have devices for filtering the harmful rays, but we can measure the dosage with accuracy. A few years ago Beniot gave us his radio-chromometer. Other methods of regulating the dosage of X-ray treatment are Villard's pastels and Sabourauds-Noire' reaction pastels. Fulguration has numerous advocates, but this method of treating skin cancer has not received the general attention of the profession, but properly used the fulguration method produces brilliant results.

THE CYSTOSCOPE: ITS USE AND ABUSE.

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Probably no other instrument in the whole armamentarium of the modern physician, surely none in that of the urologist, has a broader field of usefulness than the cystoscope. Yet in the hands of one not skilled in its technique it may become not only useless, but a source of great pain and even danger to the patient. This latter statement was forcibly brought home to the writer, when, some years ago while suffering from a renal calculus, an attempt at cystoscopy was made by a very competent general surgeon. This resulted in failure owing to the excruciating pain, and the writer suffered with hematuria and painful urination for days afterward. Some months later the calculus passed following dilatation and injection of the ureter through the cystoscope in the hands of one of America's leading exponents of its use.

The modern cystoscope, with its small caliber, its smooth, round surface, its cold light and its irrigating attachments, while a direct descendant of the one which Nitze produced in 1878, is a far cry from that heavy, cumbersome instrument, with its large bore and hot light.

There are a number of instruments, both

foreign and domestic, on the market today, each having its exponents, and each laying claim to superiority in one or more particular respects. The writer feels that to a great extent, at least, the claims to superiority for various cystoscopes by different cystoscopists are due not so much to the superiority of the instruments as to the fact that they are the ones with which the individual workers have become most familiar.

The uses to which the cystoscope may be put are broadly divided into diagnostic and therapeutic.

As a diagnostic agent the cystoscope is invaluable in diseased conditions of the bladder. By its use a clear picture of the interior of this viscus may be obtained, and pathological conditions diagnosticated with ease and certainty. Probably the most important abnormal bladder condition which the cystoscope reveals is intravesicular tumors. These new growths may be either benign or malignant, and while it is usually not possible to distinguish them with the cystoscope alone, the age of the patient, his general condition, and other clinical evidence should be borne in mind. A portion of the tumor can usually be removed through the cystoscope, and should be done, when possible, for laboratory diagnosis.

The various inflammatory conditions of the bladder can be readily differentiated with the cystoscope. While acute cystitis, especially gonorrheal, is usually considered a contra-indication of cystoscopy, it is often desirable to determine whether or not this condition is localized. Chronic inflammation of the bladder is revealed by a typical picture of distended vessels, ecchymosis and sometimes ulcers. In tubercular cystitis the usual finding is an area of severe inflammation which shows granulations and ecchymosis. Sometimes small grayish tubercles are seen scattered here and there over the surface of the lining membrane.

Vesicular calculus is a comparatively frequent cystoscopic finding. Of course, this condition may be diagnosticated with more or less certainty in most cases from the clinical his-

tory, by intravesical palpation, with the Thompson stone searcher, and by the X-ray, but in certain cases, such as encysted calculus, diverticula in which the stone is lodged, etc., these methods fail, and the cystoscope comes to the physician's aid.

Enlarged prostate, while usually revealed by rectal palpation, may be better appreciated by means of the cystoscope. Other rarer bladder conditions which are revealed only by the cystoscope, or by exploratory incision, which may be mentioned, are varicose veins of the bladder wall, diverticula of the bladder, abnormalities of the position and contour of the ureteral openings, and congenital cystic protrusions of the ureteral wall.

Useful as is the cystoscope in the diagnosis of pathological bladder conditions, its sphere of usefulness is greater in diagnosing lesions of the upper urinary tract, the ureters and kidneys. While considerable information may be gained concerning pathological conditions of the ureters and kidneys by mere inspection through the cystoscope, more can usually be learned by ureteral catheterization.

By inspection may be determined whether or not urine is flowing from both ureters, and the source of blood or pus, that is, whether or not it is coming from either ureter.

By ureteral catheterization may be determined the nature of pus which may be coming from the opening, the location of the lesion and the nature of the infecting organism.

The diagnosis of renal, and especially ureteral calculi, is very materially aided by ureteral catheterization. First, by determining from which ureter, if either, blood is being passed; second, by the catheter meeting an obstruction in the ureter, and third, by having a radiograph made with a suitable catheter in the ureter. Not infrequently after this procedure supposed ureteral calculi are found to be phleboliths, or some foreign substance at considerable distance from the ureter.

Tuberculosis of the kidney may be determined by finding tubercle bacilli by microscopical examination of urine obtained by ureteral catheterization, or by the innocula-

tion of a guinea pig with the same. This is of the utmost importance, as often only one kidney is involved, and it may be removed, restoring the patient to health.

In the diagnosis of hydronephrosis the use of the urethral catheter is of the utmost importance. In this condition there is usually no difficulty met with in passing the catheter until the uretero-pelvic juncture is reached, when there is some resistance. Before the catheter has reached the pelvis the flow of urine is slight or absent, but in hydronephrosis after the catheter has passed into the pelvis there is a steady drip.

Probably the most important role of ureteral catheterization is that played in connection with renal functioning tests, the phloridzin, the phenol-sulphone-phthalene, and the estimation of urea. By these tests may be determined with great accuracy the actual functioning ability of each kidney.

In the realm of treatment of urinary diseases the cystoscope ranks second only to its diagnostic importance. With such instruments as the Brown and the Bransford Lewis operating cystoscopes many diseased conditions, not only of the bladder, but of the kidneys and ureters as well, may be treated most successfully.

Certain types of vesicular tumors may receive treatment through the cystoscope, either by removal by cutting with the small scissors, provided with some operating cystoscopes, or a wire loop, or by the application of the high frequency current.

Vesicular calculi, if of small size, may be removed through the cystoscope, or even if of considerable dimensions, may be removed after first crushing with a lithotrite.

One of the most brilliant results which may be obtained with the cystoscope is the removal of ureteral calculi. If these are within two or two and one-half inches of the ureteral orifice they may sometimes be removed by the use of small flexible forceps. The first surgeon to successfully perform this operation was Dr. Bransford Lewis by the use of his operating cystoscope. If the calculus is too high up to

be reached with the forceps it will often pass by dilating the lower end of the ureter and injecting some bland ointment, such as liquid albolene, through a ureteral catheter. Or quite frequently its descent may be facilitated by merely catheterizing the ureter.

In chronic catarrhal inflammation of the pelvis of the kidney much good may often be obtained by the injection of the pelvis with a weak antiseptic solution, such as 5 per cent argyrol, through a ureteral catheter. This treatment is not indicated in very severe pyogenic infections where surgical intervention is demanded.

In temporary blocking of the urine due to twisted ureter or floating kidney it may be expedient to resort to ureteral catheterization to relieve the condition.

Very often in certain abdominal and pelvic operations the ureteral catheter in place may be of the greatest service as a landmark.

As indicated above, cystoscopy in the hands of an amateur may become worse than useless, and naturally even in the hands of an expert it has its contraindications and limitations.

In acute inflammatory conditions of the urethra the introduction of the cystoscope might be attended with dire results by extending the infection to the bladder, the ureters, or even the kidneys.

Of course cystoscopy is dependent upon the size of the urethra through which the cystoscope must pass, and is further limited by the caliber of the instrument. The size of the different prominent cystoscopes varies from 18 to 26 French. Frequently in certain stricture cases where it is desirable to perform cystoscopy it is necessary to first dilate the urethra.

To sum up, the modern cystoscope in the hands of one skilled in its use has become a means of correctly diagnosing nearly all pathological bladder conditions, including abnormalities in contour, tumors, inflammations, and calculi; urethral conditions, such as calculi, inflammations, twists and kinks; many kidney

conditions, as lessened functioning powers, calculi, hydronephrosis and pyonephrosis, tuberculosis, etc.; and in the realm of therapeutics it is useful in the removal of vesicular tumors and calculi from all portions of the urinary tract, in the treatment of chronic catarrhal inflammation of the renal pelvis, and for furnishing a landmark in certain abdominal and pelvic operations.

RENAL HEMATURIAS AS INFLUENCED BY URETERAL CATHETERIZATION.

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These cases, three in number, are of interest particularly, because of their individuality, there being no satisfactory explanation for cause and result.

If we consider hematuria and its causes, there is as a rule, some material basis from which to draw conclusions, with the exception of such cases as are referred to in this class, namely, "Idiopathic" or "Essential" hematuria.

In order to permit this peculiar phenomenon to stand out in a conspicuous way, it may be well to call attention to some of the more common hematurias, with some of their underlying causes. For example: Injuries to any portion of the urological tract, foreign bodies—such as stone in the kidney, ureter, bladder prostate of urethra. Neoplasms, benign or malignant, in this tract. Tubercular infections from the kidneys down, inclusive. Other suppurative lesions of the kidneys, etc. Acute or chronic nephritides. Ulcers of the bladder, cystitis and trigonitis. Terminal hematurias as found in cystitis colli and acute posterior urethritis, especially when there is an acute verumontanitis. As an early symptom in benign prostatic hypertrophy, this being a late sign in cancer of the prostate. Hematurias found in acute general infections, either of bacterial or protozoan origin. Those