age of secondary operations and failures to relieve.

Cannon's experiments have shown the same results. A gastroenterostomy on a normal stomach of an animal does not drain the gastric cavity, even if placed at the lowest point. The gravity advantage of the gastroenterostomy is overcome by intra-abdominal tension, and the food, by muscular action, is carried out the pylorus rather than the artificial opening. The magnificent showing of gastroenterostomy in obstruction has led to the indiscriminate performance of the operation in those cases of ulcer in which gastric drainage is normal. This particular phase of the subject must be further investigated.

Chronic ulcer of the duodenum is relatively more common in the upper two inches than in any corresponding portion of the stomach. It is especially liable to perforate, although its sheltered situation usually leads to adhesive protection. Many pyloric ulcers will be found to have their origin on the duodenal side. Gastroenterostomy is the operation of choice, as it diverts the irritating gastric juices and food products from the sensitive surface, thus promoting rapid healing. We have performed gastrojejunostomy 286 times for all purposes, with a mortality of 5½% in the benign series. The recent improvements in the technic of gastroenterostomy has greatly reduced the mortality and largely eliminated the causes of failure to mechanically relieve the conditions. Moynihan well says that "the surgeon may not unreasonably expect that from being a last resource gastroenterostomy may be considered as a method of treatment worthy of consideration in a much earlier stage of chronic ulcer of the stomach." Excision of gastric and duodenal ulcers would seem to be a wise procedure, but is open to certain strong objections. In 20% of cases more than one ulcer is present, and one or more may be undetected or lie in an inaccessible situation. It leaves the ulcer tendency unrelieved, and more ulcers may form. Rodman has suggested the removal of the pyloric or ulcer-bearing portion of the stomach with complete closure of both duodenal and stomach ends and independent gastrojejunostomy. We have followed this plan in 5 cases of inveterate ulcer relapsing after gastroenterostomy, with good results. The gastroduodenostomy of Finney is a most excellent operation, and we would predict a wider field of usefulness than it has enjoyed. We have performed this operation 46 times, with one death and no relapse. The theoretical objection is that in open ulcer the food must pass the ulcerated area before reaching the widened pylorus, and obstruction has no part in the production of ulcer, as is shown by the development of duodenal ulcers. Pyloroplasty must be discarded. While we had no deaths in 20 operations, we had 7 relapses.

In briefly calling attention to the malignant diseases of this group of organs, the writer would emphasize the possibilities of cure by

means of operation. In the gall bladder we found 4% of cases at the operating table had malignant disease, and all of these cases had gallstones present or evidence that they had been present at one time.

Since it has become the practice to remove all thick-walled gall bladders as useless and a possible source of future trouble, many cases of malignant disease in an early stage have been in this way, as one might say, accidentally cured. We have met with several such instances.

Cancer of the stomach is the most common type of malignant disease in the human body, constituting one fourth to one third of the total number. The radical treatment of gastric carcinoma is now on assured ground, with a mortality of 10%, or less in favorable cases, to 20% in late but still operable disease. The only necessary thing for success is an early diagnosis, and this must be on clinical grounds, supplemented by early exploratory incision. In 46 gastric resections for pyloric cancer we had 7 deaths.

The profession may well look on the surgical achievements in this new field of work with pardonable pride. That there are many shortcomings must be admitted, but in the history of surgery there has never been a territory opened up with equal rapidity, nor one in which the physician and surgeon have worked together in such harmony for the common good. The statistics on which this paper is based represent the operative experience of Dr. Charles H. Mayo and myself.

Original Articles.

THE CASPER-HIRSCHMANN DEMONSTRATION AND PHOTOGRAPHIC CYSTOSCOPE.¹

BY G. S. WHITESIDE, M.D., BOSTON.

I WANT to demonstrate to you this evening, a new cystoscope that combines several features of much interest, and I shall preface my remarks with a few words on cystoscopy in general and in the female in particular. On account of the anatomical arrangement of the female urethra and bladder, digital and instrumental exploration have been practiced since prehistoric times. Visual examination of the bladder is a diagnostic method of more recent date, but, nevertheless, was practiced so long ago that no one living now can claim to have been the first to attempt it. The first instruments, of course, were crude; later, various improvements were introduced along different lines, resulting at the present time in two classes of instruments for the examination of the bladder in the female. The simplest and most generally employed of these two classes is that which has been perfected and brought to notice in modern times, and in this country especially, by Kelly of Baltimore.

This, as you all who are doubtless familiar with

¹ Presented at the meeting of the Suffolk District Medical Society; Section for Obstetrics and Diseases of Women, March 23, 1904.

it, through having used it as well as heard of it, are aware, consists essentially of an open endoscopic tube, the cavity of the bladder being illuminated by a light reflected from the outside. In this class of cases the bladder is dilated with air induced to distend it by the assumption of a favorable posture on the part of the patient, namely, the knee-chest position. The disadvantages of this method of examination are several; the most important of them being that the knee-chest position is an extremely tiresome and objectionable one for the unetherized patient to assume, and a very inconvenient one in which to place a completely etherized patient. The next most important objection is that the light, being reflected from the outside, often does not give as clear and satisfactory an illumination of the bladder cavity as one might wish. The advantages of this instrument are also several. The size of the endoscopic tube which it is possible to use is satisfactorily large. The fact that it is an open tube allows the possibility of various instruments, such as probes, curettes, forceps, scissors or catheter, being introduced through it for purposes of diagnosis or treatment. The cost of the apparatus is very small, and its simplicity prevents it from ever getting out of order. The technique of this method of examination is comparatively easy and requires but little practice to be remembered.

The other class of cystoscopes, of which I especially wish to speak to-night, has one great general advantage in that they may be used with precisely the same technique in either the male or the female. This class of instruments was originally made practically useful by Nitze, twenty-five years ago. They carry the light at the inner end of the instrument itself. The view is obtained through the modified telescope in the shaft of the instrument, and the medium used for distending the bladder is clear boric acid solution. Many modifications, all dependent on the same essential principle, have been devised by surgeons in almost every civilized country.

The one of which I especially wish to speak, the Casper-Hirschmann, is an instrument combining three valuable features. It may be used as a simple inspection cystoscope, or it may be used as a means of demonstrating and teaching cystoscopy and vesical pathology, in the living, to students, or it may be used for taking permanent photographic records of interesting features in normal or diseased bladders. First, with regard to its use as a demonstration cystoscope, I wish to say that the greatest difficulty experienced by those who wished to teach cystoscopy has hitherto been owing to the fact that after some object of interest had been seen and focused by the instructor, the student almost invariably moved the instrument sufficiently so that he did not see what it was intended that he should see when his turn came to look through the instrument. With this cystoscope it is possible for the student and the instructor to look through it simultaneously and observe every feature of the interior of the bladder while the

instructor explains the significance of each object demonstrated. With regard to its use as a photographic instrument it is also extremely satisfactory, because the difficulty which existed in previous photograph cystoscopes has been eliminated. This difficulty was that after the surgeon had focused the object he wished to photograph, he was obliged to unscrew the eyepiece of the cystoscope and screw on the camera, thereby taking his picture entirely uncontrolled by sight. In this instrument, it is possible to observe the object not only before but during the time it is being photographed, because the surgeon may look through one eyepiece of the instrument while the camera is placed at the other.

I have used this instrument for diagnosis, demonstration and for photography in several female and in a larger number of male cases. I will pass around a few photographs which I have taken with it recently. I think all of you will agree, on giving the matter thought, that the technique is simple and the view of the object far more satisfactory than is usually the case with the open endoscopic tube.

I have here some bladders which have been taken at autopsy and hardened in formalin. It is possible in these specimen dummies to demonstrate the cystoscope almost as well as in the living.

With regard to cystoscopy in the female I wish to say that it is a field as yet comparatively little explored. There are many pathological conditions associated with the uterus and its appendages which press upon, distort or even invade the cavity of the bladder, producing characteristic appearances in the interior of that viscus, and if the gynecologist will perfect himself in the use of the cystoscope, he will be rewarded by observing appearances in the bladder which will lead him to a more accurate diagnosis in inflammatory or malignant disease, or even in cases of simple malposition of the uterus.

EXPLANATION OF PLATE.

Figs. 1 and 2 show normal ureter openings. Notice the shadow cast by the ureteral papilla on the bladder wall and the door, pit-like orifice of the ureter opening in the apex of the papilla.

Figs. 3 and 5 are from a case in which an incomplete litholapaxy had been done. Fig. 3 shows a long slit-like opening of a ureter. At the base of the papilla is a fissure of fold in the mucous membrane. Notice the solid, leathery appearance of the mucosa due to chronic cystitis. Fig. 5 shows three broken fragments of stone lying on the bladder floor.

Figs. 4 and 6 are views taken in a case where chronic obstruction to the outflow of urine has caused hypertrophy of certain bundles of muscle fibers in the bladder wall — a so-called, trabeculated bladder. The arrangement of the muscle bundles is well shown in Fig. 6 and also in Fig. 4 above the catheter which has been inserted in the ureter. The shadow of this catheter shows below it on the bladder wall.

HUMAN SLAVERY AS A PREVENTION OF PULMONARY CONSUMPTION.*

BY THOMAS J. MAYES, A.M., M.D., PHILADELPHIA, PA.

IN the arduous research for new measures to stamp out pulmonary consumption it is astonishing to find that one of the most interesting episodes in the history of our country, which

* Read before the Philadelphia meeting of the American Climatological Association, June 4, 1904.