

ment to be rotated without allowing the wires of the battery to rotate with it and thus obscure at any time your vision.

The instrument which I show you was intended for the examination of the anterior part of the bladder, and another one, the same in construction only the window is on the posterior side, to be used for the examination of the posterior wall.

But practically the anterior instrument is all that is required, as with it all parts of the bladder can be viewed by rotating the instrument at will. It can be introduced into the bladder almost as readily as a calculus sound, but when in, it requires

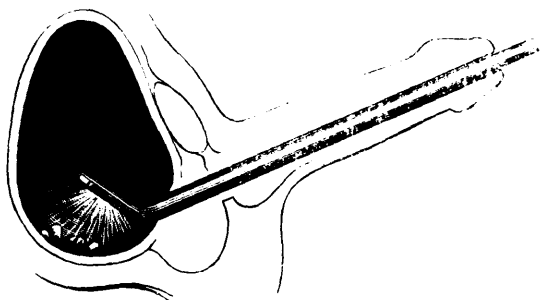


FIG. 1.—The posterior instrument as seen in position.

a great deal of practice and patience before one is able to rotate the instrument and examine a certain patch. Although we may become rapidly proficient in placing the light, it is otherwise in appreciating what is seen. A stone or typical growth is readily recognized, but there are certain conditions of the mucous membrane which are most puzzling and require experience to determine their nature.

Before passing the instrument it is well to see that it is in perfect working order, and thus save a good deal of annoyance later. The bladder should contain, at least, four ounces of clear urine. If the patient has passed his urine lately, or if it contains pus or blood it will be necessary to wash out the bladder with a solution of boracic acid, and then inject about five ounces of warm water. Having made sure that you have five ounces of fluid in the bladder, you may introduce the instrument. See that the current is turned off first of all; a little glycerine is the best lubricant as it prevents murking of the prism. When the beak has been felt to have entered the bladder, you may close the circuit, and then at the ocular end you will perceive a yellowish-red glare. By gentle manipulation you will recognize the trabeculated surface

of the bladder and the minute vessels which ramify in the mucous membrane, all illuminated with a bright white light, as clear as if seen by direct sun light. By rotating the instrument you will notice in the inferior zone, the orifices of the ureters. After a little practice one recognizes the conditions of a healthy mucous membrane. It is of a reddish-yellow or light straw color, with its surface bright and glistening and traversed by blood vessels of varied tints. When the base is illuminated you will see the trigone, which forms a beautiful object, reminding one of a sandy shore, so even and yellow is its surface. A little more posteriorly are placed the orifices of the ureters, situated upon elongated oval-shaped projections. In a healthy bladder it is not difficult to discover their slit-like openings, and if watched you will notice them to suddenly gape and a tiny swirl of fluid will be emitted. By withdrawing the cystoscope slightly, until the window is at the opening of the bladder, the urethral orifice can be searched. It is seen as a crescentic fold, blood red in color from the transmission of the rays of light through its vascular substance.

The cystoscope will show absolutely whether the disease is in the bladder or not; one can see out of which ureter purulent or bloody urine escapes. Hence we have a means of solving the question, which kidney is diseased, if there be but one affected. With it we gain a more thorough knowledge of the forms of catarrh and can watch its improvement under treatment, can diagnose ulcerations, tuberculosis, can see calculi, encysted stones, foreign bodies, velvety growths and tumors of the bladder.

Dr. Meyer, in "Annals of Surgery," says that the cystoscope has become an indispensable part of surgical equipment, and is for the bladder what the laryngoscope is to the larynx.

I am indebted for what knowledge I have of the use of the cystoscope, to Mr. E. Hurry Fenwick, of St. Peter's Hospital for Stone, London. He makes use of the instrument daily in his private and hospital practice, and has made many thousand cystoscopic examinations. He is most painstaking with his cases, takes complete notes of every examination, and if anything of interest is found he either makes a clay model of what he sees or has a photograph taken. Copies of some of his models I have here to show you.