SECTION VI.

THE VAGINA MUST BE CAPABLE OF RECEIVING AND OF RETAINING THE SPERMATIC FLUID.

We here propose to pass in review the usual obstacles to the introduction of the semen, and then the conditions that prevent its retention or sojourn in the vagina. For it is not enough that the semen be deposited in the vagina; it must not be immediately ejected.

What, then, are the ordinary obstacles to its introduction? They are mostly anatomical or mechanical, and may be arranged under the following heads:

1st. The hymen may be imperforate or nearly so.

2nd. There may be vaginismus; *i. e.* hymeneal hyperæsthesia with a spasmodic contraction of the sphincter vaginæ.

3rd. There may be atresia of the vagina

4th. The vagina may be wanting.

1. Our medical literature contains the history of many cases in which the hymen was so tough as to resist all reasonable efforts at penetration. And very many in which it has been found completely occluded, with retention of the menstrual flow. It is a little singular that I have never met with an example of either of these conditions.

All the cases of impenetrable hymen that I have seen were examples of vaginismus, where the obstruction was not in the mere resisting power of this membrane, but in a spasm of the sphincter muscle, the result of the irritable condition of the hymen.

Where the hymen is hermetically sealed up with a retention of the menses, it is easy enough to open it and evacuate the imprisoned secretion by a "crucial incision," as it is termed.

It is against this "crucial incision" that I would seriously warn the inexperienced; as, simple as the operation is, it is fraught with great danger,—not *per se*, but in the consequence of a rapid evacuation of the retained fluid. Whenever it is necessary to perform an operation for retained menses, whether it be on the hymen, the os uteri, or at any point along the vagina between the two, it should always be done by a simple puncture with an exploring needle, leaving the gradual evacuation of the flood to nature and to time. The object of this is to allow the uterus time to contract as its contents slowly ooze away This is a matter of importance only where there is a considerable amount of fluid. If there is not more than an ounce or two, I do not think it makes any difference whether we evacuate it suddenly or slowly.

The probable amount of fluid may be estimated simply by palpation, which determines with sufficient accuracy the size of the uterus with its contents.

If the uterus be but slightly enlarged by the retained fluid, we may open it fearlessly; but if it approach the size of the fœtal head, we should do it with the greatest caution.

Death has often speedily followed an incision of the hymen, where there was retention of the menses. Of course, the mere wounding of the hymen has nothing whatever to do with the fatal result, which seems to be due to pyæmia. Some think that this is caused by the admission of air into the cavity of the uterus, which, having been over-distended, fails to contract as rapidly as the fluid is evacuated. At the Woman's Hospital we

have had repeatedly to evacuate large quantities of retained menses, and we have never seen any accident follow. All our cases were the result of atresia of some part of the vagina, or of the os tincæ. One only was seemingly idiopathic, the others the result of sloughing from difficult labour.

We have always punctured the occluded portion with an exploring needle, or made a very small opening with the tenotomy knife usually found in our pocket cases; and, knowing the dangers of the operation, I must again insist on this point. If I had now to operate on the hymen of a delicate young woman, whose uterus and vagina held six or eight ounces of fluid, I would give her ergot till its specific action was produced on the uterus, and then make a small puncture in the hymen; and this for the purpose of insuring uterine contraction while the fluid was being evacuated. I cannot do better than to quote here Dr. Graily Hewitt, the latest and one of the best authorities on the diseases of women.*—"The plan ordinarily adopted has been, by means of a lancet, or bistoury, or trochar, to make an opening in the hymen sufficient to allow of the escape of the chief part of the retained blood at once, and at the time of the operation. I would suggest that an opening just large enough to allow of the escape of a very minute quantity of fluid be made at first, and that this opening should be made obliquely in the obstructing membrane, giving it a valvular character. The fluid should be evacuated *guttatim*. If the opening become closed, a second and similar opening to be made the following day, or two or three days later, and a firm but gentle support given to

* "The Diagnosis and Treatment of the Diseases of Women." By Graily Hewitt, M.D., &c., &c. London. 1863.

the abdomen by the aid of a bandage during the whole period of the evacuation of the fluid; the patient to be kept in a state of absolute rest. The aperture in the hymen should not be increased in size until the uterus has returned to its proper dimensions, the object being, at first, simply to allow the fluid to escape in the most gradual manner possible."

Dr. Arthur Farre has given me the particulars of a case of retained menses, which was seen some forty years ago by his father, an eminent physician of his time. A young lady in the country had retention of the menses; pregnancy was suspected by the family physician; Dr. Farre was sent for to decide the nature of the case; but before his arrival the hymen was ruptured spontaneously; a large quantity of retained menses was suddenly evacuated; irritative fever set in, and the patient died in a few days. Although I have frequently heard of a fatal result in similar cases, as a consequence of surgical interference, this is the only one in which I have known it to happen in this way.

2. Vaginismus.—By the term vaginismus I mean an excessive hyperæsthesia of the hymen and vulvar outlet, associated with such involuntary spasmodic contraction of the sphincter vaginæ as to prevent coition. This irritable spasmodic action is produced by the gentlest touch: often the touch of a camel's-hair pencil or fine feather will produce such agony as to cause the patient to shriek out, complaining at the same time that the pain is that of thrusting a sharp knife into the sensitive part. This is worse in some than in others. In a very large majority, the pain and spasm conjoined are so great as to preclude the possibility of sexual intercourse. In some instances it will

be borne occasionally, notwithstanding the intolerable suffering; while in others it will be wholly abandoned, even after the act has been repeatedly and, as it were, perfectly performed.

We can hardly make a mistake in the diagnosis of this affection. It could be confounded only with imperforate hymen or atresia of the vagina, the true nature of which is easily ascertained by examination. In these there is not necessarily inordinate pain on being touched. There is only a mechanical impediment to the passage of a probe or the finger into the vagina, while in the other the gentlest touch, as said before, produces excessive suffering, and this is the chief diagnostic.

To examine a case of suspected vaginismus, place the patient on the back, with the legs flexed; separate gently the labia. The patient will exhibit signs of alarm and agitation,—not that we hurt her, but she feels an indescribable, insuperable dread of being hurt. She is like a timid, nervous person who has once had a pointed instrument thrust into the exposed pulp of an inflamed nerve in a decayed tooth. The very idea of its repetition throws her into a nervous rigour. The degree of general disturbance will depend upon the peculiar temperament of the individual. But be this as it may, when we come to explore the seat of trouble, the strongest will and stoutest frame will exhibit unmistakable signs of excruciating suffering; for the gentlest touch with the finger, a probe, even with a feather, produces great agony. The sensitiveness is at all parts of the vaginal outlet. It is very great at and near the meatus urinarius on each side where the hymen takes its origin; and greater still near the orifice of the vulvo-vaginal gland; but often the most sensitive point is at the fourchette, where the hymen projects upwards. The

whole vulval or outer face of the hymen is sensitive, but it is more so along its reduplication or base. The touch of a probe or a camel's-hair pencil is sufficient.

But while the outer face of the hymen and the adjacent parts are so sensitive, if we turn the patient on the left side and separate the nates and vulva so as to pass a sound through the hymen without touching its outer surface, and then make pressure with it laterally or backwards on the inner or vaginal aspect of this membrane, we will not find there any abnormal degree of sensitiveness.

Touching the outer surface of the hymen in any portion of its reduplication, produces not only pain, but an involuntary spasm of the sphincter muscle both of the vagina and anus. In some instances, the sphincter ani feels as hard as a ball of ivory; and one of my patients supposed it to be a tumour that would require exsection. The supersensitiveness is diagnostic; the spasm pathognomonic.

The most perfect examples of vaginismus that I have seen were uncomplicated with inflammation; but I have met with several cases in which there was a redness or erythema at the fourchette. Usually, the hymen is thick and voluminous, and when the finger is forced through it, its free border often feels as resistant as if bound by a fine cord or wire.

By the term blepharismus, or blepharo-spasmus, we mean an involuntary painful spasmodic contraction of the orbicularis palpebrarum, with great supersensitiveness, or intolerance of light. By the term laryngismus, we mean a spasmodic contraction of the vocal apparatus, producing stridulous inspiration; and, by analogy, I call this painful spasmodic contraction of the mouth of the vagina, vaginismus.

I presented a paper on this subject to the Obstetrical Society of London in December, 1861,* from which I will here extract a few particulars.

In May, 1857, I was called to see a lady, aged forty-five years, who was married at twenty, and had been an invalid ever since. Menstruation, always painful, had just ceased. She had great irritability of the bladder, a sense of bearing down, and other symptoms of uterine derangement. But to me the most remarkable thing in her history was the fact that she had remained a virgin notwithstanding a married state of a quarter of a century. Some two or three years after marriage her physician discovered a sanguineous mucous tubercle at the meatus urinarius, which he removed, and then attempted to dilate the vagina with graduated bougies, which produced great suffering, without the least permanent improvement. She consulted the most eminent surgeons in the principal capitals of America, and subsequently visited London and Paris for the same purpose; but no one gave a satisfactory solution of the case, nor advised anything more than the bougie system, which had been already fruitlessly exhausted.

Her nervous system was in a deplorable condition. She was exceedingly impressible, the slightest noise being intensely disagreeable. She was able to walk only across her room, but did not often venture on this experiment, being confined most of the time to her couch, where she gave herself up to unceasing intellectual effort.

I attempted to make a vaginal examination, but failed completely. The slightest touch at the mouth of the

* "Obstetrical Transactions," 1862, vol. II.

vagina produced intense suffering, throwing her nervous system into great commotion; there was a general muscular agitation; her whole frame shivered as if with the rigours of an intermittent; she shrieked and sobbed aloud; her eyes glared wildly; tears rolled down her cheeks, and she presented altogether the most pitiable appearance of terror and agony. Notwithstanding all these outward involuntary evidences of physical suffering, she had the moral fortitude to hold herself on the couch, and implored me not to desist from my efforts if there was the least hope of finding out anything about her inexplicable condition. After pressing with all my strength for some moments, I succeeded in introducing the index finger into the vagina up to the second joint, but no further. The resistance to its passage was so great, and the vaginal contraction so firm, as to deaden the sensation of the finger, and thus the examination revealed only an insuperable spasm of the sphincter vaginæ. I candidly told her husband I knew nothing whatever about the case, had never seen or heard of anything like it, and therefore could promise nothing. However I suggested the propriety of their going to New York, for further investigation under anæsthesia. They acted promptly on this suggestion, and I invited the late Dr. John W. Francis, Dr. Emmet, of the Woman's Hospital, Professor Van Buren, and Dr. Kissam to see her with me. The two latter-named gentlemen assumed the responsibility of the etherization. Previously to the anæsthesia I attempted to make a vaginal examination, when the same train of symptoms was manifested as on the former occasion. But as soon as she was fully under the influence of the ether, I found, greatly to my surprise, the mouth of the vagina completely relaxed and the vagina itself perfectly normal.

It was not large, but certainly quite as well developed as it ought to have been at her time of life and under the circumstances. The uterus was retroverted, and there was a small polypoid excrescence about the size of a pea hanging from the os tincæ. This was removed, not with the expectation of its exerting any influence on her peculiar condition, but to prevent the risk of its future growth. I gave the opinion that it was a spasmodic contraction of the sphincter vaginæ, resulting from an irritable condition of the nerves of the part, which I could not explain. When asked if it was possible to cure it, I said—"I do not know, for the books throw no light on the subject; but it appears to me that the only rational treatment would be surgical." However I declined to do anything, on the ground that an untried process was not justifiable on one in her position in society, the hospital being the legitimate field for experimental observation.

This case is an exaggerated example of its class. I have seen several nearly, but not quite, as bad. The high intellectual endowments of this lady, her elegant culture and fine social position, as well as her long suffering, all conspired to make her case one of much thought and great anxiety to me; and it was not easily dismissed from my mind. It was the first case of the sort I had ever seen, and I could not help wondering if it would be the last. But about fifteen months after this, Professor Pitcher, of Detroit, Michigan, sent me another similar case, except that the lady had been married but two years. She had the same instinctive dread of being touched, the same muscular agitation and shivering of the whole frame, and the same pain and spasm of the sphincter on attempting to pass the finger into the vagina. As this lady's husband threat-

ened to obtain a divorce, I looked upon her case as a proper one for experiment. Explaining to her fully our ignorance on the subject, I proposed a series of experimental incisions, which she readily assented to. Thinking that the division of the irritable spasmodic outlet was the only rational operative procedure, I divided first only the edges of the hymeneal membrane on each side of the fourchette. There was no relief. Waiting for the wounds to heal, I then divided the parts again at the same points, but extending the incisions deeply through the mucous membrane and through some of the fibres of the sphincter muscle. This was followed by some improvement; she could bear the introduction of one finger without very great pain, and could even tolerate two, but it was with considerable suffering. I now saw that the hymen itself was the focus of the excessive irritability, and I then proposed to cut it out entirely, and afterwards to repeat the lateral incisions as before, making them deeper, and rendering the dilatation permanent by the use of a properly constructed bougie. By this time the mother of my patient came to the conclusion that I was experimenting on her daughter. I told her it was true, and attempted to justify the propriety of the course when a lawsuit and a divorce were in prospect. The mother, however, was inexorable, and unfortunately removed her daughter from my care. But her improvement was so great that I had no doubt of her ability to fulfil the duties of a wife under some difficulties. The experience gained by this case was of great value to me.

A few weeks afterwards, January, 1859, another case fell into my hands. This patient was the wife of a clergyman, and had been married six years. Sexual intercourse was impossible. Several surgeons had been consulted, but

without any explanation of her condition, and of course without any relief. On examination, I discovered a sanguineous, mucous, painful tumour at the meatus urinarius, and notwithstanding the experience already related, I persuaded myself that this tubercle was alone the source of all her trouble. It was removed, and its seat cauterized. In due time she returned home, but came back to me in a few days to report a persistence of her former sufferings. On a more minute examination, I found it to be in all particulars just such a case as those previously related, but not quite so intense in its manifestations. The slightest touch with a feather or with a camel's-hair pencil at the reduplication of the hymeneal membrane produced as severe suffering as if she were cut with a knife. While this lady was under observation (April, 1859), a fourth case of the same sort came under my care, that of a woman who had been married three years. Sexual intercourse had been imperfectly accomplished a few times during the first few weeks after marriage. She innocently supposed that all women had to suffer as she did, and tried to bear it; but her sufferings were so severe that at last she looked with the greatest terror upon the approaches of her husband. At her earnest entreaties, he ceased all efforts at sexual intercourse, and they lived together like brother and sister. But at last the mother of the poor timid girl began to wonder why, after three years of married life, her daughter, who seemed to be healthy and had a healthy vigorous young husband, did not become pregnant, and ventured to speak of her disappointment; whereupon the daughter hesitatingly explained it all to the mother, who immediately brought her to see me, when I found precisely the same condition of things already described. A few weeks after this, Dr. Harris, of East Thirtieth

Street, New York, sent me another case (the fifth). His patient had been married two and a half years, and sexual intercourse was impossible. I now (June 18th, 1859) had three cases all at one time under observation; but to cut short this long narrative, I may here say that they were all, after many experiments and disappointments, perfectly cured in the following August.

From personal observation I can confidently assert that I know of no disease capable of producing so much unhappiness to both parties of the marriage contract, and I am happy to state that I know of no serious trouble that can be cured so easily, so safely, and so certainly.

Treatment.—The treatment consists in the removal of the hymen, the incision of the vaginal orifice, and subsequent dilatation. The last is useless without the first two, but is essential to easy and perfect success with them. I usually make two operations, but it may all be done at once.

Placing the patient (etherized) on the left side, I seize the hymeneal membrane with a delicate pair of forceps just at its junction with the urethra on the left side, and putting it on the stretch, clip with properly curved scissors till the whole is removed in one continuous piece.

In some cases the hæmorrhage requires a compress of lint. In two instances the bleeding was excessive, but easily checked with the Liq. Ferri Persulphatis. The cut surface usually heals entirely in three or four days, after which the operation for a radical cure may be performed. Notwithstanding the removal of the thick, sensitive hymen, the cicatrix marking its original place at the mouth of the vagina is exceedingly sensitive, and in some instances feels hard and tense, as if

a wire or small cord were constricting the outlet. This I divided at various points and in divers ways during my early experiments, and finally arrived at the following method, as being the surest and best.

Place the patient (fully etherized) as for lithotomy, on the back; pass the index and middle fingers of the left hand into the vagina, separate them laterally, so as to dilate the vagina as widely as possible, putting the fourchette on the stretch; then with a common scalpel make a deep cut through the vaginal tissue on one side of the mesial line, bringing it from above downwards, and terminating at the raphé of the perineum. This cut forms one side of a Y. Then pass the knife again into the vagina, still dilating with the fingers as before, and cut in like manner on the opposite side from above downwards, uniting the two incisions at or near the raphé, and prolonging them quite to the perineal integument. Each cut will be about two inches long, *i. e.* half an inch or more above the edge of the sphincter, half an inch over its fibres, and an inch from its lower edge to the perineal raphé. Of course this will vary in different subjects according to the development of the parts in each. To perfect the cure it is necessary for the patient to wear for a time a properly adapted bougie or dilator. I use a dilator made usually of glass, sometimes of metal or ivory. I prefer glass because it is easily kept clean, and being transparent, it is easy to see the cut surface, and indeed the whole vagina, without removing it. If there is much bleeding, I introduce the dilator at once; but usually I wait twenty-four hours, when it is worn one, two, three, or four hours at once. Its introduction is attended with a sense of soreness, but with none of the peculiar agonizing suffering so characteristic of the original disease.

The patient will generally wear the dilator two hours in the morning and two or three hours in the afternoon or evening; sometimes for a longer period. I have known a few who wore it six or eight hours at a time. I have often been astonished at the rapidity with which the cuts sometimes healed, the cure being seemingly facilitated by the pressure of the glass tube.

I direct the dilator to be worn daily for two or three weeks, or longer, or till the parts are entirely cured and all sensitiveness removed.

The dilator is a tube about three inches long, slightly conical, open at one end, closed at the other, and an inch and a quarter or an inch and a third in diameter at the largest part, near the open or outer end.

There is a depression or sulcus on one side for the urethra and neck of the bladder (fig. 128).

The outer open end allows the pressure of the atmosphere to assist in retaining it easily in the vagina.

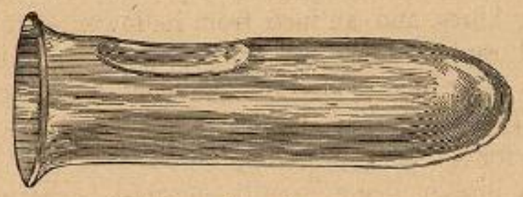

Fig. 128.

When closed at both ends, it is much more difficult to retain it *in situ*, even with a well-adjusted T bandage. The depression for the urethra is very important, for I found that a perfectly round cylinder, worn for three or four hours, always injured the urethra; and, moreover, this urethral depression assists the self-retaining capacity of the instrument.

Dr. Rottenstein, a celebrated American dentist in Paris, has recently made for me a dilator of vulcanite, which answers very well. It is quite as cleanly as glass, and is not so liable to be broken.

While these pages were going through the press, I had occasion to operate on a lady fifty-four years of age, who was married at eighteen, a widow at twenty, and married again at forty. During her first marriage copulation was effected occasionally, but it was under most trying circumstances, and with the most intense suffering. During her last marriage it was impossible. I found the mouth of the vagina a little reddish, inflamed, and excessively irritable, the slightest touch with a probe producing intense agony. The finger could be passed into the vagina, but it caused great suffering. It was, and had always been, a well-marked case of vaginismus. The hymen did not present any undue development, and I simply incised the parts on each side of the middle line, through to the verge of the perineum. The whole vulvar outlet was unnaturally small, and the incisions were extended well through the outer edge of the perineum. A glass dilator was worn three or four hours a day for a month; but at the end of this time the mouth of the vagina was just as sensitive and as spasmodic as before the operation.

I now determined to remove all the hypertrophied tissue at the fourchette and divide anew the parts beneath. Wishing to make pressure with the dilator more in the direction of the fourchette and perineum than laterally, I had the instrument made as represented in fig. 129, which seems to be a great improvement on the purely cylindrical instrument. Instead of expanding the outer end of the dilator, as seen in fig. 128, it is often necessary to roll its border inwards to prevent pressure on the labia.

In some instances the instrument is too long, and produces pain by pressure against the cervix uteri. It will then be necessary to make it shorter. The downward curvature of the conical extremity, as here represented, prevents it from striking against and hurting the uterus.

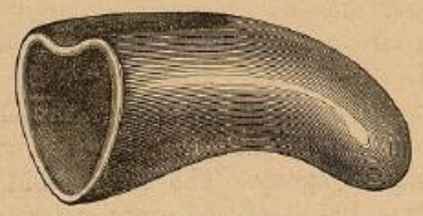

Fig. 129.

I have now operated on thirty-nine cases of vaginismus, and in every instance with perfect success. Many of these were complicated with other causes of a sterile condition, such as painful menstruation, contracted os, conical cervix, fibroid tumour, or malposition. But notwithstanding this, six conceptions have followed the operation. Some others, from whom I have not heard, have probably conceived, and a few more of them will almost certainly do so. They have usually been so well satisfied with the removal of the vaginismus that they did not care to undergo any further treatment for a condition that might be attended to at a more convenient season.

Churchill, Debout, and some others, have thought that a state of vaginismus could hardly exist long where the husband possessed strong copulative capacity; but I am sure this is an error; for I have seen several instances in which the virile power of the husband was unusually strong, but yet powerless to overcome the

obstruction; and I have seen two cases that had been subjected to the most powerful means of dilatation, long continued, and to a great degree; and yet the spasmodic action remained just the same. One of these has now been married eighteen years; and for six months she submitted, many years ago, to the torture of a trivalve dilator passed into the vagina, and opened to its widest extent: and all for no purpose. So great was her dread of the peculiar pain of this affection that her husband could not persuade her to submit to an operation at my hands, and thus she remains as at her marriage.

I have operated on those who had been married seventeen years, fifteen years, twelve years, and so on down to two years. In a few instances sexual intercourse had been imperfectly accomplished, but in the great majority of cases it had never been consummated. In two instances, the husbands, though young and vigorous, were so excitable that the semen was quickly lost, but in both of these cases the vaginismus was so inveterate that I am sure it would have persisted even under other circumstances.

Dr. T. G. Thomas, of New York, gave me the history of a case in which a physician etherized his patient, and then left her to her husband, who cohabited with her with the greatest ease; but he could not repeat the act when she was not etherized. Fortunately, the period was well chosen, for this single act of copulation was followed by conception. I have known other cases where conception occurred without the introduction of the virile organ. The seminal fluid was lost at the mouth of the vagina, and a little was doubtless injected through the hymeneal opening, and made its way to the cavity of the uterus.

Sir Joseph Olliffe has given me the history of a case

of this sort, where conception occurred without penetration of the hymen. It is not uncommon to hear of a pregnancy at full term where the hymen is unruptured. I presume that all such cases are examples of vaginismus.

Many surgeons are of opinion, since I first described this affection, that it is sufficient to forcibly dilate the mouth of the vagina, or to incise it, and then use the dilator; but I am well satisfied that the plan of removing the hymen entirely is much the best; not only of removing the hymen, but of removing any and every super-sensitive point.

In 1863, I saw a lady with vaginismus who had been married six years, and during all this time she had submitted to sexual congress, notwithstanding the intense suffering that it occasioned her. I found the hymen unbroken, but dilatable. It was exceedingly tough, and would stretch almost like an india-rubber string. I used my speculum, pulling the perineum far back towards the coccyx, which opened the mouth of the vagina sufficiently for any purpose. This was attended with great pain, but the hymen did not give way. I excised it, divided the fourchette, and used the dilator till the parts were healed. She went home, but returned in a few days to say that sexual intercourse was as unbearable as ever. On a minute examination, I found a small tubercle of indurated tissue on the right side of the mouth of the vagina, not larger than a grain of wheat. It was very sensitive even to the touch of a camel's-hair pencil. It was hooked up with a tenaculum, and cut out, and immediately the peculiar sensitiveness of the part was gone. The relief afforded was as sudden as it would have been by the removal of a subcutaneous neuromatous tumour. Indeed it has always

appeared to me that the symptoms of vaginismus were neuromatous. However, my friend Professor Alonzo Clark, one of the ablest pathologists in my own country, has frequently examined the vaginismus hymen for me, and could not find any enlarged nerve filaments running through it.

The case above related was cured by the slight operation performed the second time.

Fig. 130 represents the exact size of the hymen in this case, immediately after its removal. The indentation on its left side corresponds precisely with the seat of the little tubercle removed at the second operation, and which was doubtless the result of the imperfect excision of the thickened base of the hymeneal membrane. This case proves very conclusively how important it is to exsect the hymen in its totality; for here a small point was left which produced great suffering afterwards. But to show to a greater certainty the propriety of this course of treatment, I will here relate a most remarkable case that fell under my observation a few years ago.

Fig. 130.

A lady, aged thirty, was married at twenty-one. Vigorous efforts at copulation were made fruitlessly for five or six weeks. The husband and wife were both young and of course ignorant on the subject, and were not surprised that there was difficulty at the beginning; but soon they began to debate the point of asking medical advice. At last the wife became worn out with the oft-repeated and painful efforts at coition, and agreed to a consultation.

The family physician was called, who supposed that there must be some unusual degree of disproportion in

the relative development of their respective genital organs, and advised sexual intercourse while the wife was etherized. This was soon done and the wife knew nothing of it. But when the act was attempted the next day and the next, it was found to be utterly impossible. After a week's fruitless trial, the physician was sent for again, and again she was etherized, and coition effected with the greatest ease. But it was subsequently impossible when she was not etherized. The husband was tall, athletic, and muscular; says he is not subject to hasty ejaculation, and possesses extraordinary copulative powers. So that it was not the fault of the husband that the vaginismus did not yield to penetration and dilatation. But the subsequent history of this interesting case bears still more strongly on this point. Suffice it to say that it became the business of the physician to repair regularly to the residence of this couple two or three times a week to etherize the poor wife for the purpose above alluded to. They persevered, hoping that she would become pregnant and that delivery would cure her. This etherization was continued for a year, when conception occurred. But during the whole period of utero-gestation, etherization was necessary to coition. After the birth of the child there were a few copulations without ether, but it was exceedingly painful, and soon the pain became so severe that they were compelled to resort to ether again. At the end of another year of ethereal copulation, there was another conception, which resulted in an abortion at the third month. After this she was etherized constantly for nearly another year, when at last they saw no hope of a cure, and becoming alarmed at the frequent repetition of the anæsthesia, they concluded to give it up altogether. And when they consulted me there had been no effort at

copulation for three or four years. They had consulted other physicians in the mean time, but no one explained the case or proposed a remedy.

The mouth of the vagina was barely large enough to admit the index finger. The seat of the hymen was red, inflamed, thickened, indurated, and exceedingly sensitive to the slightest touch with the finger, a probe, or a feather. There was a reddish blotch, about the size of half a split pea, at the orifice of each vulvo-vaginal gland. The perineum had been lacerated down to the fibres of the sphincter muscle, and now a tense, inelastic inodular band extended across the fourchette, and was lost in the thickened tissue occupying the original seat of the hymen. This entire ring was quite as sensitive to a gentle touch as the most marked case of vaginismus could be; indeed, it was a vaginismus now, notwithstanding the fact that coition had been accomplished scores, nay, hundreds of times, and that a labour at full term and a miscarriage had also occurred to break up the morbid condition, if it could be done by the mere mechanical action of distension. I would not pretend to deny that we can dilate a case of vaginismus so as to permit sexual intercourse, but in most of the cases so treated the act is very painful. In every case that I have operated upon by removal of the hymen, and then by division and dilatation, sexual intercourse has been accomplished without pain.

The course to be pursued in the case we are describing was very plain, viz., to remove the whole ring of thickened tissue that encircled the mouth of the vagina, and particularly the cicatricial portion at the fourchette. This was done, and then the septum between the fourchette and the rectum was divided on each side, down through the fibres of the sphincter

muscle and the fourchette to the perineal raphé. This left a very thin partition between the two outlets. After this a glass vaginal dilator was introduced, and worn almost constantly. A larger one was used in a day or two, and in a fortnight sexual intercourse was accomplished for the first time without pain. Where there is cicatricial tissue, as in this case, there is danger of a relapse, and hence greater necessity for a prolonged use of the dilator. This remarkable case presents many points of interest, not the least of which is the fact that the two conceptions took place while she was in a state of complete anæsthesia.

3. Atresia Vaginæ.—This, of course, forms an obstacle to the reception of the seminal fluid. It may be congenital or accidental,—more frequently the latter, and oftener the result of tedious labour, followed by sloughing. The records of the Woman's Hospital present a number of cases of atresia, a few of which will serve as examples.

I have seen but one case that might be called congenital; and that was in a young girl aged eighteen, who entered the Hospital in October, 1857, complaining of great pain every month without ever having had the slightest show. She had taken aloetic purgatives and other emmenagogues without benefit.

On examination, a rounded tumour, half as large as a fœtal head, supposed to be the uterus, could be felt in the hypogastrium. The finger passed through the hymen, which was very rigid, detected a hard inelastic tumour, three-quarters of an inch beyond it, the vagina seemingly ending there in a cul-de-sac. By passing the finger into the rectum, it came in contact with the tumour felt through the vagina, and which appeared

to be the upper two-thirds of the vagina distended with something hard and inelastic, and continuous with the tumour that rose above the symphysis pubis.

The rational symptoms and anatomical relations all pointed to retention of the menses by occlusion of the lower third of the vagina. But to the sense of touch per rectum, with supra-pubic pressure or palpation, it felt exactly like an osteo-fibroid tumour. The lower or vaginal part of the tumour was quite as unyielding to pressure as the upper part or uterine portion.

Fig. 131 represents the relations of the utero-

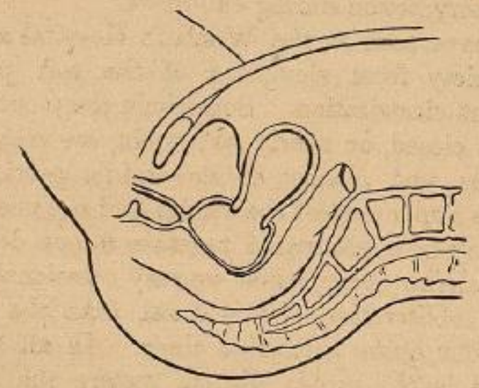

Fig. 131.

vaginal tumour, formed by the occlusion of the walls of the vagina. A very small puncture was made into the tumour, through the occluded vagina where the tissue seemed to be about a half inch thick. The fluid gradually oozed away. There was no constitutional disturbance; and the patient experienced only relief from its evacuation. When the uterus was found diminished to its normal size, we ventured to enlarge the opening sufficiently to pass the index finger up to the os tincæ, and we kept it dilated

to this moderate extent till the divided parts were covered with mucous membrane. The os and cervix uteri presented a remarkable state of granular erosion, extending over the adjacent portion of vagina, and giving rise to a profuse albuminoid leucorrhœal discharge, which yielded to appropriate treatment in the course of a month. The next menstruation was normal, and she left the Hospital with the vagina slightly narrowed at the original seat of occlusion.

This case might have been congenital, or the opposing sides of the vagina might have formed adhesions by inflammatory action during childhood.

We have seen at the Woman's Hospital atresia in great variety from sloughing of the soft parts and consequent cicatrization. Sometimes the mouth of the vagina is closed, or nearly so; again, we may have a contraction and closure of its middle portion; and, again, the upper part of the vagina and the neck of the uterus may be agglutinated together in one dense mass of fibro-cellular tissue, while we may occasionally find a complete obliteration of this canal, from the neck of the bladder quite to the os tincæ. In all cases the treatment is the same; viz., to restore the canal, if possible, and to keep it open, by the use of the glass dilator, till the newly exposed surfaces become covered with mucous membrane. In some instances this will be done in three or four weeks. The constant wearing of the dilator greatly facilitates the healing of the raw surfaces and the conversion of mere cellular into mucous tissue. There is always such a tendency to contraction that I have directed the dilator to be used every day for a long period of time.

I have seen a great many cases of occlusion of the vaginal outlet, where there was an opening perhaps

not larger than a small probe for the passage of the menstrual flow. I have seen several in which it was impossible to find this small opening till the occurrence of the flow indicated it. From these I will select but one to illustrate the treatment. A lady, forty-six years old, was placed under my care in April, 1858, to be treated for atresia. She was married at fourteen; became a mother at fifteen; labour tedious; head impacted; delivery instrumental; child still-born; sloughing of soft parts; slow recovery; atresia vaginæ; sexual intercourse impossible afterwards. Eminent surgeons were consulted, amongst others the distinguished Drs. Physic and Dewees, of Philadelphia, in 1828. Nothing was done. No attempt even was ever made to open the passage. In a few years afterwards her husband died. Strange as it may seem, this lady married again in three years. In three years more she was a widow for the second time. But the most unaccountable thing is, that she married again, after remaining a widow for nearly eighteen years and knowing at the same time that she had had perfect occlusion of the vagina for nearly thirty years. She had been married the third time about twelve months when I saw her. The mouth of the vagina was sealed up, as it were, by a cartilaginous barrier, quite unyielding to the strongest pressure. But there was a small valvular opening through which the menses made their exit.

This little opening barely admitted a small probe; but this could be passed the whole depth of the vagina, and its point could be felt by the finger in the rectum depressing the recto-vaginal septum, as it was pushed onwards to the os tincæ. Menstruation was normal, and the uterus, of natural size, was in proper position.

The vagina was normal above the point of occlusion, which was a little anterior to the neck of the bladder, as shown by fig. 132.

This case was operated on in June, 1858, the late Drs. V. Mott and John W. Francis, with Dr. Emmet, assisting. A small blunt-pointed bistoury was passed through the little opening into the vagina, and the gristly structure was divided from side to side, and then the blade of the knife was turned downwards and backwards, cutting outwards, parallel, as it were, with the ascending ischial ramus, first on the right and then on the left, keeping the index finger in the rectum, to avoid making a recto-vaginal fistula.

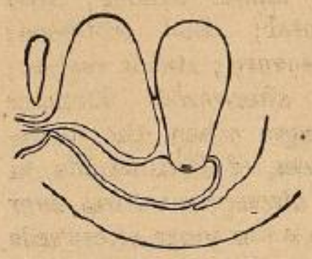

FIG. 132.

In this way the mouth of the vagina was made quite large enough, and when the finger was passed in, it was found to be sufficiently capacious above. The glass dilator was introduced, and I had the happiness of sending this lady away in the course of a month perfectly fitted for the married life.

I directed her to wear the instrument a while every day for an indefinite period, to guard against the common accident of relapse

I might relate many more very curious and interesting cases illustrating this point, but I forbear, as enough has been said to establish the principles that are to guide us in practice.

4. CONGENITAL ABSENCE OF THE VAGINA.—I have seen five cases of congenital absence of the vagina, and in all of them there was no uterus. One of

these, shown to me by Dr. Livingston, of New York, had been married seven or eight years. She was married young, and, of course, had no idea of her peculiar condition. The labia were normally developed, and the membranous tissue between the meatus urinarius and the fourchette had by constant use been pushed up between the base of the bladder and the rectum till it was developed into a blind pouch, into which the finger could be passed to the depth of nearly two inches.

As it would serve no practical purpose to dilate on this subject, I shall leave it here, simply saying that the diagnosis in such cases is easy enough with a finger in the rectum, and a sound in the bladder, alternating the latter with supra-pubic pressure.

At the beginning of this section, I said that "the vagina must be capable of receiving and of retaining the spermatic fluid."

Having now considered such obstacles as would prevent the deposit of the seminal fluid in the vagina, we may turn to such conditions as prevent its retention there when once introduced.

It has only been about three or four years since I found out that some vaginas would not for a moment hold a drop of semen.

There are no two vaginas exactly alike. They differ in length, in their various diameters, in their relations with the bladder and rectum, in their course with regard to the pelvian axes, and in their relation with the axis of the uterus. They sometimes refuse to retain the semen when they are very capacious; again, when they are too short. In this last instance, there will probably be found a disproportion between the sizes of the respective genital organs of the two sexes.

A young woman, married five years, without issue consulted me on account of her sterility. The cervix was rather indurated; the os was small. I cut it open, and the os afterwards presented quite a normal appearance. As there was nothing otherwise abnormal about the uterus, I told her she would almost certainly conceive in four or five months. She patiently waited eighteen months, and then came to me again in despair. The condition of the uterus was now all that I could have wished it to be; but the vagina, as before said, was rather short. For the first time I now suspected that perhaps the fault lay here. I requested her to come to me at some early day, two or three hours after sexual intercourse. She came the next morning. I did not find any signs of spermatozoa in the mucus of the vagina, or in that of the cervix uteri. I then began to suspect that the fault lay with her strong, vigorous husband. I asked her if she seemed to retain anything after coition. She said it all appeared to pass off instantly. In such a case, all false delicacy must be laid aside; it is a matter of the gravest scientific importance, and must be treated as such.

I told her and her husband that I must see her just after sexual intercourse. The time was appointed; I was at the house, and in four or five minutes after the act I saw my patient; and the vagina did not contain a drop of semen, but it was on her person and napkin in the greatest quantity. The microscope showed that it was perfectly normal. What was to be done? The vagina was short—too short; it could not be made longer. When the finger was pushed forcibly against the posterior cul-de-sac, in the direction of the dotted line *a*, fig. 133, it yielded to the pressure, and

as the finger was withdrawn, the cul-de-sac sprang forward, almost as if it were made of a thin sheet of India-rubber. This reaction of the distended vagina evidently ejected all the semen that did not at once regurgitate in the very act of ejaculation. Of course the remedy was self-suggestive. As we could do nothing to change the size or form of the vagina, we had only to order what was so evidently indicated—something to prevent the forcible impingement of the male organ against the posterior cul-de-sac. This had the desired effect; the semen in sufficient quantities was retained, and conception occurred in three months, after a sterile marriage of nearly seven years. I now think it probable that the operation performed on the cervix uteri was not at all necessary; for never till I saw this case had I the remotest idea of such a state of things as I have here described.

Fig. 133 would represent about the relations of the vagina and uterus in the case described above.

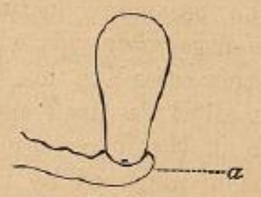

Fig. 133.

But it must not be inferred that all short vaginas are necessarily associated with a sterile condition. I have seen several cases in which the vagina had been almost wholly destroyed by the sloughing process, and in which the neck of the uterus had also sloughed away to a great extent: where, in fact, the vagina was not more than two inches deep, and yet conception occurred with the greatest facility; but in every one of these cases the upper part of the vagina was fixed with the open os presenting at its bottom; it was unyielding, inelastic, did not give before pressure, and, of course, did not

rebound on its removal. Thus it was possible for the semen to enter at once into the canal of the cervix.

Amongst several cases of this sort, I now call to mind one of vesico-vaginal fistula, sent to the Woman's Hospital, in 1857, by Dr. Dimond of Auburn, New York, in which almost the whole anterior wall of the vagina, a large part of the cervix, and the posterior cul-de-sac, and a large portion of the posterior wall of the vagina, were lost. There was but a small strip of the anterior wall, just at the neck of the bladder; the fistulous opening was two inches wide, reaching from one pubic ramus across to the other, through which the inverted fundus of the bladder fell into the vagina, presenting at its posterior border the open mouths of the ureters, from which we could see the urine passing off as it was secreted. This case was cured, but the vagina was not more than two inches deep. I had but little thought that she would ever conceive again; but in ten months after returning home she became a mother; and again, in about fifteen months after this, she gave birth to twins. In four other cases like this, the vagina was quite as short, and in all it was fixed and inelastic at its upper part; and in all, the intra-vaginal portion of the cervix uteri had been destroyed by the sloughing process, and the os presented itself as a little gaping slit in the centre of the fibrous structure that formed the upper boundary of the vagina, which stretched across the pelvis like a cord of cartilage.

In all these cases but one, the shortening of the vagina tilted the fundus uteri backwards, and placed the axis of the uterus in a direct line with that of the vagina, so that the meatus urethræ must, at the moment of ejaculation, have been in direct contact, and in a straight

line with the open end of the canal of the cervix uteri. I have seen many sterile wombs, where I thought the sterile condition could be overcome if it were possible to imitate artificially the unfortunate state of things here produced accidentally, *i. e.*, fixing immovably the open os in a direct line with the ejaculative force. This would lead me now to enquire into the rationale of the entrance of the semen into the cavity of the uterus; but I shall leave this for the next section.

But sometimes the vagina does not retain the semen even when it is of large proportions. When this is the case we almost always find the uterus retroverted.

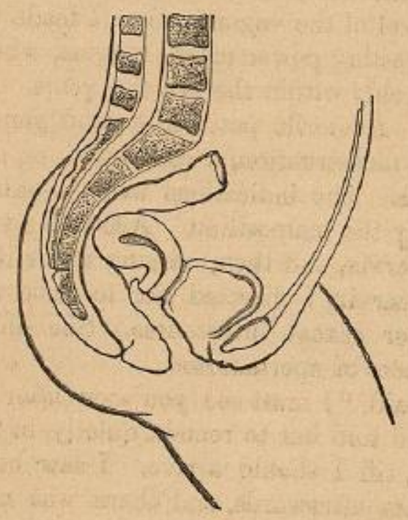

Fig. 134.

I have now but little doubt that, in many cases of retroversion, in which I have seen pregnancy follow the rectification of the malposition, the sterile state was due to the fact that the vagina did not retain the semen.

I do not mean to say that in all cases of retroversion the semen is not retained: far from it; for I know that it is often retained in ample quantities, in even the worst cases of retroflexion, such as that shown in fig. 134.

The philosophy of this is plain enough; for the vagina is here almost in its normal relations, with what should be the proper axis of the uterus, although this is flexed out of its normal position. The uterine malposition that is most unfavourable to the retention of the semen by the vagina is that of retroversion, with the os tincæ lying close up behind the inner face of the pubes, and the fundus, of course, thrown backwards below the level of the vaginal axis. I made this discovery of the ejecting power of the vagina, where there is retroversion, only within the last few years. It occurred in this way. A sterile patient, in good general health, had painful menstruation, a contracted os, and a retroverted uterus. The indications were to enlarge the os and to rectify the malposition. Accordingly I cut open the os and cervix, and then, wishing to see if the semen entered the cervix, I directed her to come to me some morning after sexual intercourse. She did so, but I found no traces of spermatozoa.

I then said, "I must see you soon after the act of coition;" and told her to remain quietly, in the horizontal position, till I should arrive. I saw her in six or eight minutes afterwards, and there was not a vestige of semen in the vagina, but it was found in the greatest abundance outside and on the napkins. The vagina was very capacious, far above the average size; and I could hardly believe my senses when I found that it contained nothing. It was then arranged that I should see my patient in fifty or sixty seconds after coition, and

I found precisely the same state of things, viz., not a sign of semen in the vagina. Now, let us see why this was so. But first it might have been supposed that it was due to hasty ejaculation. Proper inquiry settled that question in the negative by the evidence of both man and wife. Why, then, was there no semen in this very capacious vagina immediately after a normal copulation? Let us look at its anatomical relations. The uterus was retroverted, but anteflected; the cervix was long and pointed, and rested against the urethra; the body of the uterus was somewhat hypertrophied; the anterior wall of the vagina rather short, in consequence

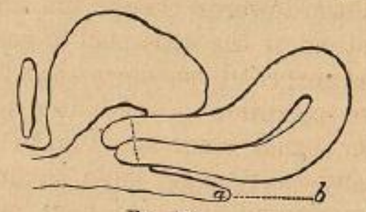

Fig. 135.

of long error of position; the vagina was otherwise very large, and the perineum relaxed. The finger carried to the bottom of the vagina, at its reduplication, *a*, fig. 135, could push this back towards the hollow of the sacrum relatively as far as *b*; this would necessarily throw the fundus upwards; the withdrawal of the finger would let it fall down again, but its momentum would carry it a little lower than the point at which it rested in equilibrio. There was nothing easier of demonstration than this see-saw movement of the uterus by pushing the posterior cul-de-sac backwards. Now the tendency of this falling of the organ by the sudden removal of a force thus impinging against the point *a*, is to depress the fundus still more, which thereby proportionally elevates the cervix; this draws up also the

cul-de-sac of the vagina, and rolls out, as it were, whatever has been deposited in it. In this particular case, the vagina would spring back from *b* to *a*, and this of itself would eject the fluid. Besides, in all cases when we examine the condition of the uterus immediately after coition we shall find the organ presenting signs of exhaustion, if I may be allowed such an expression; for instance, if the uterus is in a normal position, or even moderately anteverted, we shall find the upper part of the vagina relaxed, and passively holding a large quantity of semen, in which the cervix uteri is submerged; the uterus itself seems to be fatigued, and drops by its own gravity down towards the rectum, where it lazily sinks to the bottom of the little pool of semen.

Nothing has surprised me more than the difference in the relative condition of the uterus and vagina before and after sexual congress. I have had occasion to examine many cases under these circumstances, and I have uniformly found this as I have here described it; and when there is retroversion the fundus sinks still lower after coition than before, and this necessarily elevates the os tincæ still farther from the seminal fluid, if any of it have been retained. I have seen many cases of retroversion latterly where the semen was not retained. I could give some most interesting details on this point, but enough has been said to show the importance of the subject, to illustrate its philosophy, and to indicate the proper treatment; which, of course, would be to place the uterus in its normal position, and to retain it there by means of a properly-fitted instrument to be worn during sexual congress. In the case figured above, amputation of the cervix at the point indicated by the dotted line would be advisable before attempting further treatment.

SECTION VII.

FOR CONCEPTION, SEMEN WITH LIVING SPERMATOZOA SHOULD BE DEPOSITED IN THE VAGINA AT THE PROPER TIME.