attended her in her first confinement after the reduction of the inversion, says that complete inversion occurred spontaneously after that confinement, which he readily and at once reduced."

Of Painful Menstruation.—Menstruation may be attended by a general malaise, but should not, as a rule, be accompanied by any very severe degree of suffering. If there is much pain, either preceding its irruption or during the flow, there will generally be a physical condition to account for it, and this will be of a nature to obstruct mechanically the egress of the fluid from the cavity of the womb. The obstruction may be the result of inflammation and attendant turgescence of the cervical mucous membrane, whereby this canal becomes narrowed merely by the tumefaction of its lining coat. But by far the most frequent cause of obstruction is purely anatomical and mechanical. For instance, the os and canal of the cervix uteri may be preternaturally small, or the cervix may be flexed; or these may be complicated with the presence of a polypus, or with that of a fibroid tumour, in either the anterior or posterior wall of the uterus, and occasionally in the antero-lateral portion.

Of 250 married women who had never borne children, 129, or more than half, had pain of an abnormal kind attending the menstrual flow. I have been in the habit of dividing these into two classes, calling the one painful, and the other excessively painful or dysmenorrhœal. Of these 129, 100 were painful, or 1 in 2½ of the whole number; 29 were dysmenorrhœal, or 1 in 8$\frac{6}{10}$. Of the 100 painful menstruations, 58 had anteversion, or more properly speaking, anteflexion; 17 of these had fibroid tumours in the anterior wall: 25 had retroversion; 7 of these had fibroid tumours in the posterior wall; and in 17 the position was normal, one of these having a fibroid tumour. Of the 29 dysmenorrhœal cases, 23 had anteversion; 14 of these had fibroid tumours in the anterior wall: 3 had retroversion; all of these had fibroid tumours in the posterior wall: and in 3 the position was normal. Of the 100 cases of painful menstruation, the os was normal in but 6, unnaturally contracted in 90, otherwise abnormal in 4. Of the 29 cases of dysmenorrhœa, properly speaking, the os was not normal in a single case, being contracted in 26, and otherwise abnormal in the other 3.

The following tabular statement presents the particulars at a glance:—

Of 100 cases of painful menstruation,	Os was normal in but	6
	„ contracted in	90
	Cervix was flexed in	61
	„ congested in	7
	There were polypi in	2
Of 29 cases of excessively painful menstruation,	Os was normal in	0
	„ contracted in	26
	Cervix was flexed in	23
	„ had polypi in	2
	„ was congested in	1

From this it would appear that the pain of menstruation is almost wholly due to mechanical causes, for of the whole 129, only 8 had engorgement or congestion of the lining membrane of the canal of the cervix, and some of these were complicated either with flexure of the cervix, or with fibroid growths in some portion of the body of the uterus. I would not deny that menstruation may be painful merely from a congested state of the cervical membrane, where there is no fibroid growth, no polypus, no contracted os, and no flexure of

the cervix; but such cases are rare, while the great majority of dysmenorrhœal cases have a contracted os and a narrowed cervical canal or a flexed one. In some instances the os is not larger than a pin's head, or it may be large enough to admit a No. 4 bougie. Again, the os may be quite large enough, but the canal may be flexed so as to form a valvular obstruction to the egress of the menstrual fluid. Sometimes we find the os small and the canal flexed without painful menstruation, and here the cervix is not indurated, but soft and elastic to the touch. Of the 129 cases of painful menstruation, but 20 had the uterus in its normal position, while 81 had anteversion (31 of these with fibroids in anterior wall), 28 retroversion (10 of these with fibroids).

In a great many cases, in addition to a contraction or flexure of the canal, the cervix will be long, pointed, and indurated. If the flexure be anteriorly, we often find the intravaginal portion of the cervix unequally developed—that is, the posterior part, from the os to the insertion of the vagina at *a* (fig. 50) may be an inch and a quarter long, while the anterior, from the os to the insertion of the anterior cul-de-sac at *b*, may not be more than one-third as long.

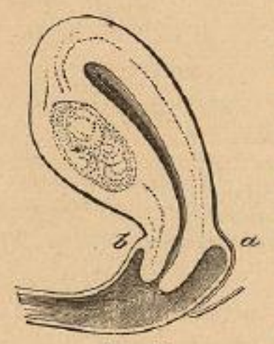

FIG. 50.

The size of the os and the position and relations of the cervix may be ascertained by the touch, as already explained (p. 9). But it is well always to resort to the sound to determine definitely the course, curvature, and contraction of the canal. To the touch and the sight the os may seem to be quite large enough, and then we may find a flexure, perhaps a very acute one, at the

junction of the cervix and body of the womb, due most probably to the presence of a small fibroid in the anterior wall of the uterus (fig. 41, page 105).

According to the facts stated above, it would seem that the pathology of dysmenorrhœa is yet to be written. I am fully of the opinion that it is simply a sign or symptom of disease, to be found in some abnormal organic condition. This may be inflammation, or it may be the cause of inflammation, or it may exist without it. But whether inflammatory or not, its action is mechanical. I lay it down as an axiom, that there can be no dysmenorrhœa, properly speaking, if the canal of the neck of the womb be straight, and large enough to permit the free passage of the menstrual blood. In other words, that there must be some mechanical obstacle to the egress of the flow at some point between the os internum and the os externum, or throughout the whole cervical canal.

Dr. Bennet* says, "I have always taught that menstruation may be painful, even acutely painful, from its dawn to its close, without any mischief or impediment existing of any kind whatever." Many years ago I believed all this, simply because Dr. Bennet and others said so; but now I do not believe in any such doctrine, because experience has taught me otherwise. There is no such thing as what is called "constitutional dysmenorrhœa." There was a time when we looked upon dropsy as an entity, a disease in itself; but now we know that it is only a symptom of various diseases. It is a symptom of disease of the heart, of the kidneys, of the liver; or it may follow hæmorrhages or diarrhœa. So is it with

* *Lancet*, June 24, 1865, p. 673.

dysmenorrhœa: it is only a symptom of disease, which may be inflammation of the cervical mucous membrane; retroflexion; anteflexion; fibroid tumour in one wall of the uterus or the other; contraction of the os internum or os externum; flexures of the canal of the cervix, either acute or gently curved, either at the os internum, at the insertion of the vagina, or extending throughout the whole length of the canal: all of which are but so many mechanical causes of obstruction, which must be recognized and remedied if we expect to cure the dysmenorrhœa. We do not talk of constitutional toothache, of constitutional colic, or of constitutional fractures, or constitutional dislocations. Nor should we speak of "constitutional dysmenorrhœa." This is but a high-sounding term that means absolutely nothing. The fact is, that most of the diseases of the uterus are as purely surgical as are those of the eye, and require the same nice discrimination of the true surgeon. And if we fail to detect the abnormal condition that produces diseased manifestations, whether of sensation or secretion, it is plainly our fault. For of all organs the uterus is now most subservient to the laws of physical exploration; and in every case of diseased action, if we cannot map out accurately the peculiar condition of the uterus producing or accompanying it, it is simply because we do not apply our knowledge of those physical laws to its investigation.

The treatment of dysmenorrhœa was formerly very empirical. Dewees cured many cases with his ammoniated tincture of guaiacum, but I have not seen any one who had derived the least benefit from it. The remedy is so nauseous that I could never get a patient to persevere with it. I must confess, however, that of

late years, since I have learned more intimately the nature of the disease, I have not prescribed it at all. My friend Professor E. D. Fenner,* of New Orleans, has been very successful with the bichloride of mercury in minute doses; but I have no experience with the remedy. Many prescribe belladonna and other narcotics, but they can only produce a merely palliative effect. The operation of enlarging the canal by incision is not always successful, but it is the only procedure from which I have derived the least benefit. The whole philosophy of the operation consists in opening the canal and keeping it open, so as to allow the easy passage of the menstrual flow. M'Intosh dilated the cervix with bougies; but whoever has followed him must have been struck with the uncertainty of the result, as well as with its painfulness, to say nothing of its danger. *A priori*, it would seem a trifling thing to pass a bougie along the cervix uteri, but I have known it to be followed by most serious results. In 1859, Professor Metcalfe, of New York, referred one of his sterile dysmenorrhœal cases to my care. There was slight anteversion, with a small fibroid in the anterior wall. The os was very small; the cervix long, pointed, and indurated; and the canal, though straight, was very narrow. I advised the operation of incising the os and cervix, which was objected to by the lady, although Professor Metcalfe was anxious to have it done. I explained to her the process of dilatation, and she wished to try it. Accordingly, a small bougie was passed in to the depth of two inches, and allowed to remain a few minutes. On the next day a larger one was used, and

* *New Orleans Medical News*, 1858.

in two or three days more a conical bougie was passed, dilating the os externum to about a No. 9. She complained of a good deal of pain at the time, and there was a slight laceration of the contracted os. That night she had a rigor, followed by fever, and a most intense attack of metro-peritonitis, which lasted many weeks, and from which she barely escaped with her life. Her recovery was slow and tedious. This was my last bougie case. I have known several cases of the same sort in the hands of others in my own country, and I have seen two in Paris during my short sojourn there.

In November, 1861, in Paris, a medical friend asked me to see a case of dysmenorrhœa, which was sterile after a marriage of eight or nine years. The os and cervical canal were very small; the cervix long, pointed, and indurated. It was just the case for an operation, or there was nothing to be done. I advised him to incise the cervix. He was afraid of it, and a year afterwards he introduced a screw bougie made of ivory deprived of its earthy constituents, which was allowed to remain in the cervix, and dilate it mechanically by absorbing moisture, and expanding to twice its original size. A violent attack of metro-peritonitis was the consequence, and I saw this lady when she had been ill about a week. She had a pulse of 140, and continued in a very dangerous condition for a long time, but eventually recovered.

The other case of metro-peritonitis from mechanical dilatation occurred in the hands of one of the most eminent physicians in Paris. Fortunately the lady recovered after three weeks of fever, attended with very great suffering.

This experience warns against merely mechanical

dilatation. But it may reasonably be asked, "Is it more dangerous than splitting up the neck of the womb?" I answer, "Yes." I cannot now say how many hundreds of times (certainly more than five hundred) the operation of cutting open the os and cervix has been done by Dr. Emmet and myself at the Woman's Hospital and in private practice, and I now remember but a single instance in which it was followed by inflammatory symptoms, and this resulted in pelvic cellulitis and abscess. The case was badly chosen for operation, and if I had known that this patient had had a pelvic abscess once before, I certainly should not have operated on her. The house-surgeon of the hospital inadvertently overlooked this part of the history of the case, and hence the accident.

Some prefer to dilate the cervix by sponge tents. Foremost amongst these stand the distinguished names of Bennet and Tilt. I have tried this method, and the results were anything but satisfactory. Professor A. K. Gardner, of New York, has used it most extensively and perseveringly, but has now abandoned the practice as unfruitful. Dr. Tilt thinks the incision of the cervix "an unjustifiable operation," * and objects to it because it produces pain and "flooding to an alarming, if not to a fatal extent." As to the pain, I am sure I have seen far more caused by a bougie than I ever saw by the operation. Indeed the operation is not a painful one. I have often performed it on delicate, timid women, who were conscious that something was being done, but had no idea that it was a surgical operation. I am opposed to operating on any rational being without first explaining what is to be done, and the wherefore. In the cases

* "Uterine Therapeutics," p. 255.

alluded to the operations were performed at the suggestion and earnest wish of husbands, who feared that they might not be submitted to if fully explained.

In 1858 I advised this operation in a case of dysmenorrhœal sterility, sent to me by Dr. Vanderpoel, of Albany, New York. There was anteflexion, with slight hypertrophy of the anterior wall, curved canal, and contracted os. The Doctor had tried the bougie system for some time without any permanent improvement, and, fully satisfied that an operation was necessary, he sent his patient to me. But the very idea of cutting was so terrible to her imagination that she went to another physician, who pronounced the operation "butcherous" and dangerous, and promised to cure her by dilatation alone. Of course this poor frightened, nervous sufferer gladly accepted the alternative, and at once placed herself under his treatment. She remained in New York for several months, undergoing daily dilatation, and then returned home without any permanent benefit. Three months afterwards she consulted me again, and on examination I found the uterus just as it was seven or eight months before. Being now fully convinced that the operation afforded the only hope of relief, she submitted to it. When it was all over she could hardly believe it, and declared that she suffered more each time the bougie was used than she did from the operation.

But so far as mere pain is concerned, it might be left entirely out of the question in these days of anæsthesia. When, however, we come to speak of the dangers of the procedure, I readily admit that we may debate that point. If, then, we compare the dangers of the operation with those of mechanical dilatation, I do not hesitate a moment to declare the former much the safer,

while in permanent results it is infinitely superior. For while I have frequently known pelvic cellulitis to follow the use of the bougie and the tent, I have never seen it but once after the operation; and while the bougie and the tent can only produce temporary improvement, we know that the operation is often followed by a perfect and persistent cure. But it may be asked, is there no risk in the operation? The only trouble that I have encountered is hæmorrhage; but that was in my early operations, and before experience taught me that there was any danger to be apprehended. Now, however, I have no such accident, because I take pains to guard against it. When Dr. Simpson first published on the subject, he said he never had hæmorrhage or other unfavourable result, either directly or secondarily; so that I was emboldened to perform the operation at my house, and allow patients to ride home afterwards. But I was soon undeceived on this point, for in the short space of two months I had five cases of hæmorrhage that were truly alarming. One occurred in a lady residing in Jersey city, who rode a distance of five miles in stages after the operation. The bleeding began just as she arrived at her home. She was, of course, very much alarmed, and sent immediately for me, and also for her family physician, who, being near by, soon arrived, removed the dressing, retamponed the vagina, and arrested the bleeding promptly, before I made my frightened appearance. The other cases, though nearer to me, were equally alarming. I then made up my mind never again to operate on patients in the consulting room. I asked Dr. Simpson, when I was in Edinburgh in August, 1861, if the operation was still as safe in his hands as he had at first represented it, telling him, at

the same time, my experience, when he declared that he never had any trouble from bleeding.

How to account for this difference in our experience I could not imagine, unless it should be that I cut more extensively than he did. To satisfy my mind on this score Dr. Simpson kindly invited me to witness the operation in his hands. It was the case of a lady from some of the British possessions. The os was small; the canal narrow; the cervix long, pointed, and indurated. It was precisely the case to justify the operation, for the gristly induration of the cervix rendered any other method quite out of the question. The operation was performed with the Doctor's usual dexterity. Then a camel's hair pencil, saturated with a solution of the perchloride of iron, was thrust into the vagina two or three times, and in ten or fifteen minutes from the time we entered the lady's apartment, we were in the street making other visits. He had such confidence in the operation and in his styptic that he did not wait for consequences. Before the operation, he requested me to examine the condition of the cervix uteri by the touch, and I found it as already described. Afterwards I repeated the touch, and found the cervix as thoroughly divided from the os externum to the os internum as it was possible to do it, proving that the difference in our experience as to hæmorrhage did not depend upon any difference in the extent of the operation. I do not pretend to account for the fact, that the operation is not followed by hæmorrhage in Scotland while it is in America; and I would warn my own countrymen to take every precaution against its occurrence, as it is almost the only accident that can attend this operation.

I may be pardoned for pressing this subject a little

further. I look upon this operation, simple as it is, as one of the great surgical advances of the day; and I am so well satisfied of its merits, that I would warn young men to be careful not to bring it into discredit by permitting an accidental complication that should never under any circumstances be allowed to take place. I know a most talented, promising young physician in my own country, whose reputation was well nigh ruined by blindly following authority, and operating with the belief that there was no danger from bleeding. Having been taught to look upon the operation as a trifling one, devoid of all risk, he unguardedly operated on his patient at his own house, and allowed her in a few hours afterwards to ride home, a distance of four or five miles. Hæmorrhage unfortunately supervened; the doctor was sent for; he was not at home. Some time elapsed before he could be found, and when he reached his patient she was in a collapse from loss of blood from which she never recovered. This is the only well-authenticated case of death from hæmorrhage that I have known to follow this operation. Of course it could not have happened but for the overweening confidence of the surgeon in the innocuousness of the operation, and it should never happen again. Such an accident as this may be smothered up in a great city, but if it occurs in the hands of a country practitioner, it may wholly ruin him for ever.

The case above alluded to happened in a small country village, and the public excitement may be imagined when everybody began to discuss the subject, and to censure a noble young physician for causing the sudden death of a citizen who was supposed to enjoy the most vigorous health. An eminent professor of obstetrics testified that the operation was a recognized

justifiable one; that it had been well done, and that death was the result of a rare and unexpected accident. This testimony was corroborated by others, and thus the popular indignation was appeased, and the young practitioner reinstated in public confidence.

But it may be asked, is there no other danger? I can only here reiterate what I have before stated, that out of the hundreds operated on in the Woman's Hospital and in my private practice, I have seen but the one case of pelvic cellulitis already noticed, which is the only risk of the operation that I know of. While this has occurred but once in my hands from the operation, it has happened frequently under my observation as the result of mechanical dilatation by bougies and sponge tents.

The position I take is this: that, as a rule, the operation is less painful than the use of the bougie, which must be repeated for months; that it is entirely devoid of danger from hæmorrhage, provided we exercise ordinary prudence in the after-treatment; that it is less frequently followed by pelvic inflammation than either the bougie or the sponge tent; that it is more certain and permanent in its results than either or both; and that, if we exclude it, there are great numbers of curable cases which would be placed beyond the pale of treatment. Thus, from my stand-point of view, the operation, when indicated, is always to be preferred to any and all other means of enlarging the cervical canal.

I am surprised to find that this operation is so seldom performed in Great Britain out of Edinburgh. In London it is condemned by the great body of the profession, although performed by several eminent men. But where we find one man to uphold it, we may point to

scores who oppose it. This cannot long remain so; for where honesty, intelligence, and earnest inquiry reign supreme, as they do here, the truth must and will prevail.

On the Continent, so far as I know, this operation is almost completely ostracized. When I went to Paris in September, 1862, a lady of very high position asked my opinion in reference to her sterility. She had been married thirteen years without issue. On examination, I was convinced that conception could never by any possibility occur unless the neck of the womb were well opened by incision. All sorts of mechanical dilatation had already been fruitlessly employed, producing metro-peritonitis, and leaving the os and cervix as contracted as at the beginning. When the husband asked me, "What are the risks of the operation?" I replied, "In America or England nothing but hæmorrhage, and that we control. I cannot say what they would be in Paris, for here you have erysipelas often following the most trifling wounds. Ask your own surgeon about it." They sent for my friend Professor Nélaton, who said that in France the operation would be attended with great risk to life. Such a decision from such an authority of course put the operation wholly out of the question for the time being. However, soon after this I had the good fortune to meet Sir Joseph Olliffe, who invited me to perform the operation on one of his patients in the upper ranks of life. When I told him what I have related above, he said he was perfectly familiar with British and American literature on the subject, and knowing the safety of the operation, would assume all responsibility in the matter. This operation, the first of the sort that I did in Paris, was performed on the 31st of October, 1862, for Sir Joseph Olliffe.

His patient recovered without the slightest trouble; and on the 2nd of December we operated on the lady whose case was first mentioned. To guard against any risk from the atmosphere of Paris, we went to their château, not many leagues from the city. The case got well rapidly, as usual, and conception fortunately occurred seven or eight months afterwards. She is now (September, 1865) the happy mother of two beautiful children,—one a boy, sixteen months old; the other a girl, less than a month old; and this after a sterile marriage of thirteen years. I am a little minute in this merely historical part of the introduction of the operation into France, for I wish to show that it may be done as well and as safely there as elsewhere.

My third case was that of a native, and I went with her to the country to perform the operation. The next was an American, operated on in Paris; then another American; and then I began to operate on natives of France, and in the city of Paris, with the same fearlessness that I did on Americans.

I may be excused for these minute details; for as the operation was condemned by the highest authority in France, it was important, not so much for myself as for the advancement of surgery, that I should exercise every precaution to guard against accident or untoward results. I have performed this operation twenty-four times on the Continent without accident, except the occurrence of hæmorrhage in one case on the sixth day after operation, which was promptly controlled by Sir Joseph Olliffe in my absence. My patients varied in age from twenty-two to forty. They were natives of France, Vienna, Frankfort, England, Scotland, Ireland, and the United States. The operations were performed in the autumn, winter, spring, and summer. Twenty

were done in Paris, two near Paris, and two at Baden; and in all there was the same rapid and safe recovery from the effects of the operation as I had always seen in New York. Of course this small number of successful operations is not enough to establish fully its acclimatization and its claims to universal favour there; but they are certainly sufficient to attract the notice and consideration of the profession in France.

But we were speaking of painful menstruation and its almost invariable concomitants, contracted os and narrowed cervical canal; and having said so much in a general way about the various methods of overcoming these, we may now proceed to discuss the plan of operating, together with the after-treatment necessary to protect against hæmorrhage and to ensure a patulous canal.

For the operation of incising the os and cervix uteri, we are indebted to Dr. Simpson. His method is followed by most operators, both in my country and in this. He places his patient on the left side, introduces the index finger of one hand into the vagina, pushes the fundus uteri up if it be anteverted, passes his uterotome (fig. 51) along the cervix through the os internum, springs the blade, and withdraws the instrument, cutting open one

Fig. 51.

side of the cervix; then reintroducing the instrument, the other side is cut in like manner; thus making a bilateral incision of the cervix large enough to allow the index finger to be passed to the os internum; and, as

before stated, he then passes into the vagina a large camel's-hair pencil, saturated with a solution of the perchloride of iron.

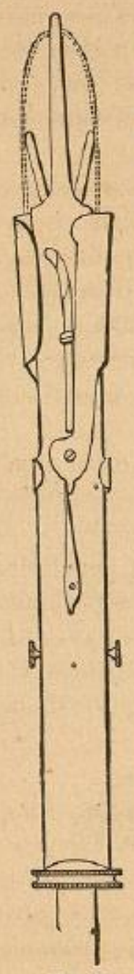

Fig. 52.

Dr. Greenhalgh has modified Dr. Simpson's instrument by giving it two blades, which cut through both sides of the cervix at once, thus ensuring an equilateral uniformity of section that cannot always be predicated of the single-bladed instrument. His instrument (fig. 52) is a masterpiece of ingenuity, and answers well in his practised hands. But I object to both these methods, because they are done in the dark, and too much is left to the execution of a machine instead of the judgment of the surgeon.

Suppose it were necessary to amputate an elongated uvula,—by no means an uncommon operation,—would it be judicious to run one finger down the throat and guide by it some machine for performing the operation in the dark? Or would it be more surgical and more precise to look into the throat, seize the part with a proper appliance, and amputate it where our judgment would determine to be right and best for the individual case? There are operations that must be done by the touch alone; but we never select this plan if it be possible to aid the manipulatory process by the sight.

Besides the objections already urged against instruments of this class, there is another to which all instruments on the principle of cutting from

above downwards are obnoxious—viz., that as the uterus is not fixed, it may glide upwards to some extent by the mere centrifugal force of the expanded blade or blades, and thus we can never feel altogether certain of the length and breadth of the cut. Whether too much or too little, it is not safely remediable afterwards.

The operation, as I prefer to perform it, differs from Dr. Simpson's, not in its aim and scope, but merely in its mechanical execution. He and his followers operate in the dark; I bring everything plainly into view. They cut from within outwards; I, in the contrary direction, from the os externum upwards to the cavity of the womb. They, as a rule, do not tampon the vagina after the operation; I always do, for the double purpose of guarding against hæmorrhage and ensuring an open os.

I place the patient on the left side, as for all the operations in uterine surgery. The speculum (fig. 5, p. 18) is introduced; a small tenaculum is hooked into the central portion of the anterior lip of the os tincæ; the uterus is gently pulled forwards; one blade of a pair of curved scissors is passed into the canal of the cervix till the outer one comes almost in contact with the insertion of the vagina on the side of the cervix, and the portion thus embraced is divided at one blow of the scissors. Then the opposite side is in like manner divided, and the operation is almost finished (fig. 53). It only remains, while the uterus is still held in position by the tenaculum, to sponge away the blood, and pass a narrow-bladed, blunt-pointed knife (at a proper angle with its handle) and divide the small amount of tissue on each side) leading from the scissor-cuts up to the very cavity of the womb. The scissors never cut the whole amount of tissue embraced between the blades. They will spring

back a little, making only a deep notch on each side of the os. The advantage of cutting the edges of the os with

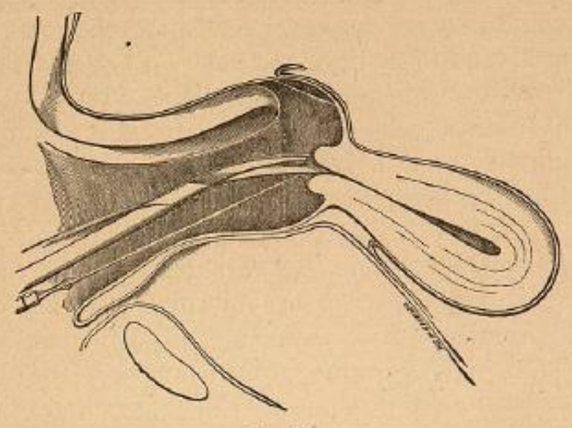

Fig. 53.

scissors is that we make the incisions perfectly equilateral and symmetrical.

Fig. 54.

[I now often use scissors with short straight blades, but curved above the joint, as here shown.]

Fig. 55 represents the knife with the blade in proper position for cutting the left side of the canal. To cut the right side, it is necessary to turn the blade in the opposite direction, as shown by the dotted line. The blade may be fixed firmly at any angle by the screw at the end of the handle, which drives a shaft up into little holes, as seen in fig. 56, where the razor-shape of the blade is also shown. The operation is quickly

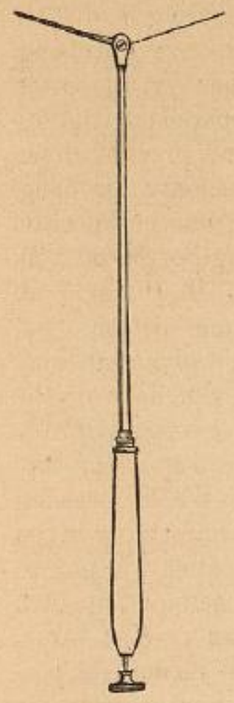

Fig. 55.

done, and the judgment of the surgeon determines whether the peculiarities of the case demand more or less cutting. The hæmorrhage is usually unimportant, but sometimes it is profuse; and I have occasionally seen it come with such a rush that the vagina would be filled before a set of sponges could be washed out. But there is nothing to be feared. Press one or two sponge probangs (fig. 57) right into the neck of the uterus, but at the same time be sure to keep the organ firmly fixed by the tenaculum; for if the bleeding be profuse, it is a very awkward and unlucky thing to let it slip out, particularly if the vagina is lax and deep. A minute or two will usually suffice to control the bleeding by the pressure of the probangs. When that is done, the dressing may be proceeded with. Two or three small pieces of cotton, large enough when moistened to fill up the gaping os, are to be thoroughly saturated with water, then squeezed as dry as possible, and afterwards wetted in a mixture of one part of Deleau's neutral solution of the perchloride of iron with four or five parts of water, or in Dr. Squibb's liq. ferri persulphatis similarly diluted. Squeeze out the superfluous fluid, and place a bit of the cotton in an angle of the wound, pressing a por-

Fig. 56.

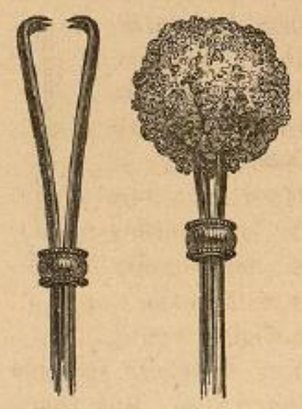

FIG. 57.

[This cut is introduced here simply to show the mechanism of the sponge-holder, and the proper size of the sponge. We often use too large a sponge to be passed with ease into the cervix. We should have a few much smaller than this.]

tion of it up into the cervical canal, and holding it in place with the sponge probang. Apply another bit of cotton similarly prepared on the opposite side, and press it down with another sponge probang. If necessary, another portion of cotton may be placed centrally; then, if there is no bleeding, some cotton wet with water or glycerine, may be laid over the neck of the womb, to be covered with dry cotton to the extent of supporting the whole dressing neatly and comfortably in its place. The patient is put to bed, having been perhaps five or six minutes on the table. She eats and drinks as usual, but the recumbent posture is enjoined for a few days. She may pass water lying, or it may be drawn off. The only object of the recumbent posture is to ensure the retention of the dressing *in situ*. I formerly allowed my patients to sit up and walk about the room the day after the operation; but I was so often annoyed by the supervention of hæmorrhage that I at length adopted the plan of keeping them down till the spontaneous separation of the intra-cervical dressing.

On the day after the operation, the whole of the vaginal portion of the tampon is to be carefully removed; placing the patient in the position as for the operation, and using the speculum, which must be introduced so as

not to derange the relations of the dressing. When it is all removed down to the intra-cervical portion, a wad of cotton saturated with Price's glycerine, and large enough to cover completely the cervix and its first dressing, is laid over it, and the patient again lifted into bed. The action of this, as already fully explained, is to induce a profuse watery discharge from the vagina, which keeps the part cleanly drained of all secretions or exudations from the decomposition of the blood contained in the original dressing. This glycerined cotton is to be removed and renewed daily till the suppurative process throws off the dressing from the neck of the womb. This will not be under three or four days. In the mean time the glycerine, by its detergent and antiseptic properties, keeps everything sweet and clean; and its affinity for water, which by osmosis it extracts from the tissues with which it lies in contact, keeps the parts entirely clear of any secretion that might be re-absorbed and poison the blood, if not thus drained off by the chemico-capillary action of the dressing. No one can thus apply glycerine to the neck of the womb and not be struck with its peculiar power and properties. The intra-cervical dressing will be loosened on the third day or later, and it may then be gently removed with forceps. If it adheres obstinately, let it alone, but cover it and the whole cervix with the cotton glycerole, and at the next dressing it may come away easily. I have frequently provoked bleeding by a little impatience in removing it prematurely. When it is once safely out, then the cervix is to be plugged with a small bit of cotton glycerole, and the whole covered as before with the same. This dressing is to be renewed daily till the parts have entirely healed, which usually takes from twelve to seventeen days, or perhaps till the recurrence of the next menstrual period

And this reminds me that the operation should always be performed within from three to five days after a menstrual epoch, so that we may have time enough for the healing process to be wholly completed before the recurrence of the next period.

There is sometimes great trouble in keeping the mouth of the womb sufficiently open. It never remains just as we cut it. The tendency of all cicatrizing wounds to contract as they heal is wonderfully illustrated here. I have often been amazed to find the os contracted in a month to one-fourth of the size of the original incisions. I have frequently seen it cut open large enough to admit the index-finger up to the os internum, and then close in a few weeks to such a degree as not to admit a No. 4 or 5 bougie, and this in spite of persevering efforts to prevent the contraction. This is the case where there is great induration of the cervix, with deposits of fibrous tissue. I have frequently been compelled to repeat the operation, and I remember several patients upon whom I have operated as often as three times in the course of a few months, and even then the result was not wholly satisfactory. These may be called exceptional cases, but it is well to know that they are not very rare. Even when the os tincæ remains open enough, we may have some trouble in keeping the contracted portion above of normal dimensions. This may be the case if there is much of a flexure, particularly anteriorly. And here I would recommend the occasional passage of a bougie after the first week. Dr. Emmet is in the habit of using the sound as early as the third day after the operation, passing it into the cavity of the womb, and pressing it pretty firmly first against one side of the canal and then against the other in withdrawing it. I have in a few cases followed his example, but with a little timidity.

Dr. Greenhalgh uses a self-retaining intra-uterine stem, which is very ingenious, and answers well in his hands. Dr. Priestley's instrument* (fig. 58) may be found useful under these circumstances. Introduced as an ordinary sound, it is then dilated as shown in the cut.

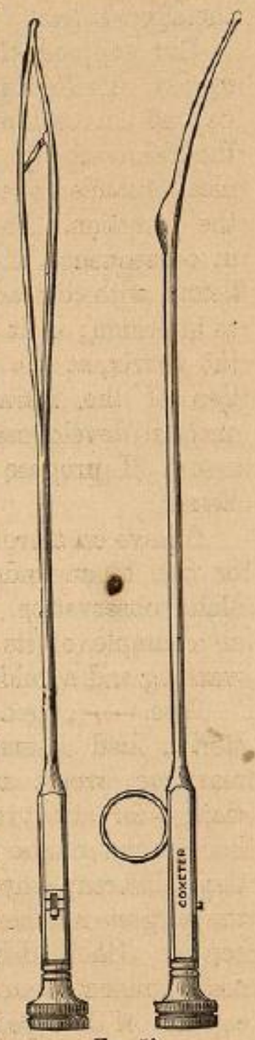

FIG. 58.

Incision of the os often cures dysmenorrhœa; sometimes it only modifies it. And again, I have seen cases where it produced no beneficial effect whatever. The first menstrual flow after it is usually ushered in without the premonitions that had so long harassed the poor sufferer, and she may pass through the whole period with comparative comfort; but I think it advisable for such patients to take very good care of themselves at each return of the flow, and to avoid all unnecessary exposure or fatigue. If there is pain enough to lie down, I direct an anodyne by the rectum, and for this purpose McMunn's elixir of opium is the very best. It is less apt to nauseate or to produce headache than crude opium or any of its alkaloids. It is more efficacious by the rectum than by the mouth, because

* *Medical Times and Gazette*, March 5th, 1864.

it is more immediately in conjunction with the nerves of the affected part.

But suppose the bilateral incision produces no permanent amelioration, are we to give up the case as beyond the reach of surgery? By no means. We must then reinvestigate; for there may still be some mechanical obstacle undetected, or, if detected, unrelieved by the operation. For instance, dysmenorrhœa may persist in consequence of an undetected polypus, or of acute flexure with contraction of the canal of the cervix at the os internum; or it may be the result of a curvature of the cervix, at the insertion of the vagina, with elongation of the intravaginal portion, and a consequent unequal development of its anterior and posterior segments. I propose to give examples of each of these classes.

I have on more than one occasion found the pain to be due to an undetected polypus, so diminutive as to elude observation. A single illustration will serve as an example of its class, and at the same time be a warning and a guide to the inexperienced.

Mrs. ——, aged thirty-two, married at twenty-four, sterile, had dysmenorrhœa for some years before marriage, worse after. Her sufferings were excruciating for about two hours on the second day. She had in the course of twelve years been treated by sixty different physicians without permanent benefit,—the largest number I ever knew any one person to consult. She had been under the care of many of the most eminent men in at least five or six of the great capitals of Europe, besides her consultations at home. I saw her in January, 1857. Her general health was good; her only trouble seemed to be the much dreaded dysmenorrhœa.

The uterus was of normal size and in proper position. Os and cervix both small, but not indurated. I resorted to the sponge tent, but found no polypus, no fibroid, and no flexure of the canal. Three days after (January 12), the os presented precisely the same appearance that it did before the use of the tents. The next menstruation was quite as painful as usual, if not more so. As the canal was straight, and the cervix soft, I would hardly have expected severe pain, although the os was rather small. Yet I did not know what else to do but to incise the os and cervix, hoping that some benefit might be derived from it. Accordingly, the operation was performed on the 22nd January, and the parts were healed before the next menstrual period; but the pain was still the same, and so continued for three or four months, in spite of treatment. I was now quite perplexed. I had used the sponge tent and found no polypus. I had then enlarged the cervical canal without the least improvement; but the symptoms were so evidently those of mechanical obstruction, that I concluded to make another exploration of the cavity of the uterus. I accordingly introduced a small sponge tent, and on its removal I passed another, larger and long enough to enter the cavity of the womb. On its removal, I had the satisfaction of finding and bringing away a polypus, which was but little larger than a common garden pea. Its attachment and relations, represented in the diagram (fig. 59), suggest at once the rationale of the symptoms.

The violent agonizing pain always supervened on the second day of the flow. When I first felt the tumour, it was protruding through the os internum after the removal of the tent; but by the pressure

of the finger it suddenly slipped upwards, and I could not touch it again till the finger was gently forced through the os internum to the fundus, when I fortunately seized it with forceps and brought it away.

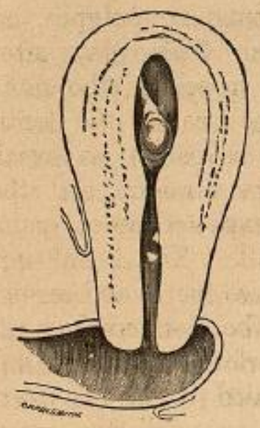

Fig. 59.

My explanation of the pain is this—By the second day coagula formed above the tumour, which pressed it downwards, its slender pedicle yielding till it blocked up completely the os internum just like a ball-and-socket valve. Then would come the violent neuralgic throes continuing for two hours or more, till the tumour either dilated the contracted part, or was compelled to retreat again into the uterine cavity by displaced coagula driven between it and the posterior face of the uterus by the expulsive efforts of the organ.

The case illustrates the necessity of a very thorough investigation before a correct diagnosis can always be made out in obscure cases. The leeching, the physicking, the blistering, the anodynes, the baths, the mountain excursions, the sea-bathing and sea voyages that this poor patient suffered and endured for years are almost incredible. As contemptible as the little polypus was, it took me nearly four months (shall I say?) of empirical observation to find out that it was the source of all the mischief.

It is now plain enough, but the difficulties of diagnosis may be appreciated when we remember the history of the case and the great number of distinguished physicians who were baffled in their honest efforts to elucidate it.

I have already said that sometimes after the cervical canal is freely opened by the bilateral incision it contracts again, and the pain of dysmenorrhœa may be just as severe as before the operation, and that this is more apt to be the case if there is much flexure, particularly anteriorly. We shall then in all probability be compelled to repeat the operation, and exercise greater care in keeping the canal open afterwards. We may occasionally find the obstruction at the os internum with flexure and contraction, while the lower portion of the canal may be of normal size. This, however, is by no means common. Yet I have seen several examples of it. Its most perfect type I found in a patient of Sir Joseph Olliffe. This lady was about thirty-six years of age, and had suffered from painful menstruation most of her menstrual life. Sir Joseph had dilated the os externum and the cervix up to the os internum, but had never been able to pass a sound through this. One of the most eminent surgeons of Paris saw her in consultation with Sir Joseph about four years ago, and, failing to pass the sound, proposed to enlarge the contracted portion by the use of the actual cautery! This treatment was not carried out, and on my arrival in Paris, in the fall of 1862, Dr. Olliffe kindly invited me to see her. I found the fundus lying just behind the inner face of the symphysis pubis, with quite a sharp flexure at the os internum. The sound could be easily passed to the os internum, where it met with an unyielding barrier, and I was obliged to have a small one made, quite probe-like, just to suit the case; and even this could not be passed with the patient on the back; but by placing her on the

side, using the speculum, and fixing the cervix with a tenaculum, it passed into the uterine cavity seemingly through a dense inelastic ring of fibrous tissue, which resisted not only the ingress but the egress of the olive-shaped point of the probe. I at once agreed with Sir Joseph's opinion that an incision of the part was the only safe and speedy method of overcoming the difficulty. The neck of the uterus was split bilaterally, just as if it had been contracted all the way to the os tincæ. When we came to cut the gristly circular band at *a* (fig. 60), the blunt-pointed knife was passed through it with some little difficulty, and the cuts on each side were attended with the peculiar creaking sensation that we experience in cutting through cartilage. The wound was treated in the usual way, as previously laid down, and all was well by the time of the next menstruation. The os internum was, after the fourth or fifth day, forcibly pressed open laterally by the sound, as practised by Dr. Emmet.

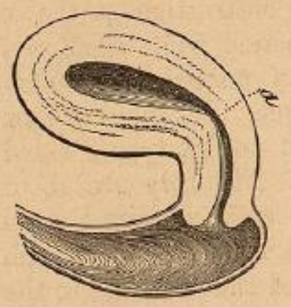

Fig. 60.

But the pain of menstruation may continue even after all our best efforts to enlarge the os internum as well as the cervical canal by the bilateral incision. It is then often the consequence of curvature, with elongation of the vaginal portion of the cervix, accompanying anteflexion. When this is the case, we shall find the os tincæ looking in the direction of the axis of the vagina, the posterior portion of the cervix from the os tincæ to the posterior cul-de-sac being two or three times as long

as the anterior, measuring from the os to the anterior cul-de-sac. I have repeatedly performed the bilateral operation on such cases as this without improvement, and for the best of reasons. If we take a flexible tube the size of the cervical canal, and curve it as represented by the diagram (fig. 61), it flattens out laterally, and the inner concavo-convex surfaces, necessarily brought into close apposition, present an almost valvular mechanical obstacle to the passage of a fluid in either direction. By referring to the diagram, it will be seen at once that a bilateral incision could only widen the canal a little transversely, but not at all antero-posteriorly; that the curvature would remain the same, and consequently the distances between the two opposing surfaces of the cervical canal would in no way be modified by such operation. Having so often failed, under such circumstances, to afford the relief anticipated from the bilateral incision, I at last devised and practised the following method. To remove the flexure of the canal would be to remove the obstacle to the easy passage of the menstrual flow. To do this, it is only necessary to split the posterior portion of the cervix from the os tincæ in a straight line backwards, nearly to the insertion of the vagina, and thus the canal of the cervix is made to run in a straight line from the cavity of the uterus to the terminus of the incision at *a*, instead of curving round to the os tincæ. The method of doing this is very simple. The patient as usual on the left side; the speculum introduced; the anterior lip of the os tincæ is held by the tenaculum, as

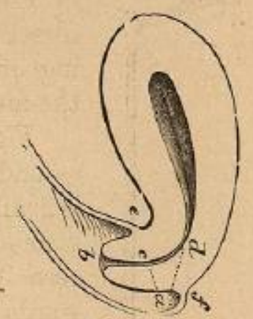

Fig. 61.

so often described; and then with a straight pair of scissors the posterior portion of the cervix is split at one blow, as far as can be easily and conveniently done by scissors, which would be about as far as represented by the dotted line *a c*, fig. 61. Then the blunt-pointed knife (fig. 62), bent at a proper angle with its shaft, and cutting backwards, is passed up to the cavity of the uterus, and the parts cut in the direction of the line *a d*, thus straightening out the canal, and thereby removing the mechanical obstacle due to its flexure.

Fig. 62.

Fig 63 is intended to represent the second stage of the operation. The uterus is firmly fixed by the tenaculum, while the razor-shaped blade of the blunt knife is seen in the act of cutting the canal backwards. The case is to be treated on the same general principles laid down for the management of the bilateral operation. There is some little care necessary to avoid cutting through the vaginal cul-de-sac into the peritoneal cavity—an unpardonable blunder that no true surgeon could possibly make. The operation has succeeded admirably in these cases, but is wholly inapplicable except in just such cases as the one above described. I have often performed the operation in this way, and my colleague, Dr. Emmet, has repeated it more frequently than I have; for the relief it affords is a great temptation to its performance.

In operating for dysmenorrhœa, we must not lose sight of doing it in such a way as to favour the chances of conception. How often do we hear even medical

men say, "If she could only have a child it would cure her." To this I always feel inclined to reply, "If we

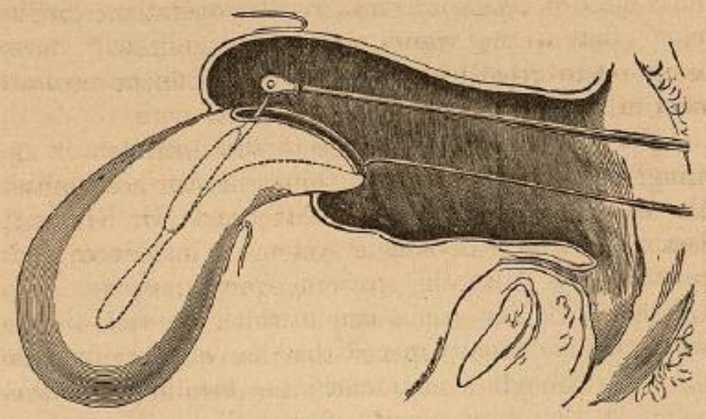

Fig. 63.

could only cure her, she would have a child." We should remember that the physical causes that obstruct the easy egress of the catamenia, likewise obstruct the easy ingress of the spermatozoa; and to remove the one is in some degree to relieve the other. If an inflamed, turgid cervical mucous membrane is a mechanical barrier to the passage from one direction, it is equally so to it from the other. If a contracted os shuts the door to an outlet, it closes it equally to an inlet. If a cervical canal, flexed to such a degree as to bring its opposite walls into close contact, will produce the pain of dysmenorrhœa, it will as certainly prevent the pain of parturition, but only by preventing conception. Thus, to treat dysmenorrhœa successfully, is to treat many, but by no means all, cases of sterility successfully. Those who have adopted the operation of enlarging the canal of the cervix for the cure of dysmenorrhœa, seem satis-

fied to rest upon it alone for the relief of sterility. But more remains to be done.

It would seem that I have already said enough on the subject of dysmenorrhœa, and the operations for its relief; but as my views previously published* have been controverted by some of the most eminent medical men in England, I shall say a few words more.

Dr. Henry Bennet† objects to the operation of incising the cervix, because he thinks he can accomplish the same result by sponge tents; and Dr. Gream,‡ because he thinks the bougie system, as introduced and practised by M'Intosh, answers every purpose. Dr. Gream says he has seen a case in which the neck of the womb was so largely opened that he could easily pass his finger through it, and touch the membranes of the ovum, at the third month of gestation. His patient aborted soon after; and he thinks the abortion was not the result of passing the finger into the cavity of the uterus, but of the inability of the organ to retain its contents, in consequence of the extensive division of the circular fibres of the cervix.

This is, I admit, a very rational inference; at all events we must accept the fact, and inquire into its cause. Mr. Spencer Wells§ advocates the operation, but says he has seen several cases in which the cervix was too largely incised, and the lips of the os tincæ were in consequence everted, rolled back, and almost lost in the insertion of the vagina. This is certainly a very grave objection to the operation of bilateral incision. But I have never seen this accident after the operation,

* *Lancet*, March 4th and 11th, April 1st, and June 3rd, 1865.
† *Lancet*, June 24th, 1865. ‡ *Lancet*, April 8th, 1865.
§ *Lancet*, May 27th, 1865.

as performed by my method, and, as before stated, Dr. Emmet and myself have done it several hundred times.

Let us, then, inquire why it occasionally follows this operation in the hands of English surgeons and not in ours. At first I was disposed to believe that the gentlemen alluded to above had encountered unique and isolated cases; but upon inquiry I am now convinced that this accident does occasionally follow the use of the metro-tome caché. It is well to know this fact, so as to guard against its occurrence.

A short time ago, a friend invited me to see a case of fibroid of the uterus, attended by severe hæmorrhages, in which he had divided the cervix after the plan of Mr. Baker Brown. The operation had been done by some one before, but the bleedings continued, and my friend, desirous of giving the operation a fair chance, determined to make a more thorough division of the cervix, for which purpose he set the blades of the metro-tome caché very widely, so as to cut deeply. The consequence was a complete division of the cervix through the whole of the circular fibres, from the os tincæ quite to the cavity of the uterus, which produced the deformity that Mr. Spencer Wells speaks of. After seeing this case, I could no longer doubt. Why does this accident happen after the metro-tome caché method of operating, and not after my plan? The reason is obvious enough, if we consider the difference in the two methods of operating. To illustrate this, let the diagram (fig. 64) represent the natural size of the uterus. This outline is taken from Dr. Savage's* picture of a dissection of a uterus of natural size. I have made

* "Illustrations of the Surgery of the Female Pelvic Organs." By Henry Savage, M.D., Physician to the Samaritan Hospital for Women. Plate 8, fig. 3.

the cervix project a little more into the vagina, as we

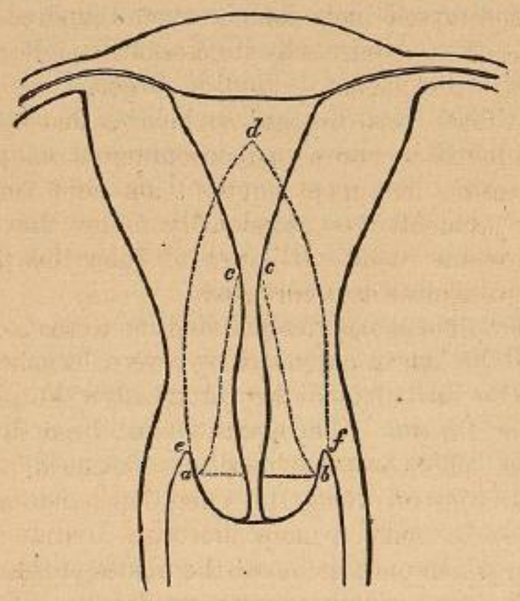

Fig. 64.

usually find it so in the majority of cases requiring operation.

According to my plan of operating, the dotted line *a b* would represent the proportion of cervical tissue divided by the scissors (page 156), while the dotted lines *a c*, *b c* would represent the extent of the incisions made by the blunt-pointed knife (fig. 55, page 157) up towards the cavity of the uterus. Now, upon this same diagram, let us see what would be the nature and extent of the incisions made by the metrotome caché. We will take Dr. Greenhalgh's instrument, as now made in London by Weiss, and in Paris by Charrière, as being the safest and best of its class. Lay it down upon this diagram, with the point at the fundus *d*, and the shoulder at the os tincæ, hold it firmly as we would in operating upon a patient, then draw the blades slowly down, and the extent of their movements will be shown by the dotted lines *e d*, *f d*.

The two methods differ theoretically as well as practically. The one is based upon the idea that the obstacle to be overcome usually exists in the lower portion of the cervical canal; the other upon the belief that it is always found at the os internum. Now, by comparing the incisions made by these two methods, it will be seen that the metro-tome caché divides the circular fibres of the cervix to a greater extent at the os internum, and throughout the entire cervix, than is done by my method.

As before said, too large a division of the cervix is sometimes followed by eversion and rolling back of the two lips of the os tincæ. But why only sometimes? Large and small are always relative terms. What may be small in one case may be comparatively large in another. The metro-tome caché cuts so much whether the cervix be large or small. We know very well that the size of the cervix varies greatly in the unimpregnated uterus, and that in the class of cases requiring this operation, it is sometimes less than an inch in diameter. Now, if we use an instrument that cuts more than this, it must of necessity cut through the cervix from side to side; and hence the danger of the accidents that are said to sometimes follow this operation.

I have seen, in several shops, metro-tomes that could be opened from one and a half to two inches. I am not going out of the way to caution my younger brethren against machines of this sort, when I call to mind the fact that a friend of mine recently used one of them, and was afterwards glad to see his patient ultimately recover from the serious consequences of his rashness. If we

must use a metro-tome caché, let us take Dr. Greenhalgh's, with its maximum expansion, as shown in the diagram above.

But why do the lips of the os tincæ roll back when the cervix is too extensively incised? The rationale is this: The longitudinal fibres of the uterus run down from the fundus to be inserted or incorporated antero-posteriorly with the circular fibres of the cervix. These two sets of muscular fibres are antagonistic in their action physiologically. In a normal labour, the contraction of the longitudinal fibres of the body must be accompanied or followed by a relaxation of the circular fibres of the cervix, or the labour could not be finished. They are as antagonistic as are the flexors and extensors of the hand. Destroy the power of the one set of muscles, and the other will inevitably take on a tonic contraction, and draw the hand in the direction of the line of their action. In the operation of dividing the circular fibres of the cervix uteri by the metro-tome caché, if the whole diameter of the cervix be cut entirely through, we must of necessity cut the whole of its circular muscular fibres, which destroys their contractility, and removes the force that bound, as it were, in a bundle the terminal extremities of the longitudinal fibres, which then take on a tonic rigidity, retracting the divided lips of the os tincæ, and producing the deformity that, we must admit, is occasionally seen to follow the metro-tome caché method of operating.

Whether my explanation be correct or not, does not in the least affect the fact under consideration; and the young surgeon cannot be too careful, for if he should unfortunately cut too much, there is no remedy for his mistake. It is far better to cut too little, even at the risk of being compelled to repeat the operation.

SECTION III.

THE OS AND CERVIX UTERI SHOULD BE SUFFICIENTLY OPEN, NOT ONLY TO PERMIT THE FREE EXIT OF THE MENSTRUAL FLOW, BUT ALSO TO ADMIT THE INGRESS OF THE SPERMATOZOA.