Among the distinguished lay nurses special mention must be made of Miss Chanler of New York. I met Miss Chanler in Ponce, Porto Rico, where she did most excellent service in the military hospitals. Her numerous patients will always remember with deepest gratitude her arduous, unselfish work. The Misses Wheeler, daughters of Major-General Wheeler, accompanied their heroic father to Cuba, nursed him when he was ill and labored earnestly among the sick of his command. They continued their labor of love at Camp Wikoff, where many a sick soldier owed his restoration to health to their unremitting, tender care. Diet kitchens were established at Camp Wikoff under the supervision of Mrs. M. H. Willard of New York, which proved of the greatest benefit for the sick and convalescent soldiers. I take the liberty to quote from a letter recently received from Mrs. Willard, dealing with this subject: "For six weeks I was at Montauk, representing the Red Cross Society Maintenance of Trained Nurses, which, together with the Massachusetts Volunteer Aid Association, established diet kitchens in connection with the General and Division Hospitals. On my arrival at Camp Wikoff I found the kitchen department in a very serious condition. The officers, doctors, nurses, orderlies and employees, as well as the patients, were procuring their food from a small wooden building, presided over by an army cook, and everything in and around the mess hall was in a dirty condition. Rice and oatmeal were the principal diet for the sick, and this was so often burned and badly cooked that the patients were unable to relish or retain it. The first diet kitchen was established August 27, and those at the three Division Hospitals soon followed, and this, with one at the Detention Hospital, made a system of five kitchens, covering a radius of three miles, with a force of fifteen cooks, several dieticians, ten volunteers and twelve detailed men. These kitchens supplied carefully and scientifically prepared food for the sick and convalescent, and the physicians and nurses were able to procure for their patients, not only liquid diets, but light and special diets as well. One of our prominent physicians remarked that his patients were better fed at Camp Wikoff than in any hospital in New York City with which he had been connected. The Government soon realized the value of the work, and two weeks after the opening of the kitchens they were turned over to the officials, and from that time, with no cost to private enterprise, the sick soldiers of all the hospitals were served, not only with home-made broths of beef, mutton and chicken, but also with oysters, broiled chicken, tenderloin steaks, chops, jellies, custards, etc."

This new enterprise in caring for sick soldiers deserves to be brought to the attention of the general public and should receive the strongest encouragement in the event of another war.

The different relief societies, National, State and local, did noble work in aiding the Government in properly caring for the sick and wounded. The names of Miss Helen Gould, Mrs. Ellen Hardin Walworth, and scores of other noble-minded, patriotic women will always be prominently mentioned in the history of the short, decisive war so gloriously ended. The charity that has been practiced so bountifully and so generally, must satisfy our victorious army that the patriotism they carried into the field has been cultivated at home in words and action to a degree and extent unparalleled in the history of the world. War

in a just cause begets patriotism, and nothing can demonstrate this more clearly and forcibly than our experience in the field and at home during the last eventful six months.

IMPLANTATION OF URETERS IN RECTUM.

A METHOD HAVING FOR ITS OBJECT THE MAKING OF SUBSEQUENT INFECTION OF THE URETERS AND KIDNEYS IMPOSSIBLE.

BY FRANKLIN H. MARTIN, M.D.

CHICAGO.

For two years I have been experimenting on dogs with the object of determining whether the complete removal of the bladder can be made a justifiable operation. In order to make removal of the bladder an acceptable procedure it is necessary to dispose of the ureters in a manner so that the substitute receptacle for the urine will have reservoir room, contractile power under the control of the individual, and, most important, a perfect sphincter outlet, also under the complete control of the individual. Reserving the history of the work already done in this comparatively new field for a subsequent paper which I now have in preparation, which also will give my many experi-

FIGURE 1.

ments in detail, I will simply state that the rectum seems to offer a reservoir which fulfills the above indications.

The reason why the lower bowel does not make an ideal bladder is because it is not clean, and almost all experiments in which the ureters have been implanted in the rectum in dogs have ended—when they have survived the ordeal of the primary effects of the operation—in infection of the kidneys and death from nephritis.

Several ingenious methods have been offered by experimenters, the most of which I have undertaken on animals. The procedure which I now offer is unique and simple of accomplishment. When I say simple I am speaking in comparative terms. Ureteral-rectal anastomosis is a very delicate and difficult operation under any circumstances.

The principles of my operation are as follows: 1. The ureters empty into the bowel in the direction of its long diameter, and from above downward, so that the urine is discharged in the direction taken by the fecal current. 2. The ureters are buried in the walls of the rectum for a distance of an inch or more longitudinally, so that in the act of defecation the fecal

mass will squeeze the caliber of the ureters closed by its pressure on the mucous membrane, and that pressure is exerted from above downward in the direction of the onward flow of the urine, thereby emptying the ureter by a milking process. 3. The ureters are further protected by the muscular coat of the intestine. This is accomplished by surrounding them in their longitudinal course through the intestine to the extent of two centimeters by the circular coat of the bowel. This muscular coat of the bowel, in acting

FIGURE 2.

from above downward, milks the urine downward and holds the ureters closed when the rectum is aiding in defecation. When the contraction and closure due to defecation is over, the urine will spurt forth with considerable force, acting as its own cleanser. 4. The ureters are implanted in the lower bowel, which is normally empty except at defecation.

OPERATION.

1. Place patient in Trendelenberg position; make

FIGURE 3.

the abdominal incision so as to expose the rectum; pack back the omentum and intestines; make a longitudinal incision of the peritoneum over the ureters down to their insertion into the bladder, and dissect them out with the finger to a height of about three inches; tie each ureter near the bladder with strong silk and sever them above that point. 2. Bring each ureter forward and approximate in front of the rectum by including the wall of each in one fine silk suture

armed at each end with cambric needles (Fig. 1C); approximate the ureters further by two fine silk sutures passing through the outer walls of the ureters only, securing the two tubes parallel, as shown in Fig. 1. Place severed ends of the ureters on a gauze sponge while executing the next step. 3. Make a longitudinal incision two inches long through the peritoneal and subperitoneal tissue of the upper wall of the bowel, and dissect back this tissue so that an oval surface of the muscular coats of the intestine is exposed, the length of the primary incision in the bowel and one inch wide at its center. The flaps are held apart by silk stays, tenacula or small retractors. 4. After making sure that the bowel is free of fecal matter and having secured it above by a clamp or rubber tubing, make a small incision through the remaining coats of the bowel about large enough to admit the two ureters without pressure and about one-third the distance from the lower end of the oval denudation; pass through this opening into the interior of the bowel the double threaded suture previously placed in the ends of the two ureters and bring the needles out a short distance apart, slightly below the lower end of the denudation, about one inch from the opening made for the ureter (Fig. 1C), and draw the ureter through the opening and to the point at which the stay silks found their exit (Fig. 2C). 5. Eleva-

FIGURE 4.

ting the two ureters at right angles to the bowel, they should be secured to the fibrous and mucous coat of the bowel by a number of closely-applied sutures of fine catgut or silk, great care being necessary not to penetrate to the mucous coat of the ureter or to apply the sutures so as to constrict the ureters. The ureters are now laid parallel with the bowel on the denuded portion, the handling silk is made taut and additional sutures passed, securing the ureters to the muscular coat of the intestine as it is rolled in by the tension on their ends. 6. The ureters are now buried in the muscular coats of the bowel by folding those coats over them for a distance of one inch (Fig. 3B.B.) and securing them to the ureters by fine silk sutures. 7. The peritoneal coat of the bowel is now closed over the ureters to the point where they separate and then below them above that point. This is accomplished by a running inversion stitch of silk. A few additional interrupted sutures of silk attach the peritoneal coat to the outer coat of the ureters (Fig. 4). 8. Close the abdomen with a small gauze drain, passing down to the bowel in the lower angle of the wound.

REMARKS.

This method is the outcome of experiments on thirty-seven dogs and three operative procedures on human beings. Of the latter there was one removal of the bladder which lived three years, and one more of exstrophy of bladder in which the ureters were implanted in the rectum with only partial success. Of the experiments on the dogs four lived for indefinite

periods, two with both ureters in the rectum. These experiments in detail will form a subject for a further communication.

SCHOTT TREATMENT OF CHRONIC HEART DISEASE.

WITH REPORT OF CASES.

Read before the Medical Society of the City Hospital Alumni,
of St. Louis, Nov. 3, 1898.

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By way of preface, I should like to recall certain fundamental principles in the management of diseases of the heart upon which rests the rationale of this method of treatment by baths and gymnastic movements. At the outset it is important for us to distinctly remember of how slight importance, from a prognostic standpoint, is a valve lesion, as evidenced by a murmur and the other physical signs, for the discovery of such a lesion does not in itself consign the victim to a certain or early grave any more than it does per se call for the administration of the class of remedies known as cardiac stimulants. Indeed, many persons with marked physical evidence of valvular defects live out actively and usefully their allotted life expectancies, uninfluenced apparently by these cardiac maladies. Lauder Brunton relates that when he was a student of medicine, one of his professors was the subject of adherent pericardium, and consequent dyspnea, but is now quite strong and well after thirty-five years of professional work. Balfour states that many cases of aortic regurgitation run along comfortably and perfectly free of symptoms for thirty or forty years, and one of his friends, the subject of mitral regurgitation from the age of 30 years, led an active and useful life up to his death, at the age of 70 years; but these are but two of innumerable such examples which go to prove that the destiny of a case of valvular disease of the heart does not depend upon the valve lesion itself, so that we must look elsewhere for the pernicious results that do often occur in these cases; and in so doing we discover that it is the condition of the heart muscle which determines the future course of these cases. So long as the cardiac muscle remains sufficiently strong to carry on the circulation in spite of valve defects, just so long will the patient be perfectly comfortable and entirely free of symptoms, he having then, as we say, a compensated heart lesion; but allow this muscle to grow weak from any cause, to become, for example, the seat of fatty degeneration, then it will soon find itself unable to propel the proper amount of blood beyond the obstruction into the arterial system; resulting in damming up of the vital fluid in the venous trunks, and giving rise sooner or later to the picture of an uncompensated heart lesion, with which we are all so familiar.

We may, therefore, say the treatment of chronic heart disease practically resolves itself into the proper development and care of a muscle; and how does the athlete acquire his powerful muscles? Simply by a process of training, with the object, through a nutritious diet, of supplying his entire system, muscles included, with a sufficient quantity of rich, arterial blood, so that by systematic, regulated exercise he may cause his muscles to enlarge or hypertrophy, and

thereby gradually become capable of doing more and more work. Perfectly analogous to this should be the care of the heart muscle, called upon through disease to do extra work; and in reality this is just what, and only what, the subject of beginning cardiac disease needs. He must be enabled through attention to rules of hygiene, proper diet, etc., to supply his heart with an abundance of good, rich blood, and through properly regulated exercise, he must gradually accustom his heart muscle to meet the increasing demands on its force and strength. This is the only medication such a case should receive during the formative stage of compensation, and even afterward, in maintaining this condition of compensation in a comparatively healthy heart muscle. We should be no more justified in giving heart stimulants or tonics to such a case than we would be in beating the animal which is faithfully drawing along a heavily laden wagon; for in either case we would be doing more harm than good.

A striking example of the capabilities of muscular power through training is the classic one of the wrestler of Milo, who, it is said, was able to carry about a bull by beginning to carry him as a calf, and continuing to do so daily from that time until grown. On the other hand, in one devoid of gymnastic training, a sudden great effort beyond what has been his custom, may cause distress and dyspnea; so we see the strength of the cardiac and other muscles is, in fact, largely relative, and stands in relation to the work ordinarily demanded of them. The heart muscle also resembles those of the athlete in that they all require a definite amount of rest to prevent their becoming fatigued. This all-important fact is very graphically put by Brunton as follows: "To walk one thousand miles in six weeks can hardly be called any feat at all; but to walk one thousand miles in a thousand hours is a very different proposition, and may be regarded even now as beyond the capacity of most men. There is no more actual work involved in walking twenty-four miles in one day than in walking twenty-four successive hours, one mile for every hour, the difference between the two being the short period allowed for rest and recuperation between each period of exertion in the latter. Now, the action of the heart is like that of the athlete who has very short periods of rest between his periods of action, and just as the athlete's work is rendered more difficult by shortening his period of rest, so is that of the heart by increasing the rapidity of its pulsation."

In order, however, to thoroughly appreciate this very apt comparison of Brunton, we should recall for a moment how the heart obtains its rest. The cycle of its action is, as you know, divided into systole, diastole and pause, and it is during the two latter periods that the ventricles, the most important muscles of the heart, secure their much-needed rest. Should the action of the organ be accelerated, what is the result? Why, the time occupied by the systole remains as great as ever, while that of the diastole and pause is shortened, so that abnormal rapidity of the heart always means that the organ is doing more work with less rest—a condition in which we nearly always find it in disease.

This résumé of fundamental principles would, however, be incomplete without a few words concerning the manner in which the muscles of the heart are nourished, without recalling, for example, that the nourishing fluid is carried to them through the two