeply in the tissue of the cervix, with a small external orifice, which is frequently so closed, that the thick mucous contents collect within them, and bulge out upon the surface (the ova of Naboth). These are the glands which, we believe, yield the glairy mucous discharge like white of egg; and when this form of leucorrhœa is present, we know of no exception to its being directly produced by these glands, and by no other parts of the sexual passages. It is with us—and our author's doubt upon the matter does not shake our belief—a pathognomonic sign

of an affection of the cervix. The pathology of the first-named glands is well described by Mr. Whitehead. Sometimes they are inflamed, and appear as numerous red, raised points, varying from twenty in number to ten, eight, or a smaller number; and occasionally they are prominent and callous, and assume a warty appearance.

In cachectic habits, with induration of the cervix, they present a worm-eaten appearance; the follicles sometimes inflame and suppurate; and by two or three of them coalescing, a deep excavated sore with callous overhanging margins is formed. "This probably constitutes," says Mr. Whitehead, "the commencement of what has been described as a corroding ulcer." With reference to this point we may say, that we have frequently seen these glands filled with strumous matter, which after a time appears to soften and break up, leaving a more or less deep sore behind. The womb as an organ, is oftentimes the seat of tubercular deposits, which accumulate sometimes in the tubes, sometimes in the glands of the cervix, and occasionally the uterine glands become filled with it; and after a time, the entire mucous membrane appears to be destroyed, becoming rough, ragged, and ulcerating,—the strumous ulceration of the lining membrane of the uterus.

Gonorrhæal inflammation of the uterus. "Gonorrhœa," says Mr. Whitehead, "is much more frequently an affection of the uterus than of the vagina." It is extremely liable to cause endo-uteritis by its inflammatory action extending within the womb. Mr. Whitehead's opinion and views of the disease confirm, but do not go beyond, those which are now prevalent, both on the Continent and in this country. It is a very common cause, amongst the poor particularly, of granulating and other forms of ulceration of the cervix; and it will last in this state for a very considerable time. After the acute symptoms are relieved, the treatment ought to be local; and it may generally be cured by a few applications of the solid nitrate of silver applied through the speculum.

Syphilis. We looked with much interest to this part of Mr. Whitehead's treatise; hoping that his extensive experience in Manchester, and his accurate notice of cases, would have illustrated, more fully than hitherto had been accomplished, the effects of syphilis on the female system during gestation, and its influence on the offspring. There are few subjects which involve points of greater practical importance than this; and we confess that we sympathise with our author's disappointment, in his having delayed, until quite recently, to give it his particular attention. If we might venture to offer Mr. Whitehead our advice, it would be, that his future researches should set strongly in this direction; and we believe that he would do good service to the profession, and accomplish a most praiseworthy task, if he would amass a far larger number of cases than he has done, carefully and rigidly scrutinise them, and deduce the practical inferences which flow from them. Incidental notices of the effect of syphilis as a frequent cause of abortions, and the possibility of its being transmitted to the female and her offspring, when the male parent is labouring under secondary symptoms only, have been given by Mr. Colles, Dr. Maunsell, Mr. Acton, and one or two others. Mr. Whitehead has not advanced beyond this point; although his description of the signs of secondary syphilis, as shown on the vaginal portion of the uterus, is

practical, and we believe quite correct. The following quotation enumerates them.

"The local pathognomonic signs, to enumerate them in the order of their frequency, are :—1. Endo-cervicitis, or inflammation, to greater or less extent, of the lining membrane of the cervix uteri, with inflammation, excoriation, or ulceration of the labia around the uterine orifice. This appearance was noticed in nineteen out of twenty-eight cases. 2. A mottled or patchy appearance of the cervix, consisting of a number of dark red spots of irregular shape, surrounded by lighter coloured portions. They sometimes appeared highly irritable and excoriated, but not aphthous. The whole cervix was generally enlarged and slightly indurated, and there was evidence in most cases of endo-cervicitis. This state of parts was noticed in eleven out of twenty-eight cases. 3. Aphthæ of the cervix, occurring in eight out of twenty-eight instances. The patches, which appeared perfectly white, of a circular or oblong shape, situated upon a dark red base, were easily detached by the aid of lint, and left a bright red surface of similar form and dimensions, having, in some instances, a very minutely granular aspect. These were associated with hypertrophy of the cervix, and sometimes endo-cervicitis. 4. Warts were witnessed in three of the cases registered in the preceding table—twice on the cervix, and once on the walls of the vagina. They were all associated with endo-cervicitis and hypertrophy of the cervix. These excrescences were witnessed, however, in many of the instances not tabulated. Inflammatory induration or hypertrophy of the cervix was present in most of the cases recorded in the table, and there was not unfrequently observed an extremely corrugated state of that part of the vaginal mucous membrane lying in immediate contact with the bladder, and beneath the arch of the pubis, with hypertrophy of the cellular structure surrounding the urethra and about the neck of the bladder." (pp. 372-3.)

There are three ways, says Mr. Whitehead, in which secondary syphilis may originate in the female, which we may thus abbreviate. 1. A female has a primary sore which is imperfectly cured. 2. Another may have a sore on or just within the os uteri, which she is not aware of. In both of these instances, secondary syphilis may obviously enough follow on the primary disease. 3. A man has secondary syphilis, which he directly transmits to a female. "The possibility of transference," says Mr. Whitehead, "of the venereal taint under this form will probably be disputed." It is this third mode of transmission which requires very full illustration as a cause of abortion. Our author relates only two cases of it, which, however, are worthy of notice. (Cases xlvii and xlviii.)

If our limits permitted us, we would willingly pursue this subject further; and we should have no difficulty in showing that a venereal taint, in a more diluted state (if this term be allowed us) than any of the recognised forms of primary, secondary, or tertiary, is capable of being transferred from the male through the influence of the semen, and may be concealed in the female system without producing any of the recognised signs of the disease in her, or even affecting the cervix; and may either be followed by a series of abortions, or by the appearance of syphilitic disease in the child three or four weeks after birth. Our own experience on this subject has led us to examine very closely for the history of syphilis, *supposed to be cured*, as a poison still influencing the ovum, and causing habitual abortion; and since we have done so, we have been surprised at the number of cases which have presented themselves to us. Attention ought to be directed to the examination of the aborted ova,

which, we believe, will frequently bear marks of the syphilitic poison. Early abortions from this cause generally show marks of a slow death of the fœtus, which frequently is dissolved in the liquor amnii, leaving only the cord behind; and the chorion is surrounded with coagulated blood, which presents an irregular mammillated appearance when looked at from within the amnion, the ovum having previously been opened. Sometimes white patches are seen on the surface of the early placenta, and the parietal decidua appears to have been inflamed; and in one case which came under our notice, the ovum had degenerated on four occasions into the hydatiniform placenta (diseased chorion), which originated apparently from syphilitic poison. Some practical points, connected with the treatment of these cases, still need settling. Both parents may be quite free from any notable sign of syphilis; and yet the child may show decided marks of it either when born, or within one month of its birth. First, the child is to be cured; and the only difference in its management is the mode in which mercury ought to be administered.

This may be done in three ways: 1st, by inunction, after Sir B. Brodie's plan, which Mr. Whitehead approves; 2d, by small doses of the hyd. c. cretâ; and 3d, by salivating the mother, and influencing the child through the mammary secretion. Of these plans, we ourselves give a decided preference to the administration of one- or two-grain doses of gray powder twice a day; and we may safely allege that there are few cases in practice which are more uniformly gratifying in their results than these when so treated. The child gets plump and well-nourished, and the skin clears, in a comparatively short time. But a more difficult question arises in the management of the parents. Granting the necessity for the use of mercury, which, like our author, we hold to be of prime importance for the destruction of the poison, ought one or both parents to be put under its influence, before the chance of another pregnancy is again hazarded? As a rule, which admits, however, of occasional exceptions, we believe there is no security unless both parents are similarly treated; and our habit has been strongly to advise this step in the cases which have occurred to us. Mr. Whitehead judiciously observes that much depends on the mode of administering mercury; and that the mineral ought not to be dispensed with, even in debilitated constitutions, if the venereal taint shall be known to exist. In this we most fully concur; and we speak from extensive experience when we say, that the solution of bichloride of mercury, combined with cinchona and sarsaparilla, may be given to very feeble and cachectic persons with the best possible result. The beneficial effects of mercury may be securely obtained, and the constitutional powers be invigorated and restored at the same time. Mr. Whitehead does not think very highly of sarsaparilla, and he speaks with far more confidence of the *rumex hydrolapathum* combined with *taraxacum* and *sassafras*, in the treatment of secondary syphilis.

Prolapsus uteri. The last of the ten diseases which our author notices, is this displacement of the uterus, which interferes with gestation, by impeding the current of blood through the veins of the pelvis, and inconveniencing the proper action of the bladder and rectum. Like most practical men, Mr. Whitehead looks upon the atony of the vagina, and, we might add, a weak and insufficient support from the floor of the pelvis, as the cause of descent of the womb. He, like many others, deprecates

the use of pessaries; and he directs his treatment for the cure of this descent, in all its stages, to a combination of constitutional and local measures; the latter consisting in the application of suitable remedies to any ulcerated or diseased surface, and the use of astringents, such as matico, tannin, &c., to the flaccid vagina. He has contrived a prolapsus tube, which patients can employ themselves, and by means of it, direct tents charged with these astringent ingredients to the upper part of the vagina. We know nothing of this prolapsus tube, beyond the figure which our author has had engraved of it; but it does not appear to us to possess any advantage over the curved glass tube, which Dr. Montgomery, we believe, first employed. The close approximation of the walls of the vagina, which is always seen on the withdrawal of a speculum, points out the absolute necessity, when injections are being used, that the orifice of the instrument should come in contact with the part affected; and this affords our author the pretext for a sneer against those "authors who have gravely recommended the patient to lie on her back, with the pelvis elevated, in order to receive the full effect of the material injected." In spite, however, of this, we beg to say, that if patients do lie on their back, with a pillow under the pelvis, and use a good Clarke's syringe, or still better, that lately contrived by Dr. Kennedy, they may easily, and do, to our certain knowledge, readily inject fluid to the upper dilated part of the vagina, and so submit the lower part of the womb and the entire vagina to the influence of the ingredient injected. There are, no doubt, many bad instruments and very much bad management employed in this common operation; and in many cases suppositories of tannin, &c., may be advantageously substituted. A table of thirteen cases of prolapsus uteri is appended to this paragraph.

Sterility. The chapter on Sterility, which figures so prominently in the title-page, is short, and contains but little that was not well known before. Mr. Whitehead limits his consideration of the causes of sterility to "those more frequent causes, consisting in diseased states of the uterus and of its organic product, and which, generally speaking, are susceptible both of demonstration and cure." Of these, that on which he most dwells is "chronic endo-uteritis, or what may be called irritable uterus." We have already referred to this affection, which Mr. Whitehead renders still more obscure, by confounding it with the disease which Dr. Gooch has described as irritable uterus. He says that this disease may prevent pregnancy in three ways,—

"In the first place, the inflammatory action going on within the uterus, and which is liable to be aggravated under states of venereal excitement, may prevent the formation of the membrana decidua, and the ovum, even although impregnated, is necessarily thrown off without any manifestation of its existence in the fertilised state; secondly, the diseased condition of the lining membrane of the uterus may be extended to the Fallopian canals, obliterating for the time their internal orifices, so as to oppose an insurmountable obstacle to the admission of the spermatie fluid within them, and thus to render the fertilizing effort abortive; thirdly, the nature of the secretion furnished by the internal surface of the uterus or of the vagina, under certain states of disease, may be inimical to the active existence of the spermatozoa, occasioning their destruction before they arrive at the extricated ovula." (401-2.)

The first two conditions, which we believe involve an error, are not discussed in this place; but Mr. Whitehead refers particularly to the

deleterious influence which certain morbid states of the uterine and vaginal mucus exercise on the spermatic animalcules. He quotes Donn's well-known experiments on this point, which appear conclusively to show that very acid mucus from the vagina, and even that which is secreted during pregnancy, occasion the speedy death of the spermatozoa. Mr. Whitehead thinks that the latter state is accounted for by the absence of the alkaline mucus from the uterus, which modifies the acid character of that which is secreted by the vagina. In chronic endo-uteritis, and perhaps in other forms of disease, the properties of the mucus from the uterus are quite altered; and, instead of partially neutralising the acid properties of the vaginal mucus, it surcharges it with an excess of that which M. Donn has experimentally shown to be destructive to the zoosperms. We quite participate in M. Donn's and our author's views on this subject; and we are disposed also to look to constitutional treatment as the most efficacious means of altering this derangement of secretion. We need scarcely say, however, that should there be any ulceration or other disease of the cervix, the treatment of a local kind, which is appropriate for its cure, will tend materially to remove one symptom of it,—namely, sterility. The cases which Mr. Whitehead narrates, like those supplied by Dr. Bennet, prove this point; which is sufficiently familiar to most who are in the habit of treating uterine disease. No notice is taken of the cure of sterility and dysmenorrhea by the mechanical dilatation of a morbidly-contracted os uteri: and we must say, that this part of Mr. Whitehead's treatise is defective and unsatisfactory.

In bringing our review of Mr. Whitehead's book to a conclusion, we are glad to express the high estimate we have formed of its author, as a talented, truthful, and philosophical observer. We admire his independent self-reliance, although it sometimes runs to a fault; and we quite appreciate the hard work he must have undergone in collecting the materials for his treatise. Our readers will not, we trust, have inferred from the freedom and minuteness with which we have animadverted upon what we regard as its faults, that we desire to lead them to an unfavorable estimate of this production. On the contrary, it is because the most original portions of the work,—the product of Mr. Whitehead's own observations,—are so valuable, that we have thought it right to subject the whole to a close scrutiny; and to point out where we think that he has been led into error. We must remind Mr. Whitehead of the discrepancy we have indicated between the title and the contents of his work; and would urge him, on the next occasion on which he comes before the public, to think less of filling a book, and more of making a complete, but concise exposition of his subject, whatever that may be. We sincerely hope, and fully anticipate, that he will receive encouragement to extend his observations into other branches of uterine pathology, by a rapid sale of this his first work; and trusting that our recommendation of it to the profession will promote this result, we conscientiously and cordially give it.