of eliminating infection from the rectum as a potent factor for evil in lacerations extending into the bowel.

A notable feature is the small amount of bleeding that occurs. Really, it is less than the average operation for partial laceration of the perineum. The reason is that in the latter, hemorrhoidal vessels are encountered that cause more or less annoyance from venous bleeding. In my operation they are not encountered unless the mistake is made of cutting too close to the wall of the rectum, but if it is confined to the loose tissue between the rectum and the vagina the hemorrhoidal vessels will escape untouched. In two instances I had to ligate a single vessel (they were in the first two cases) before I fully appreciated the importance of keeping in the cellular interspace.

The bowels should be evacuated on the third or fourth day, using oil and glycerin enema in addition to a saline purgative. The tension sutures are left to absorb, but should be removed if they become infected, usually about the seventh day.

CASES.

The first patient upon whom I did this operation was a very small woman (Mrs. G. R. D.), who came to my infirmary from Anniston, Ala. She had a tear measuring two inches up the rectum after a cicatrization. The surrounding scar tissue was very dense and the two sides of the perineum very difficult to force in contact. The posterior rectal mucosa protruded beyond the muco-cutaneous margin. The incision was easily and rapidly made and the flap drawn an inch and a quarter below the anus, showing very great mobility of the rectum after separating it from the vagina. Surely if it can be drawn down three inches in a small woman, the principle of the operation must be practical in the average subject. The operation was done Oct. 14, 1901. In this case silkworm was used for the Emmet sutures to fix the ends of the sphincter together and to hold the flap down. They gave satisfactory results, but created pain by cutting the skin, consequently they were displaced for kangaroo tendon in subsequent cases with one exception. The angle of the vaginal wound was closed with catgut sutures. Kangaroo was used to approximate the deep fascia, triangular ligaments and muscles. Catgut was also inserted in the skin and superficial fascia. The woman made an excellent recovery without infection. The flap almost completely retracted on the seventh day.

CASE 2.—Mrs. J. W. J., from Rosewood, Ga., age 25, white. Operation at Grady Hospital Oct. 25, 1901. An attempt had been made to close the tear before she came into my care. Laceration measured one and one-fourth inches up the rectum; there was considerable loss of tissue on either side, scar tissue extended high up on the side of the vagina and an unusual loss of rectal mucous membrane had occurred. The operation was done as described in the body of this paper, using kangaroo for the tension or Emmet sutures. The flap projected an inch beyond the anus. Recovery free from infection and almost painless. Flap retracted on the eighth day.

CASE 3.—Mrs. Alice S., age 28, Atlanta, Ga. Laceration of six years' duration, extending one and three-fourths inches up septum. A thick band of scar tissue extending up the vagina to cervix uteri, showing that the vagina was lacerated its full length, the rectum less involved. Operation Nov. 25, 1901, at private residence. In splitting the septum the long vertical strip of scar tissue was not encountered, showing that the upper part of the tear implicated the vagina only, consequently the descent of the anterior wall of the rectum was not hindered in the least. Kangaroo tension sutures were used to hold the sphincter muscles and rectal flap. The vaginal angle closed with catgut. Kangaroo was used to close skin and body of the perineum (Fig. 5) and catgut to closely approximate the edges of the wound, then completed as above described. The flap projected one and one-fourth inches below the anus and retracted on the ninth day. The kangaroo in the body of fascia and skin caused pain and required several doses of codein, otherwise recovery excellent.

CASE 4.—Mrs. J. E. B., Atlanta, Ga. Age 30. Complete laceration of the perineum of about three years' standing, extending nearly two inches up the rectum and fistulous tract extending from the side of the torn perineum to an ischio-rectal abscess on the left. Operation Dec. 20, 1901. The abscess was evacuated, curetted and drained through an incision below the edge of the triangular ligament and about one inch from the side of the anus. In curetting the fistulous tract, the abscess cavity was opened so that it communicated freely with the wound of the perineum, consequently the kangaroo sutures were dispensed with and silkworm employed in their stead, both for tension sutures and for the purpose of closing the body of the perineum, tying same on skin. The lateral dissection was limited more or less by the abscess, consequently the flap was not brought as far external as in other cases. It was turned forward and anchored with silkworm sutures which cut through the edges of the flap at the end of the fifth day, permitting retraction twenty-four hours later. Recovery was very good, but there was more or less pain from the cutting of the silkworm sutures.

CASE 5.—Negro, Emily J. Age 25. Operation in Grady Hospital, Jan. 28, 1902. Diabetic subject, cocain anesthesia. A small band of tissue connected the two sides of the perineum at the posterior commissure, a result of an attempt at closure some one had made. Laceration of the rectum one and a half inches deep, cicatricial tissue very dense, parts very rigid. The operation was done as above described, using kangaroo for the tension sutures. There was very little pain. The flap retracted on eighth day—results satisfactory. The operation was rather difficult on account of the cocain anesthesia; the patient was rigid and parts unyielding.

PLASTIC SURGERY OF THE FEMALE URETHRA.

WITH REPORT OF A UNIQUE CASE.

HENRY P. NEWMAN, A.M., M.D.

Professor of Gynecology and Clinical Gynecology, College of Physicians and Surgeons, Chicago, Medical Department of the University of Illinois, and Professor of Gynecology, Chicago Polyclinic.

CHICAGO.

The restoration of the female bladder when extensively torn and its floor practically destroyed by the original injury and subsequent unsuccessful surgery, is in itself difficult enough, sometimes impossible, but where you have also to construct a new urethra and devise means of controlling the flow of urine, the problem is indeed a perplexing one. Many methods have been tried, some of them with marked success, for reconstructing this membranous canal with its mucous lining, but the literature of the subject shows that the same method can rarely be applied twice, since each of these unique accidents happens in its own way and calls for a new and specially devised operation.

In presenting this report I had hoped to give final results in a very interesting case now under treatment at the Marion-Sims Hospital, but its progress, while satisfactory, has been tedious, and I am obliged to give you only such data as I have up to the present. This has for me possibly some advantages, since a free discussion of the further steps which I had proposed to take may be of benefit to some future sufferer similarly unfortunate.

ETIOLOGY OF THE INJURY.

The patient, Mrs. S. W., referred to me by Dr. Inks of Nappanee, Ind., is 39 years of age, and has been married three years. She is only four feet eight inches in height, undeveloped, with a generally contracted pelvis and an ankylosed hip, resulting from a severe attack of Pott's disease in early childhood. Two years ago she gave birth to a full term, still-born child. The

delivery was accomplished without instruments, but was a forcible extraction through a narrow pelvis with a distended bladder. The resulting rupture involved an extensive tear of the bladder floor and complete obliteration of the urethral tract, which was laid open the entire length. By subsequent retraction of the torn surfaces even the landmarks of the previous urethral channel were lost.

PREVIOUS ATTEMPTS AT REPAIR.

Six weeks afterward, while the patient was still in bed from the results of her severe delivery, an attempt was made to repair the injury. This was repeated in April and September of the following year. The two first operations were done in a private dwelling, the last in a small country hospital. These were conscientious attempts and were done probably as well as limited facilities and experience could do. The results, however, were most discouraging.

When the patient came to me last December she had a veritable exstrophy of the bladder. The organ was everted through the large rent in the floor and the

Figure 1.

reddened and inflamed bladder walls were thickened and covered with mucus. The vulva and thighs were excoriated and she had a large inflamed surface over the lower sacral region, in the center of which was an ulcer the size of half a dollar. The left hip was ankylosed, the pelvis narrowed and the rami of the pubis, practically denuded of all but a thin covering of scar tissue, formed a very acute angle. No trace of a urethra could be made out in any of the surrounding tissues. The small, hyperinvolved uterus was deformed by tears and resulting scars, the cervix drawn forward and downward by the large cicatrix in the small vagina, as will be seen by the accompanying cut. (Fig. 1.)

TREATMENT.

I operated in January last, attempting to constrict the floor of the gaping bladder wall as a step toward subsequent closure. Flaps were taken from the vulva on either side and, after splitting the bladder and vaginal wall, a considerable closure was accomplished by means of silver-wire sutures, a drain or retention catheter being inserted in an opening behind the line of sutures and the patient kept in the exaggerated dorsal position until the wound healed. It was desired to

prevent in this way the urine from accumulating and soiling the sutures. The second operation was done in February, when still further closure was accomplished by a similar suturing of flaps, this time with silkworm gut. My further aim in both instances was to construct a urethral channel from the soft parts about the vestibule and from the labial mucous membrane. The results obtained left much to be desired, but the patient, feeling herself greatly improved over her former condition, left the hospital during my absence in the south, and has but just consented to return for completion of the work.

RESULTS OF THE PROCEDURE.

The operation which I have just performed, and which was along the same lines, bade fair to be successful in closing the entire bladder and obtaining a urethral canal, and its partial failure is due to an accident. An attendant, unfamiliar with the case, in replacing a drainage catheter, pushed it through the newly-formed urethra instead of into the artificial opening provided for the purpose. As it is, the patient can hold her urine for a considerable time when in the recumbent position, and I believe some mechanical appliance can be provided which will prevent involuntary evacuation and leakage. Since the work I have already done has proven so successful I shall abandon the intention I had when this report was projected.

Figure 2.

In another case presenting all the formidable features of this one, I would be disposed to do the operation I have devised and which I will briefly outline, rather than to expose the patient to the annoyance and distress—amounting in a tubercular subject to danger of life—incident to prolonged confinement and repeated operating.

THE PROPOSED OPERATION.

After the usual aseptic and antiseptic preparation, the patient is placed in the lithotomy position, the uterus drawn down with vulsellum forceps and a semilunar incision made through the mucous membrane behind the cervix in the vaginal vault. This procedure and the opening of Douglas' cul-de-sac are the classical first steps in vaginal hysterectomy. The tubes and ovaries are now ligated with catgut and severed, and as much also of the broad ligament as is necessary to allow of the uterus being turned downward through the posterior vaginal opening and sufficiently inverted to close the gap in the floor of the bladder. (See Fig. 2.)

The mucous and serous surfaces coming in contact with each other and intended for approximation are

denuded and stitched together by interrupted silkworm-gut sutures.

An opening made through the wall of the uterus into the uterine cavity at a point corresponding with the location of the external meatus and a retention catheter inserted up through the dilated cervical canal into the bladder.

The parts are approximated with sufficient firmness to prevent leakage from the now fully-constructed bladder. The vagina is loosely packed with iodoform gauze and the patient put to bed. Permanent drainage is established by means of the catheter and extension tubing leading into a receptacle containing a 1-2000 bichlorid solution.

The newly-formed bladder is washed out with a saturated solution of boric acid every eight hours and the external parts bathed with the bichlorid solution, followed with sterile water and dusted with aristol or some antiseptic powder.*

OTHER METHODS IMPRACTICABLE.

When we consider the horrible state the patient is in, the danger of infection extending to ureters and kidneys, the depressing mental effect, the impairment of general health, the danger to life, some radical procedure for relief seems imperative. Again, the usual methods will not suffice. Entire closure, whether or not it includes the vagina, as in urinary fistulæ, makes no provision for voluntary urination. A suprapubic opening as used in the male would be inapplicable. The gradual drawing downward of the uterus until it can be used for plastic closure of the bladder opening could not be done in this case, owing to the adhesions and fixation. Rolling up of vaginal tissue to form a urethra after the unique method of MacArthur and subsequently using the device of Kolesche, so ingeniously perfected by Fletcher, for controlling the flow of urine, was not possible because scarcely any anterior vaginal wall tissue was available. The transplantation of the trigone into the rectum was contraindicated by the insufficiency of the rectal sphincter. Indeed, all known methods seemed impracticable.

ADVANTAGES AND DISADVANTAGES.

The method proposed has in its favor these points. The entire operation for closing the bladder and furnishing a urinary tract can be done at one sitting, with a strong probability of its successful issue. The saving of time and suffering to the patient is a great consideration.

The possible sources of failure might be: insufficient collateral circulation in the uterus separated from its posterior attachments. The use of serous instead of mucous membrane for the bladder floor might be more or less objectionable, though this has already been successfully reported; the uncertainty of inducing sphincter-like control of the circular fibers of the cervix uteri.

In spite of these difficulties I believe it is possible to use as a factor in forming another urethra the hyperinvolute, deformed uterus which has now no functional value proportionate to the service it might be made to perform.

100 State Street.

* This operation should not be confounded with the simple drawing down of the uterus without inversion for plastic work, nor with Freund's procedure in cases of vesical and rectal fistulæ. In this latter only the body of the uterus is used, the cervix above being curled on itself and walled off by cicatricial tissue.

Treatment of Warts.—Kaposi used to advise painting the wart and adjacent tissues every day with a mixture of bichlorid one part to thirty parts collodion.

OBSERVATIONS ON SOME RECENT CASES OF ORTHODONTIA.*

E. A. BOGUE, M.D.

NEW YORK CITY.

The two cases that I have been observing are brother and sister, eight and nine years old, respectively, and the observations have continued for a little more than two years. Both these children presented the curious anomaly of irregular deciduous teeth, though the teeth of both parents were, until extractions were practiced, remarkably regular. This irregularity of the temporary teeth meant, of course, contracted arches. In the case of the boy the contraction was so great that the lips fell

Fig. 1.—John M., 8 years old. Teeth closed and upper molar far in advance of its proper position. Lips fallen in like an old edentulous person.

in like those of an edentulous person (see cut of profile), giving him the appearance of a very old man. I greatly regret that I did not have a photographic profile made at the time, but his mother was so confident that she had one that I did not urge the matter, and it is now too late to secure this almost unique specimen.

The problem in both cases was to procure an enlargement of both arches in the easiest and most painless way

Fig. 1A.—John M., 8 years old. Mouth as it was July, 1899, closed.

possible, and with the least detriment to the teeth and disturbance to the children, and then to retain these teeth in their new positions, holding them out of one another's way during the continued shedding of the temporary teeth and the eruption of the permanent ones.

As children of that age are constantly active, fingers, tongue and lips included, I determined upon fixed, that is to say, nonremovable apparatus, and the first was put on April 19, 1900, when the boy was just eight years old and the girl about nine.

* Read at the Fifty-third Annual Meeting of the American Medical Association, in the Section on Stomatology, and approved for publication by the Executive Committee: Drs. G. V. I. Brown, M. H. Fletcher and R. R. Andrews.