induration low down in the right iliac fossa. He had the patient removed to the hospital, and a day or two afterwards made an incision just above Poupart's ligament, and as soon as the tissues were divided there was an escape of pus and blood-clot, which he found arose from the separation of the iliacus muscle in the pelvis. He could pass his finger down over the surface of the ilium, the periosteum being stripped off and the peritoneum being pushed upward into the muscle. The amount of material collected under the iliacus muscle was certainly a pint, and consisted partly of pus and blood-clot. This case presented at first many of the symptoms of appendiceal abscess.

Dr. Jopson spoke of a case of abscess arising in the soft parts of the iliac fossa. It was in an infant two or three months old, arising without apparent cause, and appeared as a swelling above and to the outer side of Poupart's ligament. Its deep origin was not suspected until it was opened, where the speaker found that he could pass his finger deeply into the iliac fossa. This case healed rapidly.

The other case was a boy of sixteen or eighteen who presented a swelling of rather rapid growth above the outer border of Poupart's ligament. In some ways it resembled a rapidly growing sarcoma, although its cystic nature was rather apparent. There were no symptoms of hip or spine disease; it was very evident that it contained fluid. It proved to be an abscess of the sacro-iliac joint which had followed the iliac fascia, pointing above Poupart's ligament instead of in the back.

Dr. Willard said that the erratic course frequently taken by pus originating from the spine or from various portions of the ilium is so common that we ought to be on our guard for abscesses appearing in the right iliac region. We are so liable, of course, at the present time to look upon all these accumulations as appendiceal. He had seen a number of large abscesses which were undoubtedly purely iliac not psoas abscesses,—not from the spine,—but caused by a rupture of, or severe injury to, the iliac muscle by violent contraction, the fibres of the muscle being torn. In two cases very probably the injury to the muscle would have ended in resolution, but, owing to attacks of influenzal grip, degeneration occurred, abscesses formed, and large quantities of pus were evacuated. Various abscesses may creep down from the vertebral column or from the region of the kidney or liver, and present themselves in the right iliac fossa.

STATED MEETING, FEBRUARY 3, 1902.

The President, Richard H. Harte, M.D., in the Chair.

INTESTINAL SUTURE.

Dr. Edward Martin, in a discussion upon the above subject, said that for some time Drs. Carnett, Levi, and himself had been trying the various methods of sewing animal and human intestines. The speaker wished to detail some of the conclusions which they had reached.

The difficulty incident to making an end-to-end intestinal suture is dependent upon the loose, flabby, slippery nature of the tissues involved, its deep position, and particularly the tendency of the mucous membrane to prolapse. Of the many different methods of end-to-end suture, those which now are received with most favor are the Murphy button apposition, the Maunsell invagination, the Lembert suture, the suture facilitated by the O'Hara forceps, and, latest, and in some respects best, the Connell method of suture, all the knots being placed within the lumen of the intestine.

Considering the use of the different devices for facilitating sewing, they found the Murphy button and the O'Hara forceps perhaps the most practicable. By the O'Hara forceps the junction is a little more rapid. His own experience with the Murphy button was comparatively limited. He had used it in one case of resection of the pylorus with part of the stomach, and the final junction between the stomach and duodenum was made by means of the Murphy button. The man ran a smooth course until the seventh day, when he was given, by inadvertence, a full-sized eggnog. He vomited, went into collapse, and died. The Murphy button had given way; moreover, the swollen mucous membrane had entirely occluded its lumen. Sometimes the button is the only thing that can be used; but, under ordinary circumstances, after intestinal resection where the parts are fairly accessible, we have other and better means.

The O'Hara forceps offers an admirable means of rapid, easy, safe suture, provided the stitches be passed deeply; but the diaphragm is left too large. In one dog subjected to an end-to-end suture by the Connell suture, and lower down to a similar procedure by the O'Hara forceps, some hard fæces which passed through the upper line of junction lodged in the lower and produced an obstruction. The line of the diaphragm is perhaps a third of an inch in width all around, and this may produce sufficient narrowing of the lumen, to make a difference between life and death to a patient whose bowels previously have not been cleared out. Also where the bowel walls are thick, the forceps may knuckle or double over.

The Lembert suture is fairly rapid, provided the gut be anchored properly. In anchoring and in applying these sutures, they found the forceps devised by Allis, that is a modified tenaculum forceps, of the greatest help. In the Lembert suture the question has been discussed as to whether it should be continuous or interrupted; and, indeed, that question is a very common one for decision in regard to all forms of intestinal suture. After first closing the mesenteric junction,—which should always be done by a rectangular suture tied on the mucous surface,—three anchoring sutures are applied, one to either side of the mesenteric attachment and one at the portion of the gut farthest from this attachment. Two continuous sutures are then run from the stitch at the side of the mesentery to that on the convex border. There are then six interruptions. None the less in dilating the bowel there is always a more distinct constriction than where interrupted sutures are placed throughout. The latter, however, take much more time in their application.

In regard to all intestinal sutures, it seems clear that the dread of penetrating the mucosa is one of the legacies left from pre-antiseptic days. The peritoneum will stand a great deal of insult if it is not soiled; it will stand some soiling if not insulted; but the combination is deadly! If there be infection carried by the threads traversing the mucous coat, there are few records to prove it. Cases of fatal peritonitis are not due to penetration of the mucous coat, but to failure to include the submucosa. If the sutures are applied properly, some of them are almost certain to penetrate some part of the mucous membrane.

Knots on the outside are supposed to increase the danger of

peritonitis. Connell and Maunsell devised their methods of suture for the purpose of avoiding this danger. Connell's suture has seemed strong, perfectly safe, and has produced the smallest diaphragm.

In experimenting with the Maunsell invaginated method after using this Connell suture, one is liable to become confused as to the proper method of applying the suture, since in one case the gut is simply turned inside out, in the other it is invaginated. The Maunsell method is rapid, easy, and safe. The main objection to it is that it requires an added incision, which must be closed by the Lembert method. The thread used should not be too fine to be handled readily, nor should it fit the eye of the needle so closely that it readily slips out. A fine Chinese twist is preferable. The ordinary dissecting forceps is not very serviceable, but the tooth forceps is of the greatest use. The double tenaculum and the instrument devised by Allis are both serviceable and both expedite the operation. The sweet and white potato plates, bone plates, bone bobbins, and other mechanical contrivances, have not been employed. For the removal of a carcinoma involving the entire circumference of the stomach, one-third of that organ was removed. Its continuity was restored by the rectangular suture knotted on the mucous membrane, the closure being completed by two Lembert sutures. This patient made an uneventful recovery.

The next important element in the successful closure of an intestinal defect incident to resection is the manual dexterity, which can only come from long practice, such as is only practicable in the laboratory upon living animals and upon human cadavera.

Dr. De Forest Willard had had the opportunity to see Dr. Connell make the application of his suture, and was struck with its exceeding simplicity and with the rapidity of the operation; also with the security with which he was able to bring the two ends of the intestine together. His end-to-end anastomosis would evidently stand a very considerable amount of strain. His experience demonstrates that there is less danger of leakage by this method of suturing all the coats of the intestine than by the old method of endeavoring to pick up the peritoneum and muscular coat.

Leaving all the knots within the lumen is certainly most

desirable. The absence of a foreign body, like the Murphy button or any device of its kind, is of very great advantage. Those who have used the Murphy button, and have not been able to find it for several weeks afterwards, are always anxious as to its ultimate disposition. If there are a number of points of narrowing of the intestine and a Murphy button is inserted above, it may cause secondary obstruction. The Connell method is simple and effective, and with the use of the Allis forceps or the O'Hara forceps, or both, the procedure is a rapid one.

Dr. John B. Deaver had not been sufficiently impressed with the Connell suture to give up the Lembert operation. While he did not say that the Connell suture is not equally as good, he had always made it a rule that where a suture, or any type of surgical procedure, had served him well, not to give it up for any new method. He had never had any difficulty in closing the ends of a bowel. He whipped the mucous membrane, removing the clamps or rubber tube, when the bowel inflates and makes the introduction of the continuous Lembert suture comparatively easy. He had had occasion recently to use the bone bobbin, devised by Mr. Robson, of England, and could say that it offered some advantage.

As far as the Murphy button is concerned, it only has a certain field. He, too, had gone through the ordeal of waiting for patients to pass the button.

In one of the first operations done with the segmented rubber ring, he had to open the bowel later and remove the segments of ring. With the Murphy button, the operation of cholecystduodenostomy is made comparatively easy.

Dr. W. L. Rodman said that unquestionably the trend is in the direction of direct suturing and doing away with mechanical aids. In talking with Dr. Murphy on this subject, the speaker had been led to believe that he considered many bad results had occurred from using buttons too large or improperly manufactured. He had had no unpleasant experience with the Murphy button, and could do better work with it than with other methods, and it undoubtedly is the most rapid way of making an anastomosis. There are objections to it which have been already stated; but, if the button is properly selected and is made by the best of instrument makers, it will not prove disappointing in many instances.

Dr. Martin agreed with Dr. Deaver that it was best to continue the method with which one is familiar. The old Lembert suture, properly applied, gives admirable results. There are practically no records against it to show, when it is used properly, that it is not good. It seems, theoretically perhaps, that the knots within the lumen and the rectangular suture represent a better method; it is slower than the Lembert, but representing, as it does, a strong line of union, it might be well to adopt it as one of the resources when there seems to be special danger of a suture-lining giving way. One objection to the Murphy button is the expense.

THE RADICAL CURE OF HÆMORRHOIDS WITHOUT THE USE OF GENERAL ANÆSTHESIA.

Dr. Gwilym G. Davis read a paper upon this subject, in which he said that the desirability of some method of treatment by which internal hæmorrhoids can be cured without the necessity of resorting to general anæsthesia has long been evident. The commonly used methods of treatment are those of the ligature or clamp and cautery under general anæsthesia and the injection of carbolic acid or other coagulant without anæsthesia. Any formal operation for hæmorrhoids is often declined for two reasons,—the patient is afraid to take an anæsthetic and undergo an operation, or alleges that he cannot spare the time necessary to be absent from his business affairs.

Experience with the injection methods has demonstrated that while satisfactory in many cases it is unreliable, and unpleasant or even serious results may occur at any time. The value and efficacy of cocaine on the mucous surfaces elsewhere suggested its use for rectal troubles, and the method proposed is a combination of it with the electrocautery. The hæmorrhoids are to be exposed to view by means of a speculum. Every surgeon probably has a favorite rectal speculum. At present, the one preferred by Dr. Davis is that known as Kelly's sphincterscope. It is cylindrical, two and a quarter inches long, cut off square at the end, and is used with an obturator. It is not self-retaining, but after being introduced, the patient himself can hold it in place, as it has a large, firm handle. The speculum having been inserted, a pledget of cotton an inch or so in length is moistened with a 4 per cent. solution of cocaine and introduced, being allowed to

The O'Hara forceps offers an admirable means of rapid, easy, safe suture, provided the stitches be passed deeply; but the diaphragm is left too large. In one dog subjected to an end-to-end suture by the Connell suture, and lower down to a similar procedure by the O'Hara forceps, some hard fæces which passed through the upper line of junction lodged in the lower and produced an obstruction. The line of the diaphragm is perhaps a third of an inch in width all around, and this may produce sufficient narrowing of the lumen, to make a difference between life and death to a patient whose bowels previously have not been cleared out. Also where the bowel walls are thick, the forceps may knuckle or double over.

The Lembert suture is fairly rapid, provided the gut be anchored properly. In anchoring and in applying these sutures, they found the forceps devised by Allis, that is a modified tenaculum forceps, of the greatest help. In the Lembert suture the question has been discussed as to whether it should be continuous or interrupted; and, indeed, that question is a very common one for decision in regard to all forms of intestinal suture. After first closing the mesenteric junction,—which should always be done by a rectangular suture tied on the mucous surface,—three anchoring sutures are applied, one to either side of the mesenteric attachment and one at the portion of the gut farthest from this attachment. Two continuous sutures are then run from the stitch at the side of the mesentery to that on the convex border. There are then six interruptions. None the less in dilating the bowel there is always a more distinct constriction than where interrupted sutures are placed throughout. The latter, however, take much more time in their application.

In regard to all intestinal sutures, it seems clear that the dread of penetrating the mucosa is one of the legacies left from pre-antiseptic days. The peritoneum will stand a great deal of insult if it is not soiled; it will stand some soiling if not insulted; but the combination is deadly! If there be infection carried by the threads traversing the mucous coat, there are few records to prove it. Cases of fatal peritonitis are not due to penetration of the mucous coat, but to failure to include the submucosa. If the sutures are applied properly, some of them are almost certain to penetrate some part of the mucous membrane.

Knots on the outside are supposed to increase the danger of

peritonitis. Connell and Maunsell devised their methods of suture for the purpose of avoiding this danger. Connell's suture has seemed strong, perfectly safe, and has produced the smallest diaphragm.

In experimenting with the Maunsell invaginated method after using this Connell suture, one is liable to become confused as to the proper method of applying the suture, since in one case the gut is simply turned inside out, in the other it is invaginated. The Maunsell method is rapid, easy, and safe. The main objection to it is that it requires an added incision, which must be closed by the Lembert method. The thread used should not be too fine to be handled readily, nor should it fit the eye of the needle so closely that it readily slips out. A fine Chinese twist is preferable. The ordinary dissecting forceps is not very serviceable, but the tooth forceps is of the greatest use. The double tenaculum and the instrument devised by Allis are both serviceable and both expedite the operation. The sweet and white potato plates, bone plates, bone bobbins, and other mechanical contrivances, have not been employed. For the removal of a carcinoma involving the entire circumference of the stomach, one-third of that organ was removed. Its continuity was restored by the rectangular suture knotted on the mucous membrane, the closure being completed by two Lembert sutures. This patient made an uneventful recovery.

The next important element in the successful closure of an intestinal defect incident to resection is the manual dexterity, which can only come from long practice, such as is only practicable in the laboratory upon living animals and upon human cadavera.

Dr. De Forest Willard had had the opportunity to see Dr. Connell make the application of his suture, and was struck with its exceeding simplicity and with the rapidity of the operation; also with the security with which he was able to bring the two ends of the intestine together. His end-to-end anastomosis would evidently stand a very considerable amount of strain. His experience demonstrates that there is less danger of leakage by this method of suturing all the coats of the intestine than by the old method of endeavoring to pick up the peritoneum and muscular coat.

Leaving all the knots within the lumen is certainly most

desirable. The absence of a foreign body, like the Murphy button or any device of its kind, is of very great advantage. Those who have used the Murphy button, and have not been able to find it for several weeks afterwards, are always anxious as to its ultimate disposition. If there are a number of points of narrowing of the intestine and a Murphy button is inserted above, it may cause secondary obstruction. The Connell method is simple and effective, and with the use of the Allis forceps or the O'Hara forceps, or both, the procedure is a rapid one.

Dr. John B. Deaver had not been sufficiently impressed with the Connell suture to give up the Lembert operation. While he did not say that the Connell suture is not equally as good, he had always made it a rule that where a suture, or any type of surgical procedure, had served him well, not to give it up for any new method. He had never had any difficulty in closing the ends of a bowel. He whipped the mucous membrane, removing the clamps or rubber tube, when the bowel inflates and makes the introduction of the continuous Lembert suture comparatively easy. He had had occasion recently to use the bone bobbin, devised by Mr. Robson, of England, and could say that it offered some advantage.

As far as the Murphy button is concerned, it only has a certain field. He, too, had gone through the ordeal of waiting for patients to pass the button.

In one of the first operations done with the segmented rubber ring, he had to open the bowel later and remove the segments of ring. With the Murphy button, the operation of cholecystduodenostomy is made comparatively easy.

Dr. W. L. Rodman said that unquestionably the trend is in the direction of direct suturing and doing away with mechanical aids. In talking with Dr. Murphy on this subject, the speaker had been led to believe that he considered many bad results had occurred from using buttons too large or improperly manufactured. He had had no unpleasant experience with the Murphy button, and could do better work with it than with other methods, and it undoubtedly is the most rapid way of making an anastomosis. There are objections to it which have been already stated; but, if the button is properly selected and is made by the best of instrument makers, it will not prove disappointing in many instances.

Dr. Martin agreed with Dr. Deaver that it was best to continue the method with which one is familiar. The old Lembert suture, properly applied, gives admirable results. There are practically no records against it to show, when it is used properly, that it is not good. It seems, theoretically perhaps, that the knots within the lumen and the rectangular suture represent a better method; it is slower than the Lembert, but representing, as it does, a strong line of union, it might be well to adopt it as one of the resources when there seems to be special danger of a suture-lining giving way. One objection to the Murphy button is the expense.

THE RADICAL CURE OF HÆMORRHOIDS WITHOUT THE USE OF GENERAL ANÆSTHESIA.

Dr. Gwilym G. Davis read a paper upon this subject, in which he said that the desirability of some method of treatment by which internal hæmorrhoids can be cured without the necessity of resorting to general anæsthesia has long been evident. The commonly used methods of treatment are those of the ligature or clamp and cautery under general anæsthesia and the injection of carbolic acid or other coagulant without anæsthesia. Any formal operation for hæmorrhoids is often declined for two reasons,—the patient is afraid to take an anæsthetic and undergo an operation, or alleges that he cannot spare the time necessary to be absent from his business affairs.

Experience with the injection methods has demonstrated that while satisfactory in many cases it is unreliable, and unpleasant or even serious results may occur at any time. The value and efficacy of cocaine on the mucous surfaces elsewhere suggested its use for rectal troubles, and the method proposed is a combination of it with the electrocautery. The hæmorrhoids are to be exposed to view by means of a speculum. Every surgeon probably has a favorite rectal speculum. At present, the one preferred by Dr. Davis is that known as Kelly's sphincterscope. It is cylindrical, two and a quarter inches long, cut off square at the end, and is used with an obturator. It is not self-retaining, but after being introduced, the patient himself can hold it in place, as it has a large, firm handle. The speculum having been inserted, a pledget of cotton an inch or so in length is moistened with a 4 per cent. solution of cocaine and introduced, being allowed to

remain as the speculum is withdrawn. In a few minutes the speculum is again introduced, the cotton removed, and the speculum partly withdrawn and turned from side to side until the hæmorrhoid on which it is desired to operate is brought well into view. The patient then takes hold of the handle of the speculum and holds it in position, while, with a small electrocautery knife, such as is used in nasal operations, the hæmorrhoid is either seared superficially or a line burnt in it, or one or more punctures made as deemed most suitable. Especial care should be taken not to encroach on the skin, but restrict the application to the mucous membrane. The cautery point may cause bleeding. The blood can be wiped away with cotton in a pair of forceps held in the opposite hand, and, if it is too free, the operation may be suspended. A piece of cotton is then pressed on the bleeding point and allowed to remain as the speculum is withdrawn.

Bleeding into the bowel and distention of the rectum are to be avoided by not applying the cautery too high up, as otherwise the sphincter may fail to compress the bleeding point. One locality is enough to treat at a visit. The cotton does not produce any discomfort because of the anæsthesia produced by the cocaine, and the bleeding is controlled by the contraction of the sphincter. The cotton is passed out at the next movement of the bowels. The operation had better be done late in the day, so that after the application the patient may return to his home, lie down, and rest for the night. By the next morning any irritation which may have been produced will have subsided, and he may resume his business. It is better to allow perhaps a week to intervene before another application, as otherwise the wound previously made will not be sufficiently advanced in healing. By persistently working in this manner, the hæmorrhoids can gradually be removed.

Each operator must evolve his own technique, and this can easily be done by beginning with a single small application of the cautery and observing its effect on the patient. The applications can then be increased both in frequency and extent, according to the judgment of the surgeon.

The method is not advisable in every case. In some the hæmorrhoids are so extensive that treatment in this manner would be too tedious and consume too much time, but in a certain class of cases it will be found quite satisfactory.

Dr. Edward Martin said that the common teaching for a great many years, in regard to treatment for affections about the anus, was that stretching the sphincter was essential to the comfort of the patient. A rectal fissure was treated, first, by overstretching the sphincter, then by cutting, then by curetting or removing the fissure. These procedures have long since been shown to be unnecessary, though often there is excited a tenesmus, which causes great anguish and aggravates the local inflammation. One reason for wishing to operate on these cases without an anæsthetic depends on the fact that the mortality for anæsthesia is higher for rectal operations and for comparatively trifling operations than for any other class of surgical procedures. There seems to be a cardiac inhibition caused by stimulation of the rectum.

Dr. W. L. Rodman had never operated on such a case without a general anæsthetic until a few days ago. The patient had previously undergone an operation, and said that the ether had made him very sick; that he preferred to undergo the operation for hæmorrhoids without an anæsthetic. The speaker had no idea that he could stand the pain when he went on the table, but to the last he said he did not want anything. Three very large internal piles were tied and removed after stretching the sphincter. The man stood the operation surprisingly well without any anæsthetic whatever. In many instances the speaker used the clamp and cautery, though his preference was for the ligature. He had never had postoperative hæmorrhage occur in his own practice, but it is undoubtedly one of the dangers after the clamp and cautery operation. If the base of the pile be incised too near the clamp, and if the iron be used at a white instead of a dull heat, the danger of secondary hæmorrhage is great.

Dr. William J. Taylor called attention to the necessity of applying the heat slowly when the cautery is used. The pile should be cooked, not cut off. The cautery is used on either side, starting from the top, cooking it back and forth, until only a fibrous band supports the pile. He had never seen a hæmorrhage occurring after that method, but it takes considerably longer than when the hæmorrhoid is rapidly burned off.

Dr. De Forest Willard said that we cannot too frequently emphasize the danger of these operations on the rectum where anæsthesia is employed. Even in simple cases serious symptoms

may arise. He had practically abandoned the ligature, and rarely employed the Whitehead excision. He had had personal experience in the use of the ligature, with sloughing masses within the rectum, the presence of knots and ligatures, and the intense pain and discomfort that are found in these cases, no matter how thoroughly the sphincter has been stretched. He always preferred the clamp and cautery. If we use a clamp whose blades will close parallel and not in a V-shaped manner, then cut through the skin with scissors, so as not to have too thick an outer portion of the pile in the proximal end of the clamp, and then thoroughly incinerate the tissues, we will rarely have hæmorrhage. The after results are better than with the ligature, and there is less danger of subsequent contraction.

Dr. H. R. Wharton had formerly used the ligature in the treatment of hæmorrhoids, but was led to give it up after trying the clamp and cautery, simply because the patients on whom the ligature method was tried suffered so much pain. He had never seen hæmorrhage after the clamp and cautery. He had seen men operate with clamp and cautery in which they trimmed the hæmorrhoid too close, and hæmorrhage had resulted. He clamps the hæmorrhoid and then cauterizes with the Paquelin cautery at a dull, red heat. If the hæmorrhoids are large, he leaves one-eighth or one-fourth of an inch of stump at least free from the clamp, and then cauterizes this stump thoroughly. He regarded the operation as safe as that by ligature, and the convalescence is probably a little more rapid.

Dr. John B. Deaver observed that in the after-treatment of these cases he made it a practice to withhold opium. He had the bowels moved on the second day, and encouraged a daily bowel movement.

Dr. Martin said that the last time he had used the clamp and cautery he took particular pains to cook the stumps slowly and thoroughly. When he loosened the clamp there came an arterial gush, which was only checked by ligature. He had never used the clamp and cautery since. In addition one case of clamp and cautery suffered afterwards from stricture, and immediately following the operation experienced the most agonizing pain. Both these cases were exceptionally severe ones, and many others ran a perfectly smooth course.

Dr. Richard H. Harte said that it has often been urged

that the ligature is a very painful method of treating piles, and that, on the other hand, the use of the clamp and cautery possesses all the desirable features of treating these cases. This, however, had not been his experience. If the ligature is intelligently used, but little pain or discomfort will follow its employment. He had frequently employed both methods on the same day of operation, and attempted to see if there was any marked difference in the amount of discomfort that the patients suffered. He was disposed to think that less pain was suffered when the ligature was carefully employed. The entire base of the pile should be freed and the vessels grasped in the loop of a small, strong, silk ligature. He never confines the bowels in these cases; and patients the next day are usually able to sit up in bed and read, and never express themselves as suffering any unusual discomfort.

Dr. Willard said that as to the after-treatment of this operation, the patient's bowels should never be locked up. A soft stool can be passed through a sensitive rectum and anus with very little difficulty, but if, as in former times, the bowels are confined for many days, a large feculent mass must be extruded, an extremely painful process. The bowels should be kept soft from the second day, and a mushy stool secured daily thereafter.

Dr. Davis said, in closing, that he wished to call attention to the fact that the rectum is tolerant of certain manipulations under cocaine. The surgeon had cases at times presented to him which are not so severe as to compel the individual to submit to a formal operation. To relieve those cases is the object of the operation presented by him.