Dr Barbour said there could be but one opinion as to the paper just read, and especially as to Dr Kynoch's pluck in operating under such adverse conditions. Undoubtedly it was the only chance for the patient, and it was unfortunate that the accident of secondary hæmorrhage prevented a successful result. He was not sure that it was a case of interstitial pregnancy, on account of the relations of the tube and round ligament. It might be a case of pregnancy in a separate uterus, with a rupture of the uterine wall and hernia of the ovum.

Dr Kynoch thanked Dr Ferguson for his suggestion to have the specimen of supposed intestitial gestation remitted to a Committee for more minute examination.

On the suggestion of Dr Ferguson, and with the sanction of Dr Kynoch, the Chairman nominated a Committee, consisting of Drs Barbour, Berry Hart, and Haultain, to examine and report on Dr Kynoch's specimen of interstitial pregnancy.

V. ON VAGINAL HYSTERECTOMY BY DOYEN'S METHOD: WITH SIX SUCCESSFUL CASES:

By A. H. Freeland Barbour, Assistant Gynecological Physician to the Royal Infirmary, Edinburgh.

The operation of extirpation of the uterus has an interesting history.[1] Naturally it was done in the first instance when the organ was found already prolapsed; the first extirpation of the prolapsed uterus for cancer, which is the subject we have to discuss in this communication, being performed in 1560 by Andreas A. Cruce. The non-prolapsed uterus was removed *per vaginam* for the first time in 1822 by Sauter of Constance. The patient recovered, but died four months later from pneumonia. In 1828 Blundell also extirpated the cancerous uterus successfully *per vaginam*. The patient died one year afterwards from cancerous stricture of the rectum. A year later, Recamier placed the operation on a scientific basis by ligaturing the base of the broad ligaments.

For the next fifty years attention was chiefly directed to hysterectomy for fibroids. The large majority of the operations done in this connection are not, however, hysterectomies in the strict sense of the word, as a portion of the uterus is generally left as a pedicle, the treatment of which has given rise to so much discussion.

The modern history of extirpation of the uterus for malignant disease dates from 1878, when Freund described his operation for removal of the uterus by the combined method, that is to say, by abdominal and vaginal incision: an incision was made through the abdominal walls in order that the uterus might be got at, and

[1] See Hegar and Kaltenbach, *Operative Gynäkologie*: Stuttgart, 1891, S. 392.

the broad ligaments ligatured in three portions, the broad ligament pedicles being afterwards drawn down through the opening in the vaginal vault. Two years later, Ahlfeld collected statistics of Freund's operation, which showed a mortality of 71 per cent. for the 93 cases collected—a mortality which condemned the operation.

About the same time extirpation began to be carried out from *the vagina alone*, by an operation, the technique of which was elaborated by Czerny, Billroth, Schroeder, and Martin. By this method a much better result was obtained, the mortality being only 25 per cent. in 32 cases collected by Hegar and Kaltenbach. This diminished mortality showed that the vaginal method was immeasurably superior to the abdominal or the combined. There is nothing more striking than the difference in the appearance of a patient who has undergone an operation by the vaginal as distinct from the abdominal method. Even when the uterus and ovaries have been cut out *per vaginam* the patient looks no worse than one who has undergone repair of the perineum, and shows a striking contrast to one who has gone through an abdominal section. The advantages of the former method are that you reach the pelvic organs by a short route instead of passing through the abdominal cavity with the risk of handling the bowels, and introducing septic matter by fingers, sponges, or instruments; and also that there is free drainage obtained after the operation.

One drawback to the vaginal method is the difficulty of getting at the broad ligaments so as to control efficiently the blood-supply. To do this by ligature implies a more or less tedious operation, and there is loss of blood during the operation, which according to Hegar and Kaltenbach was the chief cause of mortality, at least in the earlier cases of the vaginal operation. It is the use of the clamp instead of the ligature, with the advantages of this method, which form my reason for bringing this communication before the Society.

As to who first suggested the use of the clamp, the Landaus, in their valuable monograph,[1] give the credit of it to M. B. Freund, in a paper on W. A. Freund's operation[2] in which he proposes to use a clamp instead of the ligature; but Sänger[3] rightly points out that he suggested its use in the combined operation, and that he says it would be inadvisable in the vaginal one. It would seem, therefore, that the credit belongs, as Pozzi says, to Spencer Wells, who in 1882 suggested the use of the clamp for the

[1] *Die vaginale Radicaloperation, Technik und Geschichte*, von Prof. D. Leopold Landau and Dr Theodor Landau: Berlin, 1896.

[2] *Zeits. f. Geb. u. Gyn.*, 1881, Bd. vi, S. 358.

[3] "Zur Geschichte der vaginalen Hysterektomie nach Doyen:" *Cent. f. Gyn.* 1896, No. 51.

vaginal operation.[1] Although, however, the French operator courteously gives an Englishman the credit of the suggestion, it is to the distinguished French surgeons Péan and Richelot that the honour of making the clamp a practical success is due. I need not trouble you with the discussion as regards priority between these two operators, which turns largely upon the use of the clamp by accident as against premeditation, and the use of it alone as against using it along with the ligature. Practically they both began to use it about the same time, Péan's first operation being in June 1885, and Richelot's in July 1886.

Doyen of Rheims has also used the clamp with great success, introducing new methods, if not also new principles, so that his operation differs essentially from the other two. French Gynecologists distinguish between the "preventive" use of the clamp, in which it is put on during the operation as a temporary means of checking bleeding, and the "definitive" or "final" use of it, in which it is put on at the last stage of the operation as a permanent means of arrest. Péan used the clamp in the first sense, clamping the base of the broad ligament so that he might split the cervix laterally and excise it before removing the uterus. Doyen does not apply the clamp until the last thing in the operation, any bleeding during it being checked by the traction on the uterus. Further, Péan and Richelot apply the clamps from below upwards, Doyen where possible from above downwards. Doyen has also emphasised the advantage of splitting the uterus anteriorly, which causes it to collapse, and also allows the operator to take a fresh hold along the free margin of the incision. We shall describe shortly the operation as we have done it, following Doyen's method,[2] and then discuss the cases with some points suggested by them.

The patient is prepared beforehand by repeated vaginal douches and packing the vagina with iodoform gauze. In a case of cancer of the cervix it is of course impossible to get the field of operation thoroughly cleansed, but the nearer we can approach to this the better. Some have gone the length of scraping away the diseased mass and washing the field with alcohol so as to destroy the cancerous surface and lessen the risk of inoculation of cancer cells on fresh cut surfaces. Whether better results will be got as to non-recurrence by these drastic measures time alone will show.

[1] The passage runs :—"I think it extremely probable that the operation as hitherto practised might be very much simplified by drawing down the uterus, separating its attachments to the vaginal wall all round as near to the uterine substance as possible, or exactly where the peritoneum is reflected off from its walls, securing any bleeding vessel, as it is divided, by pressure forceps, not using ligatures, but leaving the forceps hanging out of the vagina for two or three days until all danger of hæmorrhage has ceased."—*Ovarian and Uterine Tumours:* London, 1882, p. 526.

[2] As described in his beautifully illustrated monograph—*Deux Procédés inédits d'Hystérectomie abdominale et vaginale:* Paris, 1893.

But it seems to us that antiseptic douching and packing with iodoform gauze is all that is necessary. When the vagina is contracted, as in nulliparæ, distention with a bag beforehand, as Doyen recommends, procures more room.

The instruments required are spatulæ, scissors, strong volsellæ

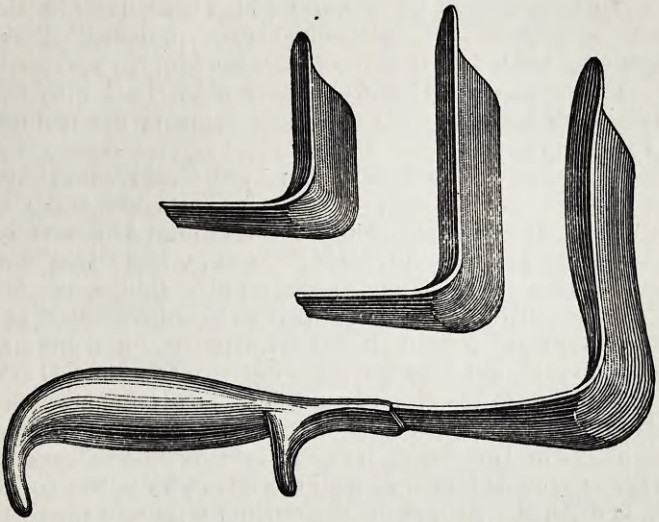

Fig. 1.—Doyen's Spatulæ for Vaginal Hysterectomy.

(like bullet-forceps), and clamps. The spatulæ (Fig. 1) are modified Sims' specula, for holding back the anterior and posterior vaginal walls. Doyen's clamps (Fig. 2) have the special advantage

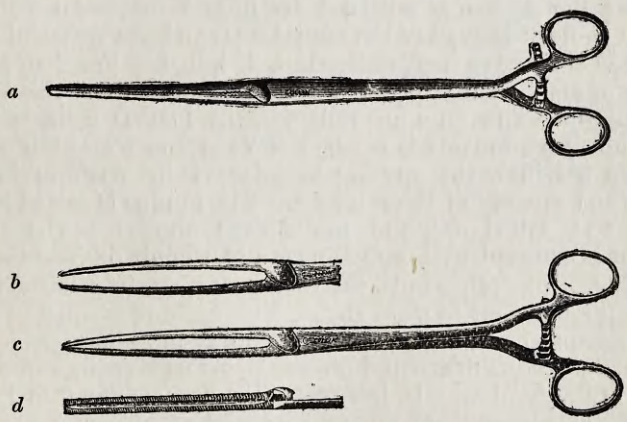

Fig. 2.—Doyen's Clamps. (*a*) compressed, (*b*) blades open, (*c*) closed, (*d*) inner face of blade.

of elastic blades which are concave, so that they touch first at the points, and only on firm compression throughout (see Fig. 1). This insures compression at the points of the instrument which are in relation to the base of the broad ligament where the large vessels are. Further, each blade is grooved (Fig. 2 *d*) so that the tissue bulges into the space and all risk of slipping is prevented. The cervix being laid hold of laterally and drawn down, a circular incision is made with the scissors through the vaginal mucous membrane. Anteriorly it skirts the os externum, so as to lessen the risk of going into the bladder. Posteriorly it runs more in the fornix, as there is little danger of injuring the rectum (see Fig. 1 in Plate).

Ségond makes a lateral incision in the fornix extending outwards from the circular one, so as to facilitate the separation of the bladder. It is a noteworthy fact that in his 400 cases Ségond has not once injured the ureter. Landau, and more recently Condamin, have recommended leaving a bridge of mucous membrane uncut in the fornix; that is to say, a crescentic incision is made before and behind the cervix, but these are not made to unite at the sides until a later stage in the operation. Condamin does this to lessen the risk of injuring the uterine arteries until the clamp is to be applied.

The pouch of Douglas is now cut into by alternately clipping with the scissors and feeling with the finger, until the peritoneal cavity is reached. Should the peritoneum retract or the pouch be obliterated by adhesions, so that the peritoneal cavity is not at once reached here, the separation of the uterus anteriorly is gone on with. This is done with the finger, great care being taken not to injure the bladder (Fig. 5 in Plate). As soon as the cervix is so far free, the uterus is split with the scissors in the middle line anteriorly (Fig. 2 in Plate).

Where the uterus is enlarged by fibroid masses, a V-shaped incision is made instead of the mesial one; and the V-shaped piece cut out in successive fragments—1, 2, 3, 4, 5, 6 in Fig. 4 in Plate.

The cut margins are caught in volsellæ, and more of the uterus pulled down. The anterior wall is still further split, till the utero-vesical peritoneum is reached. When the peritoneal cavity has been cut into, the opening is enlarged by pushing in the scissors and separating their blades. The fundus is seized in the forceps and pulled out, and the clamps applied. The broad ligament is caught between the finger and thumb, or between the index fingers of both hands, the finger tips meeting beyond the base of the ligament so as to ensure that nothing is caught in the clamp except the ligament. The clamp is introduced from the upper margin of the ligament downwards, so that its points are at the wound in the fornices. It lies beside the uterus (Fig. 6 in Plate), or if the appendages are removed as well, it is placed external to these. A smaller clamp is passed on the inner side of the big

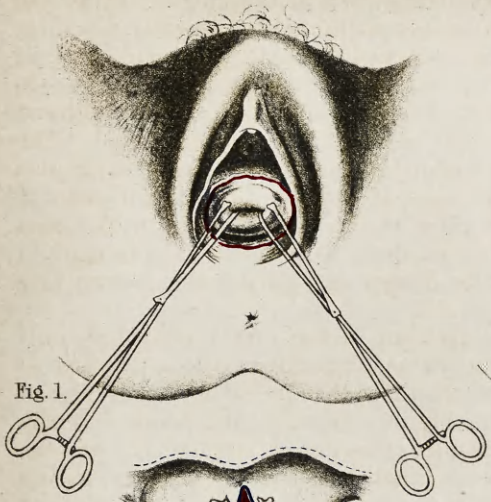

Fig. 1.

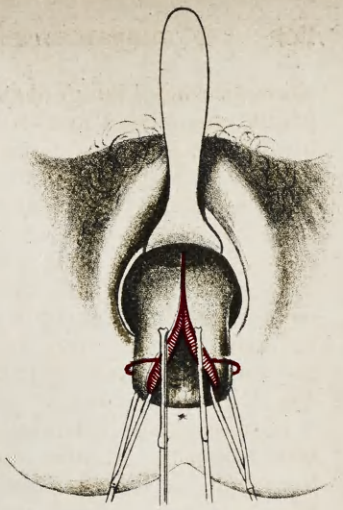

Fig. 2.

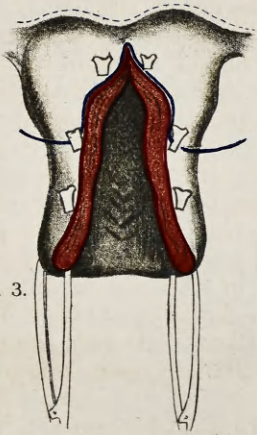

Fig. 3.

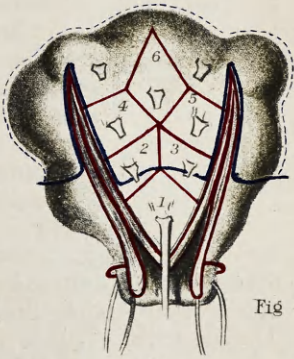

Fig. 4.

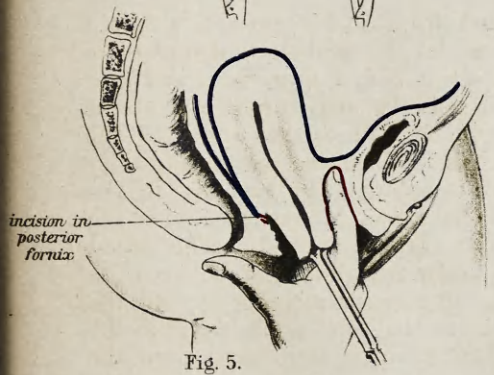

Fig. 5.

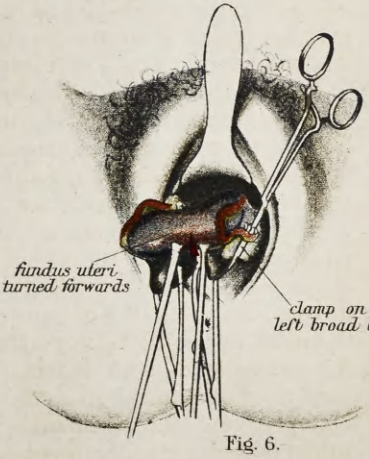

Fig. 6.

VAGINAL HYSTERECTOMY WITH CLAMPS (DOYEN).

FIG. 1. Incision in fornices. FIG. 2. Uterus drawn down and anterior wall divided. FIG. 3. Splitting of anterior wall; FIG. 4 shows the V-shaped incision. FIG. 5. Separation of bladder. FIG. 6. Application of clamp.

one, that is, between it and the uterus, for safety; and the uterus cut away. The handle of the clamp is now turned down so as to lie in the axis of the vagina, which means some twisting of the broad ligament. Instead of lying in the axis of the pelvic inlet, it is rotated through a quarter of a circle until it lies in the axis of the outlet. A tampon of iodoform gauze is now introduced between the clamps, and the ends of the gauze thrown round their handles where these might press injuriously on the vulva. In the after-treatment the bladder should be emptied by the catheter for two days to prevent soiling of the vaginal tampon. Sometimes considerable pain is complained of (much more than after ligatures have been used), which may be due to the traction on the ligaments by the clamp. In two of my cases this was so marked as to call for morphia. The large clamp is removed in forty-eight hours; the small one twelve hours later. The iodoform gauze is left a day longer. On its removal a gentle douche may be given. Usually there is not much discharge, though in one of my cases two foul-smelling sloughs came away, and in another there was considerable serous oozing. By three weeks the vaginal roof is well cicatrized, and the patient able to go about.

In reviewing the operation as a whole, we see the following advantages in this method. (1) It allows of more rapid operating; (2) the vigorous traction controls all bleeding, and no hæmorrhage has to be attended to until the final stage, when the clamp is applied; (3) the splitting of the uterus allows it to collapse, and gives a fresh hold for the forceps; (4) the rotation of the uterus and the application of the clamp over the upper margin of the ligament first, enables one more easily and more certainly to get the whole ligament within the bite; (5) the weight of the clamp keeps the broad ligament pedicles down in the vagina (after ligature these might retract into the peritoneal cavity); (6) the layers of the peritoneum thus become apposed and are adherent above the clamps, which further favour drainage *per vaginam*.

These are the advantages which may be claimed for the clamp operation. In comparing it with the ligature, it has the undoubted disadvantage of a longer convalescence. Healing takes longer when the pedicle is left in the bite of a clamp than when tied by a ligature. On the other hand, as already said, the clamp allows a more rapid operation; so that here we have to balance the advantages of a shorter operation against a longer convalescence. We have an analagous case in the use of the clamp in the treatment of uterine fibroids. The extra-peritoneal treatment of the stump undoubtedly means a longer convalescence, but the advantages of a shorter operation, with the greater security against bleeding, more than compensate for this.

The six cases in which I have used this method are as follows:—

The first was a patient aged 29, who had five children, the last sixteen months before, and one abortion seven years previously. She had nursed the last child for fourteen months; and on weaning it had some hæmorrhage from the vagina which lasted a few days. A fortnight later she began to bleed, and as the bleeding continued for six weeks, she saw Dr Fordyce at the Cowgate Dispensary. He diagnosed commencing carcinoma of the cervix. The operation was done a few weeks later in Ward 28. The disease was localised to the cervix, the uterus not much enlarged and freely movable. The operation was accomplished more easily and more rapidly than any of the others, taking not much more than twenty minutes. I have seen this patient fifteen months after the operation, and there is as yet no recurrence.

The next case, Mrs A. R., was aged 55, and four years past the menopause. She had had bleeding from the vulva for seven months when Dr Donald saw her at the Cowgate Dispensary. Though the bleeding had lasted for some time, the physical signs were not well marked when she was first seen, the malignant infiltration being above the os externum, and, as was seen at the operation, affecting specially the cellular tissue between the cervix and the bladder. The operation was done in November last, ten months after the first bleeding. I found very great difficulty in separating the uterus from the bladder, and in doing so with the finger tore the bladder wall. An attempt was made to stitch it up at the time, but the fistula persisted. The margins of this, three months later, were noted to become indurated; and bleeding and a secondary nodule developed beside them. This patient is now showing symptoms of complications of the ureters, the urine is becoming scanty, and she has persistent headache. I think there was malignant infiltration of the bladder wall at the time of the operation, which explains the ease with which it was torn. Injury to the bladder and ureter is one of the risks in this method of operation. The latter is prevented by keeping the incision near the os externum anteriorly, and dissecting carefully until the cellular tissue demarcation between the bladder and cervix is reached. It is surprising that the ureter has not more frequently been injured. Landau describes fully its intimate connection with the bladder which pulls it up out of the way, so that if the separation be extended sufficiently to both sides of the cervix, there is no possible danger of injury to the ureter.

The third case was apparently[1] one of sarcoma uteri, which showed several points of interest. She was a virgin, aged 65, who had had bleeding from the uterus for six years, which latterly had been very profuse. When I first examined her I felt a small tumour distending the lower uterine segment, which I did not feel again until the cervix was dilated. The uterus was enlarged and

[1] Microscopic examination has since shown that it was carcinomatous degeneration of the mucosa in a uterus with multiple fibroids.

freely movable. Professor Simpson, who saw her with me, advised dilatation of the cervix and exploration of the uterine cavity. This was done, when I found the whole mucous membrane affected with sarcomatous degeneration, and a small polypoidal tumour, probably a fibroid. The operation was extremely difficult owing to the senile virgin vagina, and the enlarged uterus, which had a small fibroid in the posterior wall, and another in the substance of the anterior. I do not think I could have got this uterus out had it not been for Professor Simpson's kind assistance, and I am glad of this opportunity of saying how much I am indebted to him, not only for help in this case, but also for his introducing Doyen's method of hysterectomy into Edinburgh. It is through his having seen Doyen operating in Paris, and his having subsequently frequently operated in his own ward here, that this operation has come to Edinburgh, and come to stay. Twelve days after the operation in this case, the patient began to complain of incontinence of urine. At the time I satisfied myself that the urine was coming from the urethra, but I have never been able to exclude certainly a ureteric fistula, the patient objecting to the necessary examination to determine this. The incontinence is still present five months after the operation, though it varies in degree from time to time.

The fourth case was a patient aged 33, who had three children, the last eight years ago. She was under Dr Donald's care at the Cowgate Dispensary, who noted a suspicious nodule in the cervix, which broke down, leaving an irregular cavity with friable margins. The uterus was unusually large, and I found difficulty in applying the clamps in this case from the depth of the broad ligament. The large clamp just gripped it and no more, while on the right side the small clamp did not take in the whole ligament. This patient had a rise of temperature on the third day, which ceased when the gauze was changed. She was the only case that showed febrile symptoms.

In the fifth case, the hysterectomy was done for prolapsus uteri. The patient, aged 34, has had two children, the last seven years ago. Two years since she was admitted to Ward 28, suffering from complete procidentia, the uterus measuring $3\frac{1}{2}$ inches. I amputated the cervix and repaired the perineum with a posterior colporrhaphy. The result at the time was satisfactory, but the prolapse recurred worse than before, the sound passing now $4\frac{1}{2}$ inches, and the retroflexed uterus descending sometimes beyond the vulva. As a plastic operation had been tried without success, and the patient was anxious to get relief if possible by operation, hysterectomy seemed justifiable. With the uterus already outside the vulva, this would seem to be the easiest case of all on which to operate, but it proved the opposite. The tissues were so altered by the congestion and chronic inflammation that it was impossible to hit the line of demarcation between the

rectum and the uterus, and still more between the bladder and the uterus. I failed to reach the pouch of Douglas in the first instance from behind; and an assistant had to keep his finger in the rectum to prevent its being cut into. It was with great difficulty that I got the bladder dissected off the uterus in front and reached the utero-vesical peritoneum. From this I passed the finger into the pouch of Douglas and cut down upon it. In addition to the clamps some bleeding points had to be ligatured with catgut, and it seemed advisable to stitch the wound in the vaginal mucous membrane as far as possible with catgut. The operation took about two hours. The patient has done well.

The last case was a patient, aged 49, who had seven children, the last sixteen years ago. Till last December she had menstruated regularly, but since the New Year has had bleeding, at first continuous for five weeks, and then after three weeks' interval continuous again for another six weeks, when she was admitted to the Infirmary. The cervix was normal, the sound passed for 3½ inches and showed some irregularity of the uterine mucosa. I dilated the cervix till I could introduce the finger, when I felt a polypoidal hypertrophy of the mucosa localised to the right of the Fallopian tube angle. I removed these with the finger-nail, and submitted them to Dr Leith, who pronounced it a glandular cancer. When the uterus was being extirpated, a small ovarian or broad ligament cyst was discovered on the right side. A second clamp was put on beyond it, so that it could be removed with the uterus.

The fact that all these patients recovered without any bad symptoms shows that vaginal hysterectomy for cancer can take its place among the justifiable operations. Till recently the mortality was so great that it was doubtful whether removal of the uterus would ever take a position alongside of removal of the breast. The vaginal operation shows that it will. These cases are too few to reason from, so I give the statistics of a larger number. In this country I find that Jessett[1] records 70 cases of vaginal hysterectomy for cancer and sarcoma, with 6 deaths; while Purcell,[2] who did the first vaginal hysterectomy for cancer in England (the patient being still alive twelve years after the operation), has had 63 operations with 12 deaths. For hysterectomy in Germany we have the largest statistics given by Fehling,[3] who finds the mortality for 778 extirpations done by thirteen of the leading German operators as 9·1 per cent., the best results being those of Kaltenbach, who had, for 138 cases, a mortality of only 3 per cent.

Two questions of great practical moment are raised, when we

[1] *Brit. Gyn. Journ.*, 1896-97, p. 327.
[2] Discussion on Jessett's paper.
[3] Quoted by Buechler, *Zeits. f. Geb. u. Gyn.*, 1894, Bd. xxx, Hft. 2, S. 365.

estimate the value of this operation, viz., the frequency of cases in which operation is possible, and the results as to non-recurrence. In my experience, cases suitable for operation only exceptionally present themselves. We have a remarkable contrast in the experience of German operators. Krugenberg[1] treated 31·6 per cent. of his cases of malignant uterine disease by radical operation; while Kaltenbach[2] was able to operate on 40 per cent. (134 out of 452 cases seen over a period of seven years). Gusserow[3] found 15·4 per cent. of the 577 cases that came to his clinique operable. The latter proportion of 1 in 6 will accord more, I think, with the experience of Gynecologists in this country than the former of 1 in 3.

A still more important question is the result as to non-recurrence. Here again we must go to German operators for statistics large enough to be of service. Of 92 cases operated on by Kaltenbach, 23 were without recurrence more than three years after. Krugenberg finds after three years 37·5 per cent., and after four years 29·5 per cent., without recurrence, while Leopold[4] found that 55·8 per cent. out of 164 were without recurrence after four years. If immunity for four years is given to a fourth, the operation becomes justifiable; and Leopold's statistics of immunity to more than a half are very encouraging. Against this, however, we have Pozzi's rather pessimistic estimate, in which he describes it as a palliative treatment of longer or shorter duration, the average being one year.

The cause of recurrence after operation has become recently the subject of an interesting inquiry.

The *lymphatics* play the chief rôle in the dissemination of cancer, and it is to Poirier's researches as to their course, and the work of Seelig,[5] Winter,[6] Russell,[7] and others, as to their implication in carcinoma, that we must refer here. From Fig. 3 we see that the lymphatics from the body of the uterus pass through the upper part of the broad ligament to the lumbar glands, receiving on their way those from the ovary and Fallopian tube; while those from the cervix and upper part of vagina pass through the lower part of the broad ligament to the iliac or iliopelvic glands. A third and less important chain runs down the

[1] 'Die Resultate der oper. Behand. des Carcinom, etc.,' *Zeits. f. Geb. u. Gyn.*, 1892, S. 108.

[2] Buechler, *Zeit. f. Geb. u. Gyn.*, 1894, Bd. xxx, Hft. 2, S. 365.

[3] Oskar Müller, *Charité Annalen*, xviii, S. 529.

[4] "Die Dauererfolge der Vaginalen Totalextirpation, etc." *Geb. u. Gynäk.*, Bd. ii. aus der Konigl. Frauenklinik, Dresden—Leipzig, 1895.

[5] *Path. Anat. Untersuch. über die Ausbreit des Gebärmutterkrebs. Innaug. dissert.* Strasburg, 1894.

[6] "Uber die Recidive des Uteruskrebses insbesondere über Impfrecidive;" also, "Uber die Ursache der Krebsrecidive: *Z. f. Geb. u. Gyn.*, 1892, S. 141.

[7] "The Operative Significance of Metastasis and Post-operative Recurrence n Carcinoma of the Uterus:" *A. J. O.*, Dec. 1896.

round ligament to the inguinal glands. These lumbar glands surround the aorta and vena cava, extending as far down as the bifurcation of the common iliac artery, where they become continuous with the iliac or ilio-pelvic glands. These last, which receive the cervical lymphatics, extend from the bifurcation of the common iliac artery downwards in front of the internal iliac.

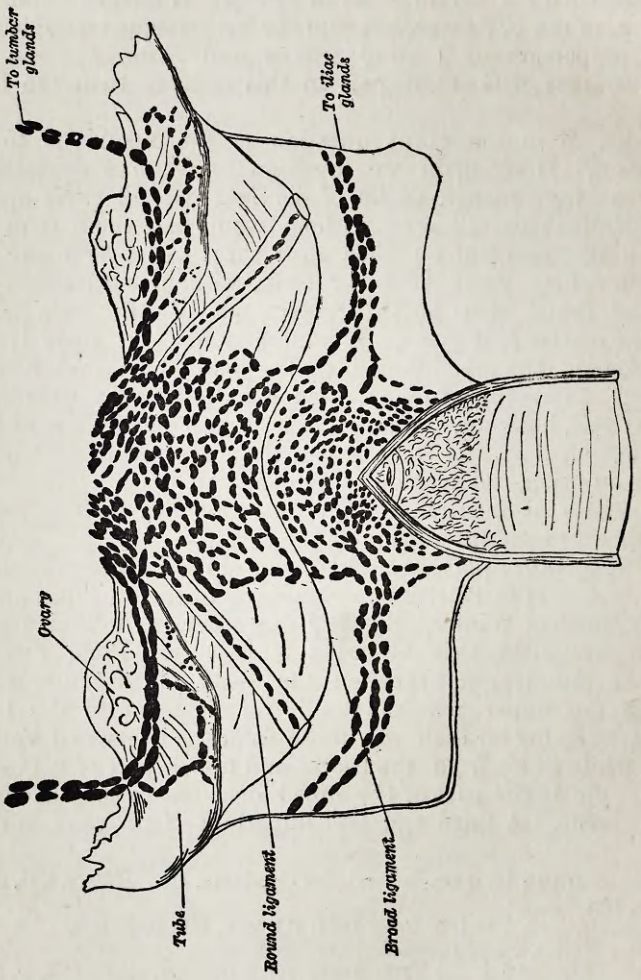

FIG. 3.—Lymphatics of Uterus (Poirier).

From the situation of the lumbar glands cancerous infiltration of them cannot be investigated directly, though it may be recognised through interference with the circulation. Cancerous ilio-pelvic glands, on the other hand, can be palpated *per vaginam* or *per rectum*. The inguinal glands, the most accessible, are very rarely

affected in uterine cancer. Russell figures an interesting specimen with nodules in the round ligament, evidently in the chain of lymphatics which follow it. Enlargement of the inguinal glands is frequent in affections of the vulva, but in such cases infection is by another route.

In an early stage of cancer, nodules may be found separate from the original focus, sometimes in a chain. Seelig has shown that these nodules are plugs of carcinomatous tissue, which have grown within the lymphatic vessel from carcinomatous epithelium carried by the lymph stream. The endothelium of the lymphatic vessel is not affected, as this microscopic section shows (Fig. 4).

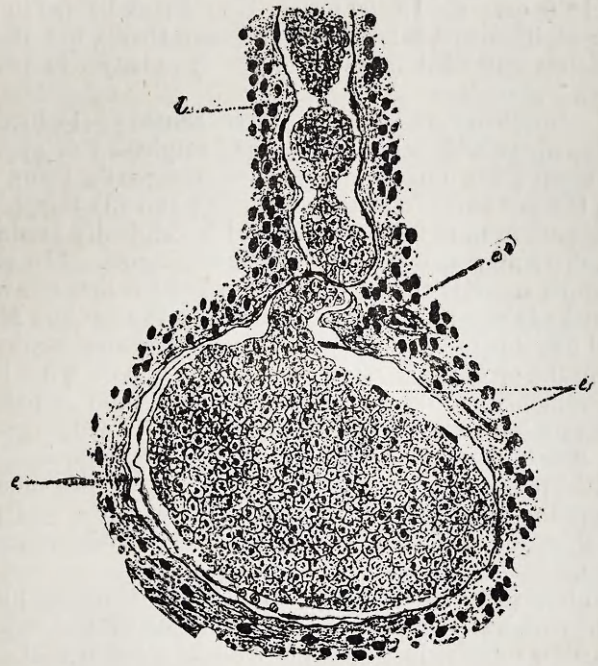

FIG. 4.—Plug of Cancer Cells in a Lymphatic Vessel (Seelig).
The endothelium is *in situ* at c^1, detached at *c*.

Stiles in an elaborate research on cancer of the breast, in which he has studied especially its relation to the lymphatics, believes that here also recurrence is due to cancer cells left in the lymphatics. He also notes that endothelium is not affected by these cancer plugs. Further, he believes in inoculation, as he says that a knife once used to cut cancerous tissue, should not be used again at the same operation.[1]

[1] "Contribution to the Surgical Anatomy of the Breasts," *Edin. Med. Jour.*, June 1892.

In cervical cancer, extension takes place along the lymphatics, and especially in those of the outer muscular layers; while in cancer of the body, the lymphatics of the mucosa and then those of the inner muscular layers are involved. This slower and more limited extension explains the better results, as to recurrence, in hysterectomy for cancer of the body as compared with that for the cervix.

The type and seat of the morbid process have both a bearing on recurrence. Thus it is less frequent after epithelioma than after carcinoma. Further, there is more immunity after operation in superficial cancer of the vaginal portion and cancer of the body of the uterus (whatever form the cancer takes) than in ordinary cancer of the cervix. In the former case it may be due in part to the type (epithelioma being more frequent there), but it is also due to a less extended invasion of the lymphatics in cancer of the body.

Local recurrence may be due to three causes:—(1), incomplete removal—cancer cells being left in the lymphatics of apparently healthy tissue; (2), unclean operation—cancer cells being inoculated on the raw surfaces at the operation; and (3), re-appearance of the disease from the same cause which originally produced it. Further, there may be metastasis in remote organs. The rapidity of the return suggests that it is due to one of the first two reasons. The second of these has been emphasised by Winter and Mackenrodt, and has this to be said for it: that in operating for cancer of the cervix the operator is often working in a hole with broken-down carcinomatous débris. Hence the operation is not clean, like the excision of a non-ulcerating breast. Further, the peritoneum, which is peculiarly susceptible to implantation, is also exposed. To diminish the risk, Winter recommmends removal of as much of the broken-down tissue as possible before extirpating, and the cleansing of the field with an alcoholic solution of corrosive sublimate.

Incomplete removal of affected lymphatics certainly plays an important part, and the study of the exact seat of the recurrence has a peculiar interest in connexion with its relation to lymphatic distribution. The suggestions of operations,[1] with more complete removal of the parametric tissue, show the importance of this.

Dr James Ritchie said that the paper was of great interest from a variety of considerations,—because of the historical account of the operation, the statistics of results, the systematic, clear, and

[1] As by Kelly, who passes a bougie into the ureter and removes the uterus by the abdominal method, ligaturing the uterine artery an inch from the uterus before it gives off the vaginal branch. (Clark—"A more radical method of performing Hysterectomy," etc., *Johns Hopkins Hospital Bull.*, vol. vi.) He mentions that of twenty vaginal hysterectomies, only four showed on microscopic examination that the cut surface was healthy.

concise description of Doyen's operation, and the modifications of it. It was of interest, not only to operative gynecologists, but also to those who are engaged in general practice. In view of such favourable results, including Dr Barbour's six consecutive successful cases, and Leopold's large percentage of those who remained free from recurrence after four years, the operation deserved favourable consideration. The difficulty which he experienced was that patients who suffered from uterine cancer did not seek advice sufficiently early. When there was deposit around the uterus, operation was useless. He heard with interest Dr Barbour's statement regarding the rarity of implication of the inguinal glands, because about four years ago Prof. Simpson had seen with him a case of carcinoma of the body of uterus in which these glands were affected. He asked Dr Barbour whether, in view of the tolerance of the peritoneum, statistics bore out his statement that sepsis was less rare after vaginal than after abdominal hysterectomy.

Dr N. T. Brewis had listened with great interest to Dr Barbour's paper, and he had sincere pleasure in congratulating him on his highly successful series of cases. Dr Brewis considered Doyen's method one of the best in which clamps are used. The chief recommendation of the clamp method is the rapidity with which the operation can be performed; its chief drawback is the difficulty that is experienced in removing the tubes and ovaries, along with the uterus, when a single large clamp is used on either side. The operation of hysterectomy for cancer is not justifiable unless the disease is confined to the uterus. Pain is the symptom which usually drives the patient to the gynecologist, but pain, unfortunately, is not an early symptom of cancer of the uterus; it usually does not occur until the disease has spread into the cellular tissue, so that when the patient comes to consult us it is too late. Dr Brewis believes this to be the reason why so few cases are met with suitable for operation. Hæmorrhage is an early symptom, but as cancer is most frequently met with about the menopause, patients consider it part of that phenomenon, and seldom seek advice until it has continued for a considerable period. But when one is consulted for bleeding, a thorough examination is called for, cervical erosions should be carefully treated, and portions of the cervix and endometrium should be examined microscopically when diagnosis is doubtful. When one considers how rarely cases suitable for operation are met with in this country, one cannot but doubt whether the German operators, who furnish such excellent statistics of ultimate recovery after hysterectomy for cancer, have been sufficiently careful to exclude non-malignant cases. Dr Brewis did not approve of vaginal hysterectomy for prolapse of the uterus, because removal of that organ weakened the pelvic floor, and the operation was apt to be followed by vaginal enterocele.

Dr Barbour thanked the Society for their kind reception of his paper. As to Dr Brewis's criticism, he should have mentioned that the appendages can easily be removed from the uterus, should this be thought desirable. He had not done it in most of his cases, because metatasis in the ovary is not frequent in uterine cancer, and patients suffer less after hysterectomy when the ovaries are not removed at the same time. He entirely endorsed what was said as to hysterectomy for prolapse, and the risk of enterocele. In this case, however, plastic operation alone had been tried before, and it failed. He was much obliged to Dr Fordyce for supplementing his paper with practical suggestions, which were of special value on account of the number of operations which he had seen and had to do with afterwards.

MEETING VII.—JUNE 9, 1897.

DR ALEXANDER BALLANTYNE, *President, in the Chair.*

I. *Dr Barbour* read the following report of the Committee appointed at last meeting to examine Dr Kynoch's specimen of apparent INTERSTITIAL PREGNANCY:—

REPORT OF COMMITTEE ON DR KYNOCH'S SPECIMEN OF APPARENT INTERSTITIAL PREGNANCY.

We have examined the specimen submitted to us by Dr Kynoch. It is difficult to say whether it is from a case of interstitial gestation, or from a rupture of the pregnant uterus. While the clinical history and the condition found at the operation suggest an interstitial gestation, the situation of the rent, the marked hypertrophy of the uterine wall (which resembles a retracted uterus), and the appearance of the Fallopian tubes, rather favour the latter view.

J. BERRY HART.
F. HAULTAIN.
A. H. F. BARBOUR.