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The Cystoscope

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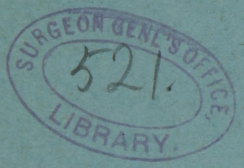

THE CYSTOSCOPE.

I HAVE found it necessary during the past few months to make everal important additions and modifications in the construction of my cystoscopes, which I wish briefly to describe in this article in response to numerous inquiries as to the best model.

My cystoscope is a nickel-plated metal cylinder eight centimetres long, equal in diameter from end to end, measuring in the different sizes from five up to twenty millimetres. The outer end of the speculum has a funnel-shaped orifice. The sides of this funnel-shaped orifice are fifteen millimetres long, and are inclined at an angle of sixty degrees to the straight sides of the cylinder.

The following improvements have been made upon my first specula:

In the first place, the little shoulder (see Fig. 2) which existed between the lower end of the speculum and its obturator has been done away with, making the instrument, when put together ready for introduction, smooth from end to end (see Fig. 3). This alteration can be made upon the first specula. In removing the shoulder care must be taken not to taper the lower end of the speculum down to a knife edge or a ragged edge, rendering it liable to cut the wall of the bladder or urethra at every contact. The edge should for this reason be slightly dulled.

The second point of importance to be observed is that the end of the obturator should be a well-defined, well-pointed cone,

and not short and obtuse, manifestly facilitating its introduction (see Fig. 1).

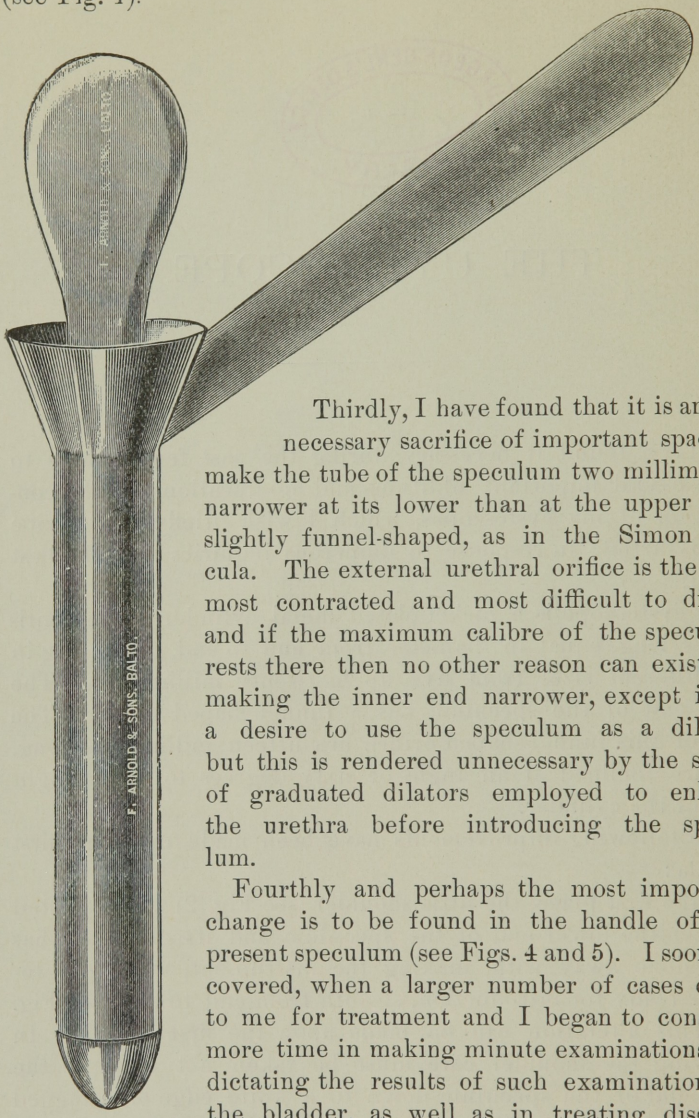

FIG. 1. — Perfected cystoscope.

Thirdly, I have found that it is an unnecessary sacrifice of important space to make the tube of the speculum two millimetres narrower at its lower than at the upper end, slightly funnel-shaped, as in the Simon specula. The external urethral orifice is the part most contracted and most difficult to dilate, and if the maximum calibre of the speculum rests there then no other reason can exist for making the inner end narrower, except it be a desire to use the speculum as a dilator, but this is rendered unnecessary by the series of graduated dilators employed to enlarge the urethra before introducing the speculum.

Fourthly and perhaps the most important change is to be found in the handle of the present speculum (see Figs. 4 and 5). I soon discovered, when a larger number of cases came to me for treatment and I began to consume more time in making minute examinations and dictating the results of such examinations of the bladder, as well as in treating diseased areas, that the small handles on the first specula became exceedingly fatiguing to the fingers endeavoring to hold them. I therefore have had a long handle attached, eight centimetres long by twelve millimetres broad and

five millimetres in thickness, which can be comfortably grasped by the hand; this is now placed on all the specula. This handle can also be readily placed on the first set of specula with short handles.

I commonly prefer for ordinary inspection, treatment, and catheterization of the ureters the No. 10 speculum (ten millimetres in diameter). I find some of my friends express a preference for a higher number—12. I think, with practice and after acquiring some little skill, No. 10 will be found best adapted to general use.

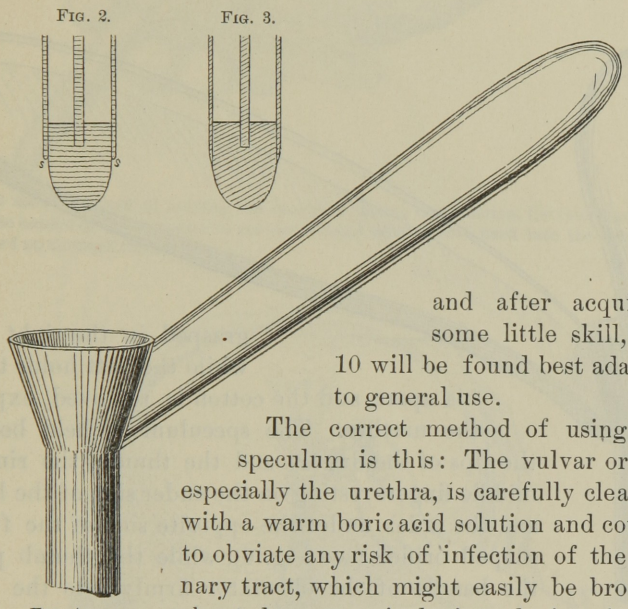

Fig. 2. Fig. 3.

Fig. 4.

Fig. 2.—The upper left hand corner shows the end of the first speculum constructed, with its obturator. The shoulder at *s s* is a fault in the construction, corrected in the improved cystoscope as seen in Fig. 3, the upper right hand figure. The lower figure, 4, shows the funnel-shaped end of the speculum with the large improved handle.

The correct method of using the speculum is this: The vulvar orifice, especially the urethra, is carefully cleansed with a warm boric acid solution and cotton, to obviate any risk of infection of the urinary tract, which might easily be brought about by successively introducing instruments through an unclean urethral orifice into the bladder. The calibrator is then used to measure the diameter of the meatus, thus determining the size of the dilator to be used first. From this up the successive sizes of dilators are used until the urethra is dilated up to No. 10. This can be accomplished without pain by twisting absorbent cotton on an applicator and saturating it with a five-per-cent solution of cocaine and laying it just within the urethra for five minutes before dilating. After once dilating the urethra I have been able to introduce the speculum at once at subsequent examinations, without any further

preparatory dilatation. Quite often the No. 10 can be introduced at once with ease without any dilatation.

The bladder is now catheterized, unless the patient has urinated immediately before the examination. A pledget of sterilized cotton is now placed between the labia over the urethra, to protect the latter from contamination during the change of posture, and the patient is placed in the knee-face position, which I almost invariably prefer for first examinations. The speculum is grasped in the right hand while the left holds the labia apart, and the cotton is removed, exposing the urethra. The speculum is held between the tips of the fingers and the thumb, the ring and middle fingers resting on the under side of the handle and the index under the opposite side of the funnel-shaped orifice (see Fig. 6), while the thumb pushes the handle of the obturator firmly into the speculum, preventing the obturator from being forced up into the speculum as it is pushed through the urethra. Thus firmly held, the point of the speculum (*i.e.*, obturator) is placed upon the urethral orifice and the speculum pushed on through the urethra into the bladder by a movement in a direction at first inward then downward, thus describing a slight curve around the under surface of the symphysis.

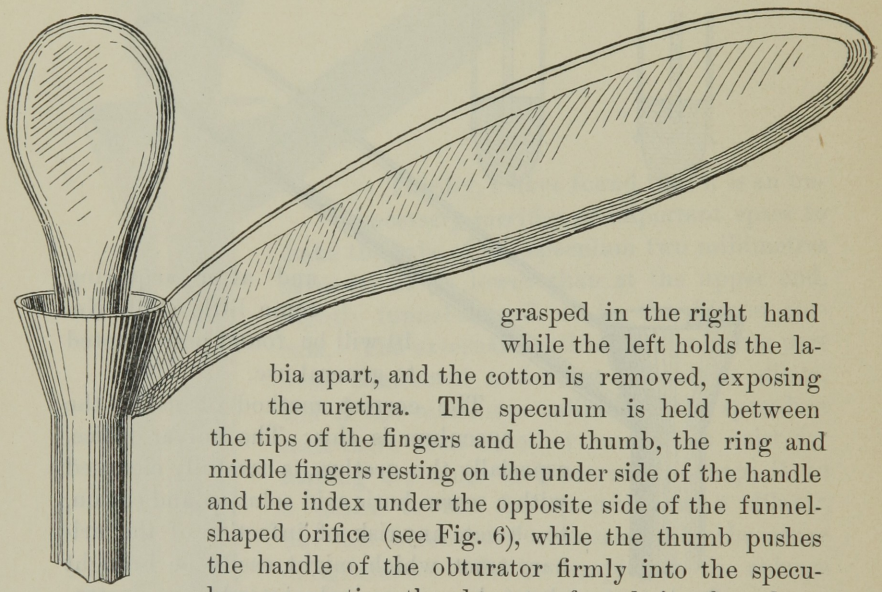

FIG. 5 shows a similar speculum with a stouter handle, large enough to grasp in the full hand.

If the patient cannot well remain as long as desired in the knee-face position, its advantages may often be secured by first placing her for a short time in that position until the viscera gravitate up out of the pelvis toward the diaphragm, and introducing a catheter into the bladder, which at once fills with air. The catheter is now withdrawn, and the patient gently returned

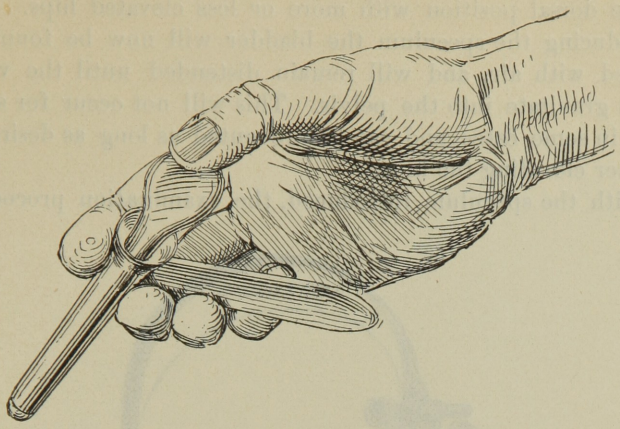

FIG. 6 shows method of holding the speculum during introduction, the thumb pressing upon the handle of the obturator to prevent the end being forced back into the tube as it is pushed up through the urethra.

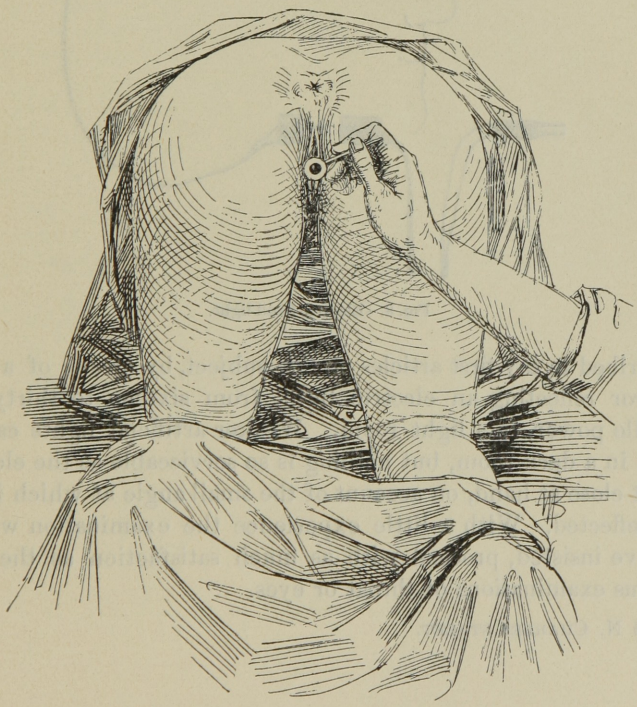

FIG. 7 shows the patient in the knee-breast position, the speculum introduced and the long handle conveniently held for examination.

to the dorsal position with more or less elevated hips. Upon introducing the speculum the bladder will now be found distended with air, and will remain distended until the viscera again gravitate into the pelvis. This will not occur for a long time in some cases, and can be prevented as long as desired by further elevating the hips.

With the speculum introduced, the examination proceeds as

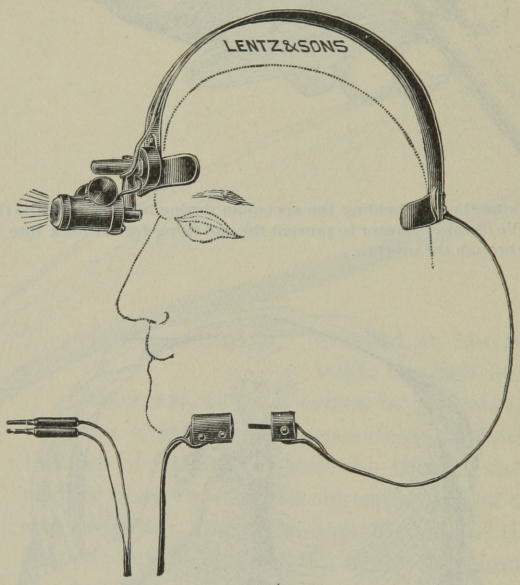

FIG. 8.—Electric head light.

described in my first articles on this subject, by means of a head mirror reflecting an electric light, from sixteen to thirty-two candle power, in a light room. Weaker artificial lights can be used in a dark room, but nothing is so serviceable as the electric light close at hand, on account of the small angle at which it can be reflected. With a little experience the examination will, as I have insisted, proceed with as much satisfaction as the analogous examinations of throat or eyes.

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