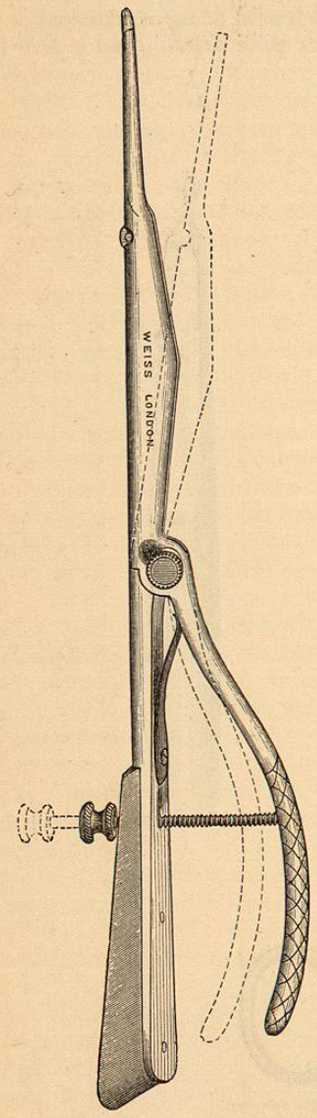
which shall be of equal depth at every part. The blades are liable to slide away a little towards the finish of the stroke, leaving a spur of tissue uncut. To remedy this I have often completed the incision made by my scissors with Simpson's metrotome. But for some years I have discarded

Fig. 46.



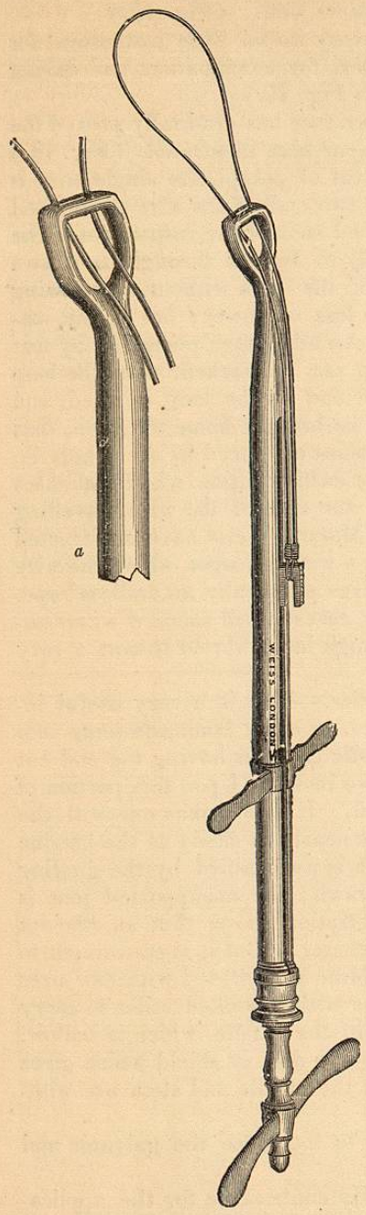
Simpson's Metrotome.

Fig. 47.

Sims's Tenaculum Hook.

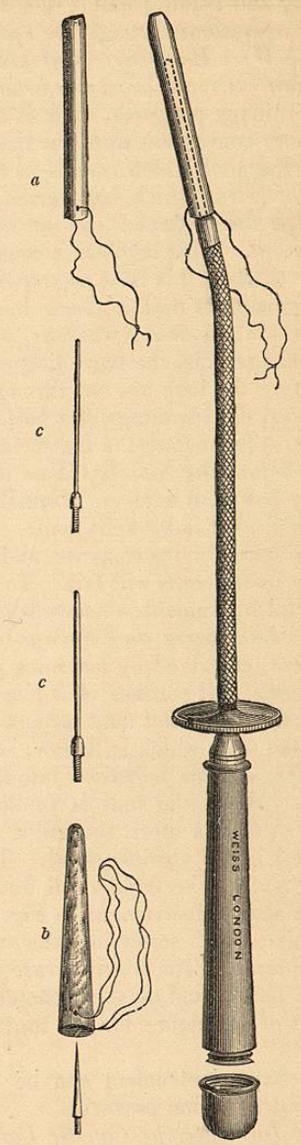
my own scissors for a modification of Küchenmeister's scissors, one blade of which is provided with a small recurved hook. This buries itself in

Fig. 48.



Improved Wire Écraseur.
a. Full size.

Fig. 49.



Barnes's Instrument for introducing Laminaria or Sponge-tents into the Uterus (R. B.). (Half size.)
a. The hollow laminaria-tent.
b. The sponge-tent.
c c. The stilets upon which the tents are mounted.

the tissue as soon as the part is seized, and holds it secure whilst it is being cut through. The instrument answers well. (Fig. 45.)

Sims's Tenaculum Hook.—This is a very useful little instrument for seizing and holding steady the cervix uteri for examination, and during other operations through the speculum. (Fig. 47.)

The *Wire Écraseur.*—Advancing experience has gradually proved the superior convenience of the form of écraseur here illustrated. (Fig. 48.) For ordinary purposes, such as the removal of polypi, the single wire is far more convenient than the chain. The two ends of the wire are hooked on to the hook which travels in the screwed stem of the instrument. The loop of wire, which has seized the body to be cut through, is drawn through the flattened eye at the end of the stem without any sawing movement. This involves a considerable loss of power; but in the majority of cases this is of no importance. An advantage possessed by this arrangement is that a much longer loop can be worked, since the loop comes down double; whereas, when one end of the loop is fixed, and one only travels, the travelling end may be brought home too soon, that is, before the loop has cut through the tissues embraced in it. There is, however, the advantage of a half-sawing or cutting action, which increases power. To obviate the inconvenience of the ends of the wire travelling home before the loop has done its work, Messrs. Weiss have constructed a very powerful écraseur, furnished with a windlass upon which the wire is wound as it is brought home. This gives practically an endless rope. It is a splendid instrument; and in some cases it will succeed where ordinary instruments will fail. To cut through large fibroid tumors a very powerful instrument is necessary.

The Laminaria and Sponge-tent Carrier.—This is a very useful instrument, contrived by me some years ago, to carry laminaria-tents into the uterus. It consists of a piece of elastic catheter having the end cut off, so that the stilet may project about two inches. Upon this portion of stilet the tent, which is hollow, is mounted. It thus makes one with the catheter, and can be passed into the uterus nearly as easily as the uterine sound. When the tent is *in sitû*, which is ascertained by the guiding finger at the os uteri, the stilet is withdrawn; the unsupported tent is then left in the uterine canal. This description shows that an efficient instrument can be improvised out of a catheter. But it is convenient to have a special instrument. (Fig. 49.) Mine is provided with two sizes of stilets, which screw into the stem; also with a pointed stilet to carry sponge-tents. These stilets are stowed in the handle, which is hollow. At the handle-end of the catheter or tube is a disk or shield which gives a point of resistance for the thumb, when the handle and stem are withdrawn.

The same instrument can be adapted to introduce the galvanic and other intra-uterine pessaries.

The Intra-uterine Caustic Carrier.—My contrivance for the application of nitrate of silver to the os and interior of the uterus is an adaptation of a plan which I learned, when a student, from Sir Benjamin Brodie. This illustrious surgeon used to arm the end of a silver probe by dipping it into fused nitrate of silver. I have had made a long probe mounted on a handle. The last three or four inches should be made of silver,

platinum, or aluminium, so as to be flexible, as it is often convenient to give a curve. The extreme end should be roughened so as to hold the fused caustic better. To arm it, proceed as follows: Fuse about half a drachm of nitrate of silver in a watch-glass or platinum-crucible, over a spirit-lamp or small gas-flame; dip into the fused caustic the end of the probe several times, so as to get several layers upon it. The probe should be moderately warmed in the flame before dipping, or the nitrate of silver will be apt to break off when cooled. (Fig. 50.)

By means of this armed probe, caustic can be carried into the cervical canal, and even into the cavity of the uterus, wishout any fear of leaving a piece behind. It may even be used without the speculum, although in doing this, unless it be guarded by a sheath, the caustic is liable to touch the vulva in passing, and to cause some irritation in consequence, and to blacken the surgeon's fingers. Armed with a sheath it resembles Lallemand's porte-caustique.

The Tube for carrying Solid Substances into the Uterus.—To apply sulphate of zinc, chlorate of potash, and some other substances, it is very convenient to fuse them into slender sticks of a given weight. To introduce these sticks into the uterus through a speculum by help of a forceps is a needlessly troublesome and sometimes difficult proceeding. A far more simple way is to cut off the end of an elastic male catheter, to place the stick in the end, and then to pass the catheter half an inch or more into the cervical canal, as you would a sound; then by pushing up the stilet, the stick is deposited in the uterus, and the instrument can be withdrawn. This can be done more easily without the speculum than with it; and where an application of this kind has to be repeated once or twice a week, this is a great advantage, saving the patient annoyance and fuss, and the surgeon trouble.

Instead of this improvised positor, it is better to have the special instrument figured. (Fig. 51.) This is a silver or nickel tube furnished with a stilet.

The Tube for carrying Ointments, etc., into the Uterine Cavity.—It is often convenient to make applications to the interior of the uterus in the form of ointment or fluid. For this purpose I have designed, with the assistance of Messrs. Weiss, a very handy instrument. It is a long silver, nickel, or vulcanite catheter, having two long eyelet-holes at the end, and a conical well-fitting piston or rod. It is easy to charge by plunging the end of the catheter beyond the eyelets into the ointment, and wiping off the superfluity which hangs to the outside. The instrument is then passed like a sound into the uterus, and then the piston, being pushed forward, expels the ointment by the eyelets on either side, leaving it, of course, in immediate contact with the uterine mucous membrane. This is an especially useful way of treating the uterine membrane affected by syphilis. The iodide of mercury ointment is thus readily applied. (Fig. 52.) It answers equally for the application of fluids. Thus by placing a bit of sponge in the end, and saturating it with the fluid, it can be passed into the cavity of the uterus. In this way I constantly apply tincture of iodine or nitric acid to the interior of the uterus.

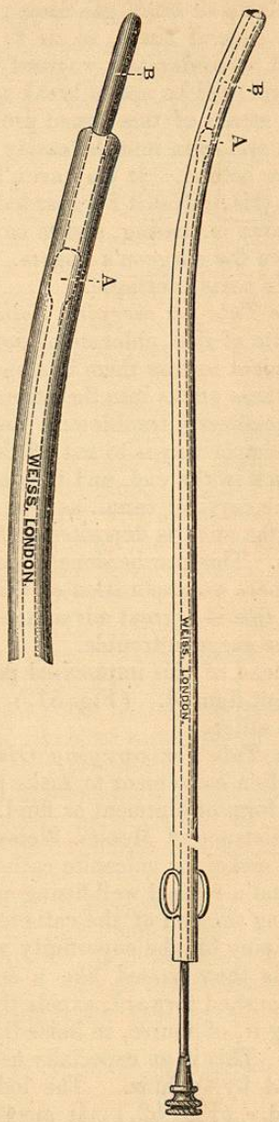
An Intra-uterine Injecting Apparatus.—By means of the above con-

trivances for depositing solids, ointments, and liquids in the uterine cavity, the necessity for resorting to fluid injections is much restricted.

Fig. 50.

Barnes's Nitrate of Silver Cautery (R. B.). (Half size).
a, Roughened end. *b*, Armed.

Fig. 51.

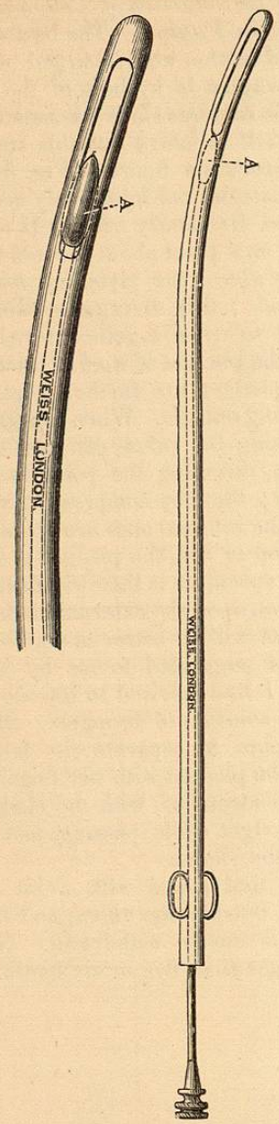


Barnes's Tube for Depositing Fused Sticks of Sulphate of Zinc in Uterus (R. B.).
A, Piston pushing out. B, The zinc stick.

But an intra-uterine syringe is sometimes indispensable. A good form is a small vulcanite tube, having minute perforations at the *sides*—not

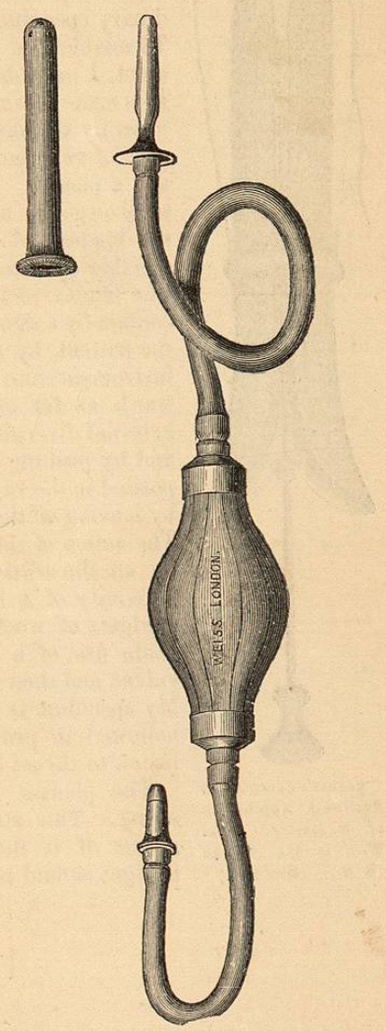
at the end—so that fluid projected may escape in fine streams or drops. The propelling force is best obtained by a movable caoutchouc ball.

Fig. 52.



Barnes's Uterine Ointment Positor (R. B.).
The left-hand figure is full size. A, the sliding-piston, which, being pushed on after the catheter is *in situ*, expels the ointment, or fluid soaked in sponge.

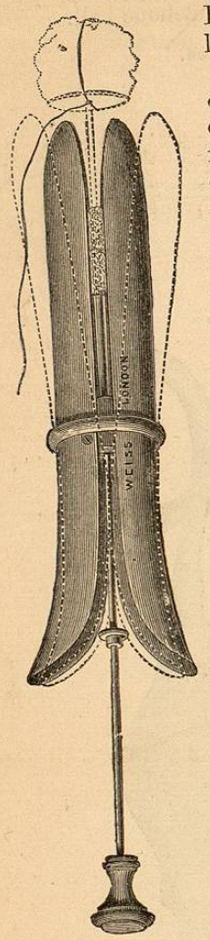
Fig. 53.



Higginson's Vaginal Syringe. (Half-size.)

Higginson's Syringe for Vaginal Injection and Irrigation.—There is no form of vaginal syringe more generally convenient for the patient's

Fig. 54.



Barnes's Speculum to Facilitate Application of Medicated Cotton-Wool in the Vagina (R. B.). (Half size.)

own use than that known as Higginson's. (Fig. 53.) It should be furnished with a vaginal tube four inches long.

Barnes's Speculum for Introduction of Cotton-wool charged with remedies into the Vagina.—The best way of introducing pledgets of cotton-wool charged with fluids or powders into the vagina is by help of the ordinary speculum. But this requires skilled assistance. To enable the patient herself to carry out this treatment, I have devised the speculum figured (Fig. 54). It is made of vulcanite, a material not injuriously acted upon by the materials most frequently used. It consists of two blades, moving on a pivot about the middle, and a piston. The blades above the pivot are made to diverge by a spring inside; this divergence causes the blades below the pivot to come together, forming a hollow cylinder in which the pledget of wool is placed. The blades inclosing the pledget are further kept in contact by a strong elastic ring outside. When charged, the patient, by simply opening the vulva, can pass the instrument into the vagina, directing the point backwards as far as necessary; then by compressing the external diverging blades, the internal ones are opened, and by pushing on the piston or rod, the pledget is deposited in the vagina. The speculum is then withdrawn by leaving off the compression upon the external blades. The action of this instrument will be better understood by an illustration. It was suggested to me by the ingenuity of a lady whom I had advised to introduce pledgets of wool soaked in solution of bromine. She made use of a glove-stretcher to separate the labia vulvæ, and then slipped in the pledget with her fingers. My speculum is like a glove-stretcher, with the blades hollowed to protect the pledget while passing, and a piston to thrust it out into the vagina.

The pledget of wool is tied round with a bit of string. This string hangs outside the vulva, and by means of it the pledget is easily withdrawn. No pledget should be worn longer than five or six hours.

CHAPTER V.

THE DIAGNOSIS OF DISEASES OF THE PELVIC ORGANS. THE TOUCH—THE SOUND—THE SPECULUM.

The general knowledge we have now acquired of the value of subjective symptoms and of the instruments of diagnosis, will enable us to pursue with greater advantage those means which bring out the objective signs, and thus to gain all the possible elements of a complete diagnostic conclusion.

One guiding rule should be impressed upon the mind of the young practitioner, when he has a case of presumed disease of the pelvic organs under investigation. Do not concentrate all attention upon this one region of the body. Remember that the fault may be in distant parts; that disease in other organs may complicate disease in the pelvic organs. Do not, in short, fall into the deplorable snare of becoming a specialist. Do not imitate the error of those physicians who, whilst repudiating the idea of being specialists, and who, when in the presence of a case marked by disorder of the nervous system, of the heart, lungs, or abdominal viscera, carefully explore the state of the organs contained in the skull, chest, and abdomen, yet scrupulously avoid exploring the not less important organs contained in the pelvis; and that even although the symptoms point to disorder in this region.

The great clinical rule should be: Interrogate all the functions; examine every organ. In this way only can we acquire a well-founded confidence that important disease is not overlooked; in this way only can we rightly estimate the relations of symptoms to disease, and the reactions of disease upon distant organs, and frame a rational plan of treatment.

A work whose intention it is to illustrate the pathology of the pelvic organs, must necessarily observe the limits of the design. The art of diagnosis, therefore, as applied to the pelvic organs, demands the most elaborate description. But in tracing this with almost exclusive care, as it must be done in a work *ad hoc*, it must not be supposed that general pathology or general diagnosis can ever be pretermitted in actual practice.

If it be admitted to be necessary to investigate all the functions of the body in connection with any presumed localized disease, *à fortiori* it is necessary, in any case of presumed disease of one of the pelvic viscera, to examine the state of the rest, its immediate neighbors. We must then never neglect to inquire into the state of the bladder and rectum. These organs seldom escape disturbance when the uterus, vagina, or ovaries are affected; primary disease in them, in its turn, affects the uterus, vagina, and ovaries; and not seldom, symptoms seemingly indicative of disease in the uterus or vagina are really due to disease in the bladder or rectum.

The order of clinical proceeding, then, may be laid down as follows:—

If a patient complain of distress referred to the pelvic organs, or dis-