Transactions of the Glasgow Obstetrical and ...
TRANSACTIONS
OF THE
GLASGOW
OBSTETRICAL AND GYNAECOLOGICAL
SOCIETY.

VOLUME III.
SESSIONS 1900-1901, 1901-1902.

GLASGOW:
ALEX. MACDOUGALL, 68 MITCHELL STREET.
1903.
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<td>1885-91</td>
<td>ROBERT POLLOK, M.B., F.F.P.S.G.</td>
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<td>1896</td>
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<td>1885-88</td>
<td>J. STUART NAIRNE, F.R.C.S.Ed., F.F.P.S.G.</td>
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<td>1902</td>
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1885  Black, Malcolm, M.D., 5 Canning Place.
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1901  Campbell, Finlay Stewart, M.D., 4 Belmont Street.
1896  Campbell, J. Hamilton, M.B., 14 Hamilton Crescent, Partick.
1897  Campbell, J. Munro, M.B., 4 Carment Drive, Shawlands.
1898  Carstairs, J. L., M.B., 59 Barrington Drive.
1892  Chalmers, W., L.F.P.S.G., 14 George Street.
1896  Christie, David, M.B., 12 Derby Terrace.
1901  Christie, W. W., M.D., 5 Albion Street, Dowanhill.
1901  Colquhoun, Walter, M.A., M.B., 7 Stanley Street, W.
1901  Colvin, Thomas, M.D., 6 Royal Terrace, Crosshill.
1897  Craig, James, L.R.C.P.E., 6 Annfield Place.
1887  Cullen, Wm., M.B., 9 Grafton Place.
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1900  Dalziel, T. Kennedy, M.B., F.F.P.S.G., 196 Bath Street.
1901  Dingwall, Alex., M.A., M.B., 3 Stanley Street, W.
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1901  MacGregor, G. Scott, M.D., 2 Burnbank Terrace.
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1885  * M'Kee, Thomas, L.F.P.S.G., 386 Cumberland Street.
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1898  M'Kendrick, John S., M.D., F.R.S.E., 2 Buckingham Terrace.
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1893  c M'Laren, Alice, M.D., 7 Newton Place.
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1899  MacLennan, Alex., M.B., 16 Sandyford Place.
1894  M'Millan, Wm., M.B., Tinavale, 382 Shields Road.
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1901  Penney, John W. W., M.B., Prospect House, Rothesay.
1902  Primrose, E. J., M.D., 107 Balshagray Avenue, Partick.
1885  * Rankin, Alex., M.D., Arthurlie, Myrtle Park, Crosshill.
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1885  * c Reid, H. C., M.B., D.P.H., Kirkland House, Blairhill, Coatbridge.
1885  * c Reid, W. L., M.D., F.F.P.S.G., 7 Royal Crescent, W.
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1897 Rutherford, James, L.R.C.P.S.E., L.F.P.S.G., 32 Hillside Terrace,
    Springburn.
1892 Salmon, Chas. E., L.R.C.P.S.E., L.F.P.S.G., Tarbet House, Tarbet.
1885 * c Scott, Alex., M.D., Waverley Lodge, Tollcross.
1885 * c Sloan, Samuel, M.D., F.F.P.S.G., 5 Somerset Place.
1898 Sloan, Samuel Macfarlane, M.B., 138 Hyndland Drive.
1896 Smith, E., Dorothea Chalmers, M.B., 1 Broompark Circus,
    Dennistoun.
1889 Smith, J., M.A., M.D., Brycehill, Kirkcaldy.
1886 c Stark, J. NIGEL, M.D., F.F.P.S.G., 4 Newton Place.
1901 Stern, ALBERT A. F., M.B., 87 Albert Road, Crosshill.
1901 Stewart, John, M.D., 16 Balmoral Crescent, Crosshill.
1887 Syme, Campbell, L.R.C.P.E., L.F.P.S.G., Kilmalcolm.
1897 Syson, J. Cockburn, M.D., 11 Annfield Place.
1899 Taylor, J. C. Mearns, M.B., 3 Eglinton Place, Skelmorlie.
1901 Thomson, Alex., M.B., 8 Hamilton Park Terrace.
1894 c Thomson, Geo. W., M.D., 3 Belmar Terrace, Shields Road.
1895 Thomson, J. Gemmill, L.R.C.P.S.E., L.F.P.S.G., 16 Kilbowie
    Gardens, Clydebank.
1885 Thomson, R. S., M.D., 12 Blythswood Square.
1892 c Todd, Geo. Bell, M.B., 39 Burnbank Gardens.
1901 Todd, James, M.D., 240 Gairbraid Street, Maryhill.
1901 Tolmie, Jas. A., M.A., M.B., Olive Villa, Drive Road, Govan.
1898 c Turner, George N., M.B., 23 Royal Crescent, W.
1885 * c Wallace, Abraham, M.D., F.F.P.S.G., 64 Harley Street, London.
1900 Wallace, John Veitch, L.R.C.S.E., L.M., 290 Langside Road.
1889 Wallace, J. W., M.D., 71 South Cumberland Street.
1902 Watson, David, M.B., 116 Mains Street, Blythswood Square.
1901 Weir, James, M.B., 24 Abbotsford Place.
1897 West, J. Thomson, M.B., Netherton House, South Avenue, Govan.
1886 Whitelock, R. H. A., M.B., F.R.C.S., 6 Banbury Road, Oxford.
1885 Wilson, H. Garnett, M.B., 5 St. James' Terrace.
1902 Wilson, James, M.B., 18 Walmer Crescent.
1897 Wilson, Jas. Alex., M.D., 55 Hill Street, Springburn.
1891 Wilson, Wm. M'Knight, M.B., 30 Grafton Square.
1892 Wright, John C., M.B., 23 Westminster Terrace.
1902 Young, J. J. Taylor, M.B., Sornhill, Maxwell Drive, Pollokshields.
L A W S.

I. The Society shall be called the "GLASGOW OBSTETRICAL AND GYNAECOLOGICAL SOCIETY."

II. The object of the Society shall be the promotion of Science and Art in connection with Midwifery and the Diseases of Women and Children.

III. The Society shall be composed of regularly qualified Medical Practitioners who have been duly elected.

IV. The Society shall consist of Ordinary, Corresponding, and Honorary Fellows.

V. At the last meeting in each session, the Ordinary Fellows shall elect the following Office-bearers:—Honorary President, President, two Vice-Presidents, Treasurer, Secretary, Editor of Transactions, Reporting Secretary, and Pathologist, who, with six Ordinary Fellows to be elected at the same time, and the retiring President, shall constitute the Council; and four shall form a quorum.

VI. The Honorary President, President, and Vice-Presidents shall be eligible for election for not more than two consecutive sessions; the Ordinary Members of Council for three sessions.

VII. The duties of the different Office-bearers shall correspond to what is understood in common use and wont.

VIII. The management of the Society shall be vested in the Ordinary Fellows.

IX. Admission to the Society shall be by ballot; and no candidate shall be declared duly elected who has not two-thirds of the votes in his favour.
X. All candidates for election into the Society must be proposed by three Fellows, two of whom must have personal knowledge of the candidate.

XI. The name of each candidate must be formally notified to the Secretary, for insertion in the billet calling the meeting, at least one week before the meeting at which the ballot takes place.

XII. The Council may nominate for election as Honorary or Corresponding Fellows such practitioners as they deem worthy of such distinction, and their election shall take place in the same way as for Ordinary Fellows of the Society.

XIII. Meetings shall be held at Half-past Eight P.M. on the fourth Wednesday of each month, from October to May, both inclusive, excepting in December when the meeting shall be held on the third Wednesday. An additional meeting may be called at any time by the Council.

XIV. The President shall call an extraordinary meeting when requested to do so in writing by five Ordinary Fellows.

XV. Fresh Specimens shall be shown at the beginning of a meeting, and the question of discussion on any Fresh Specimen shall be left to the discretion of the chairman of the meeting.

XVI. There shall be an Editorial Committee consisting of the following Members of Council, viz.:—President, Secretary, Treasurer, Editor of Transactions, and Reporting Secretary, with power to add to their number; the Secretary to be convener.

XVII. A brief synopsis of each paper shall be submitted to the Secretary at least one week before the meeting.

XVIII. All papers or other communications which have been read to the Society shall be submitted to the Editorial Committee, with a view to publication in the Glasgow Medical Journal, and, afterwards, in the Transactions of the Society.

XIX. In the case of any communication containing illustrations, the Council may, on the recommendation of the Editorial Committee, contribute from the funds of the Society towards the author's share of the expense involved.

XX. Fellows who desire to have their remarks at any meeting published in the Transactions of the Society, shall communicate the
same in writing to the Editor of Transactions not later than three days after the meeting.

XXI. The Transactions shall be issued to those Fellows who are on the roll at the time of publication, and who have paid one or more subscriptions for the period covered by the volume.

XXII. The Annual Subscription shall be Five Shillings.

XXIII. Any Fellow wishing to resign shall intimate the same in writing to the Secretary, who shall read the intimation to the Society at the next ordinary meeting, when his resignation may be accepted.

XXIV. No Fellow shall be expelled from the Society unless by the votes of three-fourths of the Fellows present at a special meeting, of which due notice shall be given by the Secretary.

XXV. None of these Rules shall be altered, amended, or expunged, unless by the votes of three-fourths of those present at an ordinary monthly meeting, a month's notice having been previously given by the Secretary of the proposed alteration.
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TRANSACTIONS

OF THE

GLASGOW

OBSTETRICAL AND GYNAECOLOGICAL

SOCIETY.

MEETINGS OF SESSION, 1900-1901.

Meeting I.—24th October, 1900.

The President, Dr. Robert Jardine, in the Chair.

I.—Specimens.

1. Professor Murdoch Cameron showed a fibro-cystic tumour successfully removed by abdominal section.

2. Dr. J. K. Kelly showed a suppurating ovarian cyst removed by abdominal section.

3. Dr. J. Edgar showed two uteri—the one removed for carcinoma of cervix, and the other for adeno-carcinoma of the body.

VOL. III.
II.—DISCUSSION ON THE DIAGNOSIS AND TREATMENT OF MALIGNANT DISEASE OF THE UTERUS.

Dr. Nigel Stark opened the discussion, and said—At the last meeting of the Society, I showed the specimen and read notes of a case of cancer of the body of the uterus, upon which I had performed vaginal hysterectomy. It was afterwards suggested that a more thorough debate might with advantage take place upon the subject of diagnosis and treatment of such cases, and, in opening the discussion, my duty is principally to indicate the lines upon which it may run.

Though our billet for this evening's meeting states that the discussion is on the diagnosis and treatment of malignant disease of the uterus, I think we should restrict ourselves to cancer, and meanwhile leave out of consideration sarcoma and deciduoma malignum. Further, we may employ the word cancer as denoting either proliferation into the deeper structures of the squamous epithelium of the vaginal portion of the cervix, or cylindrical-cell growth—the malignant adenoma which is really a glandular cancer. For clinical purposes we must distinguish between cancer in the cervical portion of the uterus and that affecting the body. The former, from its accessible and visible position and its more early local symptoms, is more readily diagnosed than the latter, but we are a long way from the general early recognition that we all desire.

I would ask the subsequent speakers to dwell on the following points as being worthy of consideration—(1) The relative frequency with which cancer attacks the cervix of patients who have suffered from laceration of that portion of the uterus during parturition, and who had afterwards been the subjects of erosion and cystic degeneration; (2) the best methods of making early diagnosis in such cases where appearances are deceptive; and (3) the value to be attached to microscopical examination of excised portions and of scrapings of uterine tissue in cancer both of body and cervix. From those who have paid attention to the subject we wish to know the speediest and surest methods of making microscopical examinations of such tissues, the fallacies which must be guarded against, and the true value of the examination as evidenced by the subsequent history of cases, especially such as have been of doubtful diagnosis, and where the treatment was determined by the results of the microscopical examination.

As regards the question of treatment, so far as cancer of the cervix is concerned, I think that most surgeons have
decided that amputations of the cervix, whether vaginal or supravaginal, are useless and antiquated operations, and we need not discuss them. Most of us are resolved that in cases which seem suitable, whether the disease is corporeal or cervical, hysterectomy is the one operation, and we might profitably discuss the indications for and against operation, and the best methods of operation. In what direction does the infection usually spread; is it by the glands or by more direct continuity of tissue? A knowledge of the correct answer to this question will, to a large extent, influence our methods of operation. The belief is gaining ground that glandular metastases are not such important factors in the extension of uterine cancer as was formerly supposed, and that prolonged severe operations, entailing extirpation of the periuterine and lumbar glands, are both unnecessary and far too dangerous. Cancer of the cervix, especially when it originates within the canal, is very rapid in its growth, and spreads along the broad ligaments and into the tissues between the uterus and rectum and uterus and bladder. It is, therefore, very necessary to cut widely round the cervix, especially on the side which is most affected. According to Howard Kelly, this is best done by preliminary catheterisation of the ureters, a procedure which, as is well known, he strenuously advocates, for the reasons that otherwise the operator must either skin out the cervix for fear of wounding the ureters or else must spend so long a time in dissecting them out that feeble patients have their proximate chances of recovery sensibly diminished. This is followed by thorough curettage of the diseased area, afterwards cutting through the vagina on all sides far beyond the limits of disease, opening the utero-vesical pouch, if necessary cutting off the base of the bladder, and then opening into the recto-vaginal pouch. The uterus is next drawn down, bisected, and, first on the one side and then on the other, the body divided from the cervix and the vessels tied. The half cervix on the least affected side is then removed, and after that the most important stage of the operation is begun, consisting of extirpation of the remaining quadrant of the uterus by the widest possible dissection, even, if necessary, going so far as to cut off the ureter above the diseased area. These are, very briefly, the steps of an operation which must necessarily, from its thoroughness, give a better percentage of permanent recoveries.

If any Fellow has had experience of internal treatment by drugs, by serums, by animal glands or tissues, we shall be pleased to hear what has been the results; we shall welcome
discussion upon the effects, good or bad, of "palliative" treatment in manifestly inoperable cases, in which scraping, cauterising, the application of formalin or other medicaments have been resorted to, and we would be pleased to know whether death comes more or less painfully to those who have not been operated upon, or to those upon whom operation has been unsuccessful, so far as permanent cure is concerned.

That a discussion upon the subject of cancer of the uterus is needed in our Society, must be apparent to all of us. There is a great army of suffering women in the United Kingdom, computed at 8,000 at the least, who are victims of this dread disease. From this army numbers are falling out daily, but its ranks are being daily recruited. We must all have been saddened by a perusal of the address given by Dr. Halliday Croom as President of the Obstetrical Society of Edinburgh in 1898. He declared that he had personally had charge of two hundred and sixty cases of uterine cancer; that only fourteen of these had fulfilled all the conditions necessary to justify hysterectomy with the expectation of success, and that "every one of these fourteen had died within the year, and in greater suffering than if they had been left alone." He asks this question—"Do women live longer lives, and die less painful deaths, if the uterus be removed, or if the disease be allowed to run its ordinary course?" And he answers—"For my part, I do not think that surgical interference is the better." And, again, he says—"Once a uterine cancer is recognised, palliative local measures and a happy euthanasia through morphia are the best solutions of the difficulty."

These are surely words of the blankest despair and the sheerest pessimism. They might well paralyse all efforts to grapple with this fell disease on the present lines, but we must believe that Dr. Croom, able and conscientious as he is universally recognised, has been peculiarly unfortunate, both in the stage at which he has seen his cases and in the results of operation. Still, the subject requires more elucidation on many aspects, and I hope that some fresh rays of light, however feeble, may be shed upon its darkness as the result of this discussion.

Professor Murdoch Cameron first referred to two cases where a wrong diagnosis had been given by a skilled pathologist to two portions of tissue removed from the cervix, and submitted to the latter for examination. In the first case, the portions removed were reported to show no evidence of malignancy, and yet the woman died four months later;
while in the other case, where a report of malignancy was given, but no operation was undertaken, the woman two years later was apparently quite well. Regarding the partial operation, Professor Cameron mentioned two cases on which he had operated three and four years ago, and where he had simply removed the vaginal portion of the cervix. Examined the other day they seemed perfectly well. When there was a good portion of sound tissue beyond the growths, he saw no objection to simple removal of cervix. He preferred, however, the more radical operation. In performing the latter he used clamps always, and preferred them to ligatures. In inoperable cases, where there is much bleeding, he curettes, and applies a solution of pure camphor and carbolic to the part.

Dr. J. K. Kelly said that difficulty in diagnosis arose only in the early stages of the disease, and in these the difficulty could be met only by resort to the microscope. Cancer had a special structure, and the recognition of this, even without marked clinical signs, would justify a radical treatment. On the other hand, clinical signs without this were no sure indication of cancer, many other conditions presenting the classical symptoms. With regard to treatment, all were satisfied that the complete removal of the diseased part was essential. As the disease advanced, the problem before the surgeon necessarily became more difficult of solution. But in early stages there was no doubt that hysterectomy had been successful in many cases, and it was to be hoped that surgery would yet further extend its reach. In very late stages, when total removal of the diseased tissue was impossible, the use of the sharp curette and cautery was sometimes followed by relief of the symptoms for a considerable time.

Mr. R. H. Parry believed in every surgeon being his own pathologist. He also thought that an operation on the lines suggested by Dr. Stark, in his closing remarks, was the one that would in the future give the best results.

Dr. G. T. Beatson said that while it was certain that many cases of inoperable carcinoma of breast were improved by oopherectomy, he had never claimed, as suggested by Professor Cameron, that the latter operation cured cancer. As regards the effect of the operation on cancer of the uterus, he had only to say that, as far as he could judge, it did not arrest the progress of the disease. In certain cases he also approved
of the removal of the vaginal portion, but he was opposed to such a radical operation as suggested by Dr. Stark. In conclusion, he spoke very favourably of the good effect of large doses of thyroid extract.

Dr. David Newman referred to the difficulty of diagnosis while the disease was in its early stage, and to the fact that very often the cases that clinically were difficult of diagnosis, could not be cleared up at first by a microscopic examination of portions of tissue removed. Finally, he remarked that cancer seemed to him to run a rapid course when it attacked the uterus; indeed, as a general rule, it might be said that the more active an organ was the more rapidly did cancer progress in it.

MEETING II.—7TH NOVEMBER, 1900.

The President, Dr. Robert Jardine, in the Chair.

I.—CASE OF ASCITES IN A FETUS CAUSING GREAT OBSTRUCTION TO DELIVERY.

By Dr. Richmond (Paisley).

Mrs. G., primipara, age 23, was confined on 6th September, 1900. On my arrival I found the left foot presenting; the os was nearly dilated to the size of a five-shilling piece. I waited until the os was fully dilated, and, under chloroform, I attempted to deliver, but found great difficulty in getting the legs to descend. With the assistance of Dr. Penman, and after long and persistent pulling, we got it far enough down to make out the cause of the obstruction, i.e., ascites. This was opened into, and a very large amount of fluid escaped, after which the child came away very easily. The perineum was very badly ruptured, and was stitched up. She fevered up a bit, but ultimately made a very good recovery.

There was very great difficulty in making out the cause of the obstruction, as the passage was very narrow, and it was only after both legs were outside that the true cause was made out.
II.—NEW INSTRUMENTS AND THEIR USES.

By DR. JANE B. HENDERSON.

The electrically lighted surgical appliances which are here this evening require very little explanation from me. They were made by the Electro-Surgical Instrument Co., of Rochester (New York), and I bought them from their representative in Toronto. As they are quite new, and have not yet been introduced to the medical profession in Great Britain, I thought you might be interested in seeing them. Some of the instruments appear to me to be more likely to be useful than others, but each one has claims of its own for special work in special cases.

The battery is a dry-celled chemical battery of four cells, the combined strength being 8 volts. The cells are self-recuperating, and can also be recharged. They are guaranteed for thirty hours' intermittent work. The rheostat controls the electric current, so that only the needed strength of current can be used. The current is strong enough to heat electric cautery points, but to use it for this purpose would the sooner exhaust it.

Instruments.—General diagnosis. Mouth lamp.—For examination of teeth, also for examining the nasal cavity, and for transillumination of the antrum of Highmore, and to assist in the examination of the accessory cavities of the nose.

Ear speculum (two sizes).—Notice the aperture left for the introduction of applications for treatment.

Nasal speculum.

Tongue depressor.—This would be extremely useful for cases of tonsillar abscess that require operation, and the patient has difficulty in opening the mouth.

Laryngeal mirror.

Universal attachment.—Can be applied to any instrument at any angle.

Urethral tubes.—Can be used for examination of the interior of the bladder and treatment of ulceration, &c., by local applications, also for exploration and catheterisation of the ureters. The tubes are made in various sizes, and the lamps remain cool, so that no difficulty need be experienced. The projecting spur is for a magnifying lens, called a megaloscope. The obturator in each case has a small groove on it to permit the entrance of air as it is withdrawn, and thus avoid all suction. The lamp attached is one-sixteenth of an inch, and
the smallest light that has been made; it is equal to one candle power.

Rectal tube.—Exactly similar in construction, but of larger diameter. By the aid of the megaloscope the differential diagnosis of malignancy in cases of stricture can be made.

Vaginal speculum with lamp.—A detachable speculum, said to be of great convenience in examination and treatment of lacerations after parturition. It appears to me that the narrow tubes, intended primarily for rectal or cytoscopic examinations, might be very useful for vaginal examinations in cases where it is undesirable to introduce a speculum of ordinary size.

The lamps and all the various parts are so made that they can be disinfected by all ordinary methods without harm.

III.—DISCUSSION ON THE DIAGNOSIS AND TREATMENT OF MALIGNANT DISEASE OF THE UTERUS (CONTINUED).

Dr. Edgar said—It is only in the early stage of cancer of the cervix that there can be much doubt as to the diagnosis. At this time the only symptom is hæmorrhage. The age of the patient is not to be relied on, as, though cancer of the cervix is most common between 40 and 50, and that of the body between 50 and 60, I have met with it at the age of 26. All cases of uterine hæmorrhage, apart from normal menstruation, ought to be examined. Before ulceration occurs, the microscope must be brought into requisition. As the edge of the growth shows the most characteristic changes, a small wedge should be removed from this part and examined by some one who has experience in the pathology of the female generative organs. Evidence obtained by the microscope ought to be controlled by a careful clinical examination, and in cases of doubt the case should be watched for a time.

In cancer of the body, the uterus may be very little, if at all, enlarged. Reliance must be placed on the curette, unless a digital exploration of the uterus is practicable. When cancer is present, a large amount of friable tissue is brought away, which shows characteristic changes under the microscope. In one case, a lady, 65 years of age, the tissue removed from near the right cornu was a simple mucous polypus. This was two years ago, and there has been no recurrence of hæmorrhage.

Indications for radical operation.—The uterus may be mobile, and yet the case unsuitable, as evidenced by one case
in which the bladder wall was infiltrated, and it was found impossible to separate the cervix from it. On the other hand, the uterus may be fixed by peritonitic adhesions, without cancerous infiltration of the parametrium. Such adhesions are not so unyielding and nodular as cancerous infiltration when a recto-abdominal examination is made.

Operations.—In advanced cases curettage is often of value. Most of my cases have been distinctly improved for some months. Oophorectomy is of no use in cancer of the uterus. Let me quote one case in this regard:—Miss P., æt. 30, began to complain of bleeding and pain in September, 1898, was curetted in the Royal Infirmary in January, 1899, and had both appendages removed by the same surgeon in May, 1899. The bleeding and pain continuing, she came into the Samaritan, and I removed the uterus on 2nd December, 1899. There was cancer of the body, with infiltration of the right uterine wall up to but not, so far as I could judge, into the parametrium. In suitable cases hysterectomy is the operation of choice; but these are rare, because patients call on the general practitioner first, as a rule, and time is generally lost in attempting to control the hæmorrhage, without first ascertaining the cause of the hæmorrhage. Delay in cancer of the body is not so serious as in that of the cervix. For this reason I have performed hysterectomy (abdominal) five times for cancer of the body as against two (vaginal) hysterectomies for cancer of the cervix, though the latter is incomparably more common. Two of the former died as a result of the operation; the other three are still alive and free from recurrence, fourteen months, eleven months, and eight months since the operation. One cannot speak of cure till about five years have elapsed. The two cases of cervical cancer, which were both so far advanced that I operated only so that the patient might have the benefit of the doubt, died eight months and twenty-eight months after the operation. Both received distinct benefit.

Dr. W. L. Reid said that, with regard to the diagnosis of carcinoma of the uterus, while he thought the pathologist ought always to be appealed to, yet he would be disposed to lay fully more strain on clinical evidence. With ordinary experience of the disease and ordinary care in differential diagnosis, there is no difficulty in recognising carcinoma when it has existed for some time. It is in the early stage, when diagnosis is most important, that it is most difficult. Where there is a necrotic fibroid, or the retention of the products of conception, the history of the case usually clearly indicates
its nature. Syphilitic ulcers, in Dr. Reid's experience, rarely give rise to difficulty of diagnosis.

Perhaps the most common and the most difficult case is where there is granular erosion of a split hypertrophic and ectropic cervix. If this does not give way directly to the thorough application of carbolic acid to the interior of the uterine cavity and the use of antiseptic douches, a thin slice should be cut out of the most suspicious part of the cervix and submitted to the pathologist. If the disease is confined to the interior of the uterus, the curette should be used with the same object. If the opinion given is unfavourable, one is justified in performing hysterectomy, rather than in waiting until the evidence comes to be beyond question. This seems to open the way for reckless removal of the uterus, but in this, as in many other situations, it must be a matter of conscience with the practitioner.

As to treatment. If the disease is malignant and confined to the interior of the uterus, hysterectomy is a hopeful operation. If it involves the cervix, it is less hopeful, but perfectly justifiable, if the disease has not extended to the cellular tissue around the cervix, and if the operation is done in a painstaking fashion.

With regard to the form of operation, the vaginal method is to be preferred, as less likely to infect the peritoneum. Ligature is better than clamping, as it enables one to cut farther from the disease without endangering the ureters.

If the uterine tumour is large, the abdominal route must be taken. If the case is beyond the reach of hysterectomy, much relief can be got from the use of the curette, followed by the application of chloride of zinc. The use of this caustic in stick form or in solution does not give the best results. If strips of lint are dried out of a saturated solution of chloride of zinc, they, backed by bicarbonate of soda lint, also dry, may be placed exactly where the caustic is wished, and left longer or shorter so as to produce the desired severity of action. In this way foetor of the discharge may be entirely removed for a considerable time, and pain generally greatly relieved.

Dr. Samuel Sloan said that very early diagnosis could hardly amount to more than a suspicion of cancer. He preferred, whilst telling the pathologist where the tissue came from, to say nothing that might bias his judgment. If his conclusions were positive, Dr. Sloan would consider his diagnosis
as practically settled. If the pathologist were uncertain, he would delay for further examinations. In his own experience the pathologist had always been right. In the early stages, a section should be given; in the later, scrapings might suffice. He thought it should be borne in mind that hardness and pain were late symptoms. The hæmorrhage, which was perhaps the only indication, should be treated as simple. If this treatment—in his hands drying the part and pressing into the tissues liquid carbolic acid—should fail to arrest this sanguineous discharge, he should apply to the pathologist early. The relation of the loss of the general health to the obvious cause is a determining point. Smell is a late symptom, though earlier in cervical than in corporeal disease. He has known discharge to be perfectly sweet for many months after the onset of the disease in the latter. In curettage, the dilatation will be more difficult after infiltration, and easier than normal where the disease is limited to the glandular tissue. He was surprised to hear Dr. Edgar say that he found corporeal disease in a small senile uterus. He (Dr. Sloan) had curetted a few days ago for senile uterine catarrh, and had decided in favour of its non-malignancy on account of the reduced size of the uterine cavity—2½ inches; his experience being that in adenoma malignum the uterus was enlarged in spite of the advanced age of the patient. The larger the amount of the scrapings, he thought, the greater the likelihood of malignancy. As to the radical operation, he thought if the disease were limited to the cervix, supra-vaginal amputation was preferable. He thought the danger of complete extirpation lay in exposing the peritoneum to the risk of contact with cancerous material. He thought Dr. Stark's method of removing the ovaries and tubes attached to the uterus was preferable to leaving them behind, or to removal of them after separation of the uterus. As to the palliative treatment, he thought thorough curettage, followed by a free application of Paquelin's cauter, a good method. This removed more effectively the deeper layers of diseased tissue, and left a less septic surface. He had found the Paquelin cauter very satisfactory for the partial removal of a large cancerous mass of the cervix. He had no experience of saturated solution of chromic acid in uterine cancer, but he had found it very satisfactory in a small cancerous affection of the vulva. Dr. Sloan thought that there might be degrees of intensity of malignancy, as there is of sepsis, and that where the history pointed to very slow growth of the disease in a patient well
advanced in years—as in a possible case of the disease which he had seen a few hours before—he thought it might be well to interfere in such cases as little as possible.

Dr. M'Bryde said—In the early diagnosis of cancer I wish to emphasise the fact that the age of the patient ought not to blind us to the possibility of cancer of the uterus. Given a case of persistent uterine haemorrhage, even in a patient under the age of 30, cancer of the uterus ought to be considered. General practitioners are very liable to overlook this. On the day previous to the meeting of the Obstetrical, a doctor called on me at the Royal Infirmary about a case of excessive uterine haemorrhage, which he would like admitted at once, as it was urgent. He told me that the bleeding had been present off and on for a year, and that all he could make out by examination was an erosion of the os. He considered it probably due to some unhealthy condition of the endometrium or the presence of a small polypus. When I expressed the possibility of cancer, he said "No" emphatically, giving as his principal reason the fact that the patient was only 28 years of age. I explained to him that I had seen at least five cases of advanced cancer of the cervix in women under 32 years of age. The case was admitted at once. On examination a very suspicious erosion of the cervix was found, the tissue underneath being very friable. As the bleeding was extreme, it was decided to explore the interior of the uterus at once, and curette. The whole of the cervix and body of the uterus was found to be converted into very friable cancerous tissue. This case seems to me to show how necessary it is that general practitioners should keep before their minds the possibility of cancer in all cases of haemorrhage from the uterus, even in young females.

Dr. Richmond (Paisley) described the following case:—Mrs. H., age 37, widow, consulted me about the end of February, 1888. She was suffering from a severe loss of blood, &c. On examination, I found her vagina very well filled with a large friable growth, which bled on being touched. I diagnosed this as an epithelioma of the cervix, and this was confirmed by the late Dr. Turner, who saw her with me at the Western Infirmary Dispensary. He advised me to thoroughly curette the whole mass, and apply pure nitric acid to the cervix. On the 4th March, 1888, along with Dr. Frank Shearer, this treatment was carried out, and in about a month or so afterwards it was repeated. She made a good recovery, and had
no return of the affection. There was no doubt in the minds of any of the three medical men as to the nature of the disease. Shortly after this she got married, and on the 30th of September, 1893, I delivered her of a live child. This was the only child she had, and at the time of the birth there was nothing unusual observed with the cervix.

She was admitted to the Paisley Infirmary on 19th August, 1900, and the report in the journal then states that two days later abdominal section was performed. A large multilocular papilomatous cyst, several of whose compartments had burst into the abdominal cavity, was removed. There was also a great quantity of ascitic fluid withdrawn. She recovered from the operation, and left the hospital on 13th October. She died nine months later.

The President said that, before calling upon Dr. Stark to reply, he would like to say a word or two on the question from an obstetrical point of view. In one of the recently published books on midwifery it was stated that cancer of the cervix was often found in pregnancy. This had not been his experience. In one way or another he had had to deal with a good many thousand confinement cases, and he had never yet seen a case complicated with cancer. The year before last there had been one in the out-door department of the hospital, but it had been transferred to one of the infirmaries before he knew of it. In upwards of 50,000 labours in connection with the hospital there had only been one case. The association of pregnancy with cancer must be rare.

He thought that if the case were seen early in pregnancy, total extirpation of the uterus ought to be done. If it had gone to full time, and there was any obstruction to delivery of the child, a Cæsarean section ought to be done in the interest of the child. Whether or not the uterus should then be removed would depend upon the extent of the disease and the condition of the woman. Her days would likely be numbered, and he did not think a Cæsarean section would shorten them any more than a craniotomy, and it would be worth doing the former to save the life of the child.

Dr. Stark, in reply, said that he thought all must agree that in the early diagnosis reliance must be placed in the pathological report, and that the treatment to be adopted was to remove the uterus as early as possible. As regards preventive treatment, he thought erosions and lacerations of the cervix should be carefully treated.
MEETING III.—28TH NOVEMBER, 1900.

The President, Dr. Robert Jardine, in the Chair.

I.—THE GLASGOW MATERNITY HOSPITALS: PAST AND PRESENT.

By Dr. Robert Jardine.

My first duty to-night is to return you my sincerest thanks for the high honour you have conferred upon me in electing me President. I shall endeavour to merit the confidence which you have placed in me by striving to my utmost to forward the interests of the Society.

For the past two years I have been working at the records of the Maternity Hospital, and it has occurred to me that an address on the history of that institution might be of interest to the Society. I do not intend to bore you with endless tables of statistics, which, however profitable, are too often weary, flat, and stale, but I shall attempt to give a historical sketch of the past and present hospitals.

In Dr. Duncan's interesting Memorials of the Faculty of Physicians and Surgeons of Glasgow it is stated that, "at the end of the sixteenth century, the number of surgeons practising in the town did not probably exceed half a dozen, and there is only evidence of the presence of one physician, though the plural is sometimes used. There were, however, in addition, at least two midwives, and it is presumed that the whole of the obstetric practice of the burgh, except difficult cases, was in their hands. . . . Where the Glasgow midwives got their training at that time does not appear, but that their morals were looked after by the kirk there is evidence to prove. Thus, from the Records of the Presbytery, 4th April, 1589, we learn that one Kate Freland was summoned before that body, 'to ass' for her profession to be ane midwyfe, qlk has not been knawin w'in ye toun and citie of Glasgow to ye inhabitis yair, and to underly ye (censure?) of ye kirk according to her demerites.' It further appears that the special interest of the ecclesiastical authorities in the midwives lay in the fact that under certain circumstances they were called on to perform one of the ordinary functions of the minister. Thus, by minute of February, 1599, the midwives are 'deschargit to go to an unmarried woman, within, while
first they signify the matter to some of the ministers in the
daylight, and if it be in the night time that they take aiths
o’ the said woman before they bear the bairne who is the
fayther of it, as they will be answerable to God and the kirk’”
(pp. 18-19).
There is little wonder that the ministers demitted this
function to the midwives. It could not have been a pleasant
task in the daytime, and at night it must have been a sore
trial to the worthy fathers of the kirk.
“In 1740 the Faculty instituted an examination for midwives,
which was continued throughout the century. The minute
of the 4th August of that year bears that, ‘The Faculty
having considered the many dismal effects of the ignorance
of midwives, and that it is incumbent on the Faculty to
prevent these evills as much as they can, They Therefore
Enact that, after the first of January, 1741, any midwife who
shall pretend as such to practise within the shyles of Lanark,
Renfrew, Ayr, and Dumbarton without a license from the
Faculty shall be fined in the sum of fourty pounds. . . .
And as the Faculty have no other view than to prevent
ignorant persons from practising midwifery, they appoint that
such as shall voluntarily submit to an examination towards
their being licensed shall pay no freedome fyne, nor be at any
furder charge than two shillings and sixpence sterling to be
payed the clerk for each of their licenses.’ The number of
applicants was considerable, but not a few were found to be
ignorant, and were debarred from practice” (p. 101).
It will thus be seen that the registration of midwives, which
has been such a burning question south of the Tweed during
the last few years, is no new thing in Scotland. I have not
been able to procure a copy of the license granted, as there
does not seem to be one in the Faculty library. There is no
mention of any unlicensed midwives having been fined. This
may account for the examination having been abandoned, as
the license apparently conferred no protection upon the holder.
There is nothing stated as to the amount of tuition the
candidate was required to have undergone before appearing
for examination. In their own interest they must have had
learning of some kind, and that was probably given by
practitioners of medicine or surgery. Dr. Duncan states that
“in the Glasgow Journal, 15th October, 1759, Mr. James
Muir, advertised:— James Muir, surgeon, will begin a course
of lectures on midwifery upon Monday, 12th November. No
woman will be admitted to these lectures unless her character
for sobriety and prudence is attested by some person of
reputation in the place she lives in. Mr. Muir continues as usual to deliver gratis all such women as apply in that way for his assistance. He intends to begin a course of midwifery for students about the end of December or beginning of January.' A similar advertisement, by James Monteith, appeared on 19th March, 1778:—'Midwifery: James Monteith, surgeon (having provided the necessary apparatus), proposes, on Thursday, 26th of March, to begin a course of lectures on the theory and practice of midwifery, to which will be added a set of lectures on the diseases of women and children, observations on inoculations, &c. Inquire at his shop, middle of Stockwell Street, or at his lodgings, Miss Semple's, New Street. At a separate hour, attendance will be given for the instruction of women in the practice of midwifery.'"

No doubt other surgeons carried on the same work, so that intending candidates for the licence of the Faculty would have opportunities of learning something about the subject. The gratuitous attendance of poor women at their own homes, for the purpose of instructing midwives and students, began the work afterwards carried on by the out-door department of the Maternity Hospital.

I have given these somewhat lengthy quotations from Dr. Duncan's book so that we may be able to form an idea of the midwifery work, and how it was done among the poor in those days.

The Glasgow Lying-in Hospital and Dispensary, as it was first called, like all the other special hospitals—or, for that matter, practically all the hospitals in Glasgow—owes its foundation to a medical man. I do no injustice to the founder of this institution, or of any of the others, when I say it was probably not done for pure philanthropy. All the same, he deserves great credit for having established an institution which has done, and is doing, a tremendous amount of good, not only among the poor patients, but in training students and nurses for their work.

In the eighteenth annual report of the Glasgow Lying-in Hospital and Dispensary, issued in December, 1852, it is stated that, "About sixty years ago, when the first lying-in hospital was opened in the city, it was interdicted by the magistrates." I wrote to Sir James Marwick, LL.D., town-clerk, and asked if he could furnish me with particulars of this from the old records of the Town Council. He very kindly sent me excerpts from the minutes of December, 1795, and January, 1796, which show that at that time there was a small private lying-in hospital belonging to James Towers,
surgeon. Mr. Towers applied to the Town Council asking for a grant to defray the expenses in connection with poor cases he had admitted and treated, many of them on the recommendation of the magistrates. A committee was appointed to visit his place and report. They gave a favourable report, and recommended that the Council should make a yearly grant of ten guineas to Mr. Towers. His place had then been in existence for four years, so that it had been opened in 1791. It was entirely supported by himself, except for the fees received from medical students. Mr. Towers must have been a lecturer on midwifery. He afterwards, in 1815, became the first professor of midwifery in the University. How long he carried on this lying-in hospital I have not been able to ascertain, but it certainly was in existence for over four years, during which time about seventy women were confined, and all successfully. The place may have been closed later on, but it was not interdicted at the opening. This is the first attempt at the founding of a lying-in hospital of which I can find record.

According to Dr. Duncan, Dr. James Wilson made an attempt to found one in 1805, so presumably Mr. Towers' place had ceased to exist. The Fellows of the Faculty refused to assist in the matter, apparently on the grounds that he was doing it for his own personal aggrandisement. His second attempt, made in 1834, was, however, crowned with success. By this time the city had increased considerably in size, and there was great need for such an institution.

In a meeting held in the Town Hall on the 19th September, 1834, the following resolutions were moved, seconded, and unanimously adopted:

1. "That, in consequence of the great and rapidly increasing population of Glasgow and its suburbs, a public lying-in hospital has long been a desideratum in this city, for affording the necessary accommodation and assistance to indigent married females, under circumstances which are at all times attended with suffering, and frequently with danger, and where the want of such accommodation and assistance has often proved fatal to the mother, to her offspring, or both."

2. "That such an institution is also wanted for the purpose of affording to students of medicine the means of practical improvement in this important department of their profession, and for placing the Glasgow school of medicine upon a footing with those of the other parts of the Empire."

3. "That this meeting do therefore agree to the immediate establishment of an institution to be designated the Glasgow
Lying-in Hospital and Dispensary, and that its general affairs be managed by twenty-five directors to be chosen annually from public bodies, and from qualified donors and subscribers in the proportion and in the manner to be afterwards determined upon.”

4. “That the professional affairs of the charity be entrusted to six or eight practitioners of medicine, who shall be annually elected by the directors from medical men who have been at least ten years in practice, without reference to their being members of any medical school or corporation.”

Committees were appointed to draw up the constitution and regulations, and also to obtain subscriptions.

We are not concerned with the constitution and laws, except in so far as they related to the admission of patients and to the duties of the staff.

No patients were to be admitted except married women who were unable to pay for medical assistance at home. Lines of admission were necessary, and were to be signed by an elder, district surgeon, or other respectable person. Advice was to be given two days a week on “female complaints and the diseases of children” by two of the staff.

You will notice that “indigent married females” were the only ones eligible for admission. The poor unfortunates who had not been blessed by the kirk were to be left severely alone. Some of the subscribers considered that if single women were admitted it would encourage vice. In looking over the records, one is struck with the fact that, in spite of this apparently hard and fast rule, many unmarried women were admitted. The rule was honoured more often in the breach than in the observance. When brought to task about this, the medical officers pleaded that they only admitted very urgent cases of this class, as in common humanity they could not turn them away. There must have been a good many urgent ones. This rule actually held good, or rather was systematically broken, for twenty-five years, when it was apparently rescinded, as the directors then announced that the institution was for poor and homeless lying-in women. It is curious that that feeling of opposition to the attendance of unmarried women still survives, and occasionally one hears it said that the Maternity Hospital should not be supported because it encourages vice. I need not waste time refuting such an absurd contention, but I would like to point out that through the Deserted Mothers’ Home, which works in connection with the Hospital, an attempt is made to reclaim
those who have fallen for the first time, and many of them are reclaimed and put in the way of making an honest living, instead of going from bad to worse. To the medical officers the presence or absence of a marriage ring should be immaterial. Married or unmarried, the woman requires attention.

As regards the staff, it was to consist of eight practitioners of at least ten years' standing in the profession. Two were to be physician-accoucheurs in charge of the in-door work, two to give advice on female complaints and the diseases of children, and the remaining four were to attend women at their own homes with the nurses and students, as it was decided to have an out-door as well as an in-door department. The ten years' standing in the profession was departed from in the instance of two of the out-door men. It has since been entirely dropped, even for the highest appointment. The appointments were to be annual, and the men were not eligible for more than four consecutive years without a break. This was also departed from, because the two chief physicians appointed remained in their posts the remainder of their lives.

I think it was a wise provision that the appointments were to be made "without reference to the men being members of any medical school or corporation." Until the present day the Hospital has had an independent existence, and is not controlled by any of the medical corporations in the city. The Faculty of Physicians were allowed to send one director, like the Trades' House and Town Council, and the president was, ex officio, a director, just as the Lord Provost is. It is quite evident that there must have been a feeling against the Faculty having too many representatives on the board, because a regulation was passed that one of the ten directors nominated by the qualified contributors should be a medical man, but not a Fellow of the Faculty. The relations between the Faculty and the Hospital have, however, been quite cordial throughout, and in 1880 the Faculty made a grant of £100 to the Hospital. Since then, two directors, in addition to the president, have sat on the board. It is rather striking that the University was not asked to send a representative. William Cummin was professor of midwifery in the University then, but his name never appears. To the extra-mural teachers belongs the credit of the starting of the institution.

The Hospital began on a very small scale on the second flat and garrets of the old Grammar School in Greyfriars Wynd, off George Street. The rent was £30 a year. The premises must have been very unsuitable. There was apparently no bath
in the place, and actually no water-closet at the beginning, as one had to be fitted up.

It was opened in December, 1834, and the first confinement took place about a month later. The first patient admitted bore the curious name of Mrs. Virtue. The contributors who objected to unmarried females being assisted must have been gratified that Virtue was so promptly rewarded by the new institution.

For the first ten years the Hospital had a very hard struggle. Funds were very low, in fact, so scarce at one time that the landlord had to reduce the rent. The amounts allowed the matron for the feeding of herself, servant, and staff were absurdly small. For herself, 1s.; for the servant, 9d.; and for each patient, 6d. per day. There was not much room for luxuries in those amounts. It is hardly to be wondered at that one of the matrons was found to have run up a bill of some £17 with a grocer. After that the tariff was revised, and a more liberal allowance made.

Within a few months of the opening of the Hospital, puerperal fever broke out and two of the patients died. The servant also died of erysipelas, and the matron was very ill. The medical men at once cleared the place of patients, several of whom were in waiting for delivery. It was thoroughly cleansed and fumigated before any more were admitted.

In 1841, a cheaper house was taken in St. Andrew’s Square. This building was also very unsuitable, and cases of puerperal fever were not uncommon. Again and again the hospital had to be closed for cleaning and fumigating. The managers were blamed, and an opposition hospital was threatened. I find reference to this opposition place in the minutes of a meeting of directors, at which the prospectus issued to the public was discussed. There is also mention made of the fact that several contributors had, in error, paid their subscriptions to the General Lying-in Hospital. Again, in the report for the year 1853, it is announced that a large increase in the number of patients was due to "the closure of one or both of the other lying-in hospitals."

From this one would imagine there had been two opposition places. There are no records of these places in the Faculty library, so no reports can have been issued to the public. If they were started with the idea of swamping the original one, they failed in the attempt. Their opposition evidently did good, because from about 1843 matters began to mend, both financially and otherwise, and a new and larger house was
taken in an adjoining land. This building was not found very suitable, and an effort was made to accumulate sufficient funds to provide a better. A few years later malignant puerperal fever broke out on two occasions, and, during part of one year, every patient admitted suffered from fever. A committee was appointed to look out for a site to build a new hospital on, but, year after year, they reported they could not find one. At length, in 1860, they were able to secure an old house, on the site of the present building, at the corner of Rottenrow and North Portland Street. Many alterations were made, and it certainly was an improvement on the former places, but still far from what a maternity hospital ought to be. It was fitted up for twenty-one beds. For two years very few septic cases occurred, but in 1863 there was an outbreak of puerperal fever, and the building had to be closed, cleaned, and repaired.

Towards the end of the seventies, it was decided to pull down the old building, and erect a new one on the same site. In November, 1879, the work was begun, and the new hospital was ready for opening in January, 1881. During building operations, the work was carried on in the old Fever Hospital, in Kennedy Street, off Parliamentuary Road.

Mr. Robert Baldie was the architect of the new building. In his plans he endeavoured to give effect to all the modern improvements suggested by the staff, Dr. J. B. Russell, and others who were connected with similar institutions. I need not occupy your time with a description of the hospital, as you are all perfectly familiar with it. However up-to-date it may have been twenty years ago, it now falls very far short of what a maternity hospital should be in a city like Glasgow. The population of the city has enormously increased within the last twenty years, so that a hospital which was large enough then is far too small at present. It was originally intended that only one flat should be used at a time, so that the empty flat might be thoroughly fumigated and ventilated. During the last year or two we have had to depart from this arrangement, on account of the number of patients being so great that both flats are frequently required to accommodate them. We have nineteen beds on each flat, not counting the two beds in each labour room. I have had as many as thirty-four patients in at one time. Another great drawback is that we have no isolation ward. There was one planned for in the upper storey, where the nurses' dormitories are, but this was found to be quite unsuitable. Another serious defect is that we have no operating room, and the labour room on each flat is no larger
than an ordinary bedroom. Considerable improvements have been made recently, but what is required is a new and larger building, specially adapted for aseptic work, and with residential quarters for students attached, or near at hand. At present, some of the nurses, the servants, and one of the house-surgeons have to sleep out of the hospital. I trust that the Fellows of this Society will make a point of urging upon their wealthy friends the pressing necessity there is for better accommodation, first, in the interest of the patients, and, second, in the interest of the students and nurses. When I come to speak of the work done at the present day, and compare it with that of years ago, it will become more evident to you how urgently a new place is required. If we had a proper place, we might have the finest teaching school of practical obstetrics in the kingdom. We have the material, but, under present conditions, it cannot be fully utilised.

History is repeating itself, as it so often does, and we are once more threatened with an opposition hospital. The city is, no doubt, large enough for two small ones, but, in the interests of administration and teaching, separate institutions will be a great drawback. In union there is strength, and I can see no reason why a united effort should not be made to build one hospital, worthy of this great city.

You will remember that there was originally a dispensary connected with the hospital, as the name Lying-in Hospital and Dispensary implies. Two physicians were appointed to give advice on diseases of women and children. At first, no medicines were given out, so very few patients applied. After a year or two, the directors voted that not more than £5 should be spent annually in medicines for the dispensary. After a few years the dispensary in connection with the first hospital was given up. It was again revived and carried on for a few years in the old hospital in Rottenrow, but ceased to exist before the present building was opened. I believe that abdominal sections for ovarian tumours, &c., were occasionally done in the old hospital. Some time ago an eminent consultant in the city told me that in his student days he acted as clinical clerk in the old Maternity Hospital. It was at the time that Lister was carrying on his experiments with antisepsics. The future consultant was deeply interested in these experiments, and, one day, when the staff in the Maternity were discussing an abdominal section for a simple ovarian cyst, he made bold to hazard the opinion that it would be a very risky undertaking, considering that there had been some cases of puerperal fever in the ward. He was told that there
was no risk, as there had not been a case for twelve days. The operation was done, but the patient died of peritonitis in a few days. Possibly this was the last one done in the hospital, as the dispensary work was shortly afterwards given up.

I have spoken of an opposition lying-in hospital. Besides this there was for many years a University dispensary, from which students attended midwifery cases at the homes of the patients. This dispensary was situated in George Street, just at the foot of North Portland Street, and, no doubt, many people bound for the Maternity at the top of the hill were intercepted by the dispensary at the foot. It was given up about the time the University migrated to Gilmorehill. The present professor of midwifery was for some years one of the physicians to this dispensary.

In connection with the work done from the University dispensary there is an amusing entry in the out-door case-book of the old hospital. It reads as follows:—"A midwife and student from the University (High Street) were in attendance upon this woman, and delivered her of the child, but could not manage to take away the placenta, although they pulled and hauled at it for about two hours; at the expiration of which time the friends of the patient thought they had been long enough at work without doing any good, and came to this hospital for assistance. Mrs. Nevin went, and brought away the placenta without the least difficulty." This was in 1846, so that students must have been attending cases from a dispensary at that early date.

From the very first a large amount of work has been done in the out-door department of the hospital. At present nearly four times as many women are attended at their own homes as in the hospital. This work is, as you know, done by nurses, students, and young graduates, under the supervision of the out-door house-surgeons. The various district men also render assistance when necessary. Some twelve years ago the directors opened the West-end Branch in St. Vincent Street. About five hundred cases a year are attended from this branch by the nurses and lady students. For over two years a lady doctor has been appointed house-surgeon to the branch. Only lady students are now allowed to take cases at the branch.

As regards the methods of carrying on the work in the early days, the matron seems to have had most of the cases to deal with, as the vast majority of them were normal. She was assisted by nurses and students. One of the senior students acted as clinical clerk. For many years an out-door
matron supervised the work of that department. She seems to have dealt with cases of version and adherent placenta, but all instrumental work was done by the district accoucheurs. One of the out-door matrons died of fever, probably typhus, contracted from one of her patients. This malignant fever was very prevalent at times, and many of the cases were ill with it at the time of delivery. Under such circumstances the death-rate was bound to be high, but many of them recovered. Cases of typhus and small-pox occasionally found their way into the wards, but they were removed as soon as the disease developed.

In the older hospitals, patients were frequently admitted weeks, and some of them even months, before delivery. At present only exceptional cases are admitted before labour sets in.

The first house-surgeons appointed did not live in the hospital, but near at hand. However, when the present building was opened, a resident in-door and an out-door house-surgeon were appointed. For the last two years we have had two out-door men, as the work has become too great for one.

Many interesting entries might be quoted from the old journals. On 12th September, 1837, a Mrs. Nisbet, aet. 27, was confined of her third child, a boy. The following entry stands after her name:—"This woman is a niece of the famous Scottish bard, Robert Burns." I have consulted a number of enthusiastic admirers of Burns, but none of them have been able to throw any light on the subject. The entry was apparently made in good faith by the clinical clerk. The woman evidently volunteered the information, just as one informed me that she had a brother a minister, and another one that she was the sister of a town councillor. In both of these cases the information was correct.

An amusing entry is made about a case of pseudocyosis:—"Dismissed for imposition, saying she was pregnant and in labour, and she really was not pregnant and, of course, not in labour."

I have been interested to note some of the methods of treatment. In 1836, plugging was adopted in placenta praevia, and also in a bad case of post-partum hæmorrhage. They had a good many cases of the latter. The douche was then unknown, but in bad cases the hand was introduced to clear out the uterus, which was then firmly kneaded on the closed hand inside by the external hand over the abdomen. I always adopt this method in bad cases, preparatory to using the hot douche. Ergot was, of course, given, and cold applications
were usually applied over the abdomen and vulva. In the
treatment of eclampsia, blood-letting was largely used, and I
notice that this was also freely practised in septic cases. In
the latter, depressants, such as antimony, were frequently
used. I cannot be certain when antiseptics were first
employed, but they have been extensively used ever since
the present hospital was opened. At present, aseptic methods
hold the field.

It is very interesting to compare the work of the early
years with what is done at present. I do not mean as regards
results, but as regards the nature of the cases and amount
of operative work.

In the next volume of Glasgow Hospital Reports, I shall
publish a statistical statement of thirty years' work in the
hospital, dealing with the cases attended between 1869 and
1898 inclusive. They are made up in three ten-year periods,
out-door and in-door separately. To give an idea of how
different the work now is from what it was in the early days
of the hospital, I now give you a list of the operations and
the abnormal cases dealt with in the first hospital in Grey-
friars Wynd, and also the same in the present hospital for
the ten years from 1889 to 1898.

In the old hospital (from December, 1834, to October, 1841
(almost seven years), 445 cases were attended.

The operative cases were—

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Cases</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forceps</td>
<td>6</td>
<td>1 in 74</td>
</tr>
<tr>
<td>Version</td>
<td>2</td>
<td>1 in 222</td>
</tr>
<tr>
<td>Craniotomy</td>
<td>1</td>
<td>1 in 445</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9</strong></td>
<td><strong>1 in 49</strong></td>
</tr>
</tbody>
</table>

Complications—

<table>
<thead>
<tr>
<th>Condition</th>
<th>Cases</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-partum haemorrhage</td>
<td>6</td>
<td>1 in 74</td>
</tr>
<tr>
<td>Placenta praevia</td>
<td>1</td>
<td>1 in 445</td>
</tr>
</tbody>
</table>

The craniotomy was done on a jammed after-coming head,
but no mention is made of the pelvis having been contracted.
The first case of contracted pelvis recorded was in 1842. She
was in labour for twenty-four hours when the pains ceased.
Version was done, and she died. A post-mortem examination
revealed rupture of the vagina and bladder. The true con-
jugate measured 3 inches.

During the ten years from 1889 to 1898 inclusive, 4,322
cases were attended. These are only of premature and full
time labours, as I have omitted abortions and miscarriages.
The operative cases were—

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Count (1 in X)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forceps</td>
<td>650 (1 in 7)</td>
</tr>
<tr>
<td>Version</td>
<td>154 (1 in 28)</td>
</tr>
<tr>
<td>Craniotomy</td>
<td>112 (1 in 39)</td>
</tr>
<tr>
<td>Induction of labour</td>
<td>90  (1 in 48)</td>
</tr>
<tr>
<td>Cæsarean section</td>
<td>56  (1 in 77)</td>
</tr>
<tr>
<td>Post-mortem section</td>
<td>2   (1 in 2,161)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,064 (1 in 4)</strong></td>
</tr>
</tbody>
</table>

Roughly speaking, the percentage of operations has increased tenfold, and in addition, we have induction of labour and Cæsarean sections, which were not done in the early days.

Complications—

<table>
<thead>
<tr>
<th>Condition</th>
<th>Count (1 in X)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-partum hæmorrhage</td>
<td>63  (1 in 70)</td>
</tr>
<tr>
<td>Placenta previa</td>
<td>45  (1 in 96)</td>
</tr>
<tr>
<td>Accidental hæmorrhage</td>
<td>28  (1 in 154)</td>
</tr>
<tr>
<td>Eclampsia</td>
<td>47  (1 in 92)</td>
</tr>
<tr>
<td>Rupture of the uterus</td>
<td>8   (1 in 540)</td>
</tr>
<tr>
<td>Occlusion of the os uteri</td>
<td>1   (1 in 4,322)</td>
</tr>
<tr>
<td>Insanity</td>
<td>7   (1 in 613)</td>
</tr>
<tr>
<td>Scarlet fever</td>
<td>5   (1 in 864)</td>
</tr>
<tr>
<td>Measles</td>
<td>2   (1 in 2,161)</td>
</tr>
<tr>
<td>Chorea</td>
<td>2   (1 in 2,161)</td>
</tr>
<tr>
<td>Enteric fever</td>
<td>3   (1 in 1,440)</td>
</tr>
<tr>
<td>Malacosteon</td>
<td>1   (1 in 4,322)</td>
</tr>
</tbody>
</table>

A mere glance at these tables shows at once how tremendously the work has increased. The number of contracted pelves I have not attempted to enumerate, but, roughly speaking, they amount to 10 per cent of the cases, and that is not counting slight contractions. It is a very striking fact that we now have so many cases of contracted pelvis to deal with, while in the early days of the hospital they were exceedingly rare. I have discussed this in my paper in the Hospital Reports, so shall not occupy your time with it now. The great increase in operative work has taken place within the last two decades, especially within the last. This brings out the great necessity there is for a new and larger hospital. I think if the benevolent public could be brought to realise how necessary a new hospital is, we should not be long without the funds.

I shall now say a few words about the men who have held the posts of chief physicians to the hospital. The staff has
always been a fairly large one, counting the district men, but space will only allow me to deal with the two chief physicians.

Dr. James Wilson and Dr. James Brown were the first two appointed. James Wilson was a Fellow of the Faculty, which he entered in 1816. He was educated in the University of Glasgow, and took his M.D. in 1837. He lectured on midwifery in the Portland Street School of Medicine from 1830 to 1838, so he was lecturing at the time of his appointment. He died in 1857. He was on the staff until his death.

Dr. James Brown was a Fellow of the Faculty, admitted in 1827. He was a native of Paisley and educated in Glasgow. He lectured on anatomy and physiology in the Mechanics' Institution, and was professor of midwifery in Anderson's University from 1834 to 1841; so he also was a lecturer at the time of his appointment. He remained on the staff until his death in 1846. If the founding of the institution was due to the efforts of Dr. Wilson, Dr. Brown did a great deal for it. He was very active in raising funds when they were sadly needed, and for many years acted as treasurer. The minutes contain various special votes of thanks conferred upon him for his services in raising funds for the institution. Both Dr. Wilson and he tendered their resignations after three years' services, in order that other medical men might have opportunities of gaining experience, but the directors refused to accept the resignations.

After Dr. Brown's death, Dr. Alexander Stewart was appointed his successor. He had been on the out-door staff from the beginning. He was an M.D. of the University, but does not seem to have been a Fellow of the Faculty. He remained on the staff until his death in 1855.

He was succeeded by Dr. J. G. Fleming, who at that time was on the out-door staff. Dr. Fleming remained as an ordinary physician-accoucheur until 1860, when he became consulting surgeon. He resigned this post in 1866. He was afterwards a director. Dr. Fleming was an M.D. of the University and a Fellow of the Faculty, of which body he was twice president. He was a surgeon to the Royal Infirmary, and afterwards a manager. In was on his initiative that a medical school was affiliated with the Royal after the University moved west. He opened the school with an address in 1874. He died in 1879. His son, Dr. W. J. Fleming, is well known to us all.

A few months after Dr. Fleming's appointment, Dr. J. G. Wilson, the son of Dr. James Wilson, was appointed on the staff. There were thus three physicians from 1855 to 1857,
DERMOID TUMOUR OF OVARY.

until Dr. James Wilson died. Dr. J. G. Wilson was professor of midwifery in Anderson's College from 1863 until 1881. He was on the staff of the hospital from 1855 to 1881 (as ordinary physician-accoucheur until 1875, and then as consulting physician until his death). The father and son were on the staff almost fifty years.

In 1865 Dr. R. D. Tannahill was appointed a consulting physician, but next year a change was made on the staff, and he was made physician-accoucheur along with Dr. J. G. Wilson. He was an L.R.C.S. Edin., M.D. of Aberdeen, and a Fellow of the Faculty. He was a physician to the Royal Infirmary and surgeon to the Lock Hospital. He died in 1887.

Dr. Hugh Miller succeeded Dr. J. G. Wilson in 1875. He was physician-accoucheur until 1883, when he became consulting physician until his death, which occurred only a few years ago.

The succeeding members of the staff are with us still, viz., Dr. Samuel Sloan, Dr. W. L. Reid, Professor Murdoch Cameron, Dr. E. H. L. Oliphant, Dr. Malcolm Black, and myself. The first four are now consultants.

In conclusion, allow me once more to bring before you the necessity there is for a new and extended hospital. I appeal to the Fellows of this Society to make this known to their friends. I feel confident that if the generous public of this great city only realised that we are hampered in our work by the want of suitable accommodation, we shall not be long without the necessary funds to build and equip a maternity hospital worthy of the second city of the Empire.

Dr. Jardine also showed a large number of specimens and instruments used in midwifery work.

On the motion of Dr. W. L. Reid, a very hearty vote of thanks was accorded him for his interesting address.

II.—FRESH SPECIMEN.

BY DR. J. M. MUNRO KERR.

Dr. Munro Kerr showed a dermoid tumour of ovary which he had removed that morning by abdominal section.
Hydrocephalus with Spina Bifida.

Meeting IV.—19th December, 1900.

The President, Dr. Robert Jardine, in the Chair.

I.—Case of Hydrocephalus with Spina Bifida.

By Dr. A. W. Russell.

Dr. A. W. Russell showed a specimen of a fœtus, born at full time, in which there was well-marked hydrocephalus and spina bifida. The mother was 21 years of age, and it was her second child. The first was born sixteen months previously, and everything was normal. During this pregnancy she experienced no inconvenience—beyond a feeling of weight in the later months. Fœtal movements were felt at the onset of labour. Owing to the prolongation of the labour, and the exhaustion resulting from severity and frequency of the pains, the child was delivered by aid of the forceps, the occiput coming down though the brow had presented originally. There was no excess of liquor amnii. There was a large frontal caput succedaneum. The placenta came away at once after the child. There was some hæmorrhage, which ceased after a hot douche. This was evidently due to a bleeding vessel in the lacerated perineum. The puerperium was normal. The specimen was sent to the Hunterian Museum, and Dr. J. H. Teacher has kindly permitted me to read the following detailed report which he had prepared:

"The fœtus was apparently quite at full time. It was not weighed. Its limbs and body are well nourished. The head is of enormous size, looking more like that of a child of three or four years, and presents the characteristic shape of a hydrocephalus, viz., great bulging out of the cranium, which appears to overhang, and dwarfs the face. The scalp is very oedematous and dark in colour; the bones of the vault could be felt to be separated from one another by considerable tracts of membrane, and the fontanelles are very large. A wide open spina bifida extends from the lower dorsal region into the upper part of the sacral region; the soft membrane between the lines of widely separated arches, was of a deep purplish colour, and flush with the adjacent skin. Cutting through it a considerable cavity was opened into, which contained no cord, but only a few thin nerve roots; it appears
to be a meningocele, associated with a condition of amytelia. There is double talipes varus. After hardening for a day in Kaiserling's fluid the scalp was cut into, letting out a very large amount of bloody serum, and considerably reducing the bulk of the head, especially in the frontal region, where there had been a large caput succedaneum. There had been a great deal of hæmorrhage into the scalp; the blood lay for the most part just over the pericranium.

"The cranium was opened through the sagittal suture, when a great deal of bloody fluid escaped, and the brain was seen inside, having collapsed into the lower part of the cavity on the left side, but still filling most of it on the right side. From subsequent examination it appears that most of this fluid came from the lateral ventricles. The brain was removed a few days later, when it had hardened somewhat, and the ventricles were incised and packed out with cotton-wool to try to preserve the shape and natural relations of the various parts, and the hardening process was continued.

"The foetus has shrunk a good deal; the head in particular looks a good deal smaller than it did at first; the scalp is left unsewn, so that the interior of the cranium may be examined. After the great increase in the size of the cavity in general, the most striking feature is the very small size of the cerebellar fossa, which is about the normal size.

"The brain is of very brown colour, owing to the engorge-ment of the pia mater with blood, which lies partly extravasated, partly in the vessels; there has been both congestion and hæmorrhage. It is very much larger than the normal brain of the child at birth, and the enlargement is at once seen to be due almost entirely to enlargement of the cerebrum; the cerebellum is quite small. The lateral ventricles are enormously dilated; the fourth ventricle and the central canal of the cord are also much dilated, but the third ventricle, infundibulum, and iter a tertio ad quartum ventriculun are not dilated to any extent. The upper part of the left cerebral hemisphere has been cut away entirely to allow of free dissection about the base of the brain. On the right only a large part of the upper and outer wall has been cut out, and the inner wall drawn up and hardened in something near its natural position, so as to show the height as well as the length and breadth of the brain.

"The great dilation of the lateral ventricles is at once apparent. The cerebral substance is greatly thinned, especially on the median aspect. The walls of the hemispheres are from 2 mm. to at most 15 mm. thick. There are numerous
hæmorrhages into their substance, which are quite recent. The fornix lies in its usual position, but the corpus callosum is raised up, stretched and thinned; and, between them, instead of the small septum lucidum, there is a wide space crossed only by a few threads of tissue, forming a very free communication between the two lateral ventricles. At the free end of the choroid plexus of the left lateral ventricle there is a small solid nodule, about the size of a pea. The ventricles have a very distinct lining membrane, about as thick as a good stout piece of notepaper. The basal ganglia of the cerebrum and the middle brain are spread out slightly, but do not appear to have suffered to any great extent from the distension of the ventricles above them.

"Sections have been made of portions of the choroid plexuses, velum interpositum, cerebrum, and cerebellum, but nothing has yet been made out which throws any light on the cause of the disease.

"The choroid plexuses and velum have quite normal appearance, except that the vessels are gorged with blood. The lining of the ventricles appears to be merely a somewhat denser layer of the same tissue as the white matter of the brain adjacent to it; it is rather more fibrous, and contains rather more cells; the epithelial lining is absent, but whether this is a defect due to the disease or due to the processes of preparation, it is quite impossible to say. In the tissue of the cerebrum the large pyramidal nerve cells are conspicuous by their extreme rarity and irregular shape. In contrast with this it is noteworthy that the corresponding elements in the basal ganglia of the cerebrum and in the cerebellum (which had not suffered any stretching) are numerous and well developed. Clearly there is an abortive condition of the essential cells of the cerebral cortex. The nodule in the choroid plexuses is merely a mass of dilated vessels in a little loose connective tissue—probably insignificant."

II.—NOTES ON A CASE OF RENAL COLIC FOLLOWED BY ABORTION.

BY DR. G. BELL TODD.

Mrs. A. G., aged 26 years, married six years, one child, 4 years. The family history is good; but twelve years ago, or six years before her marriage, she complained of severe attacks of pain in the left lumbar region, and occasionally in the left iliac region, the pain extending down the front of the left thigh. The attacks were intermittent in character, lasting
from a few minutes to a few hours, and the intervals of time between the attacks varied from a week to three or four months. Menstruation began at the age of 14 years, and her mother and medical attendant thought that her condition might be due to the establishment of that function. As she continued from time to time suffering from this condition, she consulted Sir Wm. Gairdner, who was of opinion that there was the probability of the attacks of pain being due to the passage of a renal calculus; however, nothing was seen to substantiate that opinion at the time, and as she had relief for a considerable time, and enjoyed good health, she became married at the age of 20 years. I attended her during her first confinement, four years ago, from which she made a good recovery. During her convalescence I made out by examination that she had a "left floating kidney," of which I informed her husband and herself. She afterwards enjoyed good health, and called on me on the 1st December, 1899, to inform me that she thought she was again pregnant. On the 25th of the month I was hurriedly called to see her, and found her suffering from severe pain in the left groin, and extending down the thigh. I was also shown the bed chamber, in which I found the calculus No. 1. The pains continued more or less severe all that day, and on the morning of the second day a somewhat smaller calculus, No. 2, was passed, and, afterwards the patient had relief. Knowing that she was presumably pregnant, I was quite prepared to expect that she might abort, and which actually took place on 4th January, 1900. She made a very good recovery. Her present condition is that she has enjoyed the best of health since, and expects to be confined in April next.

She has had no return of her old symptoms.

III.—NOTES OF A CASE WHERE A LARGE CALCULUS WAS REMOVED FROM THE BLADDER THROUGH THE ANTERIOR VAGINAL WALL.

BY DR. G. BELL TODD.

Mrs. M'D., aged 55 years, married thirty years, ten children, nine alive. Has always enjoyed good health till the last four years. She ceased to menstruate at the age of 48 years, and at the age of 50 she consulted her medical attendant with regard to a discharge of blood "from the womb," which came on at irregular intervals, and she became "alarmed" and thought that "something might be wrong." She was informed that there was a "tumour" present; still there were from
time to time "bloody discharges" which greatly increased her alarm. I was called to see her on the 24th September, 1899, and on examination found a dense, hard, rounded, movable body in the front of the uterus, and apparently in the bladder. On passing the sound into the bladder a large calculus could be very easily made out. I advised its removal, but, as the patient suffered so little from its presence, I was not permitted to operate till nine months afterwards, namely, on the 18th July, 1900, when I removed the large calculus now shown.

The patient being stout, with a pendulous abdomen, I preferred to operate through the anterior vaginal wall. What greatly assisted me here, by way of accident, was an old lacerated perineum. After removal of the calculus, on examining the mucous coat of the bladder, I was struck with the horny thickened condition of the anterior wall of the bladder; it was thrown into thickened folds, quite horny in appearance, resembling the gizzard of a fowl. I was, therefore, glad I had not attempted to remove the calculus by the suprapubic method, which might have involved the sloughing of the mucous membrane at the seat of the wound.

I stitched up the wound with a continuous silkworm-gut suture. The patient made an excellent recovery, the suture coming away on the seventeenth day. There was no fistulous opening, and the patient has enjoyed perfect health ever since. I took care to investigate the condition of the uterus at the time of the operation, but could make out no morbid condition present. The "bloody discharges" complained of for the last four years have completely disappeared.

IV.—DILATATION OF THE CERVIX UTERI.

By Dr. A. W. Russell.

The fact that so many different forms of dilators are to be found in the catalogues of instrument makers is proof that unanimity has not yet been reached as to the best method of dilatation of the cervix uteri. The two or three-bladed instruments, of which Sims’ is the type, and the screw dilators designed by Dr. W. L. Reid, are used by many, but the form in most frequent use is the cylindrical dilator known usually as Hegar’s. Hegar’s dilators are cylindrical throughout their length, with blunt rounded point, and each size is one millimetre greater in diameter than the preceding number. When the cervix is difficult to dilate, as it usually is in the cases that most need dilatation, it is often found almost impossible to
pass the succeeding sizes, and the forceps holding the cervix may tear through its hold more than once in spite of care. To overcome this difficulty, some dilators, such as the patterns used by Galabin, Hawkins Ambler, or Professor Murdoch Cameron, are made slightly conical. These, however, dilate the external os somewhat more than the internal os, and it is the latter that usually most requires dilatation, while they do not give you the exact measure of its dilatation. To obviate these objections, I have designed a modification in the set of dilators which I show you. These are conical from the point for $3\frac{1}{2}$ cc. (=1\frac{1}{2} inch) upwards, the rest of the stem being cylindrical. By this means the exact extent of dilatation of the internal os is measured. The various sizes succeed one another as follows:—2 mm. diameter at tip to 4 mm. at cylindrical portion, 3 mm. diameter at tip to 5 mm. at cylindrical portion, and so on, up to any higher number that is desired. By going back 1 mm. from the limit of one size, the point of the next size of dilator gets in nearly 2 cc. before it begins to dilate again, and thus secures more effective dilatation with less risk of injury. These dilators may be slightly curved or straight according to taste, the former, however, being the better pattern, as the axis of the uterine cavity is often considerably curved in cases that require dilatation. They are made of solid polished plated metal, with flattened handle, bearing, stamped on it, the range of dilatation in millimetres, and there is a distinct groove on the stem, $6\frac{1}{2}$ cc. (=2\frac{1}{2} inches) from the tip, to indicate the normal length of the uterine cavity. Not only are these dilators useful for dilatation under an anaesthetic, e.g., before curettage, but the smaller sizes may take the place of the ordinary uterine sounds, and I find that they dilate with less pain than the corresponding size of bulb-pointed sound, and patients suffering from dysmenorrhoea are often relieved for several months by a single dilatation with two or three of the smaller sizes without the necessity for an anaesthetic.

I have to thank Messrs. Gardner & Son, Edinburgh, for the trouble they have taken in making these dilators, for sending a set to show at this meeting, and for the electro block from which the illustration is taken.
V.—CASE OF MISSED ABORTION.

By Dr. J. M. Munro Kerr.

Mrs. J., aged 36, multipara, was sent to see me by her medical attendant, on account of an irregular haemorrhagic discharge, which had been going on for some months, after a prolonged period of amenorrhea.

The history was that in December, 1899, the woman menstruated as usual, but that from that time until May of this year she had complete amenorrhea. In May, she considered herself pregnant. The abdomen was distended, but she had very little digestive disturbance, and had never felt any fetal movements. She consulted her doctor in that month, because of this slight haemorrhagic discharge, which occurred every few days, and which continued until August, when I saw her.

On examining the woman, I found the cervix softened and the uterus about the size of a pregnancy at four months. I could make out no fetal movements and no heart sounds. I wrote the doctor that I thought, with him, there certainly had been a pregnancy, but that the fetus was dead. I advised its immediate removal.

As he requested me to do the operation, I packed the cervix and vagina firmly with iodoform gauze on 4th September. On the following day I removed the gauze and found the os fairly dilated, with the ovum projecting slightly through it. With a pair of forceps I removed the ovum intact. There was little liquor amnii, the placenta was very grey and fibrous-looking, and the fetus, four months old, was much shrivelled up.

It was quite clear, then, in this case that the ovum had been retained for about three and a half to four months. During all that time the woman felt quite well, and had no complaint, except the frequent slight discharge of blood.

VI.—CASE OF MISSED ABORTION: OVUM AND FOETUS RETAINED AT LEAST FIVE MONTHS, PROBABLY FOR TWELVE MONTHS.

By Dr. G. Balfour Marshall.

Mrs. B., aged 35, married sixteen years, came to the Royal Infirmary Dispensary on 13th November, 1899, complaining of pain in the back and "womb coming down." She further stated that she had not menstruated since the previous September. The patient has had nine pregnancies—two
being early abortions, three premature, and four full-time labours. Her last pregnancy ended at full time in 1895, and since then she has complained of pain (sacralache) and dragging sensation in the back, and of prolapse. This prolapse proved to be cystocele, associated with retroflexio uteri. There is nothing specially noteworthy in her history, so far as the "missed abortion" is concerned, until January, 1899. Till then she had menstruated regularly, her usual menstrual type being twenty-eight day, and lasting about two days with a scanty flow.

From January to June, 1899, she had complete amenorrhoea, when a watery discharge per vaginam commenced. The doctor called in informed her "the womb was out of place, and that he had replaced it." This watery discharge was profuse, and continued for two days, when it ceased. Shortly after this, when attending the Skin Hospital, she was put on medical treatment for the amenorrhoea she had complained about. Whether as the result of this or not, she had two apparently normal menstrual periods with scanty flow, the last occurring early in September, 1899. From this date till 13th November, 1890, when I saw her, she had complete amenorrhoea.

From the beginning of 1899, when the amenorrhoea first commenced, she had never felt very well, and was unfitted for hard work. Her appetite was poor, and she had occasionally nausea, especially in the mornings. The bowels were constipated, and defaecation frequently painful, with a feeling as if something were pressing on the rectum. This was, no doubt, due to the retroflexion, as, when I examined her on 15th November, 1899, I found a relaxed vaginal outlet with old tear of perineum, a slight cystocele, and a retroflexio uteri of the third degree, the fundus uteri lying in the pouch of Douglas, the cervix pointing downwards and slightly forwards. I had no difficulty in replacing the uterus, and noticed it was enlarged, antero-posteriorly thickened and soft. The cervix was, however, hard. I informed the patient I thought she was about two and a half or three months pregnant, and after placing a ring pessary in the vagina to keep the uterus in situ, told her to return within two months if all went well. She returned on 9th January, 1900, but as there was no change in the size of the uterus, I doubted my previous diagnosis, and told her to return another month.

During January she noticed her abdomen swollen, and when she came to the Dispensary on 13th February expressed the opinion she was pregnant, as she felt as if "something
were there." This distension was, however, due to flatulence and dyspepsia, and disappeared under treatment. The uterus was still unaltered, and I now came to the conclusion it was most probably a case of "missed abortion" or "retained ovum," taking into consideration the history of amenorrhoea, the size and softness of the uterus, and its antero-posterior thickening. The patient also suffered from attacks of paroxysmal pain at intervals, probably due to efforts of the uterus to expel its contents. It is quite possible that the rigidity of the cervix, found at later operation, may have been a factor in resisting expulsion of the uterine contents.

I kept the patient under observation till April—the uterus always remaining about two and a half to three months pregnant as regards its size.

She was then admitted to Ward 30 of the Royal Infirmary, when, on 27th April, 1900, Dr. Kelly removed the ovum and foetus, which I now show you, and I am indebted to Dr. Kelly for giving me the specimen. Dr. Kelly found the cervix so rigid that, in dilating it, he had to make incisions into its substance. As already stated, this may have been a factor in causing retention.

Examination of the ovum and foetus shows little alteration macroscopically, and there has been no haemorrhage to produce anything of the nature of a mole. The amnion and chorion seem thicker than normal, and there is a velamentous insertion of the umbilical cord, the point of insertion being about an inch and a half from the edge of the placenta. The foetus is that of a three months' old pregnancy, and broke into pieces in the process of removal.

Remarks.—The first question that arises in reference to this case is—When did the patient become pregnant, and how long was the ovum retained in utero? I think it not at all unlikely that pregnancy began early in 1899, i.e., in January, when her last menstrual period occurred, as up till this time menstruation had always been regular. The retroflexion of the uterus might account for the death of the foetus, say, in April, 1899. The uterus was said to have been replaced in June following, but in November I found a retroflexion of the third degree, and no supporting pessary.

In such an event she retained the ovum for twelve months, till it was removed. This is not inconsistent with the fact that she had a watery discharge for two days in June, and thereafter what seemed to be two scanty and apparently normal menses. This view is further supported by the fact
that she had felt more or less unwell all year. We know that a foreign body in the shape of a dead ovum can be retained many months in utero, without being thrown off, and as long as no germs gain entrance to the uterus to make its contents septic, no harm results to the patient. If organisms of decomposition get into the uterus, the ovum will putrefy and break up, and should maceration occur there is usually a dirty-brown discharge.

This case, with its prolonged amenorrhœa, is in marked contrast to that of Dr. Munro Kerr, where, after a period of five months' amenorrhœa, there was irregular hæmorrhage for four months until the uterus was evacuated. In such a case of prolonged retention of the ovum as this I bring before you, it is probable that the uterine contents are protected from the entrance of septic germs by the aseptic mucous plug lying in the cervical canal; and it has further been shown that the healthy vaginal secretion has a bactericidal power destructive to streptococci and staphylococci which may enter the vagini. On the other hand, it is remarkable how long the secundines of an incomplete abortion may be retained with a dilated cervix, and yet without the uterine contents becoming septic. I have seen a number of such cases; and, this autumn, a patient came to the Royal Infirmary Dispensary with a history of abortion and escape of a three months' foetus some four months previously, and a subsequent slight daily loss of blood. The cervix was patulous enough to easily admit the forefinger into the cavum uteri and allow of the removal of a walnut-sized portion of ovum, and yet there was no sepsis. The patient was, however; very anæmic from continuous loss of blood.

In conclusion, this is, then, a case of prolonged amenorrhœa, with the retention of the ovum for a period of probably twelve months, or undoubtedly for at least five months, until removed by operation.

VII.—RETENTION IN UTERO OF A DEAD FŒTUS FOR FOUR MONTHS.

BY DR. ROBERT JARDINE.

Mrs. A., a multipara, æt. 34, had always been attended by me at her confinements. When she was about three months pregnant, as I happened to be attending a child, she said she would probably need my services again in the following July. When she was about six months gone I was sent for, as a small amount of bleeding had occurred. I found it was very
slight. It was difficult to define the exact size of the uterus as her abdominal wall was very thick, but I failed to hear any foetal heart. She said she had quickened at the usual time, but had only felt movements for a short time. I told her I thought the foetus was dead, but I could not be absolutely sure.

A few days' rest in bed stopped the bleeding. I asked her to see me in a month's time, when I hoped to be able to give a definite opinion about the foetus. When she came to me a month later, she said she didn't believe she was pregnant at all, as her abdomen had become smaller and her breasts quite flabby. On examination, I found the uterus about the size of a five-months' pregnancy. No foetal heart and no movements were apparent. I gave a definite opinion that she was pregnant, but that the foetus was dead. She said her health had never been better, and as she was somewhat startled at my opinion, and wanted to know what was to be done, I advised her to have nothing done in the meantime, as long as her health was good, but to wait until full time, when in all probability labour would come on. I also said that if she went beyond full time I would then consider the advisability of clearing out the uterus.

Labour set in exactly at full time, and a small macerated foetus was expelled. The placenta was adherent, and it was necessary to give her chloroform to clear it out. It was in a fibroid condition. The foetus was a fifth month one. The patient made a normal recovery.

In one of my West-end Branch reports, I gave a case which I delivered at full time of a macerated fifth month foetus. The present case is the first one I have ever seen in which I have been able to make a definite diagnosis before the expulsion.

I have seen at least half a dozen cases of full time twin labours, with one macerated foetus, about the fifth or sixth month of development, and the other quite healthy. In three of the cases I attended the patients for threatened miscarriages about the time of the death of the foetus. In one of them the death of the foetus was due to direct violence. The loving father killed his unborn babe by kicking its mother in the abdomen. It was clearly a case of manslaughter, or some other kind of slaughter. Beyond punishing a man for assault, I don't suppose the law could do anything more in such a case, as an unviable foetus in utero could hardly be recognised as having rights of its own.

In one of the other cases, my having attended the woman
at the time of the death of the foetus enabled me to put a stop to a very apparent attempt to blackmail a brother practitioner. As a medical officer to a public body, he had occasion to call at her house to see one of her children. A few days afterwards she gave birth to a live and a dead foetus. Fortunately, the nurse in attendance asked me to see them, as the dead one was only half developed. A few days later the nurse reported to me that the people had brought an action against a doctor who had called at the house, and, as the door was not opened at once, had kicked it in. The door-knob was said to have struck the woman on the abdomen and killed the foetus. Several of the neighbours were prepared to swear to this.

The doctor refused to be blackmailed, and they had gone to the court. I at once volunteered to give evidence on his behalf. As soon as I appeared on the scene, they withdrew the action, and nothing more was heard of it.

How long a dead foetus, or the products of an early conception, may be retained in utero, it is difficult to decide. I have published a case of missed labour, in which the dead foetus was carried nearly a month beyond full time. In some of the cases reported, in which the time extended to years, there is no doubt that the foetus was not in a normal uterus, but in a rudimentary horn, or extra-uterine entirely.

Should I have cleared the uterus out, when I was perfectly sure of my diagnosis? So long as her health was good, I think I was perfectly justified in waiting, at least, to full time. If she had begun to suffer in any way, clearing out of the uterus would have been called for. As it turned out, the result could not have been better. In such a case, I think it is well to leave Nature to deal with the condition, so long as there is no bad effect on the woman's constitution, but to interfere at the very first indication of her health suffering. It is surprising how little a woman's health suffers from the presence of a macerated foetus in utero. We have many such cases in the Maternity Hospital, and hardly any of them have even a rise of temperature. Their systems seem to have become immune to the poison. On the death of the foetus, the channels of absorption are probably sealed up, but they must be opened up again during delivery, and yet how seldom do we have sepsis occurring in these cases. In our hospital cases, it is true, we take precautions by giving a very copious intra-uterine douche at the time of delivery, but that of itself would not prevent poisoning if the system were not in some way protected.
In the discussion that followed on missed abortion,
Dr. Kelly remarked how surprising it was that in these cases of "missed abortion" the dead ovum might be retained so long without undergoing decomposition. He referred also to two features of Dr. Balfour Marshall's case—the repeated attacks of pain indicating attempts on the part of the uterus to expel its contents, and the great difficulty experienced in dilating the cervix. The latter, he thought, might, to some degree, account for the retention of the ovum.

Dr. Lindsay said that he thought some ova retained were really cases where development was arrested owing to changes in the placenta, most commonly of a syphilitic nature.

The President, Dr. Balfour Marshall, and Dr. Munro Kerr replied.

Meeting V.—30th January, 1901.

The President, Dr. Robert Jardine, in the Chair.

I.—NOTES OF A CASE OF OPACITY OF THE CORNEA (? TRAUMATIC KERATITIS) IN THE NEW-BORN.

By Dr. Robert Jardine.

The case I have to show to-night is a very interesting one from an ophthalmic point of view. The mother, v-para, s.t. 34, was sent to the hospital by a doctor after he had failed to deliver her with forceps. The cord was found to be prolapsed, but it was pulsating strongly. The diagonal conjugate measured 4½ inches, which would give a true conjugate of 3½ inches. By direct measurement with the closed hand after delivery we found this was correct. Under chloroform the cord was easily replaced. Delivery was effected by Milne-Murray's axis traction forceps after a pretty stiff pull. The child, a male, weighed 9½ lb. Artificial respiration was necessary. The head had been grasped obliquely with one blade of the forceps over the right eye.

A few hours after birth the right cornea was observed to be opaque. The pupil could only be distinguished with difficulty. The surface lustre was somewhat diminished. The pupil reacted to light.

Dr. Ernest Thomson examined the eye on the 23rd and vol. III.
27th. On the second occasion the pupil had been dilated with atropia. He could not find any evidence of inflammatory action. On the 27th the opacity had markedly diminished. He was of the opinion that the opacity had been caused by the pressure of the blades of the forceps.

The child is now ten days old. You will notice that there is still distinct dimness of the cornea. It has cleared up considerably.

Is Dr. Thomson's explanation the true one? There is no evidence of syphilis about the mother, and the child has not shown any as yet. I have seen a very large number of cases in which there was quite as much pressure on the eye as here, and yet have never before noticed any opacity of the cornea. Very early in the embryo the cornea is opaque, and may not this be a case in which there has been delay in clearing up?

*Note.*—By a curious coincidence, we have had a second case, in which there is no doubt that the opacity was caused by pressure. The patient was delivered on 28th February. She had a scolio-rachitic pelvis, with a true conjugate of 2½ inches. The child weighed 7 lb., and was delivered with axis traction forceps. There was a depressed fracture of the left frontal bone, caused by the promontory. The right eye was found to have an opacity of the cornea exactly the same as in the first case. This was noticed immediately after delivery. The blade of the forceps had been over it. The left eye bulged somewhat, and there was a large hæmorrhage into the upper part of the orbit. The eyeball could not be examined. Three days later the clot was removed, and the eyeball was found to be intact, but the cornea was also slightly opaque.

In this case there can be no doubt about the cause. The left orbital plate is evidently fractured. The depression of the frontal bone has somewhat lessened, but it will have to be elevated when the child is a little older.

II.—CASE OF SUDDEN DEATH FROM EMBOLISM AFTER AN ABORTION.

By Dr. Robert Jardine.

Mrs. D., vi-para, æt. 33, was admitted to the Glasgow Maternity Hospital on 24th November, 1900, complaining of frequent and profuse floodings. Dr. Munro Kerr had seen her at the Western Infirmary, and recommended her to the hospital. She had had an abortion about four months before.
She was again about two months pregnant, and had lately had profuse bleedings. She was very nervous, and was evidently suffering from alcoholism. The uterus was enlarged, but the os was undilated. There was very little bleeding. The vagina was well douched and plugged. The plugging was repeated next day. After the second plug was removed, she was given chloroform in order to clear out the uterus. Hegar's dilators were used, as the os was only partly dilated. Before the uterus could be cleared with the flushing curette, she stopped breathing, and artificial respiration had to be performed for some time. The operation was discontinued, and as there was considerable oozing from the uterus, the cavity was plugged with iodoform gauze. She was freely stimulated by enemata, and hypodermic injections of ether and strychnine and a large saline injection given. Next day a pint and a half saline infusion were given into the abdominal wall. She remained very weak. Her urine was very scanty.

As she was so weak no attempt was made to clear out the uterus. The ovum came away on the 29th, but there was still some decidua left.

On the 30th, about 3:15 A.M., she awoke in a very breathless condition, and died in a few minutes.

Dr. Carstairs Douglas will show the heart, and describe its condition. The presence of the large ante-mortem clot is very interesting in view of the fact that superficially we had marked loss of coagulation of the blood. We observed that her tongue bled profusely for several hours from the slight puncture made by the forceps in keeping it forwards. There were also hæmorrhages into the subcutaneous tissues at the several hypodermic punctures and at the points of infusion. It looked almost as if she were suffering from hæmophilia in a mild form. The superficial hæmorrhages were probably due to alcoholism. The condition of her heart quite accounted for the collapse under chloroform.

Dr. Carstairs Douglas demonstrated the heart from this case, and showed the large ante-mortem clot lying in the right ventricle. It was adherent to the endocardium and musculi papillares, and extended up into the pulmonary artery. The blood during pregnancy and the puerperium has more fibrin and coagulates easier, but Dr. Jardine's case showed, on the other hand, a hæmopholic condition, as the punctures of the hypodermic needle bled profusely. He had been much struck in doing post-mortem work at the Maternity Hospital with the frequency with which he found ante-mortem clots in the
heart. He showed the Fellows a heart from a case of eclampsia, which had died a few days before, in which the right auricle was occupied by a very large clot of this kind. He referred to Heim's paper on this point in L'Obstétrique, November, 1900, in which the writer attributes the still frequent occurrence of phlegmasia dolens (in spite of aseptic midwifery) to this tendency of the blood to clot in pregnancy and the puerperium. Dr. Douglas said he hoped this year to make some observations on this matter, in the hospital, with the aid of the coagulometer.

III.—CASE OF COMPLETE TUBAL ABORTION IN WHICH...THE INTACT OVUM WAS FOUND LYING IN DOUGLAS' POUCH.

By Dr. John Edgar.

Mrs. S., æt. 30, nullipara, married two and a half years, one abortion at seventh week two years ago, was admitted into the Samaritan Hospital on 26th January, 1901, in a state of semi-collapse, and complaining of cramp-like abdominal pains.

History.—Menstruation regular till 26th November, then six weeks' amenorrhoea, during which there were morning sickness and breast symptoms. About Christmas she had for four days a "feverish chill," temperature 104° F., with pelvic pain. From 4th January till admission, there was continuous uterine haemorrhage. Several lumps (clots?) were passed at intervals with colicky pains. Not sure if membrane was expelled. On 23rd patient had a sudden attack of cramp-like pains, with faintness, retching, and cold sweat. This recurred at 10 P.M. on the 25th, and at midnight she was so collapsed that her medical attendant thought she was going to die.

On admission next day patient was still collapsed, and complained of abdominal pain, which was most severe in the left iliac region. She had also a bearing-down feeling and dysuria. The abdomen was distended and tender, and there was dulness on percussion over the hypogastrium. Per vaginam, a soft boggy mass was felt behind the uterus, but tenderness was too marked to permit of palpation of the uterine appendages. Three enemata had to be given before the bowels moved, the first time for six days.

On 28th ether was administered. Bimanual examination then showed swelling of the left appendages. When the abdominal cavity was opened a large amount of fluid blood welled out. The left tube was found distended to the thick-
ness of the index-finger, but the ostium abdominale was patent. The tube was removed along with the ovary, which contained a large and recent corpus luteum. The other appendages were normal. While sponging out the pouch of Douglas, an intact three weeks' ovum was found lying free. Patient is doing well.

IV.—CASE OF SPONTANEOUS RUPTURE OF THE UTERUS.

By Dr. Robert Jardine.

Rupture of the uterus is, fortunately, a rare complication of labour. In the vast majority of cases it arises in an obstructed labour either from excessive uterine action or more frequently from attempts to deliver. Spontaneous rupture, without any obstruction to delivery, is, fortunately, exceedingly rare. It is an appalling occurrence to have a case, which is apparently going on well, suddenly end by the uterus giving way without the least warning. In the case I am about to record, we had no warning of such an accident happening.

Mrs. C., age 32, vii-para, admitted to the Maternity Hospital on 25th January, 1900. Two nurses saw this patient at her home, and brought her into the hospital, as there had been some hemorrhage. When she came in at 11 A.M. the discharge had ceased. The os admitted two fingers. The head presented in the first position. She was having regular pains, and the pulse was good. There was no over-distension of the uterus. The resident plugged the vagina.

I saw her about 12:30 P.M., and removed the plug. There was no bleeding, and the os had now dilated to about the size of a crown piece. The membranes were intact, but there were no forewaters. The pains were increasing in strength. Careful palpation of the uterus showed that there was no internal hemorrhage. She complained of some pain low down and to the left. As labour was apparently going on naturally, I advised leaving delivery to nature.

About 2 P.M., shortly after I had left the hospital, she had a violent pain, and screamed out that something had given way. She had three of these in quick succession, and then collapsed completely. The resident, Dr. W. F. McEwen, examined her at once, and found the os fully dilated, and the head partly in the pelvis. The vaginal portion of the cervix was then intact. She was given a slight whiff of chloroform, and delivery effected with forceps. A large amount of clot and the placenta were at once removed. A large tear was felt
extending right up the left side of the uterus from the cervix to the fundus. The uterus and rent were plugged, and a saline infusion and stimulants given; but the patient died in a few minutes, just as I reached the hospital.

The uterus was afterwards removed through the vagina. The tear extended almost to the fundus on the left side. (See illustration.) The vaginal portion of the cervix had evidently given way during the delivery, as Dr. McEwen was sure it was intact when he applied the forceps. One would expect this to happen. To the naked eye, the muscular fibres appeared pale, but the uterine wall was of normal thickness. A piece was removed and hardened in perchloride of mercury solution.

Some five years ago a somewhat similar case occurred in the out-door department of the hospital. The patient, a mult-para, was being attended by two very intelligent nurses, who were positive that the head was coming down all right and everything going on well, when the patient suddenly exclaimed, during a severe pain, that something had given way. The pains then ceased, and the nurses found that the head had receded. The out-door resident was called, and found the uterus ruptured. He brought a foot down, and delivered easily. The patient was brought into hospital; but she died a couple of days later. Unfortunately, no microscopic examination was made of the uterine tissue.

The etiology of spontaneous rupture of the uterus is somewhat obscure. In the Centralblatt für Gynäkologie for February, 1898, Dr. Michael Poroschin published a most interesting paper on this subject, founded on a case of incomplete rupture of the posterior uterine wall caused by a fall on the back two days before labour had set in. The patient, xi-para, was 45 years old. When admitted the os was beginning to dilate and everything seemed normal, but when the pains became stronger she complained of pain in the abdomen and became collapsed. The uterus was found to have increased in size, and there was some bloody discharge from the vagina. Concealed accidental hæmorrhage was diagnosed. The membranes were ruptured, and a large amount of liquor amnii evacuated. Delivery was effected by expression, and the uterus emptied of the placenta and clots by Crede’s method. The uterus soon contracted and stopped the hæmorrhage, but the patient died two hours and a half later. The post-mortem examination revealed a rather deep and long
Ruptured uterus—posterior aspect.
irregular tear of the posterior uterine wall, extending through the muscular tissue, but not involving the peritoneum. He considered that there had first been a slight rupture caused by the fall, and, as no large vessels had been involved, the bleeding had not been great; but, as soon as the uterine contractions had become strong, the tearing had increased and the haemorrhage become so great as to entirely separate the placenta and distend the uterus. In my case it is quite possible that a slight incomplete rupture had occurred before the patient was admitted. This would account for the haemorrhage. I am led to think this was likely the case, because the patient complained of some pain low down and to the left of the uterus, irrespective of the uterine contractions. As careful palpation did not reveal anything abnormal, I did not attach any importance to her complaint. We got no history of any injury, but she may have overstrained herself in getting out of one of those high beds so common in workingmen's houses. The bleeding had come on shortly after she had risen.

Porochin mentions a case of Hindle's, which was published in the British Medical Journal for 10th February, 1894. The patient, a multipara, aged 42, near full time, fell on the 28th December, 1893. She went about as usual until 2nd January, 1894, when labour set in. Four and a half hours after the pains began she suddenly collapsed. The uterus had ruptured, and the fetus in its membranes had escaped into the abdominal cavity.

In Porochin's case, to the naked eye the uterus showed no special changes. Microscopic examination showed the muscle fibres cloudy, slightly outlined, with pale coloured nuclei. In the deeper layers of the torn muscles there was infiltration of blood, but neither the muscle fibres nor the red corpuscles were changed. On examining the elastic tissue he found that it was almost entirely wanting. Elastic fibres were only to be seen in the walls of the vessels, and there they looked rather angular, nodulous, and sometimes granular. The fibres were solid, without offshoots, and did not unite with one another. The elastic tissue of neighbouring vessels did not intermingle, and no offshoots passed into the neighbouring tissue. From this he concluded that the rupture was due to the want of elastic tissue.

The following is Dr. A. R. Ferguson's report of my case:—

"Rupture of wall of gravid uterus: Histological examination and report.

"(The tissue was fixed in saturated solution of perchloride
of mercury, and pieces of about 1 cm. in diameter were afterwards embedded in paraffin and sectioned.)

"A certain amount of hæmorrhage is evident at and near the ruptured edge of the tissue—red blood corpuscles being observed lying in the interstitial tissue for a considerable distance remote from the ruptured edge.

"There is distinct evidence of degeneration of the muscle-fibres in the vicinity of the seat of rupture. Many are swollen and hyaline in appearance, nuclear staining in these being practically absent. Muscle-fibres of these characters are found in the uterine tissue at a considerable distance from actual seat of rupture.

"The muscle-fibres at the actual seat of rupture are, for the most part, atrophied and shrunken, and in many places exhibit transverse or irregular fractures of the muscle substance. Nuclear staining in these fibres is absent.

"The blood-vessels of the uterine wall appear healthy, though the perivascular lymph-spaces are, in most cases, occupied by red blood corpuscles.

"Some of the sections are specially treated to demonstrate the elastic tissue constituents of the connective tissue. It is observed that elastic tissue fibres are relatively scanty near the ruptured edge. In this situation they also stain more feebly than elsewhere. Many are broken up, and present slight irregularities of contour. No decided swellings or nodes in the course of any of these fibres can, however, be detected."

From this report it is evident that not only were the muscle-fibres degenerated, but there was also scarcity and degeneration of the elastic fibres.

The case differs somewhat from Dr. Poroschin's, in that the muscle-fibres were degenerated, while the elastic elements were present, but scanty and degenerated. The degeneration of the muscular elements probably accounts for the rupture happening without any known extra strain having been thrown on the uterus, as in Poroschin and Hindle's cases.

The question arises, can one guard against spontaneous rupture during labour? I am not now referring to obstructed labours with strong uterine contractions, but to cases like the one I have just recorded. I do not think one can, as they always occur without any warning. In my case I had some ante-partum hæmorrhage, and if that had been severe or continued I would undoubtedly have interfered, and delivered the patient at once. Had I done so, I think it more than
probable that the rupture would have occurred, and I would have blamed myself as being the cause.

As to the best treatment when the rupture has occurred, I shall not deal with that to-night, but leave it for a future occasion, when I hope to give notes of a few cases we have had sent into the hospital during the last year or two.

I am deeply indebted to Dr. Ferguson for all the trouble he has taken in making such a careful examination of the tissues submitted to him, and also to Dr. John Lindsay for the excellent drawing he has made of the specimen.

V.—PLACENTAL POLYPUS.

BY DR. A. W. RUSSELL.

True placental polypus is a condition that is probably of greater interest than importance, but as it is not often seen, and as deciduoma malignum has been reported as following it, this complete specimen is shown to-night. It was removed nearly three months ago from a patient, 41 years of age, who had passed through an apparently normal labour, under the care of a midwife, about seven weeks previous to the date of operation. It was her eleventh pregnancy, the others being also normal, except one, a miscarriage at five months. The patient could not say whether the midwife had used traction or other unusual manipulation in the removal of the placenta, but she said she had had a severe flooding at the time, and had been bleeding ever since. Her anaemia and weakness were marked, and her temperature had also been rising. Her doctor feared that it might be an inversion of the uterus, and I was asked to see her. After examining her together, we decided that it was a polypus springing from the interior of the body of the uterus, and we arranged to remove it next day. Under chloroform, the cervix, soft and already well dilated, admitted the finger easily, and, in trying to locate the exact site of the growth, I detached it, leaving a roughened surface and slightly projecting stump on the posterior wall and near the left cornu. The whole uterus was well curetted with the blunt flushing curette, and the abundant débris which I now show you was removed. As the stump could not be completely reduced with the blunt curette, I followed with the sharp curette. I douchèd before and after with mercuric potassium iodide solution, and afterwards introduced an iodoform gauze drain which had been wrung out of the antiseptic solution. The cervical tissue was very soft, it being almost impossible to keep hold of it with the ordinary bullet forceps,
and it bled so freely as to require suture. The patient made a rapid and complete recovery.

The placental tissue can be traced about half way along one side of the polypus, the rest of it being blood-clot, with whitish branching framework of fibrinous material.

MEETING VI.—27TH FEBRUARY, 1901.

The President, Dr. Robert Jardine, in the Chair.

New Fellows.—The following were admitted as ordinary Fellows:—Finlay Stewart Campbell, M.B., C.M.; James Parker, M.B., C.M.; D. S. C. Reid, L.R.C.P. and S.E., L.F.P.S.G.; John Hammond Teacher, M.A., M.B., C.M.

I.—FRESH SPECIMENS.

A. By Dr. G. Balfour Marshall.

Large ovarian cystoma: Operation: Recovery.—I bring this specimen before the Society as an ovarian cystoma is now rarely permitted to grow to such an enormous size.

Mrs. A., aged 67, first noticed a swelling in the lower half of the abdomen on the left side in March, 1900. She was advised to leave it alone, and, as a consequence, the tumour continued to grow until she could no longer move about. I first saw her on 3rd February, 1901, and noted the following:—She was much emaciated, pale, and haggard looking. The nates and lower limbs were tensely dropical, making locomotion very difficult. The abdomen was completely filled by an enormous cystoma, and projected downwards over the thighs. The lower ribs were pressed outwards, and the viscera so displaced and pressed upon that the cardiac apex was above the fifth rib, the stomach only admitted about 8 oz. of fluid nourishment at a time, and there was considerable dyspnæa on slight exertion. The cystoma was very fluctuant, with a solid portion in front extending from umbilicus to near pubes, and about 5 inches across. This portion proved, at operation, to be firmly adherent to the peritoneum, having undergone malignant degeneration. The skin of the abdomen showed numerous striæ owing to the excessive stretching.
cussion note was everywhere dull, except over a limited area posteriorly in both flanks.

The measurements were:

- Circumference just above iliac crests, 46½ inches
- At umbilicus, 45½ "
- Tip of sternum to pubic symphysis, 24 "
- Ilio-umbilical lines, 12 "

I operated on 10th February, 1901, making a 5 inch incision below the umbilicus. The tumour was so firmly adherent that no peritoneum could be distinguished, and in searching for it I opened directly into the solid portion. By keeping outside the cyst wall, I worked upwards until I reached the abdominal cavity a little above the umbilicus. The cyst was everywhere free from adhesions, with the exception of the anterior portion already mentioned. Using a small trocar to avoid sudden reduction of pressure, over 32 pints of greenish fluid were slowly withdrawn.

The tumour proved to be composed of one enormous cyst, with a large solid portion in front composed of cysts the size of a pea, containing a tough gelatinous fluid. This solid portion was undergoing malignant degeneration, and had to be stripped from the anterior abdominal wall, to which it was firmly adherent. There was no distinct pedicle to the cyst, as it had partly grown between the folds of the right broad ligament, the Fallopian tube being stretched round the base of the tumour anteriorly. The ovarian artery was ligatured close to the uterus and at the infundibulo pelvic ligament, and then the base of the cystoma was dissected out, followed by the ligaturing of the top of the broad ligament.

On the second and third day after operation large quantities of urine were passed—8 to 10 oz. every hour or so—due to absorption of fluid from the dropsical lower limbs. This caused great exhaustion, but after relief was obtained from this constant urination, the patient did well, and made an excellent recovery.

_B. By Dr. John Edgar._

_Suppurating intraligamentous ovarian cyst.—Mrs. C., æt. 34, was admitted into the Samaritan Hospital on 6th February, 1901, complaining of severe premenstrual pain of one and a half year's duration. Three children, the youngest 8 years old. Menstruation regular and free from pain till a year and a half ago; since then, three to five weekly, with severe shooting pains in pelvic region for two weeks before each_
DISCUSSION ON AUSCULTATION IN


A year ago she was for six weeks in the Edinburgh Royal Infirmary, where she was examined under chloroform, but no operation was performed. She was told she had a tumour which would disappear at the menopause. The pain, however, afterwards increased so much that she sought admission into the Samaritan Hospital in order to have the tumour removed.

Examination.—Patient very stout. Abdominal wall pendulous in front. Small umbilical hernia. A mass, fully larger than a child's head, was felt to the right of the middle line, and extending up to the umbilicus. It was smooth, globular, tense, and non-sensitive. Per vaginam, it was found to be closely connected with the uterus.

Operation.—On 23rd February, 1901, a mesial incision was made up to and including the umbilicus. The tumour was then found to be an intraligamentous cyst of the right ovary, surrounded by numerous vascular adhesions. On tapping the tumour, a purulent fluid exuded. The cyst was then enucleated with considerable difficulty. The other ovary, which was also found to be cystic, was removed, with its corresponding tube. The uterus was then separated from the bladder, to which it was firmly adherent, and, finally, after paring the edges of the umbilicus so as to cure the hernia, the abdominal incision was closed with two layers of sutures.

[Subsequent note.—Patient made an excellent recovery.]

C. BY DR. COLQUHOUN ADAM.

Dr. A. W. Russell showed for Dr. Colquhoun Adam a case of meningocele in a new-born dead child.

D. BY DR. JOHN LINDSAY.

Dr. John Lindsay showed two specimens of human embryo in a very early stage of development.

II.—DISCUSSION ON DR. ALEX. MACLENNAN'S PAPER ON "AUSCULTATION IN THE MANAGEMENT OF LABOUR." ¹

Dr. Maclellan opened the discussion by giving a résumé of the principal points in his paper, on which he wished the opinion of the Fellows.

¹ This discussion was postponed from meeting on 23rd May, 1900. (See Transactions of Society, vol. ii, p. 209.)
Dr. Carstairs Douglas said he agreed with Churchill that the first sound of the foetal heart-beat was the stronger. With reference to the relation of rate to sex, he was inclined to consider it rather as a relation of rate to weight—the larger the child the slower the heart—and since, as a rule, male infants were larger than females, it followed that usually a foetus presenting a slow beat turned out to be a male. One's calculations here, however, could be easily upset by the presence of a large female child.

Dr. G. Balfour Marshall said—The thanks of the Society were due to Dr. Maclennan for bringing forward such an interesting and instructive paper, as it was practically a condensed monograph on the subject. It gave evidence of much labour, judging by the copious bibliography, and he was to be congratulated. Auscultation is of the utmost value in the management of labour, and is, unfortunately, too much neglected, considering that it often gives us such information as guides us when to interfere on behalf of the child. Last year I attended a case where uterine inertia set in early in the first stage of labour, the membranes rupturing when the cervix was only the size of a crown, and allowing all the liquor amnii to drain away. The patient was permitted to remain in this condition for twenty-six hours, as auscultation every few hours proved the child was not affected. It was not till the lapse of this time that the stethoscope gave indication that interference was then necessary, so the child was delivered by forceps after artificial dilatation of the cervix.

Incident.—The foetal heart is usually, about mid-term, best heard near the "fundus uteri," and may be noted as early as the seventeenth week; but the earliest I have detected it is at the eighteenth week. It is, however, very difficult to make out so early, and I have frequently listened for it in vain before the twenty-fourth week. I am almost inclined to doubt Underhill's statement that he heard the foetal heart so early as the thirteenth week, as at this period the foetus is so small, and the uterus barely above the pelvic brim.

Frequency.—I agree with Dr. Maclennan that the cardiac beats are very difficult to count, and a mistake may easily be made. This was brought prominently to my mind by a case where I detected two points of maximum intensity in the foetal heart-sounds—one on the left side of the abdomen, low down, the other on the right, higher up. The difference between the two seemed to be ten beats per minute, and from
this I diagnosed twins, the uterus at the same time being larger than usual. When the cervix was sufficiently dilated to allow the presenting part to be made out, it proved to be a face case, and not twins at all.

I consider it guess work to prognose a male birth from hearing a slower or more forcible heart-beat. I have been as often wrong as right in foretelling the sex, and our expected male may prove to be a large female child.

In the diagnosis of pregnancy.—Dr. Maclellan says that, “in every case after the seventh month these sounds should be heard if the child is alive.” In this I do not agree with him. No doubt the sounds are there, but we may not hear them however carefully we search; it may be owing to a thick abdominal wall, abundance of “liquor amnii,” or because the foetus is lying with its back posteriorly. This is in contrast to these cases where a mother thinks her child is dead because she has felt no foetal movements for a fortnight, and yet we can assure it is alive by hearing the foetal heart. Where the sounds are difficult to locate with the stethoscope, a good method is to lay a towel on the abdomen and listen with the ear placed directly over the uterus. I have detected the foetal heart by this procedure after previously failing with the stethoscope.

In the diagnosis of presentation, &c.—Auscultation combined with palpation is most valuable in aiding us to diagnose both presentation and position, the umbilicus being the usual guide, but owing to the variable position of this spot we must not depend on auscultation alone. If the foetal head is kept above the brim, e.g., by a deformed pelvis, the point of maximum intensity of the cardiac beat will be higher, and error must be avoided in this respect.

In management of labour.—Auscultation of the foetal heart should never be neglected during labour, more especially after premature rupture of the membranes in the first stage and during the second stage. We may thus have an indication that interference is necessary for the sake of the child, when otherwise it would not be suspected.

Absence of cord pulsation during labour should not be taken as an indication that the child is dead. Over a year ago I attended a case of premature labour at the seventh month, the presentation being transverse, the cervix well dilated, and the cord prolapsed. No foetal heart sounds were heard, and the cord was pulseless, although in no way compressed. After version, which was at once performed, a convulsive movement of the child’s body, twice repeated, showed that the foetus was
alive, so I delivered rapidly with forceps, the fœtal head being high up owing to a flat pelvis with a 3 inch conjugata vera. After delivery, I found the fœtal heart feeble and below 100, the child in a state of asphyxia pallida. It was, however, resuscitated by artificial respiration continued for forty minutes, and the child is alive to-day.

The President said that they were all deeply indebted to Dr. Maclellan for the very able and exhaustive paper he had given them. The different points had been so fully dealt with that he did not think there was much that he could add. He would like to emphasise what Dr. Balfour Marshall had said about the difficulty of deciding that the fœtus was dead when no heart sounds could be detected. Last year they had had a case in the Maternity Hospital for several months, and on several occasions they had been unable to detect any fœtal heart sounds, while at other times they were quite audible. A live child was born at full time. He had recently seen a case in which the fœtus was supposed to have perished. He could not hear a fœtal heart, but he had detected fœtal movements through the stethoscope, and gave an opinion that the fœtus was still alive. It was born alive at full time.

He thought that auscultation ought to be much more systematically used during labour than was usually the case. He had to confess that he himself was guilty in this matter.

Before calling upon Dr. Maclellan to reply, he begged to tender him the thanks of the Society for the most interesting paper which he had communicated.

Dr. Maclellan replied, and thanked the Fellows for the way in which they received his paper.

III.—NOTES OF THE PROGRESS OF CURE OF A CASE OF PERSISTENT CYSTITIS WITH PHOSPHATIC CONCRETIONS.

By Dr. A. W. Russell.

Very few of the disorders that come under the notice of the gynaecologist are more trying to the practitioner or distressing to his patient than the class of cases in which vesical irritability and pain are the predominant symptoms, and most of us have encountered patients whose life has been on this account a constant misery, hardly relieved even by the hours of sleep. In some it has been almost impossible to discover, either in the bladder or out of it, an adequate reason for the irritability;
but not the least difficult to cure, or even to relieve, though perhaps the easiest of diagnosis, are the cases, such as one of which I wish to give an account to-night, which are associated with chronic cystitis.

The patient is 41 years of age, married, and the mother of three children. Another pregnancy, about two years before the birth of her third child, resulted in an abortion at the third month. She came to the Dispensary of the Samaritan Hospital in the beginning of August, 1898, complaining of frequency of micturition and almost constant pain over the bladder and towards the left side and back. There was also pain, described as "scalding," during micturition. The urine contained pus and blood, and showed a great quantity of thick "ropy" deposit which was mixed with a muddy granular material. Her bladder began to trouble her soon after the birth of her second child, eleven years ago, and she was admitted a year later into St. Peter's Hospital, London, where the bladder is said to have been curetted for ulceration. She experienced only temporary relief, and at frequent intervals ever since has required treatment, by washing out the bladder and other means, for the relief of her misery. As the case required in-door treatment, she was admitted to the Samaritan Hospital on 16th August, 1898. She was then carefully examined under chloroform by Dr. Edgar, Dr. Tindal, and myself. As the uterus was not in a satisfactory condition, it was curetted in the usual way. The urethra was afterwards dilated, and the bladder examined by means of Kelly's speculum and the electric light. Several patches of whitish deposit were seen on the mucous membrane. Menstruation came on four days later, blood appeared in quantity in the urine, and micturition was very frequent. After a fortnight the patient was again chloroformed for treatment of the bladder. After douching, which washed out little phosphatic masses, I dilated the urethra to admit my little finger, and, finding the bladder practically encrusted with phosphatic deposit, I gently and patiently rubbed it off, and then gave a boracic douche. As I had used ichthyol with very good result in one or two persistent cases of cystitis, which other means of treatment had not relieved, I now injected and left inside the bladder an ounce and a half of a warm 4 per cent solution of ichthyol. This was used several times afterwards. The urine continued to be alkaline, and boracic acid was given, but it did not agree. Benzoic acid was also tried. Before her discharge from the hospital, the bladder was again examined with Kelly's speculum, and it was noted as much less inflamed, and the sound
discovered no deposit. The vesical irritability, however, was not satisfactorily relieved.

Some months later I saw the patient and examined her urine, which was as thick as ever. The case did not look promising, but I encouraged her to hope for cure. With her doctor I examined her, and found that no further deposit had taken place.

About a year after being in the Samaritan Hospital, she was examined by Dr. J. H. Nicoll and myself by means of the cystoscope. We saw no signs of growth nor of deposit, but there was well-marked congestion with enlargement of the blood-vessels. I had at this time been thinking about the effect of frequent injections of a dilute solution of nitric acid in the hope of dissolving the phosphates, and I decided to try this and to combine with it a solution of nitrate of silver in the following proportions:—Nitrate of silver, 16 grains; dilute nitric acid, 30 minims; water, 2 oz. After a boric acid douche, a drachm of this solution was added to 2 oz. of warm water, and the solution was then slowly introduced into the bladder. After several injections relief was so evident that it was continued daily until the patient was able to sleep through the night without being disturbed more than once, and to retain her urine for two or three hours at a time during the day. The nitric acid was afterwards increased to 60 minims. This treatment was continued for some months, the injections being given less frequently as the case improved. There was a corresponding improvement in her general health. During the last six months she has had no injections of any kind, has had no recurrence of her vesical irritability and pain, and she considers herself to be now in perfect health.

Remarks.—The details of this case have been given to encourage perseverance and patience in the treatment of these chronic and apparently hopeless conditions, and also in order to direct special attention to the undoubted benefit of repeated injections of dilute solution of nitrate of silver and free nitric acid.

Dr. Alex. Maclellan suggested making an artificial vesico-vaginal fistula in such an obstinate case.

Dr. Carstairs Douglas said that these phosphatic concretions, which were specially apt to form in the senile bladder, were often very troublesome. He examined such a concretion at the Clinical Research Laboratory last October, where the pain and distress had been so marked, and the hæmorrhage
(probably from accompanying ulceration) so decided as to give rise to the suspicion of malignant disease. He regarded ammonium benzoate, given internally, as of little use; it was excreted as hippuric acid, which was a very weak acid. Much better results were to be obtained from bladder douches, such as Dr. Russell had employed, consisting of weak solution of silver nitrate acidulated with nitric acid.

IV. — CASE OF GENERAL SUBACUTE ARTHRITIS APPARENTLY ORIGINATING FROM, AND CURED BY REMOVAL OF, SEPTIC FALLOPIAN TUBES.

By Dr. T. K. Dalziel.

A. F., aged 34, admitted 10th January, 1901.

Previous History. — The patient had rheumatic fever thirteen years ago, and was at that time nine months an invalid. In October, 1899, when lifting a heavy wardrobe, felt that she had strained herself, and was subsequently ill, off and on, for six weeks. She was in Barnhill Poorhouse, where she had twice chloroform and was operated upon, but she did not know what was done.

History of present illness (8th January). — The illness began a week ago with sickness and vomiting, attended with some diarrhœa, which lasted three days. On 8th January, on trying on a pair of boots, felt a sudden pain in the lower abdominal region, followed by sickness and vomiting, and pain so severe that the patient lay moaning all night. On 10th January she was admitted to the hospital ward, when her temperature was found to be 100°8°, pulse 88, and respirations 20. The face was anxious-looking, and the eyes a little sunken, the tongue furred, but not dry. In the left iliac region great pain was complained of on pressure. Elsewhere there did not appear to be any tenderness over the abdomen. On 12th January the patient's temperature had fallen to normal, she felt better, and the tenderness was less. On bimanual examination, a tumour was discovered in the region of the left ovary. On 13th January the temperature again rose to 100°8°, though normal in the morning. On this day she first complained of a severe shooting pain in the left knee-joint, which was found to be slightly swollen. On the 14th the temperature was 100° in the morning. Pains were complained of in all the joints of the lower extremities. On the 15th pain had extended over the lower half of the abdomen, and was complained of also in the right elbow and the joints of
the left hand. On this day she was seen first by me, when, on bimanual examination, one readily determined the existence of considerable thickening round both Fallopian tubes, and marked tenderness on the left side. Parts were also somewhat inmobile, suggesting numerous adhesions. On the following day, 16th January, all the joints of the hands, and indeed of the whole upper and lower extremities, were extremely tender, swollen, and reddened. Especially marked were the finger-joints; the slightest movement caused excruciating agony. Although it was not considered probable that there was any pus present, it was deemed advisable, in view of the history of the case, to remove the uterine appendages, and this was accordingly done on the following morning.

They were removed, though with difficulty, owing to the numerous recent and also old adhesions which matted the whole parts in the pelvis together. Bleeding having been arrested, and the peritoneal toilet completed, the wound was completely closed, and the patient placed with the head lower than the feet. The following morning, 18th January, the temperature was 98.8°, and although there had been some sickness and vomiting during the night, it was very remarkable that the pains had already almost disappeared from the joints.

On 19th January there remained slight erythema of the small joints of the hands.

On 20th January it was found that there was some uterine discharge, which, however, disappeared in a few days with an antiseptic douche, so that on the 25th of January the patient was practically well, though kept in bed until the middle of February, when she was allowed up and about.

The President had lately under his care a case of gonorrhoeal arthritis of the knee-joint in a woman prematurely delivered at the eighth month. Staphylococci were found in the fluid removed from the joint. The patient died of septicemia, probably due to an autoinfection from this, and not by infection through the uterus, although the patient had a gonorrhoeal discharge which gave the infant ophthalmia.

Dr. Munro Kerr thought that it was hardly correct to suggest that the arthritis was due to infection from the septic Fallopian tubes, as she had previously had acute rheumatism before any pelvic affection occurred. Probably septic absorption was sufficient to start the inflammation in joints already susceptible.

Dr. Andrew Richmond recently saw a young woman who
died apparently of rheumatism. Pus was found in the affected joints, and post-mortem revealed septic abortion remains in the uterus.

Dr. A. R. Gunn was struck with the suggestiveness of Dr. Dalziel's paper. He had often seen gonorrhœal rheumatism in the male, and said that rheumatism associated with disease of the generative organs was often found.

V.—A SHORT NOTE OF THE PATHOLOGICAL CONDITIONS FOUND IN A CASE OF MITRAL REGURGITATION ENDING FATALLY SHORTLY AFTER DELIVERY—WITH SPECIMEN.

BY DR. CARSTAIRS DOUGLAS.

Cases of organic valvular disease of the heart arising before or during the course of pregnancy, and in which a fatal termination is precipitated more or less directly by the act of parturition, are, fortunately, not very common, though at the same time they are far from being rare. Having lately had the opportunity of performing the post-mortem examination in such a case, I take this occasion to present to the members of the Society a few remarks on this matter.

J. F., at 26, ii-para, was admitted to the Glasgow Maternity Hospital on 6th February, 1901, at 9 A.M., having been in labour for an hour and a half. On admission, the os was found to be three-fourths dilated, and the presentation was vertex. The patient's legs were oedematous, respiration was rapid and laborious, and numerous râles were heard over the chest. The heart's action was rapid and forcible, and a loud blowing systolic (V.S.) murmur could be heard in the mitral area. No other murmur was distinguished. The previous health of the patient had been bad for some time; she suffered from cough, breathlessness, and swelling of the feet. She had a severe attack of chorea in childhood, scarlet fever once, and recurring attacks of rheumatic fever. Her first confinement had passed off naturally.

At 11 A.M., two hours after admission, the bag broke, the os being fully dilated. The patient's dyspnœa now became greatly aggravated, and she could not lie down. Forceps were therefore applied, and easy delivery effected without chloroform. The child, a healthy male, was alive; it weighed 5½ lb. The first and second stages had together lasted four hours. The placenta came away in ten minutes. After delivery, stimulation with whisky, digitalis, and strychnine
was carried out, but the breathlessness quickly increased, the heart's action became extremely rapid, and death occurred at 4.30 p.m., exactly five hours after delivery.

I performed the post-mortem on the morning of 8th February. The body was that of a well-nourished young woman, and showed slight general icterus. Rigor mortis was distinct, there was slight œdema of the ankles, and the pupils were equal and moderately dilated. The subcutaneous fat was plentiful, and the muscles somewhat dry. When the thorax was opened, the lungs were noticed to be bulky and slate coloured. There were fully 12 oz. of straw-coloured fluid in each pleural sac, and several ounces in the pericardium.

The heart was enlarged, but it was noticed that neither the right auricle nor ventricle appeared unduly engorged. The left auricle was dilated, and contained a firm adherent ante-mortem clot, as large as a bantam's egg. The left ventricle was hypertrophied, while the mitral valve was found to be distinctly incompetent, with sclerosed and shrunken cusps, but no stenosis. A long slender ante-mortem clot extended from this ventricle into the aorta; the aortic valve was healthy. The right ventricle was moderately dilated, and both it and the right auricle contained ante-mortem clot. The tricuspid valve ring was dilated. The left lung showed marked œdema and brown induration; the right revealed the same morbid conditions, and, in addition, congestion of the lower third. The liver showed the typical appearance of chronic venous congestion. There was no ascites. Unfortunately, I had several small cuts on my hands, and was obliged at this point to refrain from further examination. The uterus, it may be noted, was empty, and perfectly normal. There was a recent corpus luteum in each ovary, and the venous plexus of the broad ligament was distinctly engorged.

Such, then, is a short note of this case, and in view of the long-standing history of cardiac disease, and the evidence of failure of compensation as shown by the hydrothorax, the œdematus and congested lungs, the nutmeg liver, and the dropisical legs, one is forced to the conclusion that nothing further could have been done for the patient, and that delivery simply gave the coup de grâce in an already hopeless case. Many cases of mitral regurgitation in so advanced a state as this never reach full time, abortion terminating the pregnancy in its earlier months. Cases of mitral regurgitation, unless advanced, do not usually die at parturition, for though both pregnancy and labour throw an increased strain
upon the heart, no special difficulty is experienced in driving the 
blood forward, provided, of course, there is no aortic stenosis.

In mitral stenosis, however, the case is very different. Berry Hart speaks of it as one of the most serious conditions in obstetrics, and notes that of eight cases which he reported or investigated, a fatal ending occurred in seven. Regarding the matter, Hart reasons thus:—"During pregnancy we have imposed on the heart the task of driving a larger bulk of blood through the ordinary circulation, and an additional area formed by the enlarging uterus and placenta. For this extra task the left ventricle of the heart normally hypertrophies. Mitral stenosis is in itself a serious cardiac disease, apart from any pregnancy, as much as the weak left auricle soon fails in its increased duty, the lungs become engorged, and the right side of the heart dilated. If the work of pregnancy, however, be added, then we get compressed into a few months what otherwise might have taken years; so that at the beginning of labour we get such failure of compensation that we have a dilated and weak left auricle, congested lungs, and a dilated right heart. When the labour is finished, and free hæmorrhage does not occur, we get returned to the right side of the heart the extra amount of blood before accommodated in the uterine and placental sinuses. The right heart more or less speedily becomes distended and the lungs engorged, so that we may get death with over-distension of the heart, or great dyspnoæa and threatened death, or sudden pulmonary œdema. I am well aware," says Hart, "that this view of the over-distension of the heart after the third stage has been disputed, and that it has been alleged that the abdominal veins can accommodate the extra amount of blood. This objection has always seemed to me absurd, inasmuch as it could also be made to prove that in a normal body the blood should not return to the right side of the heart at all." Berry Hart, therefore, recommends that in cases of mitral stenosis one should, after the completion of the second stage, feel no alarm at even free hæmorrhage, but should be specially on the outlook if hæmorrhage is scanty. Ergot, he says, must not be used. If the circulation become embarrassed, he advocates strophanthus in full doses, and dry-cupping over the præcordia. If these do not relieve, venesection is to be performed from the arm.

I may say that all obstetricians do not countenance Hart's views. Spiegelberg, for example, says that loss of blood is dangerous. P. Müller merely advocates as rapid delivery as is consistent with safety, and says that as sudden alterations

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1 P. Müller, Handbuch der Geburtshilfe, 1888, Bd. ii, a. 909.
of blood-pressure are dangerous in these cases, when the uterus is emptied sand-bags should be laid on the patient's belly, as recommended by Lahs and Fritsch. Dakin makes no reference to this special point in treatment, though he says the most dangerous period is the first week after delivery. In the American Text-book of Obstetrics (1890), the article on this subject is written by the late Dr. Parvin, who gives in some detail the treatment according to Hart, and makes reference to the plan first suggested by Fraser Wright, of giving nitrite of amyl during delivery.

In the case I have brought before your notice to-night neither hæmorrhage per vías naturales nor venesection would have made any difference, and the treatment as carried out was correct in every way.

When we meet with mitral disease, whether regurgitation or obstruction, in the course of pregnancy, the case should always be watched with care, and the patient enjoined to take as much complete bodily rest as she possibly can, in order to lighten the heart's work in every way. The slightest sign of want of compensation should be treated at once, and I prefer to use strophanthus. It has a much less effect as a vasoconstrictor than digitalis (if, indeed, it has any at all), acts more promptly possibly, and has practically no diuretic effect. It is, in short, more of a pure cardiac tonic. The greatest care should be taken to avoid bronchitis, or anything else likely to embarrass the pulmonary circulation. If compensation fail markedly, it may be necessary to interrupt gestation. Both Fehling and Kaltenbach say this should be done on occasion. I have done this myself. Some six and a half years ago, when practising at Skelmorlie, I had under my care a woman with marked organic disease of the mitral valve, certainly incompetence, and probably stenosis too. She had already had several children before she came under my care, and there were then slight indications of failing compensation. She became pregnant again, went to full time, and I delivered her in September, 1894, when she nearly died. She came round, and gradually returned to her normal. I always treated her chiefly with strophanthus.

Within a year she was again pregnant, and I determined to empty the uterus, which I did about the tenth week. She made a good recovery. I recollect I had great difficulty, contrary to what one might expect, in starting the abortion.

1 W. R. Dakin, Handbook of Midwifery, 1897, p. 503.
In 1898, after I had come to Glasgow, she again became pregnant, and once again gestation was interrupted. Compensation was, however, failing rapidly, and she died a year later of heart disease.

Only this week I was consulted by a young married woman on account of breathlessness. I found she had one of the purest and most marked presystolic murmurs I ever heard, accompanied by a very distinct thrill. She has been pregnant once, and then, fortunately for her, aborted. I felt obliged to warn her of the great risk she would run if she became enceinte, and if she does so I will follow her career with a lively and somewhat uncomfortable interest.

In conclusion, I may state, to satisfy those who have a leaning towards statistics, that among the 51,000 cases delivered in the out-door and in-door departments of the Glasgow Maternity Hospital during the thirty years between 1869 and 1898, there were 10 deaths from cardiac disease, out of a total mortality of 401. This cause was, therefore, responsible for 2·5 per cent of the deaths, 1 out of 5,100 women succumbing to it. For these figures I am indebted to the valuable paper (to be published next month) compiled by our President, Dr. Jardine, to whom, also, I am indebted for permission to publish the clinical notes of this case.

The President referred to the value of bleeding in these cases, and agreed with Dr. Berry Hart's views. Dr. Balfour Marshall referred to a case of a patient with mitral stenosis whom he had twice delivered. The first time she nearly died, a fatal issue being expected any hour during the first week of the puerperium. During the second pregnancy he prepared her for labour by administration of cardiac tonics and keeping her in bed more or less during the latter half of pregnancy. During labour the cervix would not dilate owing to a firm cicatrix. In manually dilating the cervix it tore into the vaginal fornix, and bled severely. He purposely allowed the patient to lose some 12 oz. of blood, and then brought down the foetal head by forceps. The hot douche and plugging with gauze were required to arrest the haemorrhage from the torn cervix after labour. As a result of this blood-letting, the patient had an excellent puerperium, the pulse never rising above 90, whereas in the previous pregnancy it varied from 120 to 140.

Dr. Carstairs Douglas, in reply, said that though cases of

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organic heart disease experienced almost always an increase in their distress at the end of the first stage, the really serious time, especially in the stenosis cases, was at the end of the second stage, when more blood was thrown into the general circulation with some suddenness. He would like to add that cardiac cases generally bear anaesthesia very well during labour.

MEETING VII.—13TH MARCH, 1901.

The President, Dr. Robert Jardine, in the Chair.

I.—TWO CASES OF MEASLES IN Puerperal WOMEN.

By Dr. Robert Jardine.

Puerperal measles is of sufficient rarity to warrant me in placing the two following cases on record. They both occurred in the Glasgow Maternity Hospital during the hospital year 1896-97. Several months intervened between them, so there was no question of the one having infected the other. One of our nurses also had measles, but she was not infected from either of these cases.

CASE I.—A. M'K., single, æt. 30, i-para, admitted 11th December, 1896, delivered 12th December. The vertex presented in the left occiput anterior position. Forceps was used in the cavity on account of the second stage being prolonged. The child was alive, and weighed 9½ lb. The perineum was slightly ruptured and required two stitches. Her puerperium was perfectly normal until the seventh day, when her temperature rose from 99° in the morning to 101° in the evening. Until the thirteenth day the temperature was never below 100° F., and reached the highest point, 103·4° F., on the evening of the eleventh day. On the morning of the thirteenth day it fell to 99° F., and she was covered with a copious measles rash which had come out during the night. During all these days she had never complained of any special pain or discomfort except from the fever. The lochia were sweet, and involution of the uterus had gone on steadily. She never showed any signs of coryza. I could not account for the temperature, but felt sure that it was not due to septic absorption. She was given quinine from time to time.
MEASLES IN Puerperal WOMEN.

She was a Highland servant girl, and, like many of them, had not had measles during her childhood. The source of infection, we afterwards discovered, had been a child who was sickening with measles, in the house the girl had lodged in, the day the patient was admitted to the Maternity Hospital. The incubation stage had lasted fourteen days.

She was at once removed to Belvidere, and her child, which up to then had shown no signs of measles, was taken charge of by her friends. Unfortunately, I could not gain any information as to whether or not it took the disease. The patient made a good recovery in Belvidere.

CASE II.—A. G., single, æt. 28, ii-para. This girl had been in the hospital as a waiter-on from 9th November, 1896, until the time of delivery, 3rd April, 1897. I am glad to say this system of taking in pregnant women to do part of the work of the hospital has now been abolished. She, along with the other maids, slept out of the hospital in a house across the street. She had been working about the hospital as usual on 3rd April, although she had felt out of sorts with a bad headache, but there had been no marked coryza. As labour was beginning, she was brought into hospital at night, and the resident then noticed the rash beginning to show. Her temperature was 99° F. The labour was normal, lasting nine and a half hours. There was no tendency to post-partum haemorrhage. The child, a female, weighed 7½ lb. Next day the rash was well out. We kept her in hospital for three days and then sent her to Belvidere. The highest point the temperature reached, 101° F., was on the evening of the first day.

I believe she made an ordinary recovery in Belvidere. The child, which had remained with her in the hospital, was sent to the receiving house, and was visited from time to time, but it did not develop the disease for a fortnight at least. The source of infection I could not determine, but it certainly was not in the hospital. None of the other maids took the disease.

In both of these cases the attacks were mild. In the first the catarrhal signs were entirely absent, and were only slight in the second. Cases have been recorded where the foetus had been affected in utero, and showed the rash within a few hours of birth. In the second case, one would have expected this, but not in the first. The second child did not develop
the disease within a fortnight, although exposed to the infection by being in bed with the mother for three days. It would be interesting to know if that child ever takes measles. It may have been rendered immune to the poison.

These are the only two cases I have met with, but one or two others have been recorded in the Hospital Reports. Some years ago I attended a patient in her second confinement, and found on paying my first visit afterwards that her first child had been put into the bed along with its mother, as it was so peevish nobody could do anything with it. I found it was developing measles. It remained with the mother, and she suffered no evil effects, but she had had measles in her infancy. The new-born babe, however, showed the rash distinctly on the eighth day. It made a good recovery.

The classical case recorded by Sir James Simpson so many years ago, and those collected and recorded by Dr. Underhill, would lead one to suppose measles was a very dangerous complication of the puerperium. Professor Simpson, I remember, taught us that it was distinctly a dangerous disease in a puerperal woman. The case recorded by the late Dr. Angus Macdonald, in the Edinburgh Obstetrical Society’s Transactions, led him to believe the disease was not so fatal as was generally supposed. My two cases tend to show the same, and I have brought them before you to-night in the hope of learning the experience of the Fellows generally.

Dr. G. Balfour Marshall referred to a case of scarlet fever in a new-born child, the mother remaining immune. The infant turned ill on the second day after birth, and twenty-four hours later the rash of scarlet fever appeared. The source of infection was in a house next door in the same stair. The period of incubation could not have been more than twenty-six hours. The mother consented to take the risk of nursing her child, and, fortunately, escaped infection. This case was interesting, as scarlet fever is supposed to be specially dangerous to a puerperal woman. Another point was the undoubted short period of incubation of the scarlet fever in this child.

Dr. J. Edgar mentioned a case where a puerperal woman remained immune from measles although three children were ill with this fever in the same house. He also saw a case of scarlet fever in the puerperal woman, the illness commencing on the fifth day after confinement. The source of infection was traced to a friend who had visited her on the second day of the puerperium.
II.—FATAL CASE OF PUEPERAL SEPTICAEMIA FROM GONORRHOEAL RHEUMATISM.

BY DR. ROBERT JARDINE.

Last session I gave notes of three cases of puerperal septicaemia of unusual origin. To-night I have to record another one, which is, perhaps, of even greater rarity than any of the others.

Mrs. C., æt. 31, iv-para, eight months pregnant. Her former pregnancies and confinements had been normal. About three years ago she had lost her two children, after a few hours' illness, by malignant measles. She suffered very much from nervousness after this, and had occasional seizures of petit mal. During the present pregnancy she had suffered a good deal from nervousness, but her health was otherwise fairly good.

On 23rd June she was going about as usual until about 10 P.M., when she was suddenly seized with severe pain in the right knee and heel. When I saw her at 11:30 P.M. she was screaming with the pain. The knee was not swollen, but she screamed when pressure was made on the outer or inner side. Her pulse was 120, and the temperature 99° F. Hot fomentations had been applied, but had given no relief. I gave her a quarter of a grain of morphia subcutaneously, and ordered 15 grains sod. salicyl. every four hours. Nothing gave her any relief except hypodermic injections of morphia (half a grain).

I was at a loss to account for the great pain. The temperature never rose above 100° F., and at first there was practically no swelling of the knee. At the beginning I was inclined to look upon the condition as due to hysteria, knowing the nervous condition of the patient, but it soon became evident that it was a much more serious complication.

For a week I kept her under morphia, and tried all sorts of anodyne applications to the knee, and a couple of large blisters, but she got no relief except with the morphia.

On 1st July labour came on. As she could not be moved without great suffering, I was forced to deliver with forceps under chloroform. Dr. Douglas kindly assisted me. The child, a female, was alive. While she was under chloroform, I punctured the knee-joint with a hypodermic syringe. Nothing came from the outer side, but from the inner I got a little sero-pus. As we were anxious to get some of the pus for culture, we delayed opening the joint until the morning. At the time of delivery her temperature was 99° F.
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With Dr. Douglas' assistance, a free incision was made into the joint on the inner and outer sides, and a drainage-tube passed through. There was considerable tension in the joint. Some of the fluid was collected in sterilised tubes. There was very little pus. Dr. Leslie Buchanan kindly examined the fluid. He found staphylo cocci in it, but no streptococci.

Some days before this I had come to the conclusion that the case was one of gonorrhœal rheumatism. Gonococci were not found in the cultures, but the diagnosis was confirmed by the child developing ophthalmia neonatorum of a virulent type. The pus from the eyes showed diplococci.

On the evening of the day on which the knee was opened the temperature rose to 104°, and the pulse to 140. The temperature came down to nearly normal on the fourth day, but quickly rose again. On the third day she became maniacal, and was very restless for about twenty-four hours. By this time a punctate rash had developed over both wrists, and she complained of pain in the right one. It was never so painful as the knee, nor was it swollen. There was no dis- tension of the abdomen, nor pain over the uterus.

The treatment adopted was free stimulation and quinine, with hypodermic injections of morphia to relieve the pain. She went from bad to worse, and died on the 6th.

The baby's ophthalmia was very troublesome, but it ultimately yielded to applications of protargol.

I was very much struck by certain well-marked features in this case. In the first place, there was the sudden onset. The patient was feeling much as usual in the evening, and was out shopping. The intense pain seized her on the way home, and she had great difficulty in getting up stairs. The pain was very intense, and yet there was no great febrile disturbance, neither was there any marked swelling or redness of the knee, as one would expect in such an acute case. The only drug which had any effect in relieving the pain was morphia, in half-grain hypodermic doses. This, of course, is characteristic of gonorrhœal rheumatism.

There must have been a mixed infection in the case. Staphylo cocci were found in the fluid from the knee. I am not sure that gonococci will set up septicæmia. I have seen a good many cases of confinements with gonorrhœa where there was no septic infection.

There is no doubt that the patient died of septic poisoning. The rash which appeared was a typical septic one.
I have been fortunate or unfortunate, according to the view you take of it, in having to deal with some terrible complications in labour and the puerperium, but I think this was the worst case I have yet met with. The sufferings of the patient were so great that I must confess I was not sorry when death put an end to them.

That this was a case of gonorrhoeal rheumatism I think there can be little doubt. When she was infected I cannot say, but as none of her other children had shown ophthalmia, it must have been since their birth. I did not like to question her husband on the matter, and therefore cannot say whether or not he has had the disease.

I am deeply indebted to Dr. Carstairs Douglas for his assistance and advice in the case, and also to Dr. Leslie Buchanan for the trouble he took in examining the pus from the knee and from the child's eyes.

Dr. G. Balfour Marshall said this was a very interesting case, and as there was no evidence of infection by the genital tract to account for the septicemia, it was most probably a case of autoinfection. This was borne out by the fact that staphylococci were found in the knee, being a case of mixed infection. It was a remarkable fact that although gonorrhoeal leucorrhoea was not infrequent in pregnancy and the puerperium, yet the patient escaped getting septicemia from this source.

Dr. Carstairs Douglas said he had been associated with Dr. Jardine in this case, and had been much struck by the virulence of the attack. He thought it probably due to a mixed infection, but where the staphylococci in the knee-joint gained ingress he could not say. The uterus remained normal. Had the statement that gonococci were absent in the knee-joint rested solely on the fact that no growth was got of them from the inoculated culture tubes, it might have been open to criticism, since gonococci do not grow on agar and gelatine, but films were made direct from the fluid as well and stained, and the organism proved to be absent.

III.—A PURE MILK SUPPLY: VISIT TO A HYGIENIC DAIRY FARM NEAR TORONTO.

BY DR. JANE BUCHANAN HENDERSON.

In March, 1900, Dr. Carstairs Douglas read a paper on the "Sterilisation of Milk," and a discussion followed. It is not necessary on this occasion to repeat the reasons then given for
considering milk and its treatment as a subject suitable to
bring before this Society. The following remarks are simply
offered as an addition to the discussion then begun.

The Dentonia Dairy Farm is situated a few miles beyond
the municipal boundary of Toronto, Canada, and is the private
property of the Messrs. Massey, the two gentlemen who are
at the head of the great firm of manufacturers of agricultural
implements in Toronto known as the Massey-Harris Coy.
I understand that the farm originated in an endeavour to
secure pure and trustworthy milk for the members of their
own families. Owing to the success that has accompanied
this experiment, a company has been formed to secure control
of the milk supply of Toronto, and to provide the city with
untainted milk. Mr. Massey happened to be about the farm
at the time when my visit was made, and, although I was a
perfect stranger to him, he very kindly took the trouble to
point out many of the details which might otherwise have
escaped observation.

The byres are well built, and kept thoroughly clean and
well ventilated, so as to be practically free from the heavy
smell usually associated with such places. They are built
on the slope of a hill, and the four floors have each a roadway
leading right in, thus saving much trouble, and at the same
time keeping everything very compact.

The herd is composed of about thirty to forty Jersey cows,
and twelve to fourteen Ayrshires. Each cow is submitted to
the tuberculin test before being admitted to the herd, and at
frequent intervals afterwards. They are thoroughly groomed
twice a day, and, if necessary, they receive special cleaning
just before being milked.

The milkers are all men of sound bodily health; even their
teeth are inspected, and have to be kept in good order and
well brushed. The men are instructed to wash their hands
thoroughly before beginning to milk, and if they have been
at any specially dirty work they are to take a complete bath,
convenience for this being provided at hand. They are also
to put on clean white overalls.

The milking pails have the top covered over for three-
fourths of the extent, the remaining one-fourth being filled
in with a lid which is in reality a very fine sieve, through
which the milk falls and is strained as it comes from the cow.
This prevents any flies, hairs, or solid particles from falling
into the pail. The milk from each cow is weighed on each
occasion, and a record of the amount is entered in a book
kept for the purpose.
A bacteriological filter is freshly prepared at each milking time. This consists of a thick layer of sterilised wool between two layers of sterilised muslin. This is placed over the receiver and held firmly in position by means of a closely fitting metal hoop, and all the milk is passed through this filter.

The milkhouse or dairy is kept with the greatest possible care. Absolutely no visitors are permitted to enter it, nor any of the ordinary workers about the place, but just the head dairymen. A full view of the interior and of all that goes on within can be obtained through large plate glass windows. There are double doors at the entrance, and the outer one is to be closed before the inner is opened, thus preventing a direct entrance of air and dust. The floor is of smooth asphaltite, the walls white and glazed, the tables of glass or slate, and the fittings of metal, the receiver for the milk being of white enamel. It can be sterilised with hot steam daily, and everything has been done to secure, if possible, absolute surgical cleanliness and asepsis.

The dairymen has passed through a course of training at an agricultural college, and holds a certificate to that effect. Before entering the milkhouse he has to put on a white sterilised suit, which is kept in the steriliser when not in use. If, on a rare occasion, he requires any assistance in the milkhouse, the assistant must also wear a sterilised suit.

The bottles hold one pint. They are made of clear glass, and slope gently to the neck without shoulders. The mouth is about an inch and a half in diameter, and by a simple but ingenious contrivance they can be filled four at a time. When they return empty from the city, they are placed at once in the steriliser. They are then thoroughly washed out and sterilised a second time before being used.

The milk, after being strained, weighed, and filtered, is poured into a tube which leads through the wall into the milkhouse. It then passes over tubes filled with ice-cold water, and its temperature is thus rapidly reduced to 40°F. with the object of inhibiting the growth of any organisms that may be present. It falls into the large white enameled receiver, and can there remain for a few minutes till the bottling process begins. The full bottles are placed in an ice chamber till they are distributed. Separators are used when required, but, as a rule, the milk is distributed with all its cream, which forms a very thick layer occupying a considerable proportion of the bottle; it seemed, indeed, as if the
upper third of the bottle, which is, of course, the narrower part, was occupied with the cream. The milk drawn from the cows in the afternoon is distributed in the city the following morning, and remains sweet and unaltered for several days, even in the hottest weather. With the skilful planning of the building, and the use of labour-saving appliances in every direction, the elaborate proceedings already described are carried out with the greatest ease and speed, and the bottling process can be begun within a very short time after the milk has been drawn from the cow.

The theory which underlies all these elaborate precautions may be explained in a few words. The milk of healthy cows may be considered practically sterile when it leaves the udder, but it is liable to contamination from many sources, and, under the ordinary conditions, it usually receives a plentiful supply of more or less harmful organisms—in fact, it has been calculated, as a result of experiment, that "3,250 bacterial germs per minute may be deposited on an area equal to the exposed top of a ten-inch milkpail" (vide Newman, Bacteriology, p. 185, quoted from Russell). These germs find a most suitable culture medium in milk, especially during the slow process of cooling as it naturally takes place. In the methods already described, every effort is made to secure (1) that the milk is from healthy cows; (2) that risks of contamination may be reduced to a minimum; (3) that any intruding germs may be removed by filtration; (4) and that any germs that have managed to retain their place will not have a favourable temperature in which to grow and increase; and (5), lastly, that the milk will not receive any fresh contamination before it reaches the consumers. No thermic or chemical means are used in connection with the milk, asepsis rather than antisepsis being the point aimed at, and I think that we cannot fail to admire the exactitude of detail with which this is carried out, and so contrast it with the methods to which we are accustomed.

Dr. Curtiars Douglas said he thought the idea of keeping the milk pure by means of an aseptic system was a good one, and could not be open to any of the objections urged against the treatment of milk by chemical or thermal means. He pointed out that the Canadian standard, as regards quality of milk, was distinctly higher than that accepted in this country by the Inland Revenue Department.

Dr. Marion Gilchrist asked Dr. Henderson if she knew how the tuberculin test was regarded, and how it was carried.
out in Canada. Here it was asserted by many that it tended to predispose the animals so tested to tubercular disease, and it further lent itself to fraud, as unscrupulous dealers took advantage of the fact that tubercular animals after being once tested would not react a second time to the test. She also asked if a higher price was asked and obtained for this milk, as no doubt milk treated similarly in this country would cost more. Heating the byres artificially costs too much, and since warmth is essential, the byres are kept closed instead of being aired, as this would cool them down, and the cows not give such good and rich milk. She further asked if the bacteria which produce lactic acid were excluded, as it might interfere with the making of lappeder or sour milk, which is quite a good food. She believed that lactic acid, formed by these bacteria, interfered with, or in some way destroyed, the power of other germs, and cited a case where butter milk sold from a farm where scarlet fever existed did not carry infection anywhere.

Dr. J. Edgar made a few remarks, and referred to Döderlein’s bacillus vaginae, which produces lactic acid, and is said to prevent pathogenic organisms developing. This may be analogous to the case of the lactic acid bacillus aiding in keeping milk free from other germs.

Dr. Henderson replied, and said that the milk had been distributed in bottles for six years. Mr. Massey conducts this dairy farm, and has arranged it regardless of cost, as he is a wealthy man. The method is not available for ordinary farms, so a company is to be formed to treat milk in large quantities. The afternoon’s milk is distributed next day, but it will remain sweet for several days. The cows are supposed to be all free from tuberculosis, and therefore there are no bacilli to exclude. The new company is, however, to have a laboratory to test milk bacteriologically. The price is dearer.

IV.—CASE OF HYDROPS AMNII WITH TWINS SIMULATING PAROVARIAN OR OVARIAN CYST.

BY DR. JOHN EDGAR AND DR. A. W. RUSSELL.

The relative frequency of hydrops amnii or polyhydramnios as a phenomenon of pregnancy is given as 1 in 150, but the combination of circumstances of the case to be described tonight must be of very rare occurrence. The patient, a thin and pale, but otherwise healthy woman, of 27 years of age,
was sent to consult Dr. Russell about a fortnight ago, owing to a large cystic abdominal swelling, which had grown rapidly, and was now interfering so seriously with respiration that rest and sleep were impossible except in the sitting posture. She had been married four years and eight months, and was the mother of three children. She had not menstruated since marriage, her second and third pregnancies having taken place during lactation. During her third pregnancy, at the end of the third month, she had a severe hæmorrhage, and a mass like a large clot was discharged, which was believed to be an ovum. Under treatment the hæmorrhage was arrested, and in the end of January, 1900, she was delivered of a healthy child at full term. She ceased nursing this child in the end of December, because, owing to the abdominal enlargement, she thought she was again pregnant. In examining her a fortnight ago, Dr. Russell found the abdominal swelling extremely prominent and tense, considerably larger than a gravid uterus at full term, the wall very thin and the contents very fluid, the "thril" being well marked over the whole surface. The percussion note was uniformly dull excepting on the flanks. The cervix was much softened, and the os uteri was patulous. The uterus was more easily traced upwards on the left side. The prominence of the abdomen had been observed only about the beginning of December, and the patient then thought that she must be again pregnant. The opinion was given that there was a large paroovarian cyst complicating pregnancy.

Owing to the urgency of the symptoms the patient was admitted into the Samaritan Hospital on 5th March, where she was afterwards examined by Drs. Edgar and Tindal. In addition to the facts already stated, it was noted that a distinct uterine souffle was occasionally heard, but the foetal heart could not be distinguished. The circumference at the level of the umbilicus was 41½ inches. The nymphæ were œdematous. The vaginal portion of the cervix was sinistroposed, the membranes now bulged downwards to the level of the external os, and ballottement was distinct. The uterus seemed to be displaced to the left, but no distinct lower limit could be assigned to the tumour. It was still believed to be a cyst of ovarian or paroovarian origin. On 9th March, as the membranes were dilating the cervix, Dr. Edgar decided to empty the uterus, and a small opening was made to allow the fluid to drain away. It was then apparent that it was a case of polyhydramnios, and that there were twins. After removal of the placenta and membranes, a hypodermic injection
of ergotinine was given, as well as an intra-uterine douche at 120° F., and a tight binder was applied. The patient made a good recovery without hemorrhage or other untoward incident. The twins were males, at about six months, and well formed. One measured 11½ inches in length, and was living at birth; the other was a little larger, measuring 11¾ inches, and had evidently been dead for a short time. There were two distinct cords and two separate placentæ, fused at the adjacent edges. The separate sacs were composed of amnion only, the layer of chorion and decidua forming a common covering to the two amniotic sacs. The sac that contained the excess of fluid was occupied by the dead child, and the cord of this child was also much thickened and congested. The fluid measured 16 pints. Dr. Carstairs Douglas kindly examined it, and described it as practically colourless, faintly translucent, odourless, with a specific gravity of 1007, and alkaline reaction. Serum-albumin was present, and there were traces of serum-globulin, but no albumoses, or peptones, or glucose, or met-albumen. Urea was present in small amount. The total proteids amounted to 0·1 per cent. Chlorides were abundant, and phosphates scanty, and there were traces of sulphates. Under the microscope there were seen epithelial cells and fine débris.

V.—CASE OF ANUS VULVALIS (PERSISTENT CLOACA) WITH PROLAPSE OF UTERUS.

BY DR. JOHN EDGAR.

Anus vulvalis is a condition in which the anus is situated at the vaginal orifice immediately behind the hymen. It is extremely rare. Winckel, in an examination of 12,000 individuals, has never seen a single case. Bednar has seen 1 in 7,154, and Collins, of Dublin, 1 in 16,654. It is for this reason chiefly that I have considered it right to report my case.

Mrs. G., aged 45, was sent to me as a case of complete rupture of the perineum, with a note that the case was remarkable in that patient had never borne any children, and that there was no history of an accident. She had been married for twenty years, but, with the possible exception of a miscarriage at the third month fourteen years ago, she had never been pregnant. About six months after the miscarriage Dr. Phillips, of Greenock, dilated the cervix, without chloro-
form, on account of severe dysmenorrhoea, which had troubled her since the onset of menstruation. The operation was entirely successful. In other respects menstruation had always been normal till the end of last year, when there was a period of three months' amenorrhoea. In all probability, patient has reached the menopause.

Her chief complaints when I saw her first were frequency of micturition, bearing-down sensation, and, when the motions happened to be loose, incontinence of faeces. The last symptom dated back only two years. A few years before marriage the womb began to come down as the result of a strain. At first pessaries had kept it in position, but for the last two years they could not be retained.

Four weeks ago (12th February) patient was admitted into the St. Elizabeth Nursing Home. On examination I found the vaginal portion elongated, and the uterus retroverted and prolapsed to the second degree. The hymen was relaxed, but was intact, with the exception of a few tears which did not reach down to the base. The vaginal orifice was relaxed. Immediately behind the hymen was situated the anus, the sphincter of which was somewhat relaxed. Behind this stretched a thin transverse band which resembled the fourchette, so that the anus appeared to lie in the fossa navicularis. In other respects, both the internal and the external organs of generation were well developed and healthy.

On 14th February, assisted by Dr. M'Bryde, I curetted the uterus, amputated the cervix by the Simon-Marckwald method, using strong catgut sutures, and then performed a modified Lawson Tait's operation on the recto-vaginal septum. After dissecting deeply into the septum, I carried the ends of the transverse incision well back on each side of the anus instead of bringing them forwards. Silkworm-gut sutures were used to bring the sides of the wound together. This had the effect of carrying the anus farther back, and of creating a good sphincter for it. Finally, I opened the abdomen, and stitched the fundus uteri to the anterior abdominal wall with two strong catgut sutures.

Patient has made an excellent recovery. The wounds healed by first intention, and there is now no trouble with micturition and defaecation. The fundus uteri has united with the abdominal wall, so that there will be, I trust, no further necessity for the use of pessaries.

To comprehend the etiology of anus vulvalis, it is necessary to understand how the perineum comes to be formed. In
very early embryos the Wolffian ducts and the gut open into the lower part of the allantois. By a process of thickening of the septum between the Wolffian ducts and the gut, the lower portion of the allantois gets separated into the urogenital canal in front, into which the Wolffian ducts open, and the anus behind. Both the urogenital canal and the anus open into the cloaca. This is a depression of the ectoderm at the part corresponding in the adult to the space between the clitoris and the posterior anal wall. It gradually disappears in the course of the third month by closing in from the sides.

Just before this time the Müllerian ducts develop downwards, and open along with the Wolffian ducts into the urogenital canal. Then, as the Wolffian ducts in the female disappear, the Müllerian ducts develop further, and form at this part the vagina. When the anterior portion of the cloaca closes, the urethral and vaginal openings remain patent.

Later, by a process of epithelial proliferation, the two sides of the posterior portion of the cloaca—i.e., the portion between the vagina and the anus—unite to form the perineum.

From what I have said, it will be understood that in the case which I have described the posterior part of the cloaca has not closed in; in other words, the perineum has failed to develop. It will be understood, also, that the name, atresia ani vaginalis or vulvalis, which was formerly given to the condition, and which owed its origin to the impression then held that the anal opening in such cases is an adventitious one, was a misnomer. The German term, anus vestibularis, so-called because in Germany the whole vaginal orifice is called the vestibule, is inapplicable in this country, because we restrict the name of vestibule to the small triangular area between the nymphæ and the meatus urethrae.

As regards treatment, Hochengg has advised a deep incision into the part behind the anus, splitting of the rectum and suture of it into the wound. Buckmaster says that a secondary operation—splitting of the fibres of the levator ani—should be performed at a later period in order to obtain a good sphincter. In my case I thought that Lawson Tait's operation, carried out in the manner which I have described, would meet the necessities of the case, and the result has justified my conjecture.

Dr. A. W. Russell said that he had seen a somewhat similar case some years ago. The patient was a young woman who had come into the Samaritan Hospital to be operated on by Dr. Stuart Nairne before getting married. The anus opened
in the fossa navicularis, while the usual site was indicated by
a pigmented spot. Dr. Nairne split up the perineum, dissected
out the anus and adjacent portion of rectum, and carried them
back to the proper position, afterwards stitching the perineum
over it. The operation was admirably designed, and the result
was very successful.

Dr. John Lindsay said these two cases represented two
different types. The second case had a pigmented spot, and
was one of atresia ani, with an opening of the bowel into
the uro-genital sinus. The pigmented spot would have the
spincter ani under the skin, and therefore Dr. Nairne's
operation would be the correct one. Dr. Edgar's case, on the
other hand, would have the sphincter ani present at the opening
in the vulva, and therefore he operated in the best way.

VI.—CASE OF RESECTION OF THE SIGMOID FLEXURE.

By Dr. John Edgar.

Mrs. M.T., æt. 28, ii-para, was admitted into the Samaritan
Hospital on 28th January, 1901, complaining of constant pain
in the left iliac region of seventeen days' duration.

Married five years ago, she enjoyed good health until her
first confinement a year later, when she began to suffer from
pelvic inflammation and vesico-vaginal fistula. She was
treated in the Victoria Infirmary, but the fistula reappeared
during her next pregnancy a few months afterwards. It
healed spontaneously six months after the birth of the child.
During the last twelvemonth patient has had three abortions.
The last occurred four weeks before admission, and was
followed by "a cold in the left lung." On 11th January
there was a sudden onset of pain in the left iliac region.
This pain continued until admission on the 28th. There was
no bleeding.

On bimanual examination the uterus was found to be
normal in position, and only slightly enlarged. A firm,
smooth, lobulated, and well-defined mass was felt adherent
to the left side of the cervix above the corresponding lateral
fornix. It could be moved slightly upwards and downwards
in unison with the uterus. The corpus uteri, however, was
free. The left ovary could not be differentiated, but the
right one was normal in size and site.

Operation (on 9th February, assisted by Dr. Russell).—On
opening the abdomen I passed my fingers down into the
pouch of Douglas, and managed without much difficulty to
separate the mass from its attachment to the cervix. I was surprised, on bringing it into view, to find that it was a tumour of the mesocolon of the sigmoid flexure. It was solid, and of the size of a plum. We could not be certain at the time as to its nature, but thought it most likely tuberculous. As, however, there was some doubt concerning this matter, and as it lay close up against the bowel, I thought it right to resect the bowel and mesocolon. Dr. Taylor, my house surgeon, clamped the gut with her fingers on each side, and I cut away the tumour with the adherent portion of the sigmoid flexure. After tying several vessels and suturing the mesocolon, I stitched the cut ends of the bowel together with fine silk, after Czerny's method.

The patient made an uninterrupted recovery. She felt no pain after the operation, nor was there at any time abdominal distension or sickness. The temperature never rose above 99° F., and the pulse ranged from 70 to 80 per minute. The bowels moved regularly and easily from the sixth day after the operation, and the abdominal wound healed by first intention.

Dr. Galt, pathologist to the hospital, has reported that, histologically, the tumour is of a tuberculous nature.

The points of interest in this case are as follow:—
1. The spontaneous healing of the vesico-vaginal fistula.
2. The pelvic situation of the tumour, which, with the history of pelvic inflammation, led to the probable diagnosis of left salpingo-oophoritis.
3. The consistence, lobulated shape, firm attachment to the uterus, and the freedom of the right appendages, might have tended to the diagnosis of uterine myoma, had the history not negatived this.
4. The tuberculous origin of the tumour. No tubercle could be detected anywhere else, and there was nothing in the general condition of the patient—no hectic night sweats, &c.—to lead one to suspect a tuberculous lesion.
5. The success of the end to end suture of the bowel by Czerny's method. Where speed is not absolutely required, I think this method is preferable to the use of Murphy's button.
MEETING VIII.—27TH MARCH, 1901.

The President, DR. ROBERT JARDINE, in the Chair.


DISCUSSION ON RETROVERSION OF THE NON-GRAVID UTERUS:
ITS CAUSATION AND TREATMENT.

It was agreed to postpone Dr. Kelly’s paper till the next meeting in April.

FOETAL ABNORMALITY OBSTRUCTING LABOUR.¹

BY DR. G. BALFOUR MARSHALL AND DR. JOHN LINDSAY.

Dilatation and hypertrophy of the bladder—Imperforate rectum—Undescended testicles—Absence of left kidney and ureter.

The body is that of a male infant apparently at the full term of gestation. The head, upper limbs, and upper half of the thorax are normal; but the lower ribs are thrust outwards. The abdominal walls are relaxed and thrown into folds, as if they had formerly been greatly distended. The left leg is separated at the knee-joint. The right thigh is flexed upon the abdomen, and impresses the surface. The right leg is flexed and abducted, so that the fibular side is against the outer aspect of the thigh, the lower epiphysis of the femur having been separated from the diaphysis.

On opening the body, the middle of the abdomen is seen to be occupied by a large bilobate tumour, extending from the pubis upwards, a distance of 7 inches. Its lower end com-

¹ For an account of the labour, see a note by Dr. Andrew Richmond (Paisley) at p. 6.
pletely fills the pelvis, and is adherent to its sides. Its anterior surface is also firmly adherent to the adjacent abdominal wall from the pubis to the umbilicus, the upper lobe, extending 2 inches higher, being free, and covered by smooth peritoneum.

The bowel and liver have been pushed upwards, so that the latter is completely covered by the ribs. There is a Meckel's diverticulum on the ileum, in length equal to twice the diameter of the bowel, and situated 7 inches from the ileocolic valve. The meso-cæcum is abnormally long; and the sigmoid flexure, displaced upwards and somewhat distended, crosses towards the right, and ends blindly where it is attached to the middle point of the posterior surface of the tumour.

The tumour, on being cut into, is found to be the enormously distended bladder, the walls of which are very much hypertrophied, varying from one-eighth of an inch to three-eighths of an inch in thickness. The inner surface is in some places strongly fasciculated, and microscopic sections show great increase in the muscular tissue, and a much slighter increase in the thickness of the serous coat. On the posterior wall, about an inch above the lower end of the cavity, there is a dimple, into the centre of which a hog's bristle can be passed. This is the inner end of the urethra, which is found to be pervious to a bristle as far as the front of the scrotum. Sections through the root of the penis, and others taken from within the pelvis, an inch from the anterior layer of the triangular ligament, show the urethra to be normally formed, and not at all dilated. The free end of the penis has been much distorted and hardened in the preservation of the specimen in formalin, and it is not found possible to pass a probe through the meatus, but sections across the glans reveal a pervious canal. No occlusion of the urethra has been found at any point, and it can be shown to be patent and undilated through the greater part of its length from the bladder outwards.

The bladder being broadly adherent to the anterior abdominal wall as high up as the umbilicus, the umbilical vessels pass directly from its surface into the cord, and there is no urachus. The lumen of the urachus has doubtless been opened up to form part of the general cavity of the cyst (distended bladder).

With a view to determine, if possible, the real nature of the lower portion of the cyst—whether it were part of the true cavity of the bladder or the dilated upper end of the urethra—and also with the purpose of obtaining evidence of the presence or absence of the prostate, and its position if present,
sections were taken from half a dozen places and examined with the microscope. It was thought that traces of the gland might be found in the angle between the bladder and rectum, since this is the situation in which the genital cord is formed; but sections from this neighbourhood show only the longitudinal muscular fibres of the bladder collected into a conspicuous rounded bundle. Sections from different places between this point and the internal orifice of the urethra exhibit only the same structure as those taken from higher up, namely, unstriped muscle fibres mixed with dense connective tissue and, on the inner surface, stratified epithelium. Where the cyst is very thin the muscular tissue is absent, as is to be expected where the fasciculation of the bladder is so pronounced.

A study of the relations of the levator ani to the cyst gives no help in the enquiry. Thin strands of striated muscle are found to extend for an inch or two above the level of the os pubis over the outer surface of the lower part of the cyst; but their upper limit cannot be taken as the line of insertion of the levator ani into the neck of the bladder, since these strands may have belonged to other pelvic muscles, glued to the cyst by the inflammatory exudate, and torn from their proper place when the adhesions were broken through.

The urethra, from the anterior layer of the triangular ligament to its internal orifice in the bladder, measures an inch and a quarter, about the usual length for the membranous and prostatic portions in the child, and in all probability this part of the canal represents these portions of the urethra of the normal subject. In favour of this view is the fact that the mucous membrane is thrown into the deep longitudinal folds characteristic of the prostatic urethra. But there is not a trace of the glandular elements of the prostate, nor of the ejaculatory ducts, and the microscopic structure is otherwise abnormal. Nearly the whole area of the section is occupied by bundles of striated muscle fibres coursing in different directions through it, only a narrow zone around the urethra being free from them, and formed by smooth muscular tissue. None of the authorities usually appealed to—such as Quain, Gray, or Cleland—mention the occurrence of striated muscle in the prostate; but Klein, writing the article on the “External Generative Organs” in Stricker’s Text-book of Human and Comparative Histology,¹ has the following passage:—“Transversely striated muscular tissue also occurs in the prostate in the form of continuous bands, internal to the striated fibres of

the sphincter urethrae. Henle described similar bands existing in the uppermost of those portions of the prostate lying in front of the urethra; they extend, however, as Kölliker has shown, farther downwards in the cortical portion of this segment. Fasciculi of transversely striated muscular fibres are found also in the cortical layer of the segment situated behind the urethra, especially in the upper part, where, in company with trabeculae of smooth muscular tissue, they penetrate into and divide the gland substance."

In sections through the prostate of a new-born infant which we prepared for comparison, there could be seen a band of striated muscle running across the anterior face of the gland, the fibres at the ends of the band passing into the body of the prostate itself; but in no other part of the section was there any trace of this kind of tissue. The observation of Henle is thus corroborated, and if the rest of the statement quoted is equally reliable, it must be accepted that striated muscle-fibres at least occasionally surround the first part of the urethra. This being admitted, the presence of such tissue would be another indication that the innermost portion of the canal in Dr. Richmond's specimen was the prostatic urethra; while the absence of the glandular elements may be considered to be due to a difference in origin of these elements, and the failure in development of the part which produces them.

The question naturally suggests itself whether the presence of so much striated muscular tissue around the outlet of the bladder had any causal connection with the great dilatation and hypertrophy of the organ. By way of answer to this question, we would point out that the fluid contents of the bladder had obviously been retained under great pressure, pressure to which the single ureter had yielded, yet the pervious urethra was not at all dilated. Why the urine did not pass into the urethra and escape, or if there really was an obstruction near the distal end why the pervious portion was not distended, is quite incomprehensible, except on the supposition that the sphincter fibres near the inner orifice so acted as to keep the outlet closed.

The condition was not one of rapid distension. The great amount of dense connective tissue in the bladder walls, the hypertrophy of the muscular tissue, and its collection into bundles that gave the interior a reticulated appearance, all point to a long-continued struggle on the part of the organ to empty itself. The facts of the case, indeed, so far as they concern the bladder, have a close analogy with those of congenital hypertrophy of the pylorus.
The perineum of the subject, in its muscles, nerves, and blood-vessels, is found to be normal. The sphincter ani is well developed, but the anus is imperforate. Within the bladder, at the point where the rectum ends upon its surface, there is a depression, but no perforation.

The testicles are found within the abdomen, each suspended by a fold of peritoneum which runs between the bladder and the lateral walls of the abdomen. Both are normal as to their bodies and their epididymes, but no trace of the vesiculae seminales could be discovered.

The right suprarenal body and the kidney of this side are normal; the ureter is much dilated. The left suprarenal is
well formed, but flattened against the body wall. There is not a trace of the left kidney or ureter. Their absence would appear to be due to original defect, and not to atrophy. Had the kidney disappeared by atrophy, it is probable that the renal artery would have been represented at least by its inferior suprarenal branch, but there was no such vessel.

Of the few minor variations found in dissecting the rest of the body, the only one that need be mentioned concerns the course of the left common iliac vein. This vessel joined the vena cava by crossing the front of the aorta above the origin of the superior mesenteric artery, as shown in the illustration (p. 85). The brain was too soft for examination when the specimen came into our hands.

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MEETING IX.—24TH APRIL, 1901.

The Vice-President, DR. JOHN EDGAR, in the Chair.


I.—FRESH SPECIMENS.

A. BY DR. JOHN EDGAR.

Carcinoma of cervix uteri — Vaginal hysterectomy — Recovery.—Mrs. K., æt. 43, vii-para, was admitted into the Samaritan Hospital for Women on 6th December, 1900. Her complaint was that for six months she had been getting steadily weaker, and menstruation had been much more profuse than formerly. Each period had lasted six days, and in the intervals between them she had had a constant yellow discharge, at times blood-stained. For about two months before admission she had had a slight burning pain now and then in the left iliac region.

On examination, marked carcinomatous excavation of the cervix was found, but apparently the disease was limited to this part.

Unfortunately, patient was suffering severely from bronchitis
and emphysema. I did not, therefore, deem it wise to subject her to the risk of a major operation, but contented myself with curetting the cervix thoroughly, and then swabbing it with pure formalin.

She left the hospital on 25th December.

*Dr. Galt’s report on tissue.*—“Sections show epitheliomatous growths, with large cell-nests, and much inflammatory infiltration.”

On 6th April, 1901, patient returned to the hospital free from bronchitis. In the interval she had improved greatly, she was stronger, and had gained 28 lb. in weight. There was no intermenstrual discharge; menstruation was regular, and of normal amount, the duration of each period three days. Pain was absent. She had been douching daily with boric acid lotion, and had been taking a tonic.

*Operation (13th April).*—Dr. Russell curetted and cauterised the cervix, and then Dr. Edgar pulled down the cervix with a large vulsellum forceps, and, after opening into the peritoneal cavity in front and behind, brought the uterus outside the vulva, without having cut any part of either broad ligament. Five catgut ligatures were next applied to the left broad ligament from above downwards, and the uterus freed on this side by means of scissors. This procedure was repeated on the right side. The ovaries were not removed.

A single catgut suture was inserted in the middle line, in order to partially close the opening, and the pelvic cavity was stuffed with two narrow strips of iodoform gauze. This gauze was removed on the fifth day.

Yesterday (eleventh day after operation) the opening was found nearly closed. Patient is very well. There has been no discharge, and temperature has been normal throughout.

I wish specially to draw attention to the good effect of curettage and formalin in this case.

**B. By Dr. John Lindsay.**

Dr. Lindsay showed an early hydatidiform mole.

**II.—Notes on a Case of Hydatid Mole, with Specimen.**

By Dr. Andrew Richmond.

A. E., aged 20, millworker, unmarried, was first seen by me on 5th March, 1901. She was then suffering from sickness and vomiting, which was more marked in the mornings and
when she attempted to rise out of bed. This had commenced about two weeks previously, and was gradually getting worse. The areoles of the nipples were much darker than one would expect to find in a virgin, but on enquiring as to her menstrual periods, she stated that she had menstruated a fortnight ago, that it had not stopped yet, and was different from her usual flow in that it was of a darker colour. The period previous to this was normal.

On examining her per vaginam, this discharge was found to be dark in colour and not very copious. The uterus felt slightly enlarged and the os normal.

On these grounds I gave my opinion to her mother that she was pregnant, and prescribed some ingluvin and bismuth for the relief of the sickness and vomiting. She was visited again in a few days, and her condition was pretty much as on my first visit, with the exception that I made out the uterus to be much larger than on the first examination. All the food she got was rejected, and her pulse was rapid and feeble, with temperature normal. The bloody discharge still continued, but was intermittent.

I saw her several times after this, and the uterus continued to enlarge very rapidly, indeed, quite out of proportion to what one would expect in a normal pregnancy. On being pressed for an opinion, I stated that it was likely to be a hydatid mole, and advised her to be removed to the hospital to get the uterus emptied, as she was getting very weak and losing flesh rapidly.

She was admitted to the Royal Alexandra Infirmary, Paisley, on 22nd March, 1901, and from the journal the above condition was noted, and also that the measurement round the abdomen at the level of the umbilicus was 26 inches. The areoles round the nipples were very dark in colour. At this time there was no bleeding from the uterus. She was very sick after each attempt at feeding, and was put on small doses of calomel.

On 23rd March some milk and beef tea were retained, but, later, vomiting again commenced. She was put on nutrient enemata of 2 oz. milk and beef tea, peptonised, and given every four hours. The abdomen measured at this date 26½ inches; on the 27th, 27¾ inches; 28th, 28 inches; 29th, 28½ inches. No foetal heart-sounds could be heard. The uterus was very large, and felt boggy and soft.

As her condition was not improving, it was decided to empty the uterus, and this was done under chloroform on 29th March. A uterine sound was first passed, then Hegar's
HYDATID MOLE.

Dilators, until the os was about the size of the little finger. A thin rectal gum-elastic bougie was put in and left, and the vagina packed with sterilised gauze.

Previous to this being done her vagina had been douched daily with a solution of 1 in 3,000 perchloride of mercury. It was noted at the time that a thickish, bloody discharge was coming from the os.

At 7 a.m. on 30th March the bougie was removed, as strong pains had set in, and at 7:30 a large hydatid mole was expelled. The uterus contracted well on kneading, and was cleaned out by the fingers of the house surgeon, followed by an intravaginal douche of perchloride of mercury. One-hundredth of a grain of ergotinin was injected hypodermically.

On 31st March, in the afternoon, patient had a slight rigor, and her temperature rose to 100°8 F., but fell again later in the night to 99° F. She was douched twice a day with perchloride of mercury.

On the morning of 1st April, under chloroform, I used a flushing curette, and got away a very large amount of broken-down mole tissue. The discharge was offensive, and fairly plentiful. Maximum temperature, 102° F.; minimum, 99°4 F.

On 2nd April her temperature rose to 103°8 F., with marked pain and tenderness over the abdomen on palpation or on movement as in vomiting or inhaling deeply. Pulse ranged about 130, and was weak and thready.

On the 3rd she was very ill, and, on calling a consultation of the staff, it was decided, by a majority, to keep her under the influence of morphia. Her temperature was as high as 104°2 F.; lowest, 102°6 F.; pulse from 148 to 168. She gradually sank after this, and died on the 7th, at which time her temperature registered 101°4 F. She was douched twice a day with perchloride of mercury, followed by a boracic acid douche.

A post-mortem examination was made on 8th April by Dr. Joshua Ferguson, and the following is his report:

"Examination of the abdomen only was permitted."

"External appearances.—The body is that of a well-developed and fairly nourished young woman. The mouth and nostrils are full of an offensive turbid yellow fluid."

"The abdomen is slightly prominent, is distended, and is tympanitic to percussion."

"When opened, the peritoneal cavity is found to contain over a pint of thick, purulent fluid. The omentum, deeply congested, is lightly glued to the surface of the intestines by a

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thick, yellow, purulent exudation. The intestines are distended with gas, and are glued together and covered generally with exudation. The serous surface of the intestines and the peritoneum generally are congested.

"The pouch of Douglas is practically filled up with thick exudation. Below the left ovary, and along the left lower margin of the pouch, there is an area which is intensely congested, and almost gangrenous.

"The bladder is normal.

"Both ovaries are much enlarged, principally from the presence in each of a Graafian follicle filled with recent clot. The stroma is congested and edematous.

"The uterus is enlarged. Its cavity measures 3 ½ inches transversely between the internal orifices of the Fallopian tubes, and 6 inches longitudinally from os internum to fundus. Its walls are of a thickness varying from half an inch to one inch. The inner surface of the organ is gangrenous over its entire aspect, the necrosed tissue being roughest and thickest in the left upper region of the cavity, which corresponds to a pseudo-placental site. The necrosed tissue is apparently decidual in character, and is detached with only slight difficulty from the uterine muscular wall, except at the placental site. The necrosis does not extend deeper than the mucous membrane. The uterine muscle is not congested. There is no perforation of the uterine wall, nor any laceration of the muscular layers.

"The Fallopian tubes are patent and normal in every respect; their mucous membrane is not inflamed; and there is no sign of purulent exudation in their interior.

"In the posterior fornix of the vagina, on its left aspect, there is a partially healed laceration, measuring three-eighths of an inch by one-eighth of an inch. Around this the vaginal mucous membrane is deeply congested. The connective tissue is also acutely inflamed, and constitutes a direct tract between the laceration in the vaginal wall and the semi-gangrenous area in the pouch of Douglas above mentioned. The mucous and serous membranes are here in close anatomical relation, being separated by only a quarter of an inch of the inflamed connective tissue."

Dr. J. K. Kelly asked if there was any history to account for the wound in the vagina. This seemed to be the source of the infective inflammation from which the woman died.

Dr. Munro Kerr said that the source of septic infection was evidently from the vaginal laceration. It was difficult to
explain how the laceration occurred, as there was not much manipulation. It was a pity a microscopical examination had not been made, as deciduoma malignum frequently follows hydatid mole. In a case recently reported, a swelling found in the vaginal vault was shown to be deciduoma malignum. He did not approve of curetting the uterus in cases of hydatid mole, as it might lead to perforation of the uterine wall.

Dr. A. W. Russell had used a blunt flushing curette with good results in a case where the uterus had become septic.

Dr. J. Edgar referred to Dr. Berry Hart's theory that hydatid mole was due to an acute myxœdema. He agreed with Dr. Kerr that a curette should not be used, but the finger only, as the villi sometimes penetrate very deeply into the uterine wall.

Dr. Richmond replied, and said he could assure the Fellows he did not wound the vaginal vault.

III.—DEMONSTRATION OF PLACENTAL STRUCTURES.

By Dr. John H. Teacher.

Dr. Teacher gave an interesting demonstration, illustrated by sections placed under the microscope and by lantern slides, showing micro-photographs which were passed round the meeting. Various specimens of the following were shown:

1. Placenta about thirty-fifth day. Villi with epithelium, consisting of two layers of cells which are not very well defined. (a) Langhans' layer; (b) syncytium.

2. A similar section showing an expansion of Langhans' layer in a villus at a part almost devoid of syncytium.

3. Placenta in the fourth month, showing villi with very marked expansion of Langhans' layer, where the villi are attached to the decidua.

4. Placenta at eighth month, showing the villi, foetal blood in their capillaries, and maternal blood in the intervillous spaces. The epithelial covering of the villi is reduced to a single layer.

5. Attachment of a villus to decidua, showing expansion of Langhans' layer and decidual cells.

6. Villi showing epithelium, especially the expansions of Langhans' layer, also portions of syncytium.

7. Sections of decidual tissue.

8. Deciduoma malignum (a) from a secondary nodule in the lungs, showing masses of Langhans' cells and syncytia lying free in fluid blood. (b) The same, showing the enormous
growth of epithelium (Langhans' layer and syncytium) on their surfaces. (c) The same, from a nodule in the lung, showing the thin processes of epithelium insinuating themselves into the lung tissue.

9. Decidual tissue, showing the large decidual cells and the uterine glands, with cubical epithelium and blood in their cavities.

He also showed Dr. Peters' book, which gives a description of the youngest known human ovum, and referred specially to the part dealing with the mode of attachment of the ovum to the uterine decidua.

*Dr. Edgar, J. K. Kelly, and Balfour Marshall* made remarks, and *Dr. Teacher* replied.

**IV.—DISCUSSION ON RETROVERSION OF THE NON-GRAVID UTERUS: ITS CAUSATION AND TREATMENT.**

*Dr. J. K. Kelly* opened the discussion by reading the following paper:

There is a story told of Norman Macleod when he was a young parish minister. He was making a pastoral round of his flock, and visited one day an old lady who was rather sceptical about the attainments of the young clergyman. Before she could allow him to administer the usual spiritual consolation to her or her household, she insisted that he must “gang ower the fundamentals.” Norman, of course, did so to her perfect satisfaction.

As in theology, so in gynaecology, it is a good thing occasionally to "gang ower the fundamentals," and to-night I have ventured to take up a trite and familiar subject, with a view to see where this Society stands with regard to it, and whether we are at all unanimous as to its nature, its causation, and its management.

Retroversion should be regarded simply as a dislocation, and not as a disease. Diseased conditions naturally result from the dislocation, just as they arise as the result of a dislocation of a bone at a joint, but they form in themselves no part of the retroversion. The essential fact in the dislocation is that the anterior surface of the uterus is exposed to the intra-abdominal pressure instead of the posterior surface, as in the normal condition. There is no real distinction between retroversion and retroflexion—retroflexion is simply the flexion of a retroverted uterus. In both the relation to

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1 Dr. Hubert Peters, *Über die Einbettung des menschlichen Eies und das frühere bishein bekannte menschliche Placentationsstadium*, 1899.
the intra-abdominal pressure is the same. This relation to
the intra-abdominal pressure being the decisive characteristic
of retroversion, the problem of etiology is resolved into the
question as to how the uterus can be dislocated so as to present
its anterior surface to the intra-abdominal pressure. We may
define the normal position of the uterus as that in which the
cervix is nearer the posterior wall of the pelvis than the
fundus. So long as the cervix maintains this situation the
uterus must remain in anteversion. On the other hand,
whenever the fundus lies nearer the posterior pelvic wall than
the cervix, the uterus must be in retroversion. The cause of
retroversion, therefore, is to be sought in the conditions which
bring the fundus behind the plane of the cervix. These con-
ditions are naturally the reverse of those normal conditions
that keep the cervix behind the fundus. What are those
normal conditions?

We are all familiar with great mobility of the uterus, but
there is one portion which is relatively fixed. This portion is
the supravaginal cervix, which is fixed laterally by the bases
of the broad ligaments, anteriorly by the attachment to the
bladder, and posteriorly by the sacro-uterine ligaments.
Round this fixed portion we may regard the uterus as swing-
ing freely, the portio vaginalis passing backwards as the
fundus passes forwards, and forwards as the fundus passes
backwards. In healthy conditions the fundus passes back-
wards always when the bladder fills, and forwards as the
bladder empties, so that it is in constant backward and
forward movement, while the supravaginal cervix remains
comparatively motionless. Now, if the bladder is greatly
distended, the fundus may be carried backwards so far as to
be behind the cervix, and therefore in position of retroversion,
but as the strain upon the round ligaments keeps the uterus
in apposition to the bladder, the intra-abdominal pressure
continues to be exerted on its posterior surface, and no actual
retroversion occurs. But, in a few cases, retroversion arises
when in this condition of distended bladder a fall or blow of
some kind causes a sudden overstrain either of the round
ligaments, permitting the fundus to pass backwards, or of
the sacro-uterine ligaments, permitting the cervix to pass
forwards.

Cases of sudden origin of retroversion, however, are much
rarer than the cases which arise as the result of habitual
over-distension of bladder and habitual over-filling of the
rectum. These conditions are common in women who are
engaged in shops and warehouses, where the lavatory
arrangements are insufficient and inconvenient; while, at the same time, as in girls who work at sewing machines, there may be long continued and considerable exertion involving great increase of the intra-abdominal pressure. This over-distension of bladder and rectum gradually overcomes the tone of the round and sacro-uterine ligaments, and there comes a time when the cervix slips too far forward and the fundus too far backwards, so that the anterior surface of the uterus becomes exposed to the intra-abdominal pressure, and retroversion is assured. The great majority of the cases of retroversion in nulliparae, in my opinion, arise in some such way as this, but in women who have borne children retroversion is frequently a secondary result of lacerated or relaxed perineum. In all cases, we might say with justice that retroversion is the first stage of prolapse, but in these cases we express the fact better by saying that retroversion is an incident in the process of descent. It is not itself the first stage. The perineum being defective, the structures forming the anterior segment of the pelvic floor descend to fill up the gap, but the same forces which cause their descent continue in undiminished or even in increased degree to cause their protrusion through the gap, and their descent is facilitated by the relaxed condition of the uterine supports so common in these cases. As the descent takes place the segment swings round its attachment under the arch of the pubis, and first the anterior vaginal wall and then the portio vaginalis uteri present at the vulva. At a certain stage in this descent the uterus assumes the position of retroversion, but while this position facilitates the further descent of the pelvic segment, it is in itself, as I have said, simply an incident in the process of descent.

Retroversion, then, we may classify as primary and secondary, according as it occurs independently of descent of the anterior pelvic segment, or is simply an incident in that descent. Primary retroversion, however, is not uncommonly the first step in the descent of the uterus—the first stage of a prolapse—the retroverted uterus naturally tending to move downwards along the inclined plane presented by the vaginal lumen under the action of the intra-abdominal pressure. That it does not always do so is due to various complications that arise in connection with it, and give rise to adhesions which fix it in the pelvis and prevent its further descent. Adhesions of the same kind may arise in secondary retroversion, and we have thus a natural classification of retroversion into four kinds—mobile and fixed primary, and mobile and fixed
secondary retroversion. I do not think it profitable to pro-
ceed farther than this in classification. Various degrees of
retroversion have been suggested, but quite independently of
the absence of a proper basis of measurement, one may say
that retroversion when mobile is constantly varying in
degree, and when fixed may be fixed at any level, and, we
may add, to any degree from absolute fixation to almost free
mobility. There is thus endless variety, not only in mobile,
but in fixed retroversion, and there is a corresponding necessity
for variety in the management of the condition.

With regard to fixed retroversion, the question arises as to
the relation of the adhesions to the dislocation. It has been
held by some (Küstner) that adhesions resulting from inflam-
mation of tubes or ovaries, or both, are the primary fact in
many of these cases, and that the retroversion is brought
about by the cicatricial contractions following on the inflam-
mation. I think this must be a very exceptional cause of
retroversion. There are, indeed, many cases of retroversion
combined with inflammation of the appendages, but in the
frequency with which both retroversion and salpingitis occur,
this is only to be expected, and there are many cases of
inflammation of the adnexa—many cases even of the most
chronic forms which, on this theory, one would expect to give
rise to such cicatricial conditions as have been mentioned—in
which the uterus remains in the normal position and posture.
There is, no doubt, on the other hand, that retroversion in
many cases gives rise to adhesions, and this in several ways.
In the first place, by its constantly lying in contact with the
adjacent parts, the posterior surface of the uterus comes to
form adhesions with them. Küstner has expressed this
excellently in his article on Retroversion in Veit’s Handbuch.
"To understand the occurrence of these adhesions," he says,
"we must remember that retroversion, implying as it does
a position of absolute repose, contrasts with the normal
position in which the uterus, like all the organs of the
abdomen, and of serous cavities in general, is subject to con-
stant change of position and attitude, brought about by the
varying fulness of the neighbouring hollow organs, the bladder
and rectum, by the action of gravity, and by the muscular
action of the mesometrium. Now, there is a law that so
soon as an organ lies motionless in a serous cavity, the parts
of the visceral and parietal serous surfaces that lie in per-
manent contact very soon suffer a pressure necrosis of their
endothelium, and come to adhere with each other. Of this
law we make the most extensive use in abdominal surgery; I
may mention merely ventro-fixation of the uterus, Lembert’s intestinal suture, and operations for inguinal and umbilical hernias. For the same reason that these operations succeed, the retroflected uterus must become adherent to the peritoneum of the posterior pelvic wall. The same thing must occur with regard to the tubes and ovaries which are immobilised by the retroversion.” In this way, then, we may say that retroversion directly leads to adhesions.

Indirectly, also, by leading to a salpingitis, the retroversion brings on adhesions. The retroverted uterus almost necessarily suffers from endometritis. For this there are many favouring conditions; the frequently gaping os, the situation of the os in the lower part of the vagina where virulent microbes are abundant, the low nutritive condition of the uterine wall arising from the impaired circulation, are all conditions that facilitate the occurrence of endometritis, and with an endometritis there is always the risk of an extension of the inflammation into the tubes. But with the establishment of a salpingitis a local peritonitis is usually set up, and adhesions from this cause may spread all over the posterior half of the pelvis.

These considerations are sufficient to show that retroversion leads to adhesions far more commonly than adhesions can lead to retroversion. And with regard to adhesions, we may make one more reflection before we leave their consideration. Although fixation is a further step in the history of the dislocation—a diseased condition, we may say, added to the dislocation—it is, so far as the dislocation is concerned, a conservative process. It prevents the retroversion from going on to prolapse, which is the natural termination.

With regard to the management of retroversion, it is impossible, in the space of time we have at our command, to refer to all the proposals that have been made, and the methods that have been tried. I shall confine myself to giving the results of my own experience, and stating the principles that have been gradually established in my own mind in the course of years. In general, we must draw a broad line of distinction between mobile and fixed retroversion—the treatment which is suitable for the one is not sufficient for the other.

Taking, then, the cases of mobile retroversion—that is, cases in which the uterus can be restored by manipulation to a perfectly normal position—I think that, in the great majority of cases, the wearing of a pessary to keep the uterus in position is sufficient, and the proper pessary to use is an
ITS CAUSATION AND TREATMENT.

Albert Smith. These cases I curette for the accompanying endometritis before reducing, so that the uterus, restored to normal position, may not be hindered in its progress to recovery by taking with it a loaded endometrium.

There are, however, exceptional cases in which the pessary does not retain the uterus in position. So far as my experience goes, these are either cases of extremely flexible uterus or cases of shortened anterior vaginal wall, such as we meet with in some women, probably as a congenital condition; or cases in which the perineum is deficient and the tendency to prolapse decided. In such cases some operation for fixing the fundus forward is the only effective treatment. Should we recommend such an operation for these cases? There will, no doubt, be division of opinion on this point.

But, regarding retroversion as I do, as a distinct step in the direction of salpingitis, and keeping in view all the dangers of that condition, I think an early operation is preferable to waiting for the development of distressing and, perhaps, dangerous symptoms, and none of the operations recommended involve great risk. On a few occasions I tried vagino-fixation, but I have not operated in this way for some years, chiefly because of the serious cases of dystocia reported as following from it. I have also done the Alexander Adams' operation several times, but as it practically involves the making of two openings into the peritoneum instead of one, it is in that respect inferior to the usual median abdominal section, and I have known of hernia following it even among the few cases I myself have done. I have come to prefer the fixation of the fundus to the anterior abdominal wall. It is a simple and easy operation, and without any more danger than attends abdominal section at all times, and that is very little if ordinary aseptic precautions are taken. The adhesions which result hold the fundus forward, and allow the intra-abdominal pressure to act in the normal direction upon the posterior uterine surface, while they permit the fundus to withdraw from the abdominal wall and assume nearly its normal site behind the pubis.

In cases of fixed retroversion it is sometimes possible, under chloroform, to tear through the adhesions and reduce the uterus into normal position. Such cases are, in this way, brought into the category of mobile retroversion, and can usually be treated satisfactorily by a pessary. It is, I think, insufficiently recognised in practice that a pessary should only be used after the uterus has been restored to its position. There are a few cases of fixed retroversion where the use of a pessary counteracts, to a certain degree, the tendency to
descent, and the patient will feel relieved by wearing it, but it is a mere delusion to think that a pessary can gradually correct a retroversion. In the majority of cases a pessary will do harm rather than good. The only remedy for these cases is an operation. Here there is no choice but to open into the peritoneum and peel off the adhesions that tie down the uterus, but the modes in which the uterus is retained in the normal situation, after the separation of the adhesions, are very numerous. My own practice in these cases is to do ventro-fixation—two or three sutures uniting the fundus to the peritoneum of the anterior abdominal wall. The operation is a safe and easy one in itself, but many of these cases are complicated with salpingitis, and frequently the operation involves the removal of the tubes and ovaries at the same time.

I have said nothing of the symptomatology of retroversion, mainly because, in the diagnosis of the condition, we must depend entirely upon the physical signs.

The feeling of bearing-down, and even of prolapse, which is complained of, naturally arises from the position assumed by the uterus. But the dysmenorrhea, menorrhagia, the bladder troubles, the rectal symptoms, the general nervous symptoms, and many other complaints, both local and general, are all so variable, not only in degree, but even in their presence and absence, that it is always very doubtful how far they are to be attributed to the retroversion, and how far to coincident or sequent affections. While this is the case, however, I am sure that it is a mistake to regard a retroversion in itself as of little consequence. Whether the connection be easy or difficult to trace, there is no doubt that retroversion is the starting-point of many painful, and even dangerous, pelvic conditions; and in this view, the advice to leave untreated all retroversions which are only accidentally discovered is one that should be neglected. The proper advice, rather, is to allow no uterus, however healthy, to remain in retroversion.
MEETING X.—29TH MAY, 1901.

The President, Dr. Robert Jardine, in the Chair.

New Fellows.—The following were admitted as honorary Fellows:—Professor Howard A. Kelly, M.D., Baltimore; Professor P. Budin, Paris; Professor Dr. A. Martin. James Adams, M.D., F.F.P.S.G., was admitted as an ordinary Fellow.

I.—FRESH SPECIMENS.

By Dr. J. Stuart Nairne.

(1) Small fibroid of uterus, (2) large fibrocystic tumour of uterus; both removed by supravaginal hysterectomy.

II.—NOTES ON A CASE OF SYMPHYSIOTOMY.

By Dr. J. M. Munro Kerr.

Although the operation of symphysiotomy in recent years has been much discussed elsewhere, being strongly recommended in some quarters and equally strongly condemned in others, it has never been considered by this Society. Indeed, so little attention has been given to it, that, as far as I know, Dr. Jardine and myself are the only two obstetricians who have performed it in Glasgow. This is somewhat unfortunate, as, considering the prevalence of rickets, few cities offer a better opportunity than ours for testing the value of the operation, and I think that all, except the most prejudiced, will admit that it is, at least, deserving of being thoroughly examined. I cannot think that an operation which has lingered on so many years, has had such a strong revival in recent times, and has obtained such decided support from some of the most distinguished obstetricians of the day, is one that has no place in practical obstetrics, and should be finally "banished from our hospitals." To-night, however, I have no desire to pose as a strong supporter of the operation, for, as yet, I have only performed it once; but I do wish to stand by those who are anxious to give it a thorough trial. On theoretical grounds, it has always seemed to me an operation
that has its place, and, from the practical experience I have had of it in the case I am about to relate, that opinion has been confirmed.

Mrs. P., at 36, xi-para, was admitted to the Maternity Hospital under my care on 3rd April, 1901. She informed the house surgeon that in most of her previous labours she had been attended by a well known obstetrician of this city, but that, as he was from home, she had come to be delivered at the hospital.

Her obstetric history, which was very striking, was as follows:—The first child was delivered with forceps, and was dead; the second also perished whilst being extracted with forceps; the third, fourth, fifth, sixth, and seventh were delivered with forceps or after version, and in all cases the children were dead or died within a few hours; the eighth child presented by the breech, and was delivered dead by a nurse; the ninth child was born alive with forceps, and is still living, strong and healthy; the tenth child was delivered in the hospital after craniotomy. The delivery even then was not easy, so the report says. The child is stated to have weighed 9 lb., and, on questioning her regarding the other children, she said they were all large. The patient had therefore had ten deliveries at full time with only one living child, and that in spite of the fact that she was attended by a physician of great skill in obstetric medicine. He had, he informed me, repeatedly tried to persuade the patient to have labour induced, but she always refused, and sent for him only when labour was already in progress.

When admitted to the hospital on this last occasion, I found her advanced in labour. The os was fully dilated, and "pains" had been occurring regularly for nearly twenty hours. On examination by palpation, the child was made out to be presenting by the vertex, but the head was quite movable at the brim, and overlapping the symphysis pubis. The membranes were unruptured, and the fetal heart sounds were strong and regular. The general condition of the patient was thoroughly satisfactory.

The following were the pelvic measurements:—Interspinous diameter, 9 inches; intercrustal diameter, 10 inches; external conjugate, 6½ inches; diagonal conjugate, 3⅓ inches. I estimated the true conjugate at 3 inches—it certainly was not more than 3⅓ inches. Considering the extent of the pelvic deformity, the obstetric history, the fact that the child was alive with its head movable at the brim and overlapping the
symphysis, I decided that symphysiotomy was the operation which, while subjecting the mother to little danger, offered the best prospect to the child.

The external parts about the symphysis and genitals and the vagina were thoroughly cleansed with soap and water, perchloride of mercury and lysol; turpentine and alcohol being used for the external parts in addition. An incision was then made, beginning about an inch above the clitoris, and extending upwards in the middle line for about 3 inches. The tissues down to the bone were divided, and the rectus abdominis on the right side severed. I then separated the bladder from the posterior surface of the symphysis. Dr. Jardine then passed a sound into the bladder, and dragged the urethra to the left side, so keeping it as far as possible away from injury. Keeping a finger behind the symphysis to protect the bladder, I divided the joint. This was accomplished with very great difficulty indeed. The tenotomy knife, with which I tried to do it, broke, and I had finally to use a strong scalpel. Having divided the symphysis pubis, I then severed the subpubic ligament close to the bone in the right side. After division, the surfaces gaped about half an inch. The patient was then placed in the Walcher position, Dr. Russell and I keeping up firm pressure on the sides of the pelvis. The wound in the abdomen and behind the symphysis I packed with sterilised gauze. Dr. Jardine then very kindly applied the forceps, and succeeded in getting an excellent grasp of the head, for one blade was directly over the face and the other over the occiput. With steady traction the head was gradually drawn through the brim. The force required to accomplish this was not very great, and the cut edges of the joint, when separated to their greatest extent, were never wider apart than an inch.

The child was born alive, and cried immediately after delivery. It weighed 7 lb., and measured 22 inches. The measurements of its head were as follows:—B.T., 3 inches; B.P., 3½ inches; S.O.B., 4 inches; O.F., 4½ inches.

After the delivery, the gauze was removed and the abdominal wound was closed. Several catgut sutures were put into the deep tissues, and silkworm gut was used for the skin and superficial tissues. A collodion dressing was then applied, with the object of completely sealing up the wound. Broad strips of plaster were then applied round the pelvis to keep the two sides in complete apposition.

The after-treatment was, as in all cases of symphysiotomy, very troublesome. Long sandbags were applied up each side of the limbs and thighs. By that means, and by cautioning
the patient against moving, the pelvis was kept as far as possible at absolute rest. Great care was exercised in the sponging of the parts and the emptying of the bladder, which was done with catheter every four hours for the first few days. On the fourth day the bowels were moved by an enema, and after that every third day. The wound was dressed for the first time on 16th April—thirteen days after the operation. There was then a little pus round the two lowermost superficial stitches, but that cleared away in three days. On 3rd May—a month after the operation—the patient was allowed up, and walked without feeling the slightest discomfort. There was no mobility to be made out at the symphysis. The day following she left the hospital, both she and the child being perfectly well.

The case which I have just described, you will admit, was peculiarly favourable for symphysiotomy. Some of those most strongly opposed to the operation may say that, with such a deformity—true conjugate, 3 inches to 3½ inches—forceps or version might have proved successful, and will doubtless be able to quote cases where they have succeeded in dragging a live child through a pelvis with such a deformity. I also have done the same once or twice, but I have failed far oftener than I have succeeded. In dealing with a deformed pelvis, there is far too much brute force exercised in the practice of obstetrics, and far too little recognition of the limitations of the various operations, more especially of forceps, version, and induction of labour. All of us have been surprised at times at the wonderful results—mother little upset, child even sometimes apparently none the worse—after long-continued labour and much forcible traction with forceps or after version. Few of us, however, but must admit to having likewise often witnessed most serious disasters to both from such treatment.

The case, then, was a specially suitable one for symphysiotomy. The degree of deformity was such that one could reasonably expect a good result with it, and the previous obstetric history of the patient, and the fact that the head did not engage but overlapped the symphysis, removed all hope of success with forceps or version. Indeed, the only alternatives were to do craniotomy on a living child, or Caesarean section if the child's life was to be preserved. All will admit, I think, that symphysiotomy was preferable to either.

Regarding the operation, I would direct your attention to two points. The first is that the division of the symphysis was peculiarly difficult. That has not been the
general experience—indeed, in the latest series of English cases, Herman recommends, and others have done the same, the division of the symphysis subcutaneously. Another point connected with the operation is that the patient was put into the Walcher position during the extraction of the child. By that means a gain of a quarter of an inch was obtained in the true conjugate, and so the two pubic bones did not require to be so much separated. Two great objections to the operation are the troublesome after-treatment and the difficulty of preventing the wound becoming septic. In the case I have described, a very slight and late infection of the two lower-most stitches occurred.

At some future date, and after more experience of the operation, I hope to discuss its value and limitations. The operation, I feel sure, has, and will continue to have, a place in practical obstetrics, for there will always be particular cases when it will be the best treatment, if both the interests of mother and child are considered.

III.—ADJOURNED DISCUSSION ON RETROVERSION OF THE NON-GRAVID UTERUS: ITS CAUSATION AND TREATMENT.

Dr. Russell said—In his paper on retroversion of the uterus, Dr. Kelly has wisely made no reference to such complications as pregnancy, anteflexion of the retroverted uterus, or prolapse, all of which deserve special separate consideration. Even with these restrictions, however, the subject is wide, and it is impossible for one to take up every point suggested by the paper.

No better definition could be given than that adopted by Dr. Kelly when he describes retroversion of the uterus as the condition in which the fundus lies nearer than the cervix to the posterior pelvic wall. He distinguishes between fixed and mobile retroversion, but rightly discards further classification into degrees, a distinction which is arbitrary, and apt to vary according to individual idea. It is more scientific to describe the extent of the retroversion by its relation to certain constant pelvic landmarks.

As to its causation, I believe that it is almost invariably a pathological condition, and that this would be found to be true even in the case of nulliparous and unmarried women if we were able to get complete details of the previous history. It is difficult to understand how a sudden strain, or even prolonged habitual distension of the bladder or rectum, could cause a constant retroversion. With my present knowledge and
experience of cases, I do not believe it to be possible for a mobile retroversion, uncomplicated at any stage of its previous history by inflammatory trouble, to become fixed by the mere effect of pressure by or on other structures near it.

The most important consideration, however, is the treatment of this condition. Dr. Kelly has not referred to prophylaxis, but I think it deserves an important place in our discussion. Most cases of retroversion follow labour or abortion, and if every practitioner were to make sure of examining his cases carefully, as a method of routine, within the first two or three months after an abortion or a confinement, he would be able to detect a retroversion early, and to correct it at a time when there is every chance of curing the condition by such palliative means as rest, hot douching, glycerine or ichthyol applications, and the subsequent use of a suitable pessary for a short time. By taking this precaution, I have more than once discovered a retroversion, and been able to correct it in time. Curettage in abortion, and watching and promoting the involution of the uterus in the puerperium itself, are also, of course, essential.

With regard to the use of pessaries, they frequently give rise to trouble by pressing upon and irritating neighbouring structures, and I think that, excepting as a temporary means of treatment, they should not be employed where the deviation can be corrected by operative or other measures. This applies specially to cases complicated by any form of adhesion.

I have not left myself time to discuss the merits of the various operations that have been adopted, but I wish, in concluding, to say that, though there is much to be said in favour of ventrofixation, I think that in the future we shall hear of even better results by treating this condition through the posterior vaginal fornix in the manner described by such men as Pryor. It has to be remembered that most cases of retroversion are in reality in some degree fixed, i.e., there is some form of adhesion posterior to the uterus. With proper aseptic precautions it is an easy and safe thing to enter 'Douglas' pouch, explore the neighbouring parts and separate adhesions, and then, by means of sterilised iodoform gauze packing, keep the uterus in its normal position. The patient remains in bed for a fortnight or so afterwards, while the packing is renewed as is found necessary.

This method of operative treatment seems to me to be more rational, as by it we strengthen the natural supports of the uterus posteriorly. There is also less risk to the patient; there is no abdominal incision, and no fear as to the result of anterior adhesions; no pessary is required afterwards; and,
even if ovarian or tubal disease is discovered, it can be satisfactorily treated during the operation.

*Dr. Stark* said that the Society was indebted to Dr. Kelly for his paper, which was on a subject which, though well worn in discussion, was by no means threadbare. Perhaps it would lead some to consider retroversion of the uterus in a more serious light than is ordinarily the case; but, in spite of what has been said, there are many instances of backward displacement where neither pessary nor operation is required. Such cases are sometimes congenital. In any case, exception must be taken to the statement that all cases of mobile retroversion require curetting, and he considered that it ought not to go forth from the Society without protest against its sweeping character.

Curetting is an operation useful and necessary in many cases, but when no endometritis exists it should not be performed. It required such careful attention to aseptic details, that if all women suffering from retroversion had to submit to the operation, in many cases their last stage would be much worse than their first.

A common impediment to the retention of a pessary in good position is a fibroid tumour in the posterior wall of the uterus, and this should be carefully looked for in cases which seem very readily to relapse in spite of a pessary. He also considered that some attention should be given in suitable cases to preliminary medical treatment—douching, tampons, &c.—before a pessary is used, as in many cases adhesions will then yield, and a healthier condition of the pelvis generally be brought about.

As regards operations, he prefers ventrofixation to any other for one reason, that a careful examination may first be made of the organs, and adhesions broken down. When this is done, and diseased parts removed, the fixation can be performed in safety. He now prefers catgut to silk in the suspension of the uterus.

*Dr. J. Edgar* agreed with most of Dr. Kelly’s views, but thought he had not done himself justice in making his paper so short. There were many faults of omission. We should recognise that retroversion may be physiological from the uterus being pushed back by a distended bladder, therefore must ensure that both bladder and rectum are empty before making a diagnosis. He was inclined to retain the division of backward displacement into degrees, and regretted there

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was not more unanimity with regard to the nomenclature. He spoke of them as—First degree, uterus vertical; second degree, lying back at an angle of 45°; third degree, horizontal with fundus directed backwards; fourth degree, below this. Criticising Dr. Kelly’s statement that retroversion may cause adhesion, he said that Dr. Kelly rejected the classification into degrees, because, when the uterus is mobile, it constantly varies in position; yet, immediately afterwards, Dr. Kelly quotes and agrees with Küstner that a uterus may become fixed simply through lying immobile in the pouch of Douglas. He himself did not believe that adhesions are caused by simple contact. As regards causation, an over-distended bladder might produce backward displacement, and, in support of this, he quoted the case of a typewriter in whom he regarded this as the main factor. Ruptured perineum in the puerperium was a cause, and this should always be looked for and repaired.

In cases of retroversion found during the puerperium, a pessary should be inserted about a fortnight after parturition, and if worn for six to twelve months, a cure was most likely to result.

In cases complicated by adhesions, medical treatment and stretching of adhesions was good. Operation should be limited to cases unsuitable for pessary treatment, and these formed a small proportion. He preferred ventrofixation, and used strong catgut, as he had previously had bad results with silk.

Dr. W. L. Reid said that most cases of retroversion were due to subinvolution, especially aided by the premature use of forceps, resulting in tears of the cervix and perineum. The condition was further aided by the patient rising too soon in the puerperium. The uterus was inflamed, and got displaced downwards. He agreed with the view that retroversion does not cause adhesions unless irritation is present, and he found that the great majority of cases were non-adherent. A certain percentage of retroversions do not require treatment, especially if found towards the menopause. He believed greatly in pessary treatment, and so applied that it kept the uterus in the position required to permit of intra-abdominal pressure acting on the posterior wall. Cases that are congenital with a short anterior vaginal wall were best left alone. He preferred ventrofixation when operation is necessary. The Alexander-Adams’ operation required months of careful after-treatment to prevent a hernia forming, although
great good had resulted in those cases where he had operated by this method.

Dr. James Adams said that many retroversions were congenital, and operation did no good. As many cases followed child-birth, where the perineum was torn he did a plastic operation. He commended the use of abdominal exercises to strengthen the abdominal muscles; these also acted on the round ligaments, and some cases of retroversion were thus cured. He referred to the operation bearing his own name, and to the risk of hernia following it. He now slits up the whole inguinal canal, and stitches up with catgut. Stitch abscess might follow from the strain in the sutures. He also drew attention to the course of the hypogastrics in the pelvis, as he considered them of importance in supporting the uterus.

Dr. Kelly replied.

IV.—ECTOPIC GESTATION, WITH FORMATION OF LARGE HÆMATOCŒLE AND SECONDARY RUPTURE INTO UPPER THIRD OF SIGMOID FLEXURE.

By Dr. John Edgar.

Mrs. H., æt. 39, was seen in consultation by Dr. Edgar on 18th April, 1901. The history obtained was that early in January, after a period of two and a half months' amenorrhœa, there was a sudden attack of cramp-like abdominal pains, with syncope and retching. Blood also appeared per vaginam. The medical attendant told her she was suffering from pelvic inflammation following upon an abortion. There were repeated attacks similar to the first, but at no time was there any rigor or any pyrexia. On 15th April a large quantity of chocolate-coloured blood was passed per rectum, and it was then recognised that the pelvic mass, which had been felt reaching up to above the umbilicus, was not inflammatory, but a pelvic hæmatocæle. Dr. Edgar confirmed the latter diagnosis, and as the patient was getting rapidly weaker, and was passing blood from the bowel every ten to fifteen minutes, gave a grave prognosis, and stated that the only chance the patient had lay in an operation.

On admission into the Samaritan Hospital on the following morning, patient's condition was found to be very grave. She was anaemic and puffy, and the urine contained both blood and albumen.
As, however, the abdominal mass still reached higher than the umbilicus, and blood was still being passed every fifteen minutes per rectum, the abdomen was opened. The enlarged uterus was found fixed by numerous firm adhesions to all the adjacent structures, with the exception of the anterior abdominal wall. An attempt was made for some time to separate the adhesions, but was finally abandoned. The abdomen was closed, and a transverse incision was made in the posterior fornix. Through this incision a large amount of extremely fetid blood and feces was expelled, and the mass collapsed. The cavity was douched and packed with iodoform gauze.

Patient rallied from the operation, but, though there was no fresh bleeding, feces and grumous material continued to escape per vaginam. The temperature, which had been elevated for a few days before operation, rose still higher, and patient died on 24th April.

A post-mortem examination was made by Dr. Galt. His report is as follows:—

"Summary of results.—Gangrenous diffuse abscess cavity behind enlarged uterus, extending to pelvic wall on either side; connection behind fundus with the upper third of the sigmoid flexure by a fairly large opening, united organically with the uterus; uterus itself enlarged to size of about two and a half to three months' pregnancy; cavity normal.

"External appearances.—Body of a woman about 40; well nourished; no external sign of putrefaction; abdomen distended uniformly with gas; rigidity present only in lower limbs; operation wound 4 inches long, midway between umbilicus and pubis; no discharge therefrom.

"Abdomen.—Layer of fat, 1/2 inch thick, on abdomen. Stomach and intestines much distended with gas. No peritonitis or adhesions above the pelvis; uterus presents above the pelvic brim, and is about the size of a cocoa-nut. In the pelvis there is considerable purulent peritonitis; no recent blood. The fundus of the uterus is organically connected by firm fibrous tissue on the posterior aspect to the upper third of the sigmoid flexure, which is dragged towards the middle line, and shows a very loose mesentery.

"On removing the uterus, there is found behind it, and filling up the pelvis here from one side to the other, a gangrenous abscess cavity, the walls of which are quite black. There is little free pus, as there is free drainage through the pouch of Douglas. The appendages on either side are matted
together by dense inflammatory adhesions, and cannot be properly separated.

"On incising the uterus in situ, its cavity is found to be practically normal; the uterine openings of the Fallopian tubes are patent. The tube on the right is dilated, and on pressure a little pus exudes into the cavity of the uterus. Below the dilated Fallopian tube on the right side there is a cavity about the size of a turkey's egg, filled with organised blood-clot. This cavity communicates posteriorly with the abscess cavity.

"On further examination of the sigmoid flexure, about the middle of that portion adherent to the uterus there is a communication, admitting two fingers easily, with the abscess cavity beneath. The bowel otherwise is normal, including the rectum.

"The other abdominal organs are practically normal. The liver shows some fatty degeneration, and the spleen is enlarged (weighing about 10 oz.) and congested. Kidneys not examined.

"Microscopic examination of the blood clot contained in the cavity below right tube shows the presence of occasional disintegrated, and a very few well-formed, chorionic villi in the midst of well organised blood clot."
TRANSACTIONS

OF THE

GLASGOW

OBSTETRICAL AND GYNAECOLOGICAL

SOCIETY.

MEETINGS OF SESSION, 1901-1902.

MEETING I.—23RD OCTOBER, 1901.

The President, Dr. Robert Jardine, in the Chair.

New Fellow.—Alexander Thomson, M.B., C.M., was admitted an ordinary Fellow.

I.—FRESH SPECIMENS.

A. By Professor Murdoch Cameron.

Professor Murdoch Cameron showed the foetus removed by Cæsarean section from a case of pregnancy in the right horn of a double uterus. He also showed a drawing representing the condition noted from examination at time of operation. He said that he intended to read a paper on the subject at a future meeting.

B. By Dr. John Edgar.

Dr. Edgar read notes of following two cases, and showed the specimens removed by operation:—
1. Case of carcinoma of uterus with pyometra: Vaginal hysterectomy: Recovery.—Mrs. R., æt. 60, admitted to Samaritan Hospital on 11th October, 1901. Four children, youngest 19 years old. Menopause nineteen years ago. Profuse yellow discharge for last two years, brown and fetid during the last few months. Pain in the lumbo-sacral region; cachexia. On examination, the corpus uteri was found to be enlarged and globular, the uterus movable, cervix not malignant, and the parametrium little, if at all, affected.

On 14th October cervix was dilated, and several ounces of fetid pus escaped through the os uteri. With the flushing curette a piece of tissue, of the size of a hazel-nut, was removed, and kept for microscopic examination.

Dr. Galt's report.—“Sections show a fully developed epitheliomatosus carcinoma, very cellular, and of apparently rapid growth.”

On 19th October, Dr. Edgar, assisted by Dr. Russell, removed the uterus per vaginam. Clamps were used, and left in situ for forty-eight hours. At the beginning of the operation the sound was passed into the uterus. Though no force was used, it perforated the fundus. The uterus was found after its removal to be infiltrated with cancerous growth throughout.

23rd October.—To-day the gauze packing was removed. There has been no sickness nor rise of temperature. Pain for the first twenty-four hours, not since.

2. Case of extra-uterine pregnancy: Abdominal section: Recovery.—Mrs. M'G., æt. 30, was admitted into the Samaritan Hospital on 5th October, 1901. Two children, youngest 8 years old. Five abortions, last two years ago. Menstruation regular; amenorrhoea between 30th June and 15th September —i.e., for eleven weeks. Morning sickness and breast symptoms. Two attacks of cramp-like abdominal pain, with distension, vomiting, and faintness. The first was on 30th August; the other, more severe, on 15th September. The latter was accompanied by slight uterine haemorrhage, which became profuse on the following day, and continued till admission. Expulsion of decidua on 22nd September. Bearing-down feeling. Frequent micturition.

Examination.—Uterus pushed forwards by a large mass in Douglas' pouch, chiefly to the right. The mass is elastic, non-sensitive, and projects above the pelvic rim.

On 9th October, Dr. Edgar, assisted by Dr. Russell, performed abdominal section. While separating and bringing
up the gestation sac, it broke in two. The smaller inner portion came away in the hand, and the foetus dropped into Douglas' pouch. These were removed. The outer portion of the sac, composed partly of the right Fallopian tube and partly of partially organised blood-clot, was then brought up, and the pedicle clamped and cut through. The vessels were ligatured, and the cut surface stitched over with catgut.

The left appendages were healthy. A small cyst was enucleated from the free edge of the left mesosalpinx.

Patient made an excellent recovery, the temperature remaining normal throughout.

The foetus measures 3 ¼ inches in length.

II.—CONSIDERATION OF SOME DETAILS IN THE OPERATION OF VAGINAL HISTERECTOMY FOR CANCER.

By Dr. W. L. Reid.

For some years past I have been much interested in the subject of vaginal hysterectomy, partly because I think that, carefully performed, it is an operation with a very low mortality, but principally because I believe, in spite of the opinion of many authorities of experience, that in well selected cases it holds out a very fair hope of permanent cure in an otherwise undoubtedly fatal disease.

In what I am going to say to-night I will limit my remarks to vaginal hysterectomy for malignant disease, and to the points on which difference of opinion may possibly exist; and I give details because I think that success or non-success as regards permanent results depends upon these details.

When I promised this communication I hoped to give the remote after-results, because this is, in the majority of cases, the real test of the value of any operative interference. But time has not permitted this to be done in such a fashion as would brave criticism. Suffice it to say, that of ten cases operated on for undoubted malignant disease, I know of one in which the disease reappeared and five in which, three, four, eight, eighteen, and twenty-five months after operation, there was no evidence whatever of its return. Of the other four I know nothing further than that they were well a month after operation.

First, then, as regards selection of suitable cases. Out of many who have presented themselves at the Western Infirmary, I undertook the radical operation, as I have already said, in only ten. As everyone knows, hardly one in fifty cases seen
at a public hospital is not in an advanced stage and quite beyond hope of radical cure. I think no case should be operated on where the clinical signs are not clearly those of cancer. One is, of course, most willing to operate where the signs observed by the practitioner agree with the pathologist's report on pieces of tissue from the cervix or curettings from the interior of the uterus. Nevertheless, if the clinical evidence is decided, that is sufficient warrant for a hysterectomy. Again, no case should be reckoned suitable where the uterus is not movable perpendicularly to the extent of at least an inch. I have seen the statement made that the case is not suitable for operation unless the cervix can be pulled down to the vulvar orifice. This would exclude almost all nulliparous women, and seems to me absurd. Some would reject all cases of very narrow vagina, such as one finds in old nulliparous patients. I have operated, and would operate, on such, although I confess the difficulty is often very great indeed, and splitting of the perineum is usually necessary.

It goes without saying that when the disease has extended to the vaginal mucous membrane, or through the substance of the uterus to the peritoneum, or has infiltrated the broad ligaments, operation is useless.

Given the decision to operate, what should be done in the way of preparation? The routine I have followed is this. When a patient appears with disease of the cervix of an apparently operable character, I remove the ulcerating surface with a sharp curette. If the disease is in the body of the uterus, the curette is used simply to remove a reliable sample of the abnormal tissue. Nothing further is done because of the risk of either perforating the organ or setting up a peri-metritis which would complicate the anticipated hysterectomy. The patient is kept under the influence of 1 in 200 lysol douches night and morning until the pathologist's report is obtained. On the morning of the operation a 1 in 100 lysol douche is used, followed by a 1 in 200. After anaesthesia has been induced the vagina is again washed out, not with corrosive sublimate or carbolic acid, both of which constrict the mucous membrane, but again with 1 in 200 of lysol well rubbed into the surface. Where the interior of the uterus is affected the cervix is closed by a series of strong silk sutures, which are firmly tied and left long enough to be used for pulling down the uterus, and so leaving free the space which a vulsellum would otherwise occupy. If the cervix has been involved in the disease a circular cut is made in the vaginal mucous membrane, as far as possible from the diseased tissue.
This is dissected up, folded over the stump of the cervix, and stitched with strong silk in the same way. The object of this is to close in the infective structures as completely as possible. The bladder is separated in the usual way, and Douglas' pouch opened. Now comes a question which seems debatable. Shall we divide the broad ligaments by clamping them or by ligatures? The former is a rapid method, the latter, if carefully done, is slow. I greatly prefer ligatures, on the ground that they can be put exactly where you wish them, while the clamp has to take such a grasp as it can. For other reasons I object to the clamp, but that is the chief. Again, I think five or six ligatures on each side are better than two or three. They hold better, and, taking in less tissue individually, can be more exactly placed, so keeping as far as possible from diseased structures. If they are aseptic, the number is no disadvantage, except for the time required to place them. As regards material, there is little to choose between good catgut and silk. I prefer the gut as being fully less apt to give after-trouble by not becoming thoroughly encapsuled. In my first operations I left the ligatures long, and allowed them to be discharged for two or three, or sometimes even for six or seven, weeks after operation, and so kept the wound more or less open.

The Fallopian tubes are cut as far from the fundus uteri as possible, but unless the ovaries seem unhealthy they are not removed.

The wound is wiped out with iodoform gauze, and any bleeding point in the mucous membrane is ligatured. One piece of iodoform gauze is placed between the lips of the wound simply as a drain, and the vagina is loosely packed by another piece. These are usually not removed for from three to seven days, depending on the amount of fluid they have soaked up. Such patients are not allowed out of bed until about three weeks after the operation.

Let me now give you the barest outline of the progress of one or two cases so treated.

G. S., aged 38, admitted on 11th September, 1899, with symptoms of malignant disease of the interior of the uterus. The curette was used, and a sarcoma diagnosed. This was confirmed by the pathologist, and on 20th September vaginal hysterectomy was performed with difficulty owing to narrowness of the vagina, the patient being nulliparous. The large size of the fundus increased the difficulty.

Patient was dismissed well on 17th October, 1899, and was
last seen on the 4th of this month (October, 1901), when the scar was found quite sound.

M. W., set. 52, admitted 8th February, 1900, her symptoms pointing to sarcoma of the uterus. Removal of a piece of tissue which presented at the cervix, and its examination by the pathologist, confirmed this diagnosis. On 28th February vaginal hysterectomy was performed, silk being used, as the gut was found defective. Patient dismissed well on 24th March. Seen on 4th of this month (October, 1901) with the scar quite sound.

I presume I have said a great deal with which you will all agree, but I can hardly think there will not be some difference of opinion as to the whole conduct of such cases, and it is by a declaration of these differences, and the reasons for them, that we may hope to help each other in practice.

Dr. Murdoch Cameron referred to Dr. Leishman's method of using the ecraseur for cancer of the cervix uteri, and the good results he got, many cases remaining well years after operation. An easy case for operation is rarely got, and manipulation being mostly in the vagina made hysterectomy much more difficult than would appear from the diagrams in text-books. He had never injured the bladder in any of his operations. He had one case of vaginal hysterectomy, where, owing to severe hæmorrhage which could not be controlled from below, he had performed a rapid abdominal section, and secured the blood-vessels from above. He preferred to use clamps as a more rapid method than ligation.

Dr. Renton asked what the experience of operators' now was in removing only the cervix, as he had two cases of no recurrence after ten years where the ecraseur was used. As regards choice of ligature or clamp in treating the broad ligament, it was very much a matter of which method you liked better. The clamp method is rapid and clean, while that by ligature is slow but equally good. He considered both methods equally good, but some cases were more suitable for the one than the other.

Dr. J. K. Kelly said he had for some time exclusively used clamps, although one objection to their use was the annoyance to the patient when they were removed. He had tried the angiotribe in two cases, but in the second the patient died from secondary hemorrhage, and he had not tried it since. He agreed with Dr. Reid in the essential details of the operation
as described in his paper, but a uterus might be removed even when its mobility was less than 1 inch. After using clamps a patient can be permitted to rise in twelve days. He had not met with sarcoma of the uterus amongst the many cases of malignant disease of that organ which he had seen.

*Dr. Nigel Stark* said that cases of cancer of the cervix recurred more readily than those where the disease existed in the body of the uterus. He considered that the main point was not the operation itself, but what results did we get after hysterectomy. In operating we must get well beyond the diseased area in cancer of the cervix, and for this purpose he considered ligatures even better than clamps, as we could see where we were going. He makes the first incision well down in vagina.

*Dr. A. Maclellan* said, with reference to the remark made by Dr. Kelly regarding the angiotribe, that Doyen had now discarded the instrument as a substitute for the ligature or clamps in vaginal hysterectomy, but that the angiotribe was applied to reduce the bulk of the tissues requiring ligature, thereby lessening the chance of slipping. To employ the angiotribe instead of the ligature was dangerous, and a case was mentioned which had required abdominal section to ligate a uterine artery after having had the angiotribe applied to it for the regulation two minutes. Objection was taken to the application of mass ligature as well as to the use of clamps, as by those means the secretion from the cut surfaces was pent up; whereas if ligatures were applied to individual vessels, any cancerous cells in the neighbouring cellular tissue would be washed out by the effused lymph. Referring to Dr. Stark's remark that when the glands were involved the case was hopeless, the speaker said that a case had been reported by Landau, of Berlin, at the meeting of the British Medical Association in Edinburgh, where an abdominal section was performed for the removal of an infected gland from the pelvis after a previous vaginal hysterectomy. A single case like that made it therefore necessary that these cases should be treated from the more hopeful point of view.

*Dr. W. L. Reid* replied. He went back to the days of the ecraseur, but considered it a coarse method, and used the galvanic wire. The weak point in those days was the difficulty of diagnosis, and some of the successful cases reported were perhaps not malignant at all. He considered it impossible to use a clamp with the delicacy of ligature and scissors, and, curiously enough, the mortality was greater after the clamp than by the ligature method. None of his
cases had died from the operation itself. He believed that wide amputation of the cervix might do in early cases, but all operators now performed total extirpation of the uterus.

III.—PURPURA HÆMORRHAGICA IN A CASE OF VOMITING OF PREGNANCY.

By Dr. Robert Jardine.

Mrs. W., æt. 19, was admitted to the Glasgow Maternity Hospital on 14th June, 1901, suffering from persistent vomiting, which had first commenced in January, but had been much more severe since the latter end of May. She stated that she had rejected everything except a little water since about 28th May. She considered herself in the seventh month of pregnancy. Her health previous to this pregnancy had been excellent. She had had two abortions, one nearly four years ago, and the second in July, 1900. They had both been about the third month. She could give no cause for them.

On admission, she looked collapsed, sallow, and emaciated. Judging from her rings, her fingers were much thinner than formerly. Her pulse was about 120, regular, and of fairly good tension; temperature, 99°. The heart sounds were normal, and the foetal heart could be distinctly heard. The abdomen was not much distended. The fundus was slightly above the umbilicus. There was no oedema of the legs. The urine was very scanty, dark coloured, muddy, with a peculiar sweetish odour. It contained distinct trace of albumen, pus cells, epithelial débris, and some granular tube-casts.

A sip or two of egg-flip and brandy was given, but it was immediately rejected. Rectal feeding with milk, brandy, and beef-peptonoids was at once commenced. The enemata were retained. Next day she was given 10 grs. of oxalate of cerium and 15 grs. of bismuth subnitrate three times, but she rejected the first two doses. As she was excreting very little urine, 25 oz. of saline solution were infused under the right breast. That evening her temperature, which had been subnormal since the day after admission, rose to 101.4°, but fell to 97.8° next morning. On the evening of the 18th, it rose to 103°, but it quickly fell to normal again. By the 19th she had improved considerably. The sickness had nearly ceased, and she was able to take imperial drink, milk and lime water, and brandy and ice by the mouth and retain it. The foetal heart sounds could not be heard.

On the 20th, a distinct rash began to appear about the
extensor surfaces of the elbows, hips, and knees. It quickly became purpuric and general in character. The gums, also, began to bleed readily. Hæmatemesis began on the evening of the 21st, and feeding by the mouth was stopped. The pulse became much weaker, and tremor of the hands was noticed. Her face became cyanosed, and she appeared to be drowsy.

Dr. Carstairs Douglas tested the coagulability of the blood, and found that the time was ten and a half minutes. This is about double the ordinary time. He found urobilin in the urine. She was now put on suprarenal tabloids, 5 grs., three times a day.

23rd June.—Hæmatemesis occurred twice during the night. Hypodermic injections of 5 minims. of liq. stryech. were given every six hours.

24th June.—To-day there was a slight vaginal discharge, and on examination the os was found partially dilated. Labour was going on, but the patient maintained that she felt no pain. She, however, felt the vaginal examination. In a few hours a dead foetus was delivered by the breech.

There was no post-partum hæmorrhage, but as a preventative an intra-uterine douche of 2 pints of water, containing 30 grs. suprarenal extract to the pint, was given, and a hypodermic of ergotin and strychnine. Two pints of saline solution were infused into the abdominal wall. The pulse was very feeble and rapid. The foetus did not show any eruption, and there were no hæmorrhages into the placenta.

25th June.—Vomiting has recurred several times; hiccup at intervals; pulse almost imperceptible. She lies with half-closed eyes, but when spoken to says that she feels much better. The rash has faded very much. Muscular tremor is very marked. Strychnine injections have been stopped, and ether used instead. She died at 10:45 P.M. From the last hour she was unconscious, and the breathing was Cheyne-Stokes in character.

We were fortunately able to obtain a post-mortem examination. Dr. Carstairs Douglas reports as follows:

"Body fairly nourished; sallow and jaundiced tint of skin. Rigor mortis gone in arms, present in legs. Pupils equally dilated.

"On reflecting the skin, the tissues were found to be very dry. Fair amount of subcutaneous fat.

"Thorax.—Heart covered all over anterior aspect with fat; pericardium normal. Moderate amount of dark fluid blood in right side. Every chamber occupied by ante-mortem firm,
pale clot, extending up into aorta and pulmonary artery. Left lung very distinctly emphysematous. Right lung emphysematous in upper lobe, solidified in lower lobe.

"Abdomen.—Stomach distended with gas, and containing about 10 oz. of black fluid (blood). Mucous membrane greenish-yellow in colour, and a few small pinkish spots seen here and there. No ulceration. Gullet and duodenum contained similar material, but no ulcers or bleeding points. Liver large, firm and heavy. Slight degree of nutmeg changes; gall-bladder distended. A subsequent examination of the liver and kidneys gave evidence of a deposit of iron similar to that seen in pernicious anaemia.

"Spleen small; normal.

"Pancreas small; normal.

"Left kidney fairly normal; some small bluish-black points in surface of cortex, and old hæmorrhages. Cortex pale; medulla normal. Left suprarenal appeared normal. Right kidney has an abscess in its pelvis containing thick, yellow pus. The abscess burrows to a moderate extent into the substance of the organ. Suprarenal appears normal.

"Bladder contains a little brownish urine; surface normal.

"Tubes and ovaries healthy. Corpus luteum on the right side.

"Uterus well contracted; wall pale and thick; decidua entirely away; a little blood-clot present."

We were in hopes that the post-mortem examination would throw some light on the condition, but, with the exception of the abscess in the kidney, everything seemed to be fairly normal. I don't think this abscess had anything to do with the condition. I was very much struck with the amount of subcutaneous fat, and especially with the large amount about the heart. Considering that she had had practically no food for some weeks, this was very remarkable.

Before discussing the purpuric condition, I shall say a few words about the vomiting. Uncontrollable vomiting of pregnancy is fortunately a rare disease, but when it does occur it is one of the most difficult complications one can have to deal with. When medicinal treatment fails, induction of labour is usually resorted to. I am afraid that the tendency is usually to delay too long before resorting to this. Our results in the hospital have not been very brilliant, because the patients have too often been so far reduced that they sank from exhaustion after delivery. In this case, the woman was so weak that I considered she would stand a better chance if we could first strengthen her up a bit by rectal alimentation.
CASE OF VOMITING OF PREGNANCY.

She certainly improved, but on the appearance of the purpura she rapidly grew worse, and I then felt that induction would hasten the end. After labour, which came on of itself, she sank very quickly. The painlessness of the labour is interesting. This may have been due to the action of the suprarenal tabloids, but this is only a supposition.

Some years ago I had a somewhat similar case of painless labour in a woman who was admitted for vomiting. She had had very severe hæmatemesis several times before admission, and was much reduced. As there was no recurrence of the vomiting after admission, we did not induce labour. On the second day, a seventh month foetus was expelled with the membranes intact. The patient, a multipara, never knew that she was in labour until the foetus was passing through the vaginal outlet. It was the same in this case. The uterine contractions were painless, and yet the patient felt pain from the examining finger, and also when the foetus was being expelled. At the post-mortem examination, the stomach was found not to be ulcerated, although she had had severe hæmatemesis several times.

The literature of purpura hæmorrhagica is very extensive, but comparatively few cases have been recorded in connection with pregnancy. In his text-book on Midwifery, Hirst says—“Purpura hæmorrhagica is apt to be rapidly fatal in pregnancy, which it always interrupts. The disease usually destroys the foetus before it is expelled. The maternal death may be due to post-partum hæmorrhage or to sepsis.” Müller, in his Handbuch der Geburtshülfe (vol. ii), says—“Purpura hæmorrhagica occurs as a rare but comparatively dangerous complication of pregnancy, occurring at any time during pregnancy, and lasting for varying periods. Generally, it continues till the end of gestation without interrupting the same. Bleeding from the genital tract is not reported in such cases, but they may be brought so low by bleeding from the gums, nose, and urinary organs, that at the time of labour they have practically no further hæmorrhage from the genital canal. A case of this kind is reported by Labsfeldt from Frerich's clinic. But it may lead to metrorrhagia in the puerperium, which may have a fatal termination. The disease, indeed, may first develop in the puerperium. The observation of Dohrn is of interest, which reveals that the disease can be handed from the mother to the foetus. Although after delivery all signs of the disease left the mother, they showed themselves distinctly in the child, especially in the form of

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blood extravasations, which, however, disappeared at the eighth day. A similar case is reported by Lingen. Whether pregnancy or the puerperium form the cause of the disease, it is impossible to say for want of observation."

Most of the other authors are silent on the point. Barnes seems to have reported a case about 1869, but I have not been able to find the record. In 1886, Phillips, of London, reported two fatal cases recorded by Peuch, and one of his own which recovered. One of Peuch's cases died of post-partum hæmorrhage. A careful perusal of Phillips' case gives me the impression that it may have been a case of scurvy. Curiously enough, I had a case of scurvy in the hospital a few weeks before Mrs. W. was admitted. The woman had been on starvation diet for some time. Her gums were very spongy and bled profusely, and she had a few subcutaneous hæmorrhages. A liberal diet soon cured her. The child showed no trace of the disease, but it died in a day or two. Cases of this kind are not very uncommon in a large city like Glasgow, but these are not cases of purpura hæmorrhagica.

You will notice that Hirst says pregnancy is always interrupted, while Müller states the very opposite. I agree with Hirst. In all the cases referred to by Phillips pregnancy was interrupted. I am inclined to think that cases of scurvy have been confounded with purpura hæmorrhagica, and if this is true it would account for the difference of opinion as regards results.

The disease is one of the blood, and I do not think that pregnancy has anything to do with the cause. As a matter of fact, the increased amount of fibrin in the blood should act as a preventative, and this probably accounts for its infrequency in pregnancy. Dr. Douglas' observation on the coagulation time is very important. In Fagge's Medicine it is stated that "it [the blood] has been said to be deficient in coagulating power, but this seems to be a mistake." In the present case there certainly was a very marked deficiency. I regret that a second observation was not made after the patient had been taking suprarenal extract for a few days. We had arranged for this, but unfortunately Dr. Douglas was unable to do it in time.

As regards treatment, arsenic is undoubtedly of great use in ordinary cases. The condition of the stomach in this case was against any medicines doing much good. I tried the suprarenal extract. The purpuric condition certainly improved very much, as the rash had almost entirely disappeared. Post-partum hæmorrhage seems to have been very common
in other cases. In one of Peuch's, it was the direct cause of death, and in the other the uterus filled with clot after delivery. In my case there was no bleeding at all. Whether or not this was due to the action of the suprarenal extract, it is, of course, impossible to say.

I am indebted to my resident, Dr. Robin, for the careful notes of the case, and also to Dr. Carstairs Douglas, for his valuable assistance in investigating the case and looking up the literature of the subject.

*Dr. Carstairs Douglas* said he considered this a case of great interest, as it was noted by all obstetricians that haemorrhagic purpura was a very rare complication of pregnancy. He had seen this case several times during life, and was satisfied it was a case of purpura and not of scurvy. The condition did not develop till after she had been some little time in hospital, where hygienic and dietetic conditions were opposed to scurvy; the coagulation time of the blood was notably diminished, and the urine contained urobilin, while *post-mortem* the kidneys and liver showed the evidences of deposit of iron similar to that met with in pernicious anaemia. Müller had noted that very often the bleeding of labour was strikingly small in this disease. This was the case in Dr. Jardine's patient, and the same thing was observed in a very typical case reported by Byrne (*British Medical Journal*, 2nd November, 1867), where all the classical symptoms were present (nasal, buccal, cutaneous, and renal haemorrhages). His patient had singularly little bleeding during delivery; but on the thirteenth day of puerperium, vaginal haemorrhage set in, and the patient succumbed. One of the fullest papers on this subject was that by Wiener (*Arch. f. Gynäk.*, Bd. 31, 1887). In at least two of the cases which he quotes, however, there was grave uterine bleeding, and both patients died. Dr. Douglas congratulated Dr. Jardine on having had the opportunity of seeing this case, and of putting it on record.

*Dr. J. K. Kelly* considered these cases allied to vomiting of pregnancy, and that they have a connection with pregnancy. The cause was, however, unknown.

*Professor Murdoch Cameron* said he had met with no such case in his thirty-one years of practice.
MEETING II.—27TH NOVEMBER, 1901.

The President, Dr. Robert Jardine, in the Chair.


I.—FRESH SPECIMEN.

By Dr. J. M. Munro Kerr.

Uterus removed by vaginal hysterectomy for malignant polypus of corpus uteri.—The patient, aged 48, had suffered from metrorrhagia for nine months. The cervix was dilated and the uterus digitally explored, when a hazel-nut-sized polypus with a broad base was detected attached near the fundus. A portion was removed by the curette and examined by Dr. Teacher, who declared the growth to be carcinomatous.

II.—REPORT ON DR. A. W. RUSSELL’S SPECIMEN OF POSTERIOR ENCEPHALO-MENINGOCELE.

By Dr. John H. Teacher.

The subject of this malformation is a large human foetus, which is well formed except about the head. There is a very large sac, bigger than the head itself, rising from the occipital region and hanging down on the back. The cranium in front of the protrusion is well formed, but it appears small in proportion to the face and body of the foetus, and the forehead slopes sharply back above the eyes, like in a case of hemicrania. The neck is well formed, and there seems to be an occiput behind the protrusion, even on external inspection.
POSTERIOR ENCEPHALO-MENINGOCELE.

On dissection, the cranial vault is found to consist of well-formed frontal and two parietal bones, the posterior fontanelle, occupied by the neck of the protrusion, and a well-formed occipital bone. The sac is covered partly with scalp, partly with parchment-like membrane. The greater part of its bulk consisted of very oedematous connective tissue, which seemed to be continuous in part with the dura mater, but no dura mater could be recognised in the sac. The inner sac of pia mater was recognisable as such; it closely enveloped a very large mass of brain tissue, divided into three main lobes and a small one; they are all cerebrum. The protrusion is, therefore, an encephalocele. It is connected with the part of the brain within the cranium by a narrow isthmus of cerebral tissue and membranes; it appears to represent the occipital lobes, and in actual bulk it is larger than the normally situated part, but then it is very soft and highly oedematous.

Owing to the softness of the brain tissue it was impossible to dissect it further, and the preparation as now mounted shows only the external appearances. It is catalogued as No. 50.99A in the Pathological Collection in the Hunterian Museum.
III.—REPORT ON DR. A. W. RUSSELL’S CASE OF HYDRAMNIO
IN TWIN PREGNANCY.

BY DR. JOHN H. TEACHER.

The twins were born in the sixth month, the one being born alive, while the other had been dead for some days. They were both well formed. They were enclosed in a common chorion. The amnion of the live-born twin seemed to be perfectly normal, but that of the other showed very marked hydrops. The placenta was of oblong shape, but not distinctly double. On its outer surface, a deep groove divided it transversely into two approximately equal parts. The two cords were attached about the centres of the two parts, and, from the distribution of the blood-vessels, the one part belonged to the live-born twin, the other to the dead-born twin. The naked eye characteristics of the placental tissues agreed with this, that of the half belonging to the live-born being firm, fleshy, and covered by a layer of decidua, whereas that of the dead-born was broken into lobules to an abnormal extent, frayed out in parts, had a very imperfect covering of decidua, and was brittle and stripped away easily from the chorionic membrane.

The blood-vessels of the two foetuses mutually overlap, passing across the border on the inner surface of the organ, but no evidence of anastomosis could be obtained, either by dissection or microscopically. In spite of the naked eye difference between the two divisions of the placentas, microscopic examination of sections from several portions failed to reveal any difference between that of the live-born and that of the dead-born. The villi were just as perfectly preserved and functionally active-looking in the one as in the other. Naturally, there were plenty of decadent villi, but they were as numerous in the one part as in the other. The good preservation of the placentas of the dead-born is doubtless due to its connection with the uterus. Even the absence of a proper layer of decidua seems not to have made any difference. Here, then, there was no light on the question why one foetus should have suffered from hydramnios and the other not.

The cord of the dead-born twin was much thicker than that of the live-born—a condition distinctly due to cædema. The amnion of the dead-born also was cædematous, but no difference was to be made out between the epithelium of it and that of the amnion of the live-born. There were neither knots nor twists in the cord of the dead-born; in sections it showed the
same signs of having been dead some time as did the tissues of the foetus. Dissection showed that there was no obstruction to the circulation so far as the cord and liver were concerned, but the condition of the valves of the heart could not be made out owing to its being full of firm blood-clot. The ventricles were contracted and almost empty of blood; the auricles were distended with it and the venous system engorged, as if the foetus had died in a state of asphyxia.

Histological investigation was useless, as it was impossible to tell what was due to disease and what to post-mortem changes. Cloudy swelling appeared to be present in the liver and kidneys, but no significance can be attached to that, and there was nothing else except the venous engorgement which could be fixed on as abnormal. Sections of heart, liver, lung, kidney, and skin were examined. The skin appeared not to be cedematous. The tissues of the live-born were examined as control.

The pathology of hydramnios is an extremely difficult and unsatisfactory subject. This case contributes nothing but negative evidence, which, however, may have some small value. At least, it does not conflict with the commonly accepted idea that hydramnios is a sign of foetal ill-health rather than of disease in the foetal appendages or mother.

IV.—CASE OF OVARIOTOMY FOR LARGE CYSTOMA.

By Dr. H. C. Donald (Paisley).

Mrs. M., aged 26, admitted to Paisley Infirmary on 10th December, 1900, suffering from a swelling of abdomen of five weeks' duration—i.e., since her first confinement, when she was delivered of a live male child (full time, but small).

She first menstruated at 14; continued regular until beginning of her pregnancy. During the pregnancy she lost flesh, and the swelling was very great, but nothing was remarked during this time as unusual. After delivery there was little difference in the abdominal distension, and during the five weeks before admission patient became very anæmic and wasted, and the abdominal distension increased, so that, on admission, she was very pale, emaciation was extreme, and the slightest movement gave rise to urgent dyspnœa. Abdominal distension was great; measurement from umbilicus to xiphisternum, 9½ inches; umbilicus to pubis, 9½ inches; and from umbilicus to either iliac spine, 10½ inches. All over the swelling fluctuation was very readily obtained; percussion
note dull. There was a narrow zone in the extreme flanks, and round into epigastrum, where the note was tympanitic. Hepatic dulness quite obliterated. Apical impulse in third interspace, half an inch inside left nipple. Pulse, 100; respirations, 20; temperature, 100°6.

10th February, 1901.—Since admission the general health of this patient has steadily improved. Anaemia is less; patient has put on flesh; dyspnœa is not so readily produced; and temperature, which at first ranged from 99° to 102°, has gradually settled down, and has now been normal for a week. The abdominal distension has steadily increased—during the

last four weeks there has been an increase of 4½ inches in the circumferential measurement at umbilicus (from 36 inches to 40½ inches). Operative interference decided on.

15th February, 1901.—Operation, 10 A.M. Incision in median line. Thin-walled cyst (very friable), with many and dense adhesions to surrounding structures, bladder, bowel, parietes, &c. Fully twenty-six pints brownish coloured fluid drawn (excluding quantity lost). Adhesions with difficulty separated, pedicle ligatured, cyst removed, glass tube passed down to Douglas' pouch, and wound closed.

Patient rallied well from chloroform. There was slight
retching during the afternoon; this soon passed off, and recovery was uninterrupted.

During afternoon and evening of day of operation (15th), 4 oz. 2½ drs. of almost pure blood was drawn off by catheter from glass tube; on the 16th, 5½ oz.; on 17th, 3½ oz.; on the 18th, 7½ oz. of straw-coloured fluid; on 19th, 6 drs.; and on the 20th only 2 drs., when the tube was removed and wound closed. Healed by first intention.

Dismissed well on 13th April, 1901.

V.—FATAL CASE OF Puerperal Septicaemia from Double Pyosalpinx.

By Dr. Robert Jardine.

Mrs. M'N., æt. 20, ii-para, admitted 4th June, and delivered the same day by forceps, as the second stage was somewhat prolonged. The first and second stages lasted twenty-four hours. The perineum was partially torn, and required three sutures. The child, a male, alive, weighed 7½ lb.

The patient showed an unusual amount of pigmentation of the face. A number of coppery scars were noticed about the buttocks, and she gave a history of ulcers two years ago. Syphilis was strongly suspected.

On the third day of the puerperium the temperature, which had until then been normal, rose to 101°, and the pulse to 130. The bowels had been thoroughly cleared out. On the fourth day, the temperature rose to 102°. An intra-uterine douche was given, but everything seemed perfectly sweet. Quinine (10 grs.) was given. On the fifth day the temperature fell to 100° in the morning, but rose to 102° in the evening. An intra-uterine douche was again given, but nothing was washed out. The abdomen was now distended and painful. As there had been persistent diarrhœa for the last three days, we suspected enteric. There were no rose spots, enlarged spleen, nor epistaxis. The blood gave a doubtful Widal reaction. A second specimen taken two days later gave a decided negative reaction. The severe diarrhœa persisted. The temperature varied between 100° and 102·6°, and the pulse from 100 to 130. The pulse grew gradually weaker, and the patient died on the ninth day. Just before death, the temperature ran up to 104°.

The cause of death had evidently been septic peritonitis. The source of infection I felt pretty confident would not be found in the vagina or uterus. The lochia had remained...
sweet, and the perineum had healed fairly well. No pelvic swelling could be made out _per vaginam_, and the distension of the abdomen prevented anything being felt bimanually. The _post-mortem_ examination fortunately enabled us to verify our conclusions.

The following is Dr. Douglas' report:—

"Tall, well-nourished woman, of dark complexion. Presence of diffuse macular coppery eruption; rigor mortis gone from arms, still present in legs.

"Abdomen much distended and somewhat discoloured. On opening, a quantity of thick, opaque, sanguineous fluid escaped, carrying numerous flakes of curdy pus with it. This came from the lower part of the abdomen, chiefly from the right side. A considerable amount was removed, and the parts examined. The appendix was found fairly healthy, save for some old adhesions; the bowels generally were distended, injected, and slightly glued together. The right Fallopian tube was swollen, injected, and a quantity of purulent necrotic material was found at the ostium. The ovary was soft and gelatinous, and came away easily; it seemed to have formed the posterior wall of a large pyosalpinx. The left tube and ovary were in exactly the same state. The interior of the uterus was healthy."

There is no doubt that this was a case of old double pyosalpinx. These abscesses were certainly not of recent formation. If they were both present before impregnation, the question is—How did the ovum find its way down into the uterus?

Would abdominal section have done any good here? I certainly would have tried it if we had been able to exclude enteric at once; but, unfortunately, the first examination gave an uncertain reaction, and by the time we got the second report the patient was dead. An early operation might have saved her.

Some months previous I had seen an almost identical case in consultation in the country. The child had been born before the doctor's arrival, and there had been no vaginal examination. The house was a good one, and the nurse was competent. Profuse diarrhoea set in, with a rise of temperature. There was no palpable tumour, but there was some tenderness at the side of the uterus. I at once suggested to the doctor that I thought the source of infection was from the tube, and he then told me that he had treated the husband
for gonorrhœa two years before. The Widal reaction was negative. She improved for a little, but died about ten days later. If she had been in hospital I would have opened the abdomen, but under the circumstances it was impossible to do so.

A knowledge of this case enabled me to conclude that in the case just reported we would find the source of infection in the tube. Such cases are exceedingly rare; but, in dealing with puerperal septicemia, one must bear in mind that the source of infection is not always to be found in the vagina or uterus.

I have already reported two unusual cases—one in which a poisoned finger was the source, and the other where there was gonorrhœal rheumatism, with pus in the knee-joint. I would like to add a further note about this latter case. I have recently seen the child. It has now marked congenital syphilis. There is no doubt that we there had to deal with mixed infection with a vengeance. In the case I have just reported syphilis was also present.

VI.—NOTES OF CASES OF ABDOMINAL SECTION ILLUSTRATING POINTS OF INTEREST.

BY DR. J. CRAWFORD RENTON.

Five cases of gangrenous ovarian cysts—Operation in four—Recovery in all.

CASE I.—A. B., æt. 18, was sent to me by Dr. Syme, of Kilmalcolm, with an abdominal swelling, and with a history of two attacks of peritonitis of a mild type, the highest temperature being 101°. On examination, the patient complained of abdominal tenderness, both on the right and left side, and the abdominal swelling was distinct but not excessive, the appearance indicating about a six months' pregnancy. The symptoms pointed to an ovarian cyst, with recurrent attacks of peritonitis. Dr. Syme kindly came to the operation, and on opening the abdomen, assisted by Dr. Beaton and Dr. Guthrie, found an ovarian cyst on the left side, with three twists on the pedicle from right to left, the cyst being gangrenous and the pedicle by no means a long one. This we removed in the ordinary way, tying the pedicle with a silk ligature, pure carbolic acid being applied to the stump.

On examining for the right ovary we did not find it easily, but after some search we found a gangrenous cyst adherent

1 See p. 68.
under the liver, with a long pedicle with one twist on it; this we removed. The patient did well without any bad symptom.

Case II.—A. L., æt. 25, I saw along with Dr. Sewell, of Helensburgh, with the history that she had had a pretty sharp attack of peritonitis, temperature 101°, with abdominal swelling equal to an eight months' pregnancy. As the symptoms were somewhat serious, I recommended operation without delay, and in this Dr. Sewell agreed. On opening the abdomen, the peritoneum was found closely adherent to the cyst, which was gangrenous, and there were three half turns from right to left in the pedicle. These were unwound, and the cyst removed, the pedicle being tied with silk, and pure carbolic acid being applied to the stump, as in the former case. The other ovary was cystic, and was removed, there being no twist on its pedicle. The patient did well.

Case III.—C. D., æt. 32, was placed under my care by Dr. Martyn, of Airdrie, with a history of abdominal pain, and temperature, and on the left side, per vaginam, a distinct swelling could be felt, about the size of a small coconut. Abdominal section was recommended, and a gangrenous cyst of the size indicated was, with difficulty, enucleated out of the pelvis. The condition in this case was not due to a twisted pedicle, but what appeared to be a thrombus in the pedicle. The pedicle was tied with celluloid thread, and pure carbolic acid applied to the stump. The other ovary was cystic, and was removed. The patient was much collapsed after the operation, but gradually rallied and did well.

Case IV.—E. F., æt. 35, was sent to the Western Infirmary by Dr. Roxburgh, of Troon, with an abdominal swelling, and a history of attacks of pain. On opening the abdomen, a gangrenous cyst filled the abdominal cavity, with three half turns on the pedicle from right to left; these were unwound, and the pedicle tied with celluloid thread, carbolic acid being applied to the stump. The other ovary was cystic, and was removed. As there was considerable oozing from the peritoneum in this case, a glass drainage-tube was inserted for forty-eight hours. The patient progressed favourably.

Case V.—C. G., æt. 67, came under my care with all the symptoms of an ovarian cyst, and a temperature of 101·5°, with tenderness over the abdomen. The late Dr. Thomas Keith saw her along with me, and recommended tapping,
which was carried out by means of an aspirator, Professor M‘Call Anderson being present along with Dr. Keith and myself. From the appearance of the fluid, Dr. Keith was satisfied that we had to deal with a gangrenous cyst with a twisted pedicle, and he advised delay as to any operation. The patient passed through an illness of subacute sepsis, the knee-joints being principally affected, and gradually recovered, and to-day she is quite well, and has had no bad results from the attack.

Remarks.—What causes twisted pedicle? In some cases we may blame the length of the pedicle and simple abdominal movements, when the cyst is small, causing rotation of the cyst; but in Dr. Sewell's case and Dr. Syme's case, although twisted, both pedicles were comparatively short, and I cannot in these cases blame the length of the pedicle. I would like an expression of opinion as to the cause of this twisting of the pedicle.

In Dr. Martyn's case the thrombosis which existed might be accounted for by the fact that the patient was asthmatic, and her cardiac condition was not quite satisfactory.

As regards the fifth case, it was to me very instructive, as, personally, I was anxious that an operation should be performed owing to the serious condition of the patient; but it illustrates the value of an experienced opinion like that of Dr. Thomas Keith, who advised delay, and the fight with a subacute septicæmic condition from which the patient recovered. I rather think that to-day we would have advised operation; at the same time it is well to weigh carefully the balance of evidence for and against interference. In none of the cases was there any collapsed attacks as if from haemorrhage into the cysts, as mentioned by Kelly. The twistings of the pedicles coincides with Kelly’s experience as being on the left side from right to left, and vice versa on the right side.

The next two cases I mention as illustrating the value of interference in prolapse of the pelvic organs.

Case I.—E. H., æt. 45, was sent to me by Dr. Oliver. In her case the uterus, bladder, and anterior portion of the rectum were prolapsed, and her misery was great. I advised ventrofixation of the uterus, and in this Dr. Oliver agreed. We opened the abdomen and drew the uterus well up into the abdominal wound, taking care that it was sufficiently near the umbilicus to insure that bladder distension would be quite
satisfactory after the fixation. The peritoneum was pushed one inch and a half below the fundus of the uterus, and then two stitches of chromic gut were carried through the aponeurosis, the rectus muscle, the uterus, avoiding tubes, the rectus muscle of the opposite side, and the aponeurosis, and tied. Superficial stitches were then passed. It is now two years since this patient was operated on, and she continues to be quite well.

CASE II.—D. E., æt. 32, was placed under my care by Dr. Garnett Wilson, with prolapse of the uterus and bladder. The same operation, as above described, was carried out in this case, and the result has been equally satisfactory.

Remarks.—I have no doubt that such cases are familiar to you all, but the two points upon which I would like information are:

1. Do the members approve of the method I have indicated as regards the peritoneum and fixation of the uterus?

2. What is your experience with reference to the position of the fundus of the uterus? I feel strongly that the fundus should be brought up to an inch below the umbilicus, so as to allow plenty of room for the bladder, as I have seen cases where it seemed to me that the irritability of the bladder continuing after the operation was caused by the uterus being fixed somewhat low down. On this point Kelly remarks that it does not matter how low it is fixed, as the bladder adapts itself to the circumstances and assumes the position of saddlebags. At the same time, we must bear in mind that these fixations do not continue close to the abdominal wall, but gradually are only supported by strings of adhesions. Cases of pregnancy after such operations are on record.

I should like it to be clearly understood that it is only in bad cases that I would advise ventrofixation, as the effects of closure of ruptured perineum is sufficient in nearly every case to secure the pelvic organs in good position.

Dr. W. L. Reid regarded Trendelenburg's position as most useful, as it enabled an operator to deal better with adherent tumours, which would otherwise be very difficult. He did not think it necessary to fix the uterus so high up in the abdomen as Dr. Renton mentioned. He preferred Howard Kelly's method, and had experienced no after-trouble with the bladder. He performed ventrofixation after freeing an adherent uterus.

Dr. Munro Kerr had met with two cases of twisted pedicle
out of fifteen ovariotomies. He considered that torsion of the pedicle should be diagnosed before operation. As regards cases of prolapsus uteri, he had done ventrofixation in two cases and preferred Herman's method, but the main point was to fix the uterus as low down as possible in the abdomen. It was also very important to repair the perineum at the same time.

Dr. Balfour Marshall said that the results of colpoperinorrhaphy for prolapsus uteri were often disappointing, cases returning months after operation with a recurrence, sometimes showing a partial prolapse, while in other instances they were as bad as if no operation had been performed. No case, however successful the operation might seem at the time, could be regarded as cured unless we followed the after-histories, and found no return, say, a year after. It was of great importance in these cases to narrow the vagina sufficiently when repairing the perineum and pelvic floor. The method he adopted was that of carrying the denuded areas in each posterior vaginal sulcus well up to the fornices. The vagina, at the completion of the operation, should only admit the forefinger, since, after the stitches were removed, there remained a canal of nulliparous size. In severe cases, a ventrofixation should be done as well. He adopted Howard Kelly's method, stitching the posterior aspect of the fundus uteri with strong catgut low down to the anterior abdominal wall. This allowed of some mobility of the uterus, and he considered it preferable to Herman's method, where the adhesions might be so firm as to complicate a possible future pregnancy. He had not met with any after bladder trouble in his cases. A ventrofixation should always be accompanied by repair of the perineum and pelvic floor. We should regard prolapsus uteri as a hernia, and treat it as such by repairing the supporting structures of the pelvic floor. He referred to one case of ventrofixation for complete prolapse without a colpoperinorrhaphy being done, where the uterine adhesions gradually stretched; and the prolapse became as complete as before. He considered it quite unjustifiable to perform total hysterectomy for prolapse, especially in women capable of bearing children, as the combined operations of colpoperinorrhaphy and ventrofixation were generally successful, and should at all events be tried first.

Dr. Renton replied, and said he would prefer to try ventrofixation for prolapse before proceeding to hysterectomy, and would only do Herman's method where pregnancy was not likely to occur.
VII.—THE OCCURRENCE OF MILK-SUGAR IN THE URINE OF NURSING WOMEN, WITH A NOTE ON THE BEST MEANS FOR ITS DIFFERENTIATION FROM GRAPE-SUGAR.

BY DR. CARSTAIRS DOUGLAS.

During the past few years it has happened that on several occasions I have been asked to examine the urines of nursing women, and to determine whether the reduction of Fehling's solution which these occasioned was due to grape- or to milk-sugar. For it is obviously a very different matter, alike as regards diagnosis, prognosis, and treatment, if the sugar that is present is the harmless lactose and not the more serious glucose. A surgeon or gynaecologist about to operate, who finds that his patient's urine contains sugar, will naturally feel much relieved if his mind can be set at rest upon this point; and the physician, under similar circumstances, will take a totally different line in his dietetic and medicinal treatment, according to the class to which the foreign element belongs.

I have accordingly given this matter some attention during this year, and have made a series of observations on patients in the Glasgow Maternity Hospital, partly to determine whether lactosuria were really common among nursing women, and partly to ascertain whether there were any reliable tests which would enable one to determine positively between grape- and milk-sugar in urine.

This is not a new matter, for the occurrence of milk-sugar in the urine of mothers has been noted for a good many years past. One of the earliest papers on this subject is that of De Sinéty, in Maly's Jahrbericht für Thierchemie for 1874, and since then communications have appeared from time to time by Hemper, Hofmeister, Johannovsky, Kaltenbach, Ney, and others. But when a matter of this kind crops up, and one is asked to give an opinion upon it, it is always a great advantage if that opinion can be based on personal

observation, and, accordingly, what I now wish to communicate to you briefly is what I myself found to be the case.

I. The number of cases examined was 56, and on these I made ninety-one observations; most of the cases were primiparous. Of the 56, 48 (or 85 per cent) showed the presence of milk-sugar in the urine in greater or less degree, while it was not found in 8 cases (or 15 per cent). But when these 8 cases are looked into a little more closely, it is found that 2 of them were pregnant women (sixth and eighth month respectively), while 3 of them were mothers who never nursed at all. Of the remaining 3, 1 (a ii-para) was examined only once, and on the first day of the puerperium, so that there remain only 2 cases (or 3.5 per cent of the total) where lactosuria did not occur after full lactation had been established. We may, therefore, conclude that nursing mothers usually secrete a urine, at least in the later days of the puerperium, in which milk-sugar occurs in greater or less amount.

Of the cases examined in hospital, most of the observations were made between the third and seventh day after delivery.

Of 4 undelivered cases, 2 revealed no sugar (sixth and eighth month respectively), while 2 at full time showed traces.

In at least 1 case, a v-para, sugar was found on four different occasions, though the woman was not nursing; and it was also found, where a woman had been nursing and lactosuria was present, that when suckling was stopped (e.g., on account of the child’s death) the urine might show evidence of milk-sugar for four or five days more, the quantity, however, always growing steadily less. This is, I think, a point of some importance, for women not unfrequently come into a general hospital for, let us say, some surgical purpose, leaving their babies at home, and their urine, for several days after admission, is found to contain sugar. This might be puzzling, and the prognosis accorded the patient more serious, did we not bear in mind the fact that after such a person has ceased to nurse, milk-sugar will present itself in the urine for some time. We may, therefore, say that, at least in the early days of nursing and after full lactation has been established, the majority of mothers exhibit lactosuria, and secrete a urine that readily reduces Fehling’s solution.

There is still another circumstance in which this should be kept in mind, and that is when, on examining a female applicant for life assurance, we find sugar in the urine. It is obvious that a great injustice would be done to the proposer if she were rejected or the premium loaded, simply because the
examiner had not taken the pains to find out whether or not she was nursing at the time.

II. The tests for lactose in urine.—Lactose or milk-sugar has the formula \( \text{C}_12\text{H}_{22}\text{O}_{11} \), and is one of the group termed "disaccharides" by physiological chemists, because it is formed, as it were, by the combination of two molecules of glucose less one molecule of water, thus—

\[
2\text{C}_6\text{H}_{12}\text{O}_6 = \text{C}_{12}\text{H}_{22}\text{O}_{11} + \text{H}_2\text{O}.
\]

If one take, say, a 1 per cent solution of milk-sugar in water, it will be found that it reacts quite well to Fehling's or Trommer's tests, though it may need a little more prolonged boiling than in the case of grape-sugar, as the reducing power of the former to the latter is only as 7 in 10. Milk-sugar also reacts well with nitro-propiol (ortho-nitro-phenyl-propiolic acid), a recently proposed test for sugar in urine which I have looked into pretty fully, and on which I recently communicated a paper \(^1\) to the Glasgow Medico-Chirurgical Society based on over two hundred observations. By these methods, we can easily show that sugar is present. When the examinations are made during the puerperium, and catheter specimens are not available, the presence of blood, epithelium, or other elements of the lochial discharge may give rise to fallacy, especially with the copper tests. I then usually adopt the procedure advocated by Allen, \(^2\) which takes up little time and which I have found very satisfactory. His plan is to treat the urine in neutral or faintly acid solution with cupric acetate, whereby a precipitate of xanthin bodies, uric acid, colouring matters, and albumen is produced; a partial precipitate of phosphates and creatinin also occurs. The filtered fluid does quite well for Fehling's test. To put this procedure into effect, take 7 c.c.m. of urine, boil in a test-tube, and add at once 5 c.c.m. of the cupric sulphate solution used in preparing Fehling's reagent. A precipitate occurs. When the tube has cooled, add 2 c.c.m. of a saturated solution of sodium acetate containing a trace of free acetic acid. A further precipitate now occurs, and, on filtering, a greenish-blue solution is obtained. To this are added 5 c.c.m. of the other part of Fehling's test (the alkaline tartrate solution), and the whole is boiled for fifteen seconds. Cuprous oxide at once separates


as an orange-yellow precipitate in the presence of one part of sugar in five hundred, or less. This method of Allen's I can cordially recommend.

These tests are all good, and by their aid we can show, as I have stated, that sugar is present; but, when it comes to the question as to whether glucose or lactose is the reducing agent, we are confronted by a less easily-solved problem.

Now, there is a very delicate and certain reaction for the sugars called the phenyl-hydrazine test which, I daresay, all of you know. It consists in heating a little of the suspected fluid with the hydro-chloride of phenyl-hydrazine and some sodium acetate. The heating must be prolonged (30 to 40 minutes), and should be done by placing the prepared test-tube in a water bath of boiling water. The test depends on the formation of a crystalline body called an osazone, which appears as a deep yellow sediment when the tube is allowed to cool. Under the microscope, the deposit has the form of delicate lemon-tinted needles arranged in bundles or radiating groups. Grape-sugar, milk-sugar, and maltose each forms an osazone of its own, distinguishable from one another by their crystalline form and their melting-point.

This test, when positive, is an absolute proof of a sugar, because no substances except certain sugars can produce an osazone, and it can be readily applied clinically. Cane-sugar, I may mention, does not respond to it.

Now, grape-sugar in urine answers very well to this test, and we can therefore say with great definiteness whether or not a urine contains that kind of sugar; but, unfortunately, milk-sugar in urine does not respond to it at all readily, although a watery solution of lactose does. Indeed, I may say that, though I have tried this test many times with urines containing milk-sugar, I have never yet succeeded in obtaining the crystalline lactosazone; so that this reaction, excellent as it is for grape-sugar, does not enable us to say positively that milk-sugar is present.

What about the yeast test? We all know that this is very admirable for determining whether or not grape-sugar occurs in urine (provided the amount be not too small), but milk-sugar itself does not ferment as such. Under the prolonged action of yeast, however, it is inverted into glucose and galactose, and, after that, alcohol and carbonic acid gas are formed. I may state that I have only once, in cases of lactosuria, been

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able to obtain a positive result with the fermentation test, however prolonged the action of the yeast may have been.

It is well known that a similar inversion may be determined in lactose by boiling it with a dilute mineral acid. It then undergoes hydrolysis, and we obtain glucose and galactose, thus—

\[ C_{12}H_{22}O_{11} + H_2O = C_6H_{12}O_6 + C_6H_{12}O_6. \]


Ruizard accordingly has suggested the adoption of this procedure for the detection of milk-sugar (Berl. Chem. Berichte, 1896, xxix, 147). He says that one might boil the suspected fluid with dilute hydrochloric acid, and then apply the phenylhydrazine test. I have tried this, and must confess that, in my hands at least, it has not answered well.

Another plan suggested is to hydrolyse the milk-sugar, and then test with Barfoed's reagent. I stated already that the cupric tartrate of Fehling's solution was pretty readily attacked by milk-sugar, but a solution of cupric acetate, slightly acidulated with acetic acid, is reduced by grape-sugar and not by milk-sugar. Such a solution is termed Barfoed's reagent, and Ruizard says that if you get a urine which will not reduce the reagent at first, but will after boiling with dilute hydrochloric acid, you may conclude that it at first contained milk-sugar. I cannot say that I have found this test answer at all well.

The only other test I know of to distinguish milk- from grape-sugar is Rubner's. It depends upon the colour-change produced when a solution of the sugar is boiled with solid lead acetate, and ammonia is added. Salkowski recommends that to 5 c.c.m. of the solution 4 grms. of solid neutral lead acetate should be added, and the whole boiled for two minutes; ammonia is then to be added freely, and the mixture heated once more, when a deep red colour appears in the case of milk-sugar, and at length a red precipitate falls. Grape-sugar, under similar circumstances, yields a chamois-yellow fluid. My experience has been that while quite distinctive colours can be obtained in the case of pure aqueous solutions, the results are not good when we deal with milk-sugar in urine, especially as the amount present is often very small. So you see that there appears to be no very good positive test for milk-sugar in urine. To give a concrete example. On 14th September, 1901, I examined the urine of Mrs. O'B., a

1 M. Rubner, "Ueber die Einwirkung von Bleiacetat auf Trauben—
multipara, in the fourth day of the puerperium, and nursing regularly, the case being one of fairly well-marked lactosuria. The following are the results of my trials to ascertain positively whether milk- or grape-sugar were present:—

1. Trommer's test gave a positive reaction, although not very well marked.

2. Fehling's test gave similar result.

3. Phenyl-hygrazine, after forty minutes' heating, was negative, no crystals being obtained.

4. Barfoed's reagent (acetate of copper) was negative.

5. Rubner's test gave a café-au-lait coloration, and exactly the same with grape-sugar.

6. Ruizard's test—(a) after boiling 60 c.c.m. urine with 6 c.c.m. of 10 per cent HCl₂ no reaction was yielded with copper acetate (therefore unsatisfactory); (b) the hydrolysed urine treated for forty minutes with phenyl-hydrazine, and filtered hot, gave a yellow and amorphous deposit on the filter-paper, and a yellow filtrate which, on cooling, deposited small, roundish, spinous crystals, probably galactosazone. This test was, therefore, positive.

7. The yeast test yielded a small bubble or two in six hours, 2 to 3 c.c.m. of gas in eighteen hours, and 3 to 4 c.c.m. in twenty-four hours.

8. Nitro-propiol gave a positive reaction.

In this case, which, as you see, was examined very fully, the only really positive test was the second part of Ruizard's, where crystals of galactosazone were obtained. As I have already stated, this test is not always so satisfactory in its working. Had it been negative in the above instance, I could not have said positively that milk-sugar was present, but there would have been a very strong probability that this was the case for two reasons—(1) the urine did not ferment with yeast till eighteen hours had passed, and (2) the untreated urine did not react to phenyl-hydrazine. Now, there must have been a sugar there, since the urine did ferment, and it could not have been grape-sugar, else it would have been shown by the phenyl-hydrazine test, which, I have satisfied myself, is at least twice as delicate as the fermentation one. The result is arrived at, as you see, rather by a process of exclusion than by any positive test; and I have generally been in the habit of saying that if you have a urine which responds fairly well to Fehling's test (having excluded fallacies here), but does not yield any crystals with phenyl-hydrazine, and does not ferment (except very slowly) with yeast, you may be practically certain that it is milk-sugar which it contains. This opinion
I formed for myself, and I found out later that it was the same as that expressed by v. Jaksch. In the late autumn I began working at this matter with a view to establishing some really positive and practicable test for this condition, but, as yet, my efforts, I regret to say, have not met with success.

*Dr. Samuel Sloan* said he had noticed temporary glycosuria in early pregnancy, and asked if lactosuria was more marked at the beginning or end of pregnancy.

*Dr. Douglas* replied, and said it was most marked when the mammae were engorged at the beginning of the puerperium and up to the tenth day. He could not say what the condition was during early pregnancy.

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**MEETING III.—18TH DECEMBER, 1901.**

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*The President, Dr. Robert Jardine, in the Chair.*

**New Fellows.—**The following were admitted as ordinary Fellows:—William Barbour, M.B., C.M., and G. Scott Macgregor, M.D.

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1. **FRESH SPECIMENS.**

*Dr. J. K. Kelly* showed two specimens of pyosalpinx, one being of unusual size, and removed entire.

The following specimens were shown to illustrate the discussion on the treatment of fibro-myoma of the uterus.

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**A. BY DR. JOHN EDGAR.**

(1) Removed by torsion of pedicle combined with snipping—a polypus which simulated inversion of uterus; (2) removed by enucleation and suture—two cases of senile submucous fibro-myoma of fundus causing inversion of uterus; (3) removed by morecellement and suture—large fibro-myoma of anterior lip of os uteri; (4) removed by cutting through pedicle and suture—two pediculated subperitoneal fibro-myomata of fundus uteri; (5) supravaginal amputation of

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DISCUSSION ON THE TREATMENT OF UTERINE FIBRO-MYOMA.

Utterus—six specimens, including a gravid uterus and one complicated with cancer of corpus uteri, fibroid uterus with large haematoma of ovary; (6) total abdominal hysterectomy—four specimens, including a submucous myoma associated with a suppurating ovarian cyst.

B. By Mr. R. H. Parry.

(1) Uterus with fibroid, removed at full term, Porro-Cæsarean operation; (2) fibroid, removed fifth month; (3) fibroid, hysterectomy; (4) fibroid, hysterectomy (bladder was freely opened); (5) fibroid, hysterectomy; (6) fibroid, hysterectomy (soft myoma with ascites); (7) four intramural fibroids, removed by enucleation.

C. By Dr. J. K. Kelly.

Sixteen specimens obtained by various methods of operation, and illustrating various situations and complications of uterine fibro-myomata. (1) Carcinoma and myoma; (2) pregnancy and myoma; (3) polypi; (4) subserous and submucous fibroid; (5) various fibro-myomata obtained by enucleation, excision, vaginal, supravaginal, and total hysterectomy.

II.—DISCUSSION ON THE TREATMENT OF UTERINE FIBRO-MYOMA.

Dr. John Edgar opened the discussion and said—Fibromyoma is the most common new-formation found in the uterus. Most of the text-books quote Bayle's statistics as to its frequency—20 per cent of all women over 35 years of age, and those of Klob, 40 per cent of all women over 50 years of age. These figures are in all probability too high. Having carefully examined the reports of all the cases admitted into my wards in the Glasgow Samaritan Hospital for Women during the last five years, I find that the proportion of cases suffering from uterine fibro-myoma amounts to 5 per cent. This percentage, it seems to me, represents fairly accurately, from a clinical point of view at all events, the frequency of this affection.

With regard to the treatment of these tumours, there are four methods which will require consideration, viz., the expectant, the medical, the electrical, and the surgical.

I. The expectant treatment.—By this is meant leaving the
case to nature, while at the same time watching carefully lest symptoms should arise which would necessitate some special treatment. This is the method which should be adopted in all cases in which the tumour is quiescent, and is causing no symptoms or trifling symptoms. Not only operative measures, but also drugs, should be avoided, for the simple reason that drugs can do no good in such cases, but may do harm, inasmuch as they tend to impair the digestion and to keep the patient brooding over her trouble. It is best, indeed, to keep her in ignorance of the fact that she possesses a tumour, provided she can be kept under observation, and provided a reliable relative is informed of its existence.

I am aware that a few surgeons advise that all fibro-myomata should be removed, for the reason that, even if they do not cause symptoms at the time, they may afterwards prove dangerous, and that the less complicated the case, the safer the operation. The weak point in this deduction lies in the word "may." If it were "must," as in the case of ovarian cysts, then I should agree to it at once; but, as we all know, there are very many cases of fibro-myoma which remain stationary and never cause any appreciable amount of suffering. The number of such cases is sufficiently large to justify us in refraining from surgical measures, unless special indications are present.

The only exception I should make would be a case which was complicated with pregnancy. Such a case would require careful consideration. If we were satisfied that the tumour would be likely to become dangerous during the course of the pregnancy or during labour, we should then be justified in interfering. The operation selected would depend on the case. We might empty the uterus, but such treatment is not altogether devoid of danger. Another objection to it is that pregnancy might again take place, and so we should have a repetition of the difficulty. I should prefer, therefore, either myomectomy or hysterectomy, according to the number and variety of tumours present.

In illustration of this, let me briefly describe three cases which occurred in my practice lately. In the first, I hesitated for a time between hysterectomy and the expectant treatment, but finally decided on the latter, with a gratifying result. Patient had a perfectly normal confinement at term. In the second, the tumours were so large that hysterectomy was absolutely necessary. In the remaining case, the patient had been already confined, but with so much difficulty that I considered it would be dangerous to allow her to become again
pregnant. In this case myomectomy was the operation selected.

Case I. *Multiple fibro-myomata—Uterus gravid—Delivery at term normal.—* Mrs. C., æt. 34, was admitted into the Samaritan Hospital on 14th December, 1900. Two abortions; last, four years ago. Menorrhagia. Three months' amenorrhœa (except for slight bleeding for one day two weeks ago). Pregnant. Severe pain in lower abdomen, especially in left iliac region. Frequent micturition. Painful defaecation. 

*Per vaginam,* gravid uterus reaching to umbilicus. Several large fibro-myomata, the largest situated at pelvic brim on right side. Kept her in bed under observation till her dismissal on 22nd January, 1901. Pain ceased. With growth of uterus, the tumour at the pelvic brim rose out of brim.

Subsequently, her medical attendant wrote to me that she had a perfectly normal confinement in June.

To-day (18th December, 1901) she writes to say that she is feeling well.

Case II. *Large fibro-myomata of four months' gravid uterus—Large hæmatoma of left ovary—Supravaginal amputation of uterus—Recovery.—* Mrs. R., æt. 37, primigravida, was admitted into the Samaritan Hospital on 25th January, 1900. Menstruation normal. Pain in lower abdomen and abdominal swelling from July, 1899. Amenorrhœa from beginning of October (four months), with rapid increase in size of abdomen and in degree of pain. Giddiness; micturition frequent and painful; morning sickness.

*Examination.*—Abdomen very large. Circumference at umbilicus, 47 inches. Three large fibro-myomata can be felt, one in the left iliac region, a second in right lumbar region, reaching up to the right costal margin, and a third in the umbilical region, extending into the left hypochondrium. Several smaller masses also felt. Cervix softened and lower uterine segment distended. Linea nigra. Lineæ gravidarum. Umbilicus protuberant. Mammary secretion.

30th January.—Abdominal section. Supravaginal amputation of uterus. Several adhesions had to be ligatured and cut. Hæmatoma of left ovary, size of an orange, embedded in adhesions in pouch of Douglas. Foetus measured 6½ inches; alive at time of operation. Good recovery.

17th March.—Dismissed well.

I heard from patient's doctor a couple of months ago that she is keeping well.
CASE III. *Subperitoneal fibro-myoma in pouch of Douglas causing dystocia—Both ovaries cystic—Removal of tumour by separating adhesions—No pedicle—Removal of appendages—Recovery.*—Mrs. M‘F., æt. 37, vi-para, was admitted into the Samaritan Hospital on 27th November, 1899. Menstruation normal; no pain; micturition normal; weak; very anæmic; emaciated. First five labours normal. Had severe antepartum haemorrhage and extremely difficult labour in September, 1898, owing to presence of tumour in Douglas’ pouch. Forceps used. Child died with convulsions on third day. I saw her three months afterwards, but she was so weak that operation was out of the question. Tonics were given, and she was instructed to feed well, and to avoid sexual intercourse lest she should become again pregnant. Her medical attendant stated that in July, 1899, she had an attack of pelvic peritonitis. Tumour, movable prior to this, was fixed afterwards.

2nd December.—Abdominal section. Coil of intestine firmly adherent to fundus uteri and upper surface of tumour. After separating adhesions, tumour was removed from the pouch of Douglas. No pedicle found. Tumour was partially necrosed. Both ovaries were cystic, and were removed. Good recovery.

6th January, 1900.—Dismissed well.

17th December, 1901.—Feels well. No pain. Not anæmic. Much stronger. Has not menstruated, but there have been none of the usual troubles of the menopause. Sexual desire as before. Abdominal cicatrix firm.

II. *Medical treatment.*—This has to be considered from two points of view, the curative and the palliative. As already hinted, no form of medical treatment yet devised has been found successful as a means of cure. No doubt in some cases in which ergot has been administered, a submucous tumour has sloughed and been extruded, but even granting that this was due to the drug, is it right to expose the patient to the risks of haemorrhage and sepsis entailed by such treatment, when a simple operation would have at once relieved her? All that one can and should expect from medical treatment, such as the administration of ergot, hydastis, calcium chloride, thyroid gland, mammary gland, iodide or bromide of potassium, &c., or a course of waters and baths at Kreuznach or Woodhall Spa, &c., would be a diminution of haemorrhage or pain, and, possibly, if the treatment be prolonged, a slight decrease in the size of the tumour, with consequent relief from pressure symptoms. Such results are, however, by no means certain,
and even when obtained are too often only temporary. One patient whom I saw last summer had taken ergot and ergotine continuously for three years on account of metrorrhagia due to a uterine fibro-myoma, but in spite of this the bleeding had steadily increased. Curettage at once relieved her, and, so far, the bleeding has not recurred. It is to be remembered, also, while estimating the value of any form of medical treatment, that variations as regards hemorrhage, pressure symptoms, and size of the tumour often occur spontaneously, so that such treatment may frequently receive unmerited praise or blame.

The cases which are suitable for medical treatment are those in which the symptoms are moderate and can be controlled, and in which the tumour is remaining stationary in size or is becoming smaller. If, on the other hand, the symptoms are not readily controlled, or the tumour is steadily growing larger, I should have no hesitation in adopting surgical measures. If the patient were near the menopause, I should be tempted to defer operation for a longer period, but in such a case one must remember that the menopause is generally delayed, and that fibro-myomata do not always diminish in size after the climacteric.

In deciding between the medical and the surgical treatment of fibro-myomata, it is well to bear in mind that the mortality after operation is now much lower than formerly, and that this is due not only to improved surgical methods, but also to the fact that recourse is now had to operative measures much earlier than was formerly the case. In the days when the mortality in the hands of the surgeon was high, it was but natural that men should minimise the sufferings and dangers entailed by leaving cases to nature, but it is now widely recognised that fibro-myomata are much more often fatal, directly and indirectly, than was once imagined. I have known several cases where timid physicians have allowed their patient to die rather than counsel them early to seek operative aid.

III. Electrical treatment.—This might be regarded as one form of medical treatment, or as lying between the medical and surgical methods. When Apostoli established it on scientific lines, and published his cases in 1884, it was thought by some, and more especially by Keith, that a panacea had at last been discovered which would render surgical treatment rarely necessary. Now it is altogether discredited by many, perhaps somewhat unjustly.
Various reasons may be given for the present attitude towards the Apostoli treatment. These are the natural reaction after the excess of enthusiasm shown by its devotees; the discovery that it is not a means of cure, but only a palliative remedy, and that the arrest of haemorrhage and diminution in the size of the tumour, when obtained, is often only temporary; and, lastly, the bad results obtained by many, and ascribed by them to the electrical treatment, but really due to improper methods, want of care in securing asepsis, or the injudicious selection of cases. Cases unsuitable for the treatment are—(1) those complicated with pregnancy, inflammatory affections of the appendages, or hæmatocele; and (2) fibrocysts, polypi, and subperitoneal fibro-myomata.

While assisting Dr. Stirton several years ago, I had a considerable experience of this form of treatment. I kept the patients under observation for some time afterwards, and, as a result, I have been led to the conclusion that the Apostoli treatment, if used at all, should be reserved for cases in which haemorrhage is the chief symptom, provided—(1) no contraindication exists, (2) ordinary medical treatment has failed, and (3) the tumour is not fibro-cystic nor polypoidal. The cases especially suitable are those which are near the menopause, and those which are for some reason unsuitable for operation. When operation is at all likely to be ultimately required, the danger of delay must be borne in mind.

The strength of current which we employed was generally 20 to 40 milliamperes at the first sitting, and this was afterwards increased to 100 or 150 milliamperes, according to the powers of the patient to bear the current. We always stopped short of causing her actual pain. The sittings were twice weekly, and lasted five to ten minutes. Never more than from twenty to thirty sittings were given consecutively. It is important to exercise thorough aseptic precautions, and to keep the patient resting on a couch or bed for some hours after each séance. The current must be turned on and off gradually, to prevent the patient feeling an electric shock.

IV. Surgical treatment.—There are many varieties of surgical treatment, but they may be all included under four heads:—

1. Curettage of the endometrium.
2. Operations intended to lessen the nutrition of the tumour.
3. Removal of the tumour alone.
4. Removal of the uterus, in whole or in part, along with the tumour.
1. Curettage.—This is only a palliative for hæmorrhage and leucorrhœa. When the fibro-myoma is submucous or intramural the endometrium is generally thickened, and forms almost the only source of the hæmorrhage which is so frequently a prominent symptom of these varieties of the tumour. It can be readily understood, therefore, that curettage of this thickened endometrium would help matters, at least temporarily.

The cases for which it is specially suitable are the same as those which have been already mentioned as likely to be relieved by the electrical treatment. I have tried it in several cases, in some of them with marked benefit. One of these was a patient whom I curetted on 19th November, 1898, for metrorrhagia of six months’ duration. Before the operation she had been bleeding continuously for three and a half months. The cause was found to be a small sessile submucous fibro-myoma near the left uterine cornu. I saw this patient to-day, and found her uterus greatly diminished in size. She stated that after the curettage menstruation was normal in amount and periodicity for a year, then recurred at longer intervals, and finally ceased altogether six months ago.

2. Operations intended to lessen the nutrition of the tumour.—Under this head may be classed (a) removal of the uterine appendages as first advocated by Hegar and Tait, and (b) various methods of ligature of the uterine arteries. These operations are chiefly of use in hæmorrhagic cases, but they are not always successful, and they are not always easy of performance. They were recommended in the days when the mortality after myomectomy and hysterectomy was so high, but most surgeons now perform them rarely or not at all. I have never had recourse to them in the treatment of fibro-myoma. When the tumour is fibro-cystic or pedunculated, whether submucous or subperitoneal, they are useless. In one case in which I removed four subperitoneal fibro-myomata, a colleague in Glasgow had previously removed both appendages, not, however, because of the tumours, but because the appendages were themselves diseased. The patient was not relieved until the tumours were taken away.

3. Removal of the tumour alone (myomectomy).—Cases suitable for this form of treatment are polypi, sessile submucous, and pedunculated subperitoneal fibro-myomata, and, according to some surgeons, also some cases of intra-mural and sessile subperitoneal fibro-myomata.

Polypi, if protruding through the os uteri, should be
removed by simple torsion, or, if the pedicle be thick, by torsion combined with snipping. In some text-books it is still advised to ligature the pedicle before cutting it, or to cut through it with an érasceur or a galvano-caustic wire in order to prevent hæmorrhage, but the fear of hæmorrhage has been proved to be unfounded. I have never seen any which could not be easily controlled by a tamponade of iodoform gauze. The following case may be cited as an illustration chiefly on account of its interest:—

Case IV.—Uterine polypus simulating inversion of uterus—Removed by torsion combined with snipping—Recovery.—Mrs. J., æt. 41, vii-para, was admitted into the Samaritan Hospital on 16th January, 1897. Menorrhagia for eighteen months, getting worse. Purulent leucorrhœa. Very anæmic. Patient was sent in as a case of inversion of uterus. Per vaginam, sloughing tumour, size of apple, found in vagina, protruding through os. Finger could be passed into cervical canal. Pedicle, one and a half inch thick, was attached to anterior and right surface of corpus uteri, which was sinistroverted and retroverted owing to dragging of tumour. Owing to the presence of the tumour in the vagina, and the position of the corpus uteri, it was difficult to reach the latter, hence the ease with which a mistaken diagnosis of inverted uterus had been made.

22nd January.—Polypus removed by torsion of pedicle, combined with snipping. As tumour was sloughing, curettage was not performed till a week later. Uterus packed with iodoform gauze.

12th February.—Dismissed well.

When the polypus is still in the uterus, and too large to be brought through the os uteri entire, it should be cut by scissors and removed piece by piece. This is called morcellation of the tumour, or morcellement.

A sessile submucous tumour should be enucleated and delivered entire or by morcellement, according to whether the os is sufficiently dilated or not. It is foolish to attempt the delivery of a large tumour through the os in any other way than by morcellement. All the dilatation that is required is what is sufficient to admit one finger, or, at most, two fingers. The bleeding is comparatively slight, and is altogether from the cut edges of the capsule. It ceases when the tumour is delivered owing to retraction of the uterus. The following case was operated upon in this way:—
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CASE V.—Sessile submucous fibro-myoma—Removed by morcellement—Recovery.—Mrs. K., æt. 38, one child, fourteen years ago, was admitted into the Samaritan Hospital on 12th October, 1901. Menstruation normal till two years ago, when it became profuse. Dr. Russell curetted the uterus, with good effect, but eight weeks ago bleeding began again, and continued till admission. Pain in both iliac regions, especially in left. Feeling of weight. Profuse leucorrhœa.

*Per vaginam*, os dilated; sessile submucous myoma, size of a man's fist, attached to anterior wall of uterus. Several small subperitoneal fibro-myomata.

16th October.—Submucous tumour removed by morcellement, and uterus packed with iodoform gauze soaked with hazeline.

26th October.—Dismissed well.

20th November.—Returned to report herself. No more bleeding, but pain still present.

In removing submucous tumours, whether polypoid or sessile, the danger of partially inverting the uterus by dragging on the tumour, and then cutting into the uterine wall, must be guarded against. Another danger to be avoided is incomplete removal of a tumour. I remember a case in the practice of a colleague in which death occurred in consequence of this.

Sometimes one meets with a submucous myoma on the fundus of an inverted uterus. Such cases should be treated by enucleation of the tumour, and subsequent suture of the resulting wound, before attempting replacement. I have reported two cases of this kind in the *Glasgow Hospital Reports* for 1901. Occasionally reposition occurs spontaneously after removal of the tumour.

*Cervical fibroids* may sometimes be treated by enucleation, with or without morcellement, and subsequent suture of the wound. The following case is interesting on account of its rarity:—

CASE VI.—Large fibro-myoma of anterior lip of os uteri—Removed by morcellement—Suture of wound—Recovery.—Mrs. M., æt. 48, ii-para, was sent to me by Dr. Campbell, of Inverary, on 11th August, 1898. Metrorrhagia of two and a half years' duration. Very anæmic. Micturition frequent. Feeling of weight in pelvis.

*Per vaginam*, a fibro-myoma, of the size of a child's head, distended the vagina. The case was rather puzzling, because, owing to the size of the tumour, the posterior fornix could not be reached, while in front and at the sides no os could be made
out; the anterior vaginal wall was in direct continuity with the tumour. At the time of the operation (morclement of tumour), after half the tumour had been removed, the os externum was felt, and then seen, behind the upper part of the mass. It was not dilated. The sound passed 2½ inches. The tumour thus proved to be a fibro-myoma of the anterior lip of the os. After removing it, the resulting wound was sutured. It healed by first intention.

_Pedunculated subperitoneal fibro-myomata_ should be treated by division of the pedicle, followed by ligature of vessels and suture of the peritoneal edges, unless where for some reason, such as the presence of additional intra-mural tumours, it is thought advisable to remove the uterus. Such treatment is more satisfactory than simple ligature and division of the pedicle. These cases are comparatively common.

Cases of _intra-mural or sessile subperitoneal fibro-myomata_ are, I think, unsuitable for enucleation unless one feels satisfied that there are only one or two. There is always a risk of leaving one or more small tumours which may subsequently require to be removed, and, besides this, it has been found that the danger of enucleation of such tumours is greater than the danger of hysterectomy. For this reason Martin, one of the earliest advocates of enucleation, has practically abandoned the operation in such cases. The chief reason which can be given in its favour is that it is on conservative lines, but when it is advised that a large number of tumours should be removed from a uterus by this means—in one case Alexander of Liverpool removed 25 from a single uterus—the operation is surely conservatism gone mad. Of what use could such a mutilated organ be to the patient?

4. _Removal of the uterus, in whole or in part, along with the tumour._—This includes supravaginal amputation of the uterus and hysterectomy proper, or, as it is sometimes called, pan-hysterectomy. The former operation can be done only by abdominal section; the latter by the abdomen, by the vagina, or by the combined method.

I have tried all of these methods, and think that supravaginal amputation is for most cases the best. The advantages are—(a) It is simpler and more quickly performed; (b) the risk is proportionately lessened; (c) the ureters are less likely to be injured; (d) the bases of the broad ligaments are left intact, so that the anatomical relations of the parts round the cervix are left undisturbed.
The plan I adopt is as follows:—Patient in Trendelenburg position. Open abdomen, and bring uterus forward through the incision. Ligature and cut the infundibulo-pelvic and round ligaments on each side. (For the last two or three years I have preserved the ovaries, if healthy. In many cases, however, I find the ovaries disorganised by blood or pus.) Next incise the peritoneum across the anterior surface of the uterus, and push it downwards a little together with the bladder. Catch the loose cellular tissue close to the upper portion of the cervix with two pairs of small pressure forceps, and cut between them towards the cervix. Continue this incision with knife or scissors through the upper part of the cervix. Seize the loose cellular tissue on the other side with another pair of forceps and cut above this. Remove the uterus. The cellular tissue at the sides of the stump (cervix), included between the blades of the forceps, contains the uterine arteries. Ligature these. Push a Playfair’s probe with pure carbolic acid into the cervical canal, and then stitch the cervical stump antero-posteriorly with strong catgut, taking care to include the peritoneum in front as well as behind. Sponge out the pelvic cavity and close abdomen.

This is practically Baer’s operation. Those who advocate pan-hysterectomy in all cases, say that the chief disadvantage of leaving the cervix is that it may necrose, but when the uterine arteries are tied in the way I have mentioned there is no fear of this, because the branches to the cervix are given off below the site of the ligature.

Sometimes I modify this operation by adopting Kelly’s method of beginning the operation at one broad ligament from above downwards, and finishing it at the other from below upwards. This is of special value in cases of intra-ligamentous fibro-myoma, and cases in which the appendages on one side are difficult to get at on account of adhesions.

So-called pan-hysterectomy is indicated especially in cases of cervical fibro-myomata which cannot be enucleated or which are associated with tumours of the corpus uteri, and in cases of fibro-myoma complicated with malignant disease. It can be performed by the vagina, by the abdomen, or by the combined method. When the uterus is no larger than a four months’ gravid uterus, I prefer the vaginal method, with or without morcellement or hemisection of the uterus, according to the case; but when the uterus is larger than this, or there are many adhesions, the combined method is much simpler and safer.

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In conclusion, I wish to emphasise the following points:—
1. If the tumour be growing steadily larger, remove it whether the symptoms be slight or severe.
2. If the tumour be stationary as regards size, the treatment will depend on the severity and continuance of the symptoms, the age of the patient, and the state of her health.
3. If drugs fail to check hæmorrhage, a trial may be made of the Apostoli treatment, or preferably, of curettage of the endometrium, provided the case is not one for more radical measures.
4. Where removal of the tumour is indicated, remember the danger of delay. The weaker the patient and the more complicated the case, the higher the mortality after operation.
5. Unless in certain cases, supravaginal amputation of the uterus is preferable to pan-hysterectomy.
6. When hysterectomy is being performed, one or both ovaries, if healthy, should be preserved.
7. Abdominal enucleation of fibro-myomata, if performed at all, should be limited to cases of the sub-peritoneal variety, and then only when there are no more than two or three tumours present.
8. If the operation of pan-hysterectomy be adopted, perform it by the vagina when the uterus is small; by the combined method when it is large.

Mr. R. H. Parry said,—In responding to the Secretary's invitation to speak to-night on the surgical treatment of uterine fibroids, I feel it would be better that I should confine my remarks more or less to the methods which I follow in my own practice.

In the twelve cases I have operated on during the past two years, I seem to have come across an unusual number of complications, some of which the specimens I show here to-night will serve to illustrate.

In two cases the tumour was associated with pregnancy, in one of which it was so jammed in the pelvis as to necessitate removal of the child and uterus at full term; and in the other its presence became manifest at the fourth month, during a smart attack of peritonitis, which produced extensive adhesions between the growth and the cæcum and small intestines.

In four others the attachments to the pelvic organs were intimate, and in one of these the bladder was freely opened, and in another the rectum.

Ascites and an indefinite pulmonary condition were the complications in the seventh, and heart disease in the eighth.
In the remaining four cases, anæmia, consequent upon prolonged hæmorrhage, was very marked. I have been rather surprised that so many of my cases proved to be either difficult ones to treat or were bad subjects for operation, and I may suppose that the simple or uncomplicated case comes more under the notice of the gynæcologist.

All the cases recovered, and in none, I may say, was there evidence of much shock after the operation. Happily, the results of hysterectomies, both in this country and abroad, have shown marked improvement within the last few years, and I believe this to be due to (1) the greater care in securing thorough asepsis; (2) to the improved technique of the modern operation; (3) to the greater experience and dexterity of the operator; and (4) to the adoption of measures to prevent shock.

There can, I think, be no difference of opinion on the first three points, and I shall, therefore, not dwell upon them directly; but it may be of interest to you to hear what measures I adopt to prevent shock when dealing with the class of case such as I have referred to to-night.

I arrange my cases either before operation, or immediately after opening the abdomen, into one of two groups—

1. The first includes those in which the general condition gives cause for anxiety, those suffering from heart disease or from any other condition likely to make them unable to bear shock; also those which from the nature and size of the tumour make the operation a prolonged and difficult one.

2. The second includes those in which the patient is in a fairly good condition, and on whom a more thorough operation can be carried out.

In the treatment of the first group, I follow, to some extent, the practice of Doyen, of Paris, i.e., to shorten the operation as much as possible.

I encourage the patient to rest in bed for a week or two, and during this time the diet and the action of the bowels are carefully attended to. Digitalis and strychnia are given if called for. A nutrient enema, containing 4 oz. of peptonised milk, 20 in tincture of opium, and 2 to 4 drs. of brandy is given the evening before operation. In the interest of the patient I like to operate about 9 A.M. The anaesthetic used is chloroform and A.E.C. mixture, ether being rarely given.

The patient is placed in the Trendelenburg position, and the vagina is finally cleaned with soap and water, and boracic solution or very weak carbolic solution, and the abdomen and thigh with spirit of soap, methylated spirits, and carbolic
solution. In the meantime, an assistant introduces two or three pints of saline solution into the median basilic vein. One or two gauze bandages are introduced into the vagina, and held there by vulsellum forceps.

The abdomen is opened midway between the umbilicus and the pubes, and through an incision about 2 inches in length the pelvis is explored.

If the tumour is large, and likely to give trouble in removing, the wound is enlarged upwards and downwards by means of strong scissors, in preference to a series of cuts with a knife, the object being to prevent the separation of the structures, thus simplifying the closure of the wound.

About a pint of salt solution is introduced into the abdomen, and the small intestine pushed upwards, and covered by large pads of gauze.

The broad ligaments are then clamped, the assistant repeating each step on the other side as far as is possible and convenient for two to work in what I elect to call a small wound.

Short pressure-forceps are placed over the uterine end of the tubes, and the broad ligament divided.

The peritoneal coverings of the uterus are incised usually high up, and the organ seized and dragged upwards; the uterine arteries are then looked for and tied, but if the condition of the patient gives any anxiety, and the cervix is found to be free, a strong catgut ligature is passed round the latter and the uterine arteries; and the uterus and tumour rapidly removed. When, however, this is not called for, the vagina is opened in front and behind, and the entire uterus is taken away.

At this stage the broad ligaments are tied, and the clamps removed, and the pelvis freely irrigated with warm saline solution.

The peritoneum and the vaginal walls are all included in each suture, and usually about half a dozen are required to close the wound.

The pads are now withdrawn, warm saline solution introduced, and the wound closed by silkworm stitches passed through the entire thickness of the abdominal wall. Dry dressings are applied, and one or two glass tubes containing iodoform gauze are inserted into the vagina. The time employed in performing the operation varies from thirty to fifty minutes, according to whether there is any damage to bladder or rectum to be repaired.

In the second group I do not follow Doyen's practice so
closely, as when at all possible I think it advisable to arrest all haemorrhage, and thus do away with the necessity for drainage, packing the vagina, and frequent dressing; and also to secure a strong pelvic floor, and to close the abdominal wound very carefully in order to guard against hernia.

All these details absorb time, but under favourable conditions I certainly think they ought to be attended to.

A double row of catgut sutures is passed in the pelvis—the first a Lembert suture through the edges of the vagina to direct the bleeding edge into the vagina; and the second, a continuous suture through the peritoneum.

In the closure of the abdominal wound the peritoneum and aponeurosis are stitched separately, the skin and muscles together, by silkworm sutures.

I have been particularly struck by the slight disturbance after this operation. Vomiting is usually slight, and in some cases it has been absent altogether, whether as the result of careful preparation or the injection of saline solution into the veins, I cannot state definitely, but the subject is under consideration, and I hope to be in a position shortly to give the result of my investigations.

The glass tubes in the vagina are removed at the end of the first week, the douche is used then for the first time, and the abdominal wound looked at in the third week, when the stitches are taken out.

The use of the catheter and the administration of nutrient enemata are the only causes of discomfort to the patient, and in some the recovery was as uneventful as that after a simple ovariotomy.

Dr. Samuel Sloan discussed the medical and electrical aspects of treatment, and said—I have little to say in the way of criticism of Dr. Edgar's paper, except that I shall have to differ from him in some of his conclusions regarding electrolysis, premising only that I consider his remarks on this treatment as fair and judicial in view of his experience of it.

Regarding the medical treatment of fibro-myomata, I consider it of use principally in the treatment of complications; though a case, of which I have full notes, extending over a period of thirteen years, shows that ext. ergotæ and nux vomica combined have a distinctly beneficial influence in reducing the size of the tumour, or else that these tumours do diminish, temporarily and materially, without active medical treatment. I show you carefully drawn outlines of the mass in this case; showing that in one year the portion of it
situated above the pubic line diminished from 26 square inches to 17; the mass afterwards increasing and diminishing, till now, thirteen years after the first outline was taken, when it slightly exceeds its then measurement. As the total mass of tumours was steadily increasing from its condition in the outline dated September, 1888, daily doses of ergot and nux vomica were ordered. These drugs have been taken, with occasional periods of cessation only, during the whole time; the tumour apparently increasing during the periods of cessation. No harm whatever has resulted to the patient, although for thirteen years ergot has been thus steadily administered.

I am pleased that the Secretary has requested me to state the result of my experience of electricity in the treatment of this affection, because it has led me to revise my work, with the object of clearing and crystallising my impressions regarding it.

Let me say, first, that whatever ultimate decision may be arrived at regarding the effects of electrolysis, I feel sure that Dr. Apostoli has rendered a signal service to the profession by his scientific methods, which have done not a little to remove this, undoubtedly valuable, therapeutic agent from the hands of unqualified, though probably honest practitioners, into those of medically qualified and scientific observers.

Electrolysis, in the treatment of fibroids, has, in my opinion, suffered from being over-praised and "boomed." The choice of the name electrolysis, for this use of electricity, is partly to blame for this; everyone probably, like myself, attributing the modus operandi of the treatment to be by an electrolytic effect on the tumour itself, besides the caustic effect immediately around the positive pole, which effect is really electrolytic. I believe, however, that no evidence has been forthcoming to prove that any really electrolytic effect is ever produced in the tumour, unless where this is submucous or in very close proximity to the mucous membrane of the uterus. In such cases the tumour may be really electrolysed, local stasis of the circulation being induced by coagulation, and to that extent some absorption resulting after each application. There is thus true polar electrolysis, but no interpolar electrolytic action. This, however, is a dangerous and unsurgical method of treatment, though probably less so than puncture, of which I have no experience. That this is the sense only in which the treatment is electrolytic is evidenced from a reference to the kind of cases in which it is said, by those who recommend it, that electrolysis is beneficial, namely, in recent highly
muscularised and undegenerated tumours, either submucous or interstitial, and not in old-standing or subperitoneal or degenerated fibroids. If interpolar electrolysis were really at work here, the suitable cases should be the unsuitable, as being more highly vitalised, and therefore less amenable to electrolytic influence; whilst the unsuitable ones should be the more suitable, as less vitalised, and therefore more amenable to electrolytic degeneration and absorption. This will, perhaps, in part explain the diversity of opinion regarding the use of this agent.

The following quotations from recently expressed opinions of reliable authorities may be cited to illustrate this diversity of opinion:—“Has amply fulfilled my sanguine anticipation; has a decided curative action.” “In the near future we may have to record that electricity in the treatment of fibroids is obsolete.” “Eighty per cent of all cases can be treated with great benefit, and the tumour reduced in size.” “Out of 372 cases, only 9 were cured, and 5 died.”

Two facts are obvious from this attitude of the profession towards this treatment. First, that some benefit has undoubtedly resulted from the treatment as carried out by some operators; and, second, that in the hands of others the treatment has proved useless or dangerous.

What, then, are its benefits; what its dangers; and why has the result of the treatment been so varied? The beneficial effects, where these have followed, have arisen from, first, the electrolytic action on the endometrium at the positive pole—or rather on that portion of it around the platinum probe—this action being astringent and antiseptic; the latter by the evolution of oxygen gas. This is the result where moderate doses are employed. With large doses, as 100 to 250 milliamperes, the effect will be more of the nature of a severe caustic. Thus, hemorrhage will be arrested, and the unhealthy condition of the endometrium will be modified beneficially. The interpolar effect will be a galvano-tonic contraction of the muscular tissue of the uterus proper and of the tumour, with a tonic action on the abdominal viscera and on the abdominal sympathetic. That this action in moderate doses may result in good only, and be in no way dangerous, is well illustrated by a case, though not of fibroid, which I should like to relate.

Mrs. D. called upon me in December, 1894, for relief of sterility, stating that she had been four years married and had never been pregnant. She had had a course of intra-uterine medication in a “home,” with no benefit. Her health
was poor, and when I proposed electric treatment, she said she was thankful that I could suggest something new, as nothing had hitherto been of any avail. After some preliminary treatment for some fulness and tenderness in the left fornix, utero-abdominal galvanisation, as in electrolysis, was employed, the sound measuring 3½ inches. Currents ranging from 50 to 80 milliamperes, for seven minutes at each sitting, were employed. This galvanic treatment was begun on 24th January, 1895, and five applications in all were given. The result was that she became pregnant in March following, and was confined nine months and one day from the date of the last application.

That, in large doses, however, the good may be apparent and temporary only, is evidenced by a case which I shall record briefly.

Mrs. M., aged 31, four years married, and never pregnant, called upon me in October, 1896, with a fibroid extending nearly 2 inches above the umbilicus, the sound passing into the uterine canal to the extent of 6 inches. She was very much blanched, and the hæmorrhage had been increasing during the past year. This was obviously an ideal case for electrolysis. This patient had in all about thirty applications, extending over a period of fully two years, during which time the size of the tumour varied, the bleeding became materially reduced, and the patient's general condition greatly improved. Frequently as high a current as 200 milliamperes was employed. The last application was made on 7th December, 1898, and the patient died suddenly from hæmorrhage fifteen days later. In this case it is reasonable to ask, was the fatal hemorrhage caused or accelerated by the caustic effect of the large doses of the current? I suspect this to be a real danger, apart from the probable danger of the presence of copious electrolytic débris in the cavity of the uterus, resulting from frequent applications of such doses of the current. I have also known dangerous exhaustion accompany or immediately follow the application of the current, although half an hour's rest afterwards will sometimes render the patient brisk and light of foot. We have thus material for an explanation of the diversity of opinion amongst those who have experience of this mode of treatment. My own varied results led me, some years ago, to use the primary faradic current in cases of fibroids. Since beginning the use of this current, I have rarely returned to the employment of electrolysis.

But there are other reasons for the diversity of opinion referred to. In the first place, errors of diagnosis occur to
DISCUSSION ON THE TREATMENT OF UTERINE FIBRO-MYOMA. 161

me. I read with great care a case detailed by the late Dr. Thomas Keith, who was well known as an advocate of electrolysis. The case was one of haemorrhage, with an enlargement of the uterus, and was diagnosed as a case of fibroid. The result of the electrolytic treatment was that the bleeding ceased, and the uterus returned to its normal dimensions. The case was recorded as one of fibroid tumour cured by electrolysis. I had no difficulty, however, in coming to the conclusion that, though Dr. Keith considered it a case of myoma, his enthusiasm had led him astray; for the tumour was, in all probability, a subinvoluted uterus, and the satisfactory result, I doubt not, was due to the treatment by electricity.

Errors of diagnosis are not uncommon even among good diagnosticians and able surgeons. A case in point occurs to me. The woman was seen by me in consultation in the country a few months ago. I diagnosed a pregnancy, with probably a fibroid, and sent her into the Samaritan Hospital. There had been intense sickness and general distress. Dr. Nairne agreed as to the probability of a tumour, and operated, only to find that no tumour was present. If Dr. Keith and Dr. Nairne may err in diagnosis, who is free from this risk?

Another cause of diversity of opinion, it seems to me, lies in the fact that good gynaecologists are, at least at first, not necessarily, rarely I should say, good electricians. They will, therefore, vary in their knowledge of electric science; and their very greatness as gynaecologists may induce them to attach less importance to electro-therapeutic experience; and so, misunderstanding the laws of electro-therapeutics, the result of their electric treatment will, no doubt, be often a matter of chance. I suspect that some bad results have arisen from want of care and want of attention to asepsis, operators not appreciating the importance of this, especially where large doses are employed. Perhaps, also, dash is more in their way than patience, which is essential to success in electric treatment.

Seeing, then, that electricity, in some form, may benefit or endanger in cases of myomata, how may it be employed so as to ensure the former and prevent the latter? Electricity may, undoubtedly, be used as a sedative, a tonic (local and general), an augmenter of the contractility of muscular fibre, an astringent, an antiseptic, a caustic, or a promoter of the absorption of metabolic débris and of chronic inflammatory products. I state this as a result of personal experience extending over a period of many years. When is it of use, and how is it to vol. III, x
be applied in disease of the uterus due to, or associated with, fibroids? Note that I use the word electricity not electrolysis; and it is on the former of these that I have been asked to speak. Now, it is not, as a rule, the tumour which we are asked to treat, but the discomfort or danger accompanying the tumour. It may be merely pressure symptoms, inflammatory affections of the ovary or broad ligament, metritis, salpingitis, or any other pelvic affection. It must be admitted that if these can be removed, not even a surgeon with a desire for operating will insist that operation is necessary.

I shall sum up briefly my opinion as to some of the uses of electricity in the treatment of these conditions.

If painful inflammatory products, or pain from extra-uterine cause be present, then the secondary faradic current is indicated, at first in small doses and with fine current, then in gradually increasing doses, and with a current less and less fine, that is with fewer windings in the coil.

If inflammatory products, and little or no pain, and no bleeding, then the negative pole of the galvanic current will be the proper application.

If free from inflammatory products, but bleeding be present, probably so-called electrolysis of moderate strength—under 100 milliampères—will be suitable, although I am finding, as I have indicated, the primary faradic current of service in these cases.

If the bleeding does not yield readily to moderate currents, then probably curettage will be best, after full dilatation for exploration as to seat of any fungoid endometritis, preliminary to renewal of electricity. Less decomposable débris will then result from the electrolysis, and the action of the current on parts of the endometrium not requiring it will thus be avoided.

Each case probably requires its own kind of electric treatment, just as each case suitable for the surgeon requires its own kind of surgical treatment.

I feel that almost no case should be treated surgically without first having been given a fair trial by electricity. I am not prepared to say with assurance that the primary faradic current can reduce the size of the tumour; but my experience of it warrants me in hoping that this may turn out to be the case. If my confidence in this current be confirmed by subsequent experience of it, time will still be required to ascertain what should be the dose, the voltage, the nature of the vibrations, number of windings, &c., and how these should be altered to suit individual cases, and changed as the conditions change. This treatment is at anyrate absolutely safe, or should be so,
Surgeons have blamed electricians for injury, rendering the necessary operation more difficult and dangerous; but this is less serious than a failure on the part of the surgeon would be, for a skilful surgeon may repair the damage done by an electrician; but, though electricity can do much good, no amount of skill on the part of the electrician will enable him to undo the work of the surgeon in any of these cases which go to swell the grim 5 to 10 per cent of mortality.

Dr. J. K. Kelly said that as usual Dr. Edgar had displayed his liking for minute classification in expounding the various methods followed in the treatment of myoma, but for this Society such minute classification was rather elementary. Expectant and medical treatment were not in any way opposed to surgical treatment, but were merely the plan that any man of commonsense would adopt when a tumour was present which gave rise to no trouble. The real opposition lay between surgical treatment and Apostoli’s method. Dr. Kelly, like others, had tried this method ten or twelve years ago, but had no satisfactory results. He considered that when electricity could be employed successfully for the removal of a tumour on the surface of the body, it would then be time to try it again for uterine myoma. It had continued in vogue because the uterus was the organ on which all sorts of experiments could be tried, and all with some apparent success.

Dr. Kelly considered that the only proper treatment for myoma that required treatment at all was surgical treatment, and this treatment should follow the laws of surgery, such as prevailed in all other regions of the body. The ideal that should be aimed at was the removal of the tumour with the retention of the organ. It was always so far a surgical failure to have to remove the uterus along with the tumour.

If the tumour were presenting in the vagina, it ought to be removed by the vagina, and large tumours could be removed per vaginam by morcellement. In one case of sloughing myoma, which weighed about 3½ lb., he was able to remove the whole by morcellement without any mutilation of the uterus. The tumour presenting in the vagina, however, need not be sloughing. Its very presence in the cervix, which was a region accessible to pathogenic organisms, made an abdominal operation unsuitable. In all other cases, however, when the cervix was not opened up by the tumour, and the tumour, therefore, was presumably in aseptic surroundings, abdominal section was the proper operation to perform. This gave free access to all parts, and even submucous tumours could be
safely removed. In the last operation of enucleation he had performed—the tumours obtained being among those shown on the table—the largest of the tumours was submucous, and the cavity of the corpus uteri was freely opened. A great many myomata might be enucleated and yet leave the uterus a serviceable organ. In one of the specimens shown, eight or nine tumours had been removed from the uterine wall, and yet the uterus was left. In Howard Kelly's book, also, a case was illustrated in which several tumours had been removed, and a fairly normal uterus left. No doubt such an operation took more time than a hysterectomy, but it was the proper operation to perform wherever possible.

Dr. Kelly referred briefly to three noteworthy cases of enucleation which he had recently. One was the case of a young woman who was proposing to be married, but had a large tumour which had long caused haemorrhage, and was now beginning to cause impaction in the pelvis, so that from its rapid growth her medical attendant believed it to be a sarcoma rather than a myoma. This patient has now a perfectly healthy uterus, is married, and there is no reason why pregnancy should not occur. The second case was a most remarkable one. The patient was a young, recently married woman, who had been thought to be pregnant, but was suffering from constant and severe haemorrhage. There was a large myoma chiefly occupying the fundus, and in view of the dangers of pregnancy, she was advised to have the tumour enucleated. At the operation, the abdomen was found full of dark blood, and after removal of the tumour and suture of the uterine wall, the cause of the bleeding was sought for and found in a ruptured tubal pregnancy of the left side—the rupture having taken place on her admission to the home two days before operation, the symptoms being at the time misinterpreted. In this case, also, there is every reason to hope that she may now have a normal pregnancy. In the third case, an abortion had taken place as the result of the presence of the tumour in a recently married young woman. After recovery from the abortion, which had become septic, the tumour was enucleated from the uterine wall, and the patient is now perfectly well.

Dr. Kelly concluded by saying that, with the observance of the ordinary surgical rules with regard to asepsis and the control of haemorrhage, there should be no danger in treating myoma surgically, and by again insisting that the ideal operation was the excision or enucleation of the tumour with retention of the uterus.
Dr. W. L. Reid said that he agreed very much with what Dr. Edgar and Mr. Parry had stated with regard to the treatment of uterine fibroids. In many cases no treatment whatever should be employed, there being no symptoms.

In those in which menorrhagia was a symptom, he believed that good often resulted from giving ergot freely and regularly during the intervals, and bromides immediately before and during the period.

As regards electrical treatment, his experience seemed to have taught him that it did no good except when used in such a way as to cauterise the mucous membrane of the uterine cavity, and that this was only, as a rule, temporary in its good effect.

In the same way, the use of the curette often does good temporarily, and near the menopause, or when no more effective means can be employed, it is justifiable. He was astonished that the removal of the ovaries and tubes for bleeding fibroids had gone out of fashion. It had given very good results in his hands, but he believed that success depended on the complete removal of both ovaries and both tubes, and in certain cases of large tumour, or where there were many adhesions from pelvic peritonitis, this was often much more dangerous than an ordinary hysterectomy, which should in these circumstances be the operation chosen.

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MEETING IV.—22ND JANUARY, 1902.

The Hon. President, Dr. W. J. Smyly, in the Chair.

New Fellows.—The following were admitted as ordinary Fellows:—J. Campbell M’Clure, M.B.; W. F. M’Donald, M.B.; J. A. C. Kynoch, M.B.

THE TREATMENT OF ENDOMETRITIS.

By W. J. Smyly.

Gentlemen,—It is with pardonable pride that I rise to address you this evening. To be the Honorary President of the Glasgow Obstetrical and Gynaecological Society is an honour which any obstetrician or gynaecologist might regard
with feelings of pride and satisfaction; and when I recall
the names of the distinguished men who have held the position
before me, it is the more gratifying to me to know that my
name will descend to posterity on such a roll of honour. I do
not feel that I come amongst you as a stranger; for, as I look
around upon my audience, I see many familiar faces of former
pupils in the Rotunda Hospital, and I cannot but feel that it
is due more to your kindly friendship than to any merit of
my own, that I have been placed in the position which I now
occupy.

That position, however, at the present moment, appears to
me to be honourable rather than honorary, for it entails the
necessity of delivering an address. In selecting a subject for
that address, I have departed from the time-honoured course
of reviewing the history of our art, the triumph of antisepsics,
and the many operative successes resulting therefrom; and
have chosen a less ambitious theme, but one, I hope, not
devoid of general and practical interest—"The Treatment of
Endometritis."

It would, no doubt, be more scientifically correct to have
considered the treatment of uterine inflammations as a whole;
since a distinction between cases of myometritis and endo-
metritis does not occur in Nature, nor could any line of treatment
directed to the cure of one to the neglect of the other prove of
any permanent benefit. Yet the limits of time, in which I
would venture to impose upon your patience, preclude a
thorough consideration of the subject. And since the treat-
ment of myometritis is chiefly constitutional, whilst that of
endometritis is almost entirely local, I think I may, whilst
emphasising the importance of the former, confine my remarks
to the latter—though not only admitting, but most ener-
getically affirming, that a judicious combination of both is
the only possible road to success.

What, then, is endometritis? The word signifies inflam-
mation of the uterine mucous membrane, but we generally
include under it a number of conditions which are not clearly
and certainly inflammatory. Some authorities, indeed, refuse
to admit such conditions as interstitial and glandular disease
under the title of endometritis; foremost amongst these, the
late Dr. Mathews Duncan and Dr. Herman, who place them
under the titles myxoma and adenoma. I prefer, however,
to adhere to the old arrangement. Firstly, because it is
convenient in practice, a reason which has been considered
sufficient in other equally uncertain nomenclature; as, for
example, accidental and unavoidable hæmorrhage, peri- and
para-metritis, and granular erosion of the cervix, where it is generally admitted that the terms are bad and misleading, but have been so long in use, and are so generally understood, that a change has been considered inexpedient. Another and more scientific reason for refusing to adopt the newer classification is, that it appears to be premature, since these diseases have by no means been proved to be non-inflammatory in their nature. The presence of a small-celled infiltration suggests such an origin; and although infectious germs are not generally found, and the investigations of Döderlein, Pfannenstiel, Bumm, and Menge would seem to prove their absence, yet they have been observed by others; and although it would be difficult to disprove the assertion that the discovery of germs was due to imperfection in the methods employed, and that they were actually introduced by the observers themselves, yet such observations have lately been strongly supported by Albert, who, from clinical observation, concluded that Döderlein and others have gone too far in asserting that in cases of chronic endometritis, the endometrium is always free from germs. The facts which he adduces in support of this opinion are these:—Out of 2,300 cases delivered in Leopold's Clinic in Dresden, in one-fourth of those who had fever it was found to depend upon gonococci, and this infection must have occurred before labour, and probably before conception. From his own investigations he not only confirms this view, but further states that it is true of other microbes also, which entering the uterus before conception, remain latent during pregnancy, but under the altered condition of the puerperium develop a virulent character, causing serious illness, and even death. He mentions several instances in support of this opinion, and especially two cases in which septic fever set in immediately after delivery and proved fatal in forty-eight hours, in both of which he found the focus of infection in the endometrium at the fundus of the uterus. Now, although I am still inclined to believe that those are right who hold that chronic endometritis is not associated with microbial infection, yet the subject is still open to discussion.

Etiology.—Scientific treatment depends upon exact knowledge of the cause of any illness, the removal of that cause being the chief object in effecting a cure. But, unfortunately, our knowledge in this respect is often imperfect, and our treatment empirical. In some forms of endometritis the cause is evident, in others obscure. The subject, therefore, divides itself into—
1. Cases in which micro-organisms are always present, and are evidently the cause of the complaint, and these we can further sub-divide into those which are—(a) Septic or saprophytic, (b) gonorrhœal, (c) syphilitic (?), (d) diphtheritic, (e) tubercular.

2. Those in which such germs do not exist. These are subdivided into—(a) Post-puerperal, (b) post-gonorrhœal, (c) interstitial, (d) glandular, (e) hypertrophic or fungous, (f) decidual, (g) dysmenorrhœal, (h) plastic or membranous, (i) ichthyosis uteri.

These latter forms cannot, however, be so sharply differentiated from each other as the former, and their inflammatory nature is not always, as has been already pointed out, clear. Some of them are no doubt the result of former acute inflammation, but most of them set in insidiously in connection with vascular and nervous disturbances. They are generally found to be connected with, and are probably due to, a number of causes, amongst which the most frequent are uterine displacements and tumours, cervical lacerations, ovarian and tubal diseases, obstructive diseases of the heart and lungs, nephritis, fevers (especially enteric fever), measles, influenza, cholera, perverse sexual irritations (such as onanism and preventive methods used to avoid conception). When we consider the many changes that the endometrium undergoes during pregnancy and childbed, in the formation of the decidua, the separation of the placenta and involution, it is no matter for surprise that these processes are sometimes arrested, and assume pathological conditions. Abortion is no doubt more frequently the result of endometritis than its cause, but there can be no doubt that in some cases, especially where septic infection has occurred, and even without it, the disease results from abortion. The simple retention of the decidua, in part or altogether, will, in some cases, result in endometritis; but why it does so in some, and not in all, we cannot tell. In the treatment of endometritis it is, therefore, of great importance, but not always possible, to discover and remove its cause.

Another preliminary consideration is as to the necessity for local treatment in endometritis. If we adhere to the rule, as we undoubtedly should, that treatment should not be more dangerous to the patient than the disease from which she is suffering, we must come to the conclusion that many cases do not require local treatment. First, because no kind of local interference is entirely devoid of risk; and, secondly, because many women suffer from a leucorrhœa which causes little
inconvenience and no risk. This is especially the case in young unmarried women. It is different, however, where health is undermined and life rendered useless by constant hæmorrhage or intolerable dysmenorrhœa. In married women, too, leucorrhœa is a more serious matter, though everyone does not think so. Some years ago, a young married lady, whom I had been treating for metritis, consulted a distinguished London specialist, who wrote to me saying:—“I have seen your much complaining, much complained patient. She is suffering from a healthy leucorrhœa, which requires no treatment.” Now, in my opinion, a much complaining, much complained, patient does require treatment, and especially if she be a married woman, for it is in connection with childbearing that metritis assumes its most important position. That many women continue childless owing to this disease, is proved by those cases in which pregnancy has followed its cure. That it is frequently present in connection with pregnancy, and that it is a source of many serious complications, has been long since proved by Veit and others. I have already alluded to its being a cause of abortion. This was proved by Veit, who found evidences of its presence in almost all of a large number of abortions examined by him; and since it is a chronic disease which does not tend towards recovery if left untreated, it is easy to understand the frequent recurrence of abortion in the same patient—the so-called habit of aborting. The symptoms of endometritis during pregnancy are the same as at other times, namely, hæmorrhage, pain, and discharge; and the presence of the last, according to Veit, is the most rational explanation of hædorrhœa gravidarum. Under ordinary circumstances, the decidua reflexa and decidua vera unite towards the end of the fourth month, but in cases of uterine catarrh they sometimes fail to do so, and a space is left which gradually becomes filled with fluid, the clear uterine secretion; when the tension in this cavity, increased in some cases by uterine contractions, overcomes the resistance at the internal os, the fluid escapes with a rush, and is frequently mistaken for liquor amnii.

Anomalies of the placenta, such as placenta marginata and succenturiata, excenetric or velamentous attachment of the cord, hæmorrhagic infarctions, and placenta prævia, are most frequently results of endometritis; and so is, in all probability, premature separation from the normal site or accidental hæmorrhage. The frequent association of this accident with nephritis, and the recent discovery of gonococi in the decidua serotina, in a case of accidental hæmorrhage, support this
view. Adhesion of the placenta, necessitating manual interference, is another result of the same disease. Besides all this, uterine inertia and post-partum hæmorrhage result from metritis, and so do profuse losses in the puerperium, amounting in some cases to secondary hæmorrhage. From all this it is evident that endometritis which causes severe symptoms in the unmarried, and even those forms which cause only slight symptoms in those who have to bear children, require active local treatment.

Treatment.—Prevention is better than cure, and therefore the prevention of these diseases deserves the utmost care. Asepsis in midwifery and gynaecology, the instruction of those suffering from specific diseases as to the risks attending sexual relations, the care of young women at the menstrual period, and the proper treatment of uterine displacements and tubal and ovarian diseases, as well as attention to diet, the action of the bowels, and health in general, has done much in this direction; still, a large number of cases remain which require local remedies.

Leucorrhœa, however, in young unmarried women, generally depends upon constitutional causes, and is, with few exceptions, best treated by general and not local remedies.

The cases which do require local medication are divided into those which depend upon infection, and those in which micro-organisms are absent. The treatment of septic endometritis is still open to discussion. Since Bumm has shown that before symptoms show themselves, the micro-organisms have already invaded the tissues so deeply that their destruction and complete removal is no longer possible, some authorities have abandoned all local measures as useless, and their position is further strengthened by the experiments of Schimmelbusch, who found that it was impossible, with the most thorough antiseptic treatment, to cleanse even a freshly infected wound. But, I believe that the amount of septic material present is an important factor in the ultimate result, as well as the virulence of the microorganisms, and that, therefore, even a partial removal of infectious matter is of vast importance; and clinical experience has, I believe, proved that this is so, and that energetic local disinfection has yielded the best results. Antiseptic douching should therefore be commenced at the earliest possible moment, and several pints of the fluid should be passed through the uterus. A douche and not a Higginson's syringe should always be employed, and a double current catheter, such as
Bozeman's, to secure a free return. Such highly poisonous substances as the perchloride of mercury and carbolic acid are not suitable in puerperal cases, and it is advisable to use less dangerous antiseptics, such as chinosol, lyeol, creolin, boric acid, and permanganate of potash. When, after two or three douchings, the temperature remains high, or the discharge copious and putrid, the uterine cavity may be plugged with iodoform gauze, which should be renewed every twelve hours. Where this does not succeed, and there is a possibility that portions of placenta or membranes have been retained, the cavity should be explored with the finger and such particles removed.

The value of the curette in the treatment of septic endometritis is a much disputed subject. It has been warmly advocated by some, especially French authorities, including Charrier, Charpentier, and Pozzi; but as strongly condemned by others, including the leading German teachers, especially Olshausen, Fritsch, Veit, and Gottschalk—the former believing that the causes of the disease are most thoroughly removed by this instrument, and the latter, whilst admitting this fact, contending that their removal cannot be complete, and that by destroying the barrier which Nature has erected to prevent the invasion of the system, irreparable injury may result. My own opinion is that the sharp curette is a very dangerous instrument in such cases, but that a broad blunt instrument, such as Rheinstädter's flushing curette, if carefully employed, is often of the greatest value in removing putrid material which cannot be dislodged by the finger.

The last resource, in otherwise hopeless cases, is extirpation of the uterus. Some cases in which this has been done with varying results have been published from time to time by Schultzze, Sippel, Baldy, and others. It is a proceeding, however, rarely justifiable, and only where the source of the disease is situated in and only removable with the uterus. It is, however, a matter of extreme difficulty to determine when this is the case. In acute septic cases it would be useless; in saprophytic, it is apt to be performed unnecessarily, or too late, after the disease has spread too far. The cases in which, however, it has undoubtedly saved life are those in which a putrid placenta has become incarcerated in the uterus, and cannot, with equal safety, be removed in any other way, as was the condition present in Schultzze's case.

Treatment of chronic endometritis.—It has been laid down as an axiom that the treatment must not be more dangerous
than the disease, and therefore leucorrhoea in young unmarried women should seldom be treated locally; besides, since this condition almost always depends upon constitutional causes, it is most amenable to cure by general measures.

To this fundamental rule we may add that the remedy should be capable of curing the disease, and that it should do so within a reasonable space of time. The practice of making applications to the endometrium twice a week, until the patient's faith or purse is exhausted, cannot be too strongly condemned; it is not only discreditable to the medical attendant, but often leaves the disease uncured, and the patient a nervous wreck. "Doctor," said a patient to her medical adviser, "you have been treating me for fifteen years." "My dear madam," he replied, with a benevolent smile, "I hope I may do so for another fifteen."

In the treatment of endometritis, the methods in vogue are the following:

1. Antiseptic and astringent douches.
2. The curette.
3. Chemical caustics.
4. The thermo- and electro-cauteries.
5. Steam.
6. Hysterectomy.

Out of all these I have not the slightest hesitation in giving the first place to the curette, and in this I believe that most gynaecologists will agree; but of late I have read many publications which appear to me to unduly disparage its merits. It seems the fate of all therapeutic measures to pass through certain stages—First, neglect; secondly, undue popularity; lastly, disparagement. The curette has now reached this third stage. From the time it was first introduced by Recamier in 1847, until it was taken up by Olshausen, it met with little attention. But after its merits had been demonstrated by Olshausen and Martin, and especially after Düvelius had shown that the mucous membrane was completely regenerated in a very short time after its removal, the method became universally popular, and was used in every form of disease of the uterine mucous membrane. It soon became evident, however, that it was by no means a universal panacea, and many failures, unfortunate accidents, and even a few deaths, were reported. It now became necessary that an authoritative voice should be raised against the employment of this method in unsuitable cases, and no one more qualified to raise a warning note could have been found than Professor Olshausen, to whom chiefly we owe its popularity. As a firm believer
THE TREATMENT OF ENDOMETRITIS.

in its merits, when employed in suitable cases, his caution against its abuse was all the more important.

The points which specially recommend the curette in practice are its efficiency, simplicity, and safety; but it must not be forgotten that it is also our only means of arriving at an exact diagnosis. The indications for its employment are purely symptomatic, the results obtained by microscopic examination of the particles removed are anatomically exact, and it is almost entirely due to the use of this instrument that we have come into possession of our present knowledge of the normal and abnormal anatomy of the uterine mucous membrane; and should we employ any other method of treatment, without first employing this one, we cannot be certain that we are not attempting the impossible, and striving to cure an incurable condition.

The curette is especially efficient in cases where haemorrhage is the chief symptom, but is seldom of use in those chiefly characterised by leucorrhoea, and the results are very uncertain in the cure of pain; or, in other words, it is beneficial in post-puerperal and fungous endometritis, useless in the interstitial form, and uncertain in dysmenorrhoea.

I have already said that the use of the curette is simple and safe, but that is only when skilfully employed in suitable cases; under other circumstances its dangers are many and great. Perforation of the uterus is not a very serious matter, unless some caustic is subsequently injected or aseptic precautions have been neglected; but an unskilful use of the instrument may not only remove the entire mucous membrane but part of the muscular wall as well, resulting in the partial or complete obliteration of the uterine cavity; and this is especially likely where the uterus is softened by pregnancy and during involution. The employment of the curette in early abortions is such an apparently simple and efficient method of emptying the uterus, that it is largely employed at the present time; but, in my opinion, such treatment is essentially bad and dangerous, and where Nature requires assistance the sentient finger, even though it may entail a previous dilatation of the os, is the proper and only safe method of dealing with retained portions of the ovum, and if instrumental assistance is required, it should always be controlled by the finger.

The danger attending the use of instruments without such control is painfully illustrated by a case reported in 1899 by Boldt, of New York. A medical man, when curetting for abortion, unconsciously perforated the anterior wall of the
uterus. He subsequently introduced an ovum forceps, with which he removed some lumps of fat; and at last brought down a white-looking tube, around which he crooked his finger, tore it through, and found it to be a loop of intestine. He then desisted from further manipulations, inserted some iodoform gauze into the vagina, and summoned Boldt to his assistance. On his arrival, the latter found the woman’s general condition so good that he doubted the accuracy of the description which he received, and determined to wait. After fifty hours, dangerous symptoms set in, cæliotomy was performed, and the injured bowel found extensively separated from its mesentery, and in a gangrenous condition. The intact ovum was still in the uterus. Boldt made no remark upon this case; but Sänger and Chrobak both commented upon it, pointing out, in the most emphatic manner, the dangers attending the use of instruments in such cases unless controlled by the finger. Unfortunately, this is not a solitary case, for similar accidents have been reported by Mann and others, some of which were saved from death by timely operation, and some were not. The lesson to be learned from the misfortunes of others is not, however, the abandonment of a useful method of treatment, but rather its more skilful employment and its restriction to suitable cases. In the case of abortions, I am entirely in accord with Chrobak, that the use of the curette should be limited to the removal of particles or shreds which cannot be detached by the unaided finger, and that it should always be controlled by the latter; and even where a curettage is required after the evacuation of the ovum, it is better, if possible, to postpone the operation until involution is completed.

Antiseptic douching can only be of use where infective germs are present; and, as the experiments of Döderlein, Menge, and others have proved that, excepting gonorrhoeal and tubercular cases, such germs are not present in chronic endometritis, such treatment is evidently useless.

For the successful employment of chemical agents in these cases, it is generally admitted that they should be applied in a sufficiently caustic form to destroy the entire membrane, otherwise diseased tissue is left, and the new-formed membrane either retains the pathological characters of the former one, or assumes them through contiguity of diseased portions of membrane. An important observation in this connection was made by Menge from the examination of seventy-six uteri removed by hysterectomy. He found that in almost all of these the deepest layer of the endometrium was healthy; and
this would encourage us to hope that, provided only the primary causes were removed, a healthy membrane would grow from this deepest layer of the endometrium. Even in gonorrhoeal endometritis, he maintains that this deep layer is generally free from germs, and that the accompanying metritis is entirely due to toxins; and so when the superficial layers are destroyed by a powerful caustic and antiseptic, the gonococci, which are not very resistant, are also destroyed and eliminated, and a healthy membrane will grow from the deepest layer. A caustic is more efficient in these cases than the curette, because the germs are not killed by the latter, and may be inoculated upon the raw surface left by the operation.

The caustics most frequently employed at present in the treatment of endometritis are:—Liniment of iodine, carbolic acid (alone, or mixed with alcohol, or combined with iodine as iodised phenol), the liquor ferri perchloridi, fuming nitric acid, sulphate of copper, chloride of zinc, and formalin. All these agents are not of equal value. Some of them, especially iodine, are not sufficiently powerful caustics, others destroy the tissues too deeply, and many of them cause intense suffering and alarming colic.

For ordinary use, perhaps carbolic acid and alcohol is the best; it causes little pain, is easily applied, and although cases of intoxication have been reported, I have myself never met with one.

Fuming nitric acid is said to be too powerful and too unmanageable an agent, causing in some cases obliteration of the cavity, or leaving cicatricial tissue instead of a normal endometrium. When I was assistant to Dr. Atthill in the Rotunda Hospital I saw a large number of cases treated with this caustic, and the results appeared to be excellent; and I see that it is still recommended by Dr. Herman, in his work on Diseases of Women. The fact, however, that it has been followed by the results already mentioned has prevented my employing it any more.

Chloride of zinc is strongly recommended by Sänger, but he does not omit to caution those who employ it, as he does, in a concentration of 50 per cent, to do so with extreme caution. This remedy has one, and only one, point in its favour, and that is efficiency. But its imperfections are so many that gynaecologists would hail with satisfaction any other equally efficacious treatment, free from these defects. Amongst the disadvantages attendant upon the use of chloride of zinc are the intense suffering, and sometimes even alarming colic, which
follows its use. It forms a deep slough, the separation of which has been attended by violent hemorrhage, and affords a favourable nidus for septic germs, which, owing to its feeble antiseptic properties, are liable to be introduced with it. Stenosis of the cervix, with consequent hematometra, has occurred in some cases, but generally where it was introduced in the solid form. That chloride of zinc is a feeble antiseptic is proved by Menge, who found that anthrax bacilli were still alive after immersion for twelve hours in a 50 per cent mixture. Paul and Krönig found them still capable of development after ten days in a 15 per cent solution, and Koch after one month in a 5 per cent solution.

Formalin is, according to Menge, the ideal caustic in endometritis; it is sufficiently corrosive without being dangerous, and is a powerful antiseptic. Since reading Menge's article in the Archiv für Gynäkologie, I have employed this drug extensively, and, as far as one could form an opinion in a few months, with very good results. The only disadvantage that I found was intense pain for a short time after its application. I used it in the strength recommended by him, namely 30 per cent for the endometrium, and pure formalin for erosions.

Quite as important as the caustic employed is the method of applying it. The methods generally adopted are by means of cotton wrapped on probes, syringes, gauze, and solid sticks; of these, probes are the best and safest. Playfair's probes have been generally superseded by metal ones, made in a single piece, which are not so easily destroyed by boiling. A good sound should be smooth, flexible, and not too thick.

Sänger strongly advocates a soft silver American probe, and Menge probes, made of vulcanite, which are much less expensive. The chief point in using a probe is perfect asepsis. This is not so generally recognised as in other manipulations, such as the introduction of the sound and curette, but is quite as important. The general impression that any microorganisms attached to the cotton must be destroyed by the powerful caustic is erroneous, and has been the chief cause of failure in the past. The common practice of applying the cotton, probably with septic fingers, immediately before its introduction is to be condemned, and the safe and simple method suggested by Menge highly commended. His plan is to place a number of probes, carefully armed with cotton applied with clean fingers, in a long glass jar, containing the formalin solution, the top of which is closed with a glass lid. After twelve hours, the cotton is sterilised and ready for use. When an application is required, the cervix is exposed by
means of Trelat's or other speculum, and carefully mopped with an antiseptic solution. A piece of wet cotton, having been placed under the cervix to protect the vagina, a probe is taken from the glass jar and passed up to the fundus. Two or three probes are generally used, care being taken to pass one into each corner of the uterus. Lastly, the cervix is wiped dry, a little iodoform gauze inserted, and the speculum withdrawn.

This process need not be repeated until its effects are complete—that is, after about a fortnight. Our failures in the past have been due, not only to imperfect asepsis and inefficient caustics, but probably also to too frequent repetition, by which the formation of a new membrane is frequently interrupted, and the endometrium kept in a constant condition of change, productive of pathological rather than normal growth. The objection urged against the use of probes is that, in passing the os internum, most of the caustic is squeezed out of the cotton, and very little reaches the uterine mucous membrane. The occurrence of colic, however, proves that this is not the case, and Menge showed, by experiment, that the caustic does enter the uterus. He passed probes dipped in methylin violet into uteri previous to their extirpation, and found that the colouring matter not only entered the cavity in considerable quantities, but spread itself evenly over the surface. Gauze has the same disadvantages as cotton-wool, and is more difficult of application. After curetting, however, the introduction of some iodoform gauze, as recommended by Döderlein, is of use.

Those who consider that caustics cannot be introduced in sufficient quantity by probes, employ a syringe, and most frequently Braun's syringe. The obvious advantages of this instrument are so many, that the risks attending its use are often overlooked; but the fact remains that most of the accidents which have resulted from intra-uterine treatment, have been due to the use of the syringe. The chief danger is the passage of fluid through the Fallopian tubes into the peritoneal cavity. Döderlein's experiments proved that this does occur, for when he injected methylin blue into a uterus, with every precaution, he found, after extirpating the organ, that the pelvic peritoneum was stained with the colouring matter. Hofmeier repeated these experiments, but did not altogether confirm them, and he maintains that this accident occurs but seldom, and only under peculiarly favourable conditions. Menge, however, repeated the same experiments, and fully confirmed the results obtained by Döderlein. He
found, however, that he altogether failed in attempts to drive the fluid into the tubes, in uteri removed from the body; but, on the other hand, when he injected uteri during an abdominal operation, in every case almost all the fluid welled out of the abdominal ends of the tubes, and this occurred so rapidly that any attempt to suck back the fluid was of no effect. He explains this phenomenon by the fact that the uterine is only a potential cavity, that the introduction of the syringe may cause so firm a contraction as to prevent a separation of the walls, and therefore when an incompressible fluid is injected, even in very small quantity, it is pressed into the tubes. It has been urged, however, that even should a little fluid pass through the tubes, it would cause a harmless local irritation. But Menge contends that though local, such an irritation cannot be regarded as harmless, since it may cause adhesions and partial or complete obliteration of the tubes, with consequent sterility, predisposition to ectopic pregnancy, hydrosalpinx, and perioöphoritis. Another objection which he urges against the syringe is that, owing to its complicated construction, it is impossible to sterilise it thoroughly; and this applies equally to the modifications of the instrument by Hoffmann and Santos, in which cotton is wrapped around the canula. Hofmeier, on the other hand, says that he has employed the method for years in many hundreds of cases, without a mishap; but, although my own experience coincides with Hofmeier's, yet, considering that in cases predisposed to its occurrence—disaster appears to be beyond human skill to prevent—it is time for us to consider whether this instrument should not be altogether banished from our armamentarium.

The introduction of caustics in the solid form, especially the sticks of chloride of zinc introduced by Dumontpallier, was at one time popular; but, in consequence of many unfortunate results, including stenosis of the os, with consequent dysmenorrhœa, hæmatometra, and sterility, has been generally abandoned. The worst results followed the use of chloride of zinc, but milder caustics, applied in this form, acted unequally, in some parts destroying the tissues too deeply, and in others not at all.

This latter objection applies also to the electro-cautery, with which I associate Apostoli's methods. The results are often satisfactory, but as often uncertain, and its action is difficult to control.

The treatment of endometritis by steam was introduced by Sneguireff, of Moscow, less than ten years ago. In 1897 he reported the results in four hundred cases in glowing terms.
It was not only a caustic but a haemostatic, deodorant, and anaesthetic, and produced no ill effects. The method was tried by others, but not with the same success; and it would doubtless have fallen into oblivion but for the efforts of Pincus, by whom it has been rendered comparatively safe, and who by his numerous contributions to medical journals has kept it before the profession. The method has been now extensively tried by most of the leading gynaecologists in Europe and America, but in these countries it does not seem to have attracted much notice, though Professors Simpson, of Edinburgh, and Macan, of Dublin, have written in favour of it. The points in which Pincus has endeavoured to improve upon Sneguireff's method are—(1) To regulate the temperature, so as to supply steam of a constant temperature and of sufficient expansion to reach every part of the uterine cavity; (2) to provide a safe outlet for the steam, water of condensation, and uterine discharges; (3) to eliminate the danger of scalding the hands of the operator, or his assistant, as well as the roasting of the cervix by contact with the heated catheter, and the scalding of it by returning steam.

All these objects have been fully attained by the apparatus which he has constructed. When employing vaporisation by Sneguireff's method, heat was applied in two forms—firstly, the direct action of the steam: and, secondly, that of heated metal. Both these are useful under suitable conditions, and dangerous under other circumstances; and Pincus has succeeded in constructing instruments by means of which either can be employed separately. When vapour alone is desired, the catheter constructed by Dührssen should be used. It is completely protected by a substance which is a non-conductor of heat, and the steam which issues from it alone acts as a cautery; this is termed atmocausis. Where metal heated by steam is required, the catheter designed by Pincus is employed. It resembles the atmocautery, but is not covered by a non-conducting material, and has no holes through which steam can escape. This method is termed zestocausis. By these methods, Pincus claimed that it was possible to cure subinvolution, metritis, all forms of endometritis, dysmenorrhœa, preclimacteric haemorrhages, the leucorrhœa of old women, as well as commencing puerperal infections, both after delivery at term and in putrid abortions, and also to disinfect the uterus before extirpation. It is important, however, to consider the objections which have been brought against this treatment. In some cases it has failed to cure; in others, unfortunate accidents, and even deaths, have followed its
application. The most important, however, were the criticisms of Flatau, who declared, after a series of experiments, that the temperature of the fluid entering the uterus is not more than 65° to 75° C., and that it is therefore not steam, but a fine spray of hot water, and incapable, in the short time occupied by the operation, of sterilising the contents of the uterus; and this he further proved by experiment. Further, his investigations proved that the destructive power of steam upon the uterine tissues does not depend so much upon either its temperature or the duration of the process, as upon the condition of the uterine walls and the size of its cavity, and that therefore a dosage, as claimed by Pincus, is impossible. To these criticisms Pincus replied that most of the accidents have been due to defective instruments, or to improper use of the treatment. Experiments as to the temperature of the steam are fallacious, and the true test is clinical experience. In consequence of further experience, and no doubt also influenced by these criticisms, he has somewhat modified his views as to the germicidal powers of this agent, and employs it less frequently in putrid abortions, and only where hæmorrhage or fever persists after the thorough evacuation of the uterus. Its beneficial effect in commencing septic infections he still maintains, but he attributes it to the sealing of the mouths of the blood-vessels and lymphatics, by which the organism is protected from invasion, and the production of a copious discharge, by which the micro-organisms are eliminated. In gonorrhœal and tubercular endometritis, he thinks it is the best treatment.

The points of most importance in the use of this method are—first, to have the most improved apparatus, and to see that it is in good working order; to see that the cervix and vagina are well protected, and that no hæmorrhage is going on at the time of application. In a dilated uterus, use atmoacausis; in a normal sized cavity, zestocausis. Operate, as far as possible, without anaesthesia or previous curettage, and, where the latter is required for diagnostic purposes, wait until the membrane has re-formed. In young women, the application should not exceed five to fifteen seconds. Obliteration of the cavity is only advisable as an alternative to extirpation of the uterus. It is advisable to keep the patient in bed until the membrane has re-formed.

In chronic metritis and subinvolution, the results obtained in published cases are truly remarkable. In small interstitial myomata, the method has also proved useful. In his work on fibro-myo-mata of the uterus, Mr. Stanmore Bishop passes over
this method of treatment, as only capable of affording temporary relief; but this is not in accord with the published results, and is the more remarkable since he strongly supports electric treatment. In granular erosion, zestocausis is efficient, and also in cervical catarrh, and is a good palliative in carcinoma corporis. Its chief value, however, is in the treatment of preclimacteric hæmorrhage and the catarrh of old women. It is contraindicated where the appendages are inflamed, at least in acute cases; in submucous myomata and polypi; in putrid abortions, before the complete evacuation of the uterus; and where operable malignant disease has not been with certainty excluded.

My personal experience of this new method of treatment is practically nil. I believe, however, that in those obstinate cases of hæmorrhages and catarrh, which affect women after the child-bearing period, there is no room to doubt that it is an important and valuable addition to our resources, and one that will render hysterectomy less often a necessity. But, although the good results reported in younger women render me hopeful as to its future, yet there is one point which debars my adopting it in such cases, until it is further elucidated by the experience of others, and that is whether a dosage is possible so as to avoid obliteration of the uterine cavity. Pincus maintains that it is, and that we can procure any degree of cauterisation we desire, from the most superficial scald to the complete destruction of the membrane and obliteration of the uterine cavity; and that an undesired obliteration can only result from neglect of the rules which he has formulated. Menge, Flatau, and others say, however, that this is not the case, that an exact dosage is impossible, and that obliteration of the cavity can never with certainty be excluded.

Finally, to summarise my views as to the treatment of endometritis.

Septic forms require active antiseptic treatment.

In those forms of chronic endometritis in which hæmorrhage is a prominent symptom, especially where an exact diagnosis is required, the curette is advisable.

Where leucorrhœa is the chief characteristic, or where the curette has failed, a powerful caustic is required; and of those which have proved effectual, chloride of zinc is perhaps the most certain. But we may hope in the near future to see it replaced by some better method, possibly by formalin and atmocausis.
MEETING V.—12TH FEBRUARY, 1902.

The President, DR. ROBERT JARDINE, in the Chair.

New Fellow.—James Wilson, M.B., C.M., was admitted an ordinary Fellow.

ADJOURNED DISCUSSION ON THE TREATMENT OF UTERINE FIBRO-MYOMA.

Dr. Nigel Stark said that the subject had been so exhaustively treated by the previous speakers that not much fresh ground could be broken. He thought that another discussion could be profitably engaged in on the subjects of the diagnosis and prognosis of uterine fibro-myomata. He in part disagreed with one of Dr. Edgar's propositions—that a fibroid tumour should be removed if it were growing. Various conditions had to be taken into consideration in modification of this statement—the rate of the growth, the age of the patient, and the symptoms produced. There would require to be a very steady and rapid growth in a comparatively young patient before one would determine to operate in the absence of other symptoms. He had no experience of electrical treatment which required so much special knowledge of apparatus, but nearly all evidence went to show that such treatment was beneficial only in moderating haemorrhage, and he had always had the best possible results from the use of the curette. In some instances, benefit would also be obtained from the prolonged administration of ergot. He had never performed vaginal hysterectomy on account of a uterine fibroid, as he recognised the fact that disease of the tubes and ovaries frequently co-existed, and that such diseased organs, as well as adhesions, could be dealt with properly only by the abdominal route. In most cases he decided against panhysterectomy, as the cervix was usually free from disease, and its retention strengthened the floor of the pelvis.

Dr. Carstairs Douglas said that the only contribution towards the discussion which he could offer was his experience of Apostoli's treatment. He had had a fairly extensive acquaintance with it for thirteen months, when Professor A.
R. Simpson's assistant. He had seen symptomatic improvement result in a considerable number of cases, but could not recall one in which there was permanent diminution in size of the growth. For pain and pressure symptoms the negative pole was used internally; for haemorrhage, the positive. One death had occurred, apparently directly traceable to the treatment. He agreed with Dr. Edgar that bleeding was treated as effectually and in a much shorter time by curettage.

Dr. Edgar, in reply, thought the discussion had been profitable. The majority of the speakers agreed with him that curettage was, as a rule, preferable to the Apostoli treatment. He had tried electro-puncture, but had found sloughing to follow in some cases, and therefore would not recommend it. He could not agree with Dr. Kelly that the expectant and medical forms of treatment were practically the same. The chief aim in expectant treatment is to keep the patient unaware of the existence of a tumour, or to keep her from worrying about it if she should happen to know of it. Another important purpose which the separation of these two forms of treatment serves, is to impress upon medical men the fact that no treatment short of surgical measures is of avail for the removal of myomata, and that very often these tumours cause no trouble and require no active treatment. He was pleased to find that, though some modern surgeons condemned supra-vaginal amputation of the uterus, none of the speakers had adopted this attitude.

As regards the question of marriage, his practice was to advise against it, unless the tumour were submucous or subserous, and the patient consented to its removal before marriage.

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MEETING VI.—26TH FEBRUARY, 1901.

The President, Dr. Robert Jardine, in the Chair.

I.—FRESH SPECIMENS.

A. BY DR. A. W. RUSSELL.

Cystic tumour of the round ligament.—Tumours of the round ligament are so comparatively rare that it may interest
the Fellows to see this specimen, removed several days ago from a girl of 19. She first observed it as a small swelling in the right groin about eight months ago, shortly after severely straining herself there in endeavouring with her right hand and right knee to raise a flat heavy piece of wood, weighing about 30 lb., to the height of the table at which she was working. Three or four weeks later a small swelling was felt in the right groin. It has persisted ever since, excepting for a fortnight about three months ago. At her last menstrual period she thinks it became larger, and menstruation has been too frequent and scanty. When it was examined, the swelling was found to be superficial to the external inguinal ring; was like a small ovary in size and shape, tense, not fluctuant, nor specially tender. Complete vaginal examination was impossible owing to the state of the hymen, but the uterus was found to be displaced upwards and to the right side, and its axis was changed in direction as if the uterus were slung up to the internal opening of the inguinal canal by its round ligament. The opinion was given to her doctor that it was probably an ovarian hernia, but it might be a glandular enlargement or a cystic growth. To remove it, after careful asepsis, an oblique incision was made over the external ring, and the tumour was dissected out. The round ligament, nearly as thick as a pencil, was found to spread itself over the tumour, and it was transfixed, tied with catgut, and freed so as to let it be withdrawn into the inguinal canal. The edges of the ring were brought together with a buried mattress suture of silkworm-gut, and the wound was afterwards sutured with silkworm-gut. When inspected to-day, the wound was found to be healed.

B. By Dr. John Edgar.

Cancer of cervix uteri—Vaginal hysterectomy.—There are three points of interest in this case.

1. Though the cervix is extensively involved, there has been no history of hæmorrhage. From May till August last there was amenorrhœa. The period in August was normal in duration, but somewhat profuse; that in September was normal in all respects. Thereafter there was again amenorrhœa till January, when a normal period occurred. In February menstruation came on at the proper time, but lasted only three days instead of six, and was scanty. The cancer would not have been diagnosed had it not been for a subacute attack of pelvic peritonitis. Dr. Wilson, who was called in,
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examined her, and diagnosing cancer of the cervix uteri, sent for me on 11th February. I confirmed his diagnosis, and got the patient admitted into the Samaritan Hospital. On 22nd February I curetted the cervix and applied pure formalin. This morning (26th) I performed vaginal hysterectomy. Patient stood the operation well.

2. The second point of interest lay in the firm adhesions present on both sides of the uterus. My practice in these cases is to examine recto-abdominally, and if, as in this case, I find the adhesions free from small nodules and also yielding to pressure, I conclude that they are simply inflammatory, and that the uterus, though fixed, should be removed.

3. The bladder was found to be so firmly adherent to the cervix that I had to defer the complete separation of it till near the end of the operation. After separating as much of it as I could, I opened into the pouch of Douglas, and, having retroflexed the uterus by means of the sound, I pulled the fundus through the opening, and tied and cut the upper parts of the broad ligaments. Then, after incising the peritoneum covering the anterior surface of the uterus, I managed with some difficulty to separate the bladder. As the adhesions on both sides were tense, and prevented the uterus from being brought down, I finished the operation by clamping the bases of the broad ligaments and removing the uterus with scissors.

II.—LABOUR IN A BICORNATE UTERUS (UTERUS DIDELPHYS) AND DOUBLE VAGINA.

BY DR. ROBERT JARDINE.

Abnormalities in the development of the uterus are so rare that I feel warranted in bringing the following case before you. I was exceedingly fortunate in seeing the case and recognising the condition very early in pregnancy.

Mrs. W., æt. 27, i-para, came under my care at her own home on 2nd November, 1900, suffering from persistent vomiting. She had been married in February, 1900, and previous to that had been a ward-maid in the Western Infirmary for seven years. She had begun to menstruate at the age of 15, and her periods had been regular and painless, lasting eight or nine days. The last period had ceased on 2nd October. The vomiting, which had been going on for some days, was very severe. She also complained of some pain in the pelvis, but there was no vaginal discharge. On
examining *per vaginam*, I found a somewhat elongated swelling lying obliquely backwards and towards the right. At first I thought it might be an extra-uterine gestation, but I could not make out any other body to represent the uterus. My conclusion was that she was pregnant, but that the uterus was abnormal in position and shape. The examination, however, was very unsatisfactory, and I could not absolutely diagnose the condition. She was given bismuth and oxalate of cerium, which relieved the sickness for a few days, but it returned again twelve days later. She was then kept on peptonised milk, and this relieved her. On 26th November I persuaded her to go into the Maternity Hospital, as I was anxious to examine her thoroughly under chloroform. Two days later Dr. Gibson and I examined her. We found an ordinary sized vagina with a single cervix, but a bimanual examination revealed that there was a double uterus with one side enlarged and evidently pregnant. The enlarged half lay somewhat obliquely towards the right and back of the pelvis, while the smaller half was towards the left and front. The junction of the two parts at the cervix could be distinctly made out. It was somewhat puzzling that there was only one os to be seen. We, of course, refrained from passing a sound. Our diagnosis was that we had a double uterus to deal with, and that the right horn was pregnant.

The patient was treated for some days with rectal feeding, and the sickness abated. After that the course of the pregnancy was uneventful, except that she had occasional attacks of sickness. I did not examine her again until labour had commenced on 20th July. Abdominal palpation revealed that the uterine fundus lay towards the left side, and the head of the child was directed somewhat obliquely against the right side of the pelvis. The fundus was not so broad as it usually is. On passing my finger into the vagina, I found the os admitted the tip of the finger. It was high up, and the cervical canal passed backwards and towards the right. The presenting part could not be reached, but a rounded mass, evidently the head, could be felt, with a smooth membrane over it. On making a second vaginal examination, my finger passed into a small opening which gripped it tightly. I thought at first that it had passed into the dilated urethra, but on investigating more fully I found that my finger was really in a small opening in the hymen, and that I had discovered a second vagina. I enlarged the opening and then reached the cervix. The os was not dilated. I had the patient at once removed to the Maternity Hospital, where I
examined her under chloroform. A careful investigation revealed that the half of the uterus connected with the patent vagina was not pregnant, but was lined with a thick decidua, which was easily removed. When the finger was in the cavity the body could be made out lying along the right side of the pregnant half for a couple of inches or so above the brim of the pelvis. It lay like a large limpet attached to the side of the pregnant half. I then fully ruptured the hymen of the second vagina, and found the os would admit the tip of the finger. The head was easily felt. The partition between the vaginas was quite thick at the ostium, but thinner at the upper part. A careful examination failed to reveal even the minutest communication between the two canals. Dr. Gibson examined her with me, and Dr. Oliphant was also present. We decided to allow the labour to go on in the usual way.

Our former diagnosis had been correct so far, but we had thought the right half was the pregnant one. Considering that it was the side which communicated with the vagina through which all intercourse had occurred, this is not to be wondered at. Even if we had discovered the other vagina we would not likely have come to any other conclusion. The reason why we missed finding the second vagina when we examined, was because it was closed by the hymen, except for a very small opening. The patent half was quite open, and the remains of the hymen very apparent. We did not make any search for a second vagina, as we did not wish to disturb the patient any more than was absolutely necessary. The abnormal position of the pregnant half was probably due to its falling towards the back of the pelvis from its own weight. Rotation of the entire uterus had apparently occurred. After delivery we found there was a tendency to the recurrence of this.

After labour had gone on for twenty-four hours, very little dilatation had occurred. The contractions were fairly strong, but the obliquity of the uterus prevented the presenting part from bearing on the os. The largest Barnes' bag was inserted, and in two hours' time the os was well dilated. On removing the bag I found it had been forced through the upper part of the vaginal septum. The obliquity of the uterus had caused this. The patient was delivered with forceps. The child, a male, was alive, and weighed $7\frac{1}{2}$ lb. The lower part of the septum was lacerated, and the perineum partially torn. The third stage of labour presented no difficulties. Both sides of the uterus were thoroughly washed out. The thick decidua had already been cleared out of the non-pregnant half. I
then removed the septum and stitched the raw surfaces on
the anterior and posterior walls with continuous catgut
sutures, and repaired the perineum. The puerperium was
normal, the temperature never rising.

How can we explain the fact that pregnancy occurred in
the uterine half connected with the unpenetrated vagina? In
the first place, I may say that I am perfectly sure that penetration had never taken place. The opening barely admitted the tip of the finger; and the fact that the hymen tore quite easily, showed that it was not a resilient one, which might have stretched before a penetrating organ. Cases have been observed where the spermatozoa were supposed to have passed up through the uterine cavity along one Fallopian tube and then across the uterus to the tube of the other side. Strange things do occur in connection with the propagation of the species, but, to my mind at least, this notion of the scouting powers of the spermatozoa has always seemed a little too far fetched. In the present case, the more probable path was through the small opening in the hymen. That penetration of the vagina is not necessary for impregnation, is a well recognised fact. I have seen more than one case of this, and have published one in the *Scottish Medical and Surgical Journal* (vol. i, p. 529), where the hymen was complete at the onset of labour.

It will be very interesting to watch the future pregnancies in this case to see if both sides ever become impregnated at the same time, or within a short time of each other. If the latter condition should ever arise, it will be most interesting. Such a condition, I believe, always exists in so-called cases of superfetation. In fact, I am not absolutely sure that this had not occurred this time. Dr. Carstairs Douglas examined the decidua removed from the right half of the uterus, and he found a small mass embedded in it, which he thought might possibly have been a carcaseous mole. It is interesting to note that menstruation did not occur from the unimpregnated half.

10th November, 1901.—Since delivery, the patient has enjoyed good health, except that she has suffered considerable pain from a small fissure of the anus. She is nursing her child, and he is thriving well. To-day, Dr. Russell chloro-formed her, and we made a thorough examination of the parts, and then stretched the anus to cure the fissure.

The perineum is complete, and there is no external evidence of a double vagina. The vaginal mucous membrane is smooth, but it is possible to trace where the septum had existed,
especially at the upper part, where the remains of it can be felt and seen. A bimanual examination revealed that there was apparently only one external os which would admit the tip of the finger. To the left, the body of the horn which had been pregnant could be traced. It lay far back in the pelvis, with its fundus well towards the left side. The right horn, which was much smaller, lay towards the right of the pelvis also backwards and outwards. It could not be so easily traced, but the junction at the cervix was easily made out. The speculum revealed that in appearance the cervix in no way differed from an ordinary multiparous one. A sound passed into the left side went outwards and backwards for 2\(\frac{3}{8}\) inches. I had some difficulty in passing a smaller one into the right horn. It would only pass for about 2 inches. The handles of the sounds crossed. The septum between the two cervical canals had been slightly destroyed, giving the appearance of a single os externum.

We have thus had to deal with a true bicornate uterus and double vagina. The vagina is now, of course, single. This is known as a uterus didelphys.

Labour in a double uterus may be interfered with in several ways. If both sides were pregnant, we might easily have the same difficulties as sometimes arise in twin cases, viz., locking, or both presenting parts being simultaneously driven into the brim. With one side pregnant, the non-pregnant half, which is sure to be enlarged, may obstruct. In Mrs. W.'s case this did not occur, as the body of the non-pregnant half was above the brim. The contractions of the uterus are very liable to be feeble than in an ordinary case, as the walls are ill-developed. It is well that this is the case, as otherwise rupture would be very apt to occur. Even as it is, it may occur. Malpresentations are common, and, as the uterine axis does not lie on the axis of the brim, the presenting part does not bear properly upon the cervical canal, and dilatation will be slow. This was markedly the case with Mrs. W.

Interference will be necessary in many cases. The operation to be done will, of course, depend upon the nature of the case. If delivery by the natural passages is impossible, Cesarean section should be done. A Porro's operation or an extirpation may be necessary, but the uterus should be left if possible.

After delivery through the natural passages, severe post-partum hæmorrhage may occur, if the placenta has been attached to the septum, or the septum has been torn. In such a case, firm plugging would be the best treatment.
The decidua which lines the non-pregnant horn should always be removed. It may be expelled, but one must not trust to this. If it is retained, sepsis is very liable to occur.

As regards dealing with the vaginal septum where one exists, if it is torn during delivery, I think it should be completely removed. If it is not damaged, it may as well be left.

On Christmas day last, I performed craniotomy for Dr. Ramsay, in Parkhead, in a case with a badly contracted pelvis. To remove the placenta I had to pass my hand into the uterus, and I found that the placenta was attached up in the left horn of a bicornate uterus. The right horn would admit a portion of the hand. The fundus of the uterus was very broad, but not markedly cleft. In the centre of the fundus there was a very small subperitoneal fibroid. The partition between the two sides of the uterus did not extend down any distance. If this patient should again become pregnant, I am in hopes that she will agree to have Cæsarean section performed.

III.—CASE OF UTERUS SEPTUS WITH DOUBLE Vagina, IN WHICH PREGNANCY TOOK PLACE AFTER REMOVAL OF THE VAGINAL SEPTUM, AND WAS COMPLETED NORMALLY.

By Dr. A. W. Russell.

Pregnancy in the different varieties of a double uterus, though of comparatively rare occurrence, has been of late repeatedly recorded. The condition known as uterus septus is not the rarest of these varieties; but the case I wish to describe to-night has some points of interest that warrant me in bringing it before the Society.

The patient was sent to me about eighteen months ago by Dr. Gracie, because he had found a vaginal septum, and suspected further abnormality.

She was 27 years of age, and only a few months married. She complained of dyspareunia. She had already been seen by other doctors, and had once been specially examined by a consultant, but the true condition had previously been missed. The patient was tall, and of healthy appearance. Menstruation was regular, and in every way natural, up to the time of marriage. The breasts and external genital organs were normally developed. The vagina was of normal length, and had a mesial vertical fleshy septum, which was attached to the cervix, and extended right down to the vaginal entrance,
where its breadth was greater, and therefore allowed its edge to fall against the side of the vagina. The right side was rather the more roomy of the two, but both were funnel-shaped, so that anyone examining per vaginam, and overlooking the septum, would think that there was a defective development of the upper end of the vagina and of the uterus beyond it. No communication between the two passages could anywhere be discovered. An os uteri was distinctly noted on both sides of the septum, but as the patient had missed a menstrual period, further examination was not made. Examination under chloroform and the removal of the septum were advised, if it were found that pregnancy had not already taken place. As menstruation recurred a few weeks later, examination under chloroform was made. The uterine cavity was found to be completely divided by an antero-posterior septum into a right cavity nearly the size and shape of a normal uterine interior, and a left and smaller cavity more tubular in shape. Two sounds, one in each cavity, nowhere touched one another. The ovaries were normal in size. To relieve the dyspareunia, due to the narrowing of the upper reach of the vagina, the vaginal septum was cut through and trimmed off. The patient soon after this became pregnant, but she aborted at the end of two months. She again became pregnant about the middle of May. Two months later, after some previous pain, getting gradually worse for several weeks, she had some hæmorrhage and abortion was threatened. Under rest and other treatment this passed off, but pain continued till the fifth month, and after a severe attack of pain she felt something give way, and there was a little show of hæmorrhage. I believe that this indicated the rupture of the uterine septum, as pregnancy was not afterwards disturbed by pain. I had an opportunity of examining her after this, and found that pregnancy was developing in the right cavity, the left and undeveloped half being distinctly made out as a thickening on the left and posterior aspect of the uterus. I was present afterwards at the confinement, which took place on 5th February. It was not hurried, and chloroform was used to control expulsive efforts. There was no perineal nor vaginal laceration. The second os uteri could not be felt, and there was no deep cervical laceration. The placenta was not in any way abnormal. After a normal puerperium, I was able, at the end of a fortnight, to satisfy myself that the uterine cavity was now single, there being no sign of septum either at the cervix or in the uterus.
Dr. Edgar asked if Dr. Jardine had examined carefully for an opening in the vaginal septum, as this would have afforded the most probable explanation of the impregnation of the opposite half of the uterus. In the absence of such an opening, Dr. Jardine's hypothesis was probably correct. Intra-peritoneal transmigration of spermatozoa, however, could not be regarded as an impossibility, for it was well known that ova occasionally migrated to the opposite tube. It appeared that in each of the two cases described by Drs. Jardine and Russell there was only one cervix, and ultimately only one external os. In a case seen by the speaker two years ago, there were two distinct cervices and corpora (uterus didelphys). There was also a double vagina, but the septum presented a large opening in its centre. Patient had been delivered of a healthy child at full term ten months previously. Examination showed that it was the right uterus which had been gravid, and that birth had taken place through the right vagina. Menstruation had not occurred during pregnancy. Dr. Edgar had also seen two or three cases of labour in which the uterus had been moderately bicornate, but in none of them had there been any difficulty.

Dr. G. Balfour Marshall said that he had only seen one case of uterus bicornis. There was a single broad cervix with two distinct ossa leading respectively into separate uteri. The patient had never become pregnant. He had recently examined a patient during her third pregnancy, who had menstruated regularly throughout all three pregnancies. The fundus felt broader than was normally the case; and, although he had not had an opportunity of examining her since, he regarded it as an example of uterus septus, as he could not otherwise account for the possibility of regular menstruation, with no diminution in amount of flow, during pregnancy. The fact of pregnancy occurring in the opposite uterus in Dr. Jardine's case could be explained by the passage upwards of spermatozoa deposited in the vulva, a not infrequent occurrence, or by the passage of a fertilised ovum along the opposite tube.

IV.—CÆSAREAN SECTION, WITH NOTES OF A SERIES OF NINE SUCCESSFUL CASES.

By Dr. J. M. Munro Kerr.

On looking over the record of the subjects which have been brought under the notice of this Society, and the papers
which have been read to it, I find Cæsarean section has only once been considered. That occasion was many years ago. As a matter of fact, it was in Session 1890-91 when Professor M. Cameron brought under the notice of the Society the brilliant results he was obtaining from the operation.

This is surely unfortunate, for here in Glasgow the operation has been performed oftener than in any other city of the British Empire. Last year in the Maternity Hospital alone it was performed on nineteen occasions.

My purpose in this short paper is, first of all, to detail briefly the cases on which I have operated, and afterwards to discuss some of the points connected with the operation, in the hope that to-night or at an early date others will give their experiences.

Case I.—Mrs. L., 33, iii-para, was admitted to the Maternity Hospital under my care on 15th March, 1901. In each of her two previous labours craniotomy had to be performed before the child could be extracted.

On examination, the os was fully dilated, and the membranes were ruptured. The diagonal conjugate was found to be 3½ inches, and the transverse diameters were slightly under the normal. The presenting head was freely movable above the brim, although labour had been in progress for twenty-four hours. The foetal heart-sounds were strong, regular, and numbered 140 per minute.

The operation was carried out by making the usual longitudinal incision through the abdominal wall and anterior uterine wall. The child was easily extracted by the head, but in doing this the lower end of the wound was increased by slight tearing of the lower uterine segment. The child, a female, cried lustily soon after it birth. It weighed 7 lb., and measured 19 inches. The placenta, which was situated on the posterior wall of the uterus, became immediately separated, and was easily removed along with the membranes. The woman was sterilised by tying the tubes in two places and dividing them between the ligatures. The uterine wound was closed with silk. The abdominal wound was closed in one layer with silkworm-gut.

The puerperium was very satisfactory, and the woman's progress to recovery rapid after the first few days. The temperature never rose above the normal, except the morning after the operation, when it registered 100°. The pulse, however, for the first few days was very rapid, and gave cause for considerable anxiety. On the evening of the second vol. iii.
day it registered as much as 160, but fell on the third day to 108. This rapid rate was attributed to a very bad bronchitis which developed immediately after the operation, and was caused, I feel sure, by the irritating fumes of chloroform and gas. The stitches were removed on the fourteenth day, at the first dressing, when the wound was found quite dry and healed.

The woman was dismissed on the thirty-fourth day, both she and the child being perfectly well. She began to nurse the child on the tenth day after she had recovered from the bronchitis, and continued doing so until she left the hospital.

Note on Case.—The most striking feature in this case was the alarming bronchitis which developed after the operation, and which, I think, was correctly attributed to the irritating fumes of the chlorine set free by the coal gas, the only illuminant we have in the hospital. I have seen the same complication occur once or twice before in cases operated on during the night, but never in such a severe form. The woman was really extremely ill.

Case II.—S. C., primipara, 23 (?), was admitted to the Maternity Hospital under my care on 19th April, 1901. On examination, the os was found fairly well dilated, and the membranes unruptured. The C.D. measured 3½ inches. As the foetal heart-sounds were strong and regular, it was decided to do Caesarean section. There was, unfortunately, some delay in getting the patient ready, and the operation was not commenced until three hours after the patient’s admission. The operation was performed in the usual way, and the child extracted without the least difficulty. The placenta, which was situated on the posterolateral wall, immediately separated, and was removed along with the membranes. Unfortunately, the child, a female, was dead, no trace of a heart-beat being appreciable. It weighed 7½ lb., and measured 22 inches. The uterine wound was closed with catgut, and the abdominal in one layer with silkworm gut. The woman was sterilised by tying and cutting the tubes, as described in Case I.

The recovery of the patient was most satisfactory. The feature of special interest about the puerperium was the scantiness of the lochial discharge. At first this rather alarmed me, especially as during the first four days the temperature was never much below the 100°, and on the
evening of the fifth day registered 101°, and the pulse was often running as high as 120. However, these slight disturbances in pulse and temperature disappeared by the sixth day. The lochia all through were very scanty.

The stitches were removed on the fourteenth day, at the time of the first dressing. The wound was quite dry and healed. The patient was dismissed from hospital on the thirty-second day, quite recovered.

Note on Case.—It is extremely unfortunate that the child was dead in this case, as it was chiefly on its account that Caesarean section was performed. My colleague, Dr. Jardine, very kindly saw the case along with me, and we both considered it one of those cases where, as regards the mother, the risks from craniotomy and Caesarean section were about equal. The child being alive, however, we decided on Caesarean section. Unfortunately, I did not listen for the foetal heart immediately before commencing the operation, as three hours before, at the time of the patient’s admission, I heard it quite strong and regular. The child must have died in the interval, and not, I think, during the early stages of the operation.

Case III.—Mrs. B.,æt. 26, ii-para, was admitted to the Maternity Hospital under my care on 15th April, 1901, for the purpose of being delivered by Caesarean section. Her pelvis was very markedly deformed in the conjugate diameter, but little affected in the transverse. The C.D. was 2½ inches. Her previous pregnancy terminated at full time, the child being delivered with difficulty after craniotomy had been performed.

Labour in this second pregnancy began on the 25th. Dilatation of cervix was rapid, and before the patient was ready for operation the os was fully dilated and the membranes had ruptured. The foetal heart was heard beating strongly immediately before operation.

The operation was performed in the usual way. There was great difficulty, however, in extracting the child as the uterus grasped it so firmly. It was delivered alive, but in doing this the uterine wound was enlarged by slight tearing of the lower segment. The child, a female, cried immediately after it was born. It weighed 6½ lb., and measured 21 inches. The placenta was situated on the posterior wall, and separated immediately after extraction of the child. The uterus was closed with catgut sutures, and the tubes were tied and divided
as described. The abdominal wound was closed in two layers with catgut and silkworm-gut.

The patient's convalescence was very satisfactory until the fourth day, when in the morning the temperature rose up to 103°2 and the pulse to 162, the lochia became foetid, and there was diarrhoea. I at once douched out the vagina and then the uterus with a solution of 1 in 2,000 perchloride of mercury. This had the desired effect, for in the evening the temperature was 100°6. On the eighteenth day there was again a slight rise of temperature. The stitches were removed on the seventeenth day, when the wound was found quite healed and dry. She was dismissed from hospital on the twenty-eighth day. The only thing that was not just satisfactory was that she seemed unable to completely empty her bladder, as every time it was catheterised after she had urinated, there were several ounces withdrawn.

Note on Case.—The difficulties in extracting the child were very considerable. This was not due to the small size of the wound, but to the strong uterine contractions. Considerable advance had been made before it was discovered that the patient was in labour. As has been stated, the os was fully dilated, and the membranes were ruptured before the operation was commenced. The disturbance on the fourth day was very alarming, for the patient seemed very ill. It was immediately removed, however, by the intra-uterine douche, which I was very thankful I employed.

Case IV.—Mrs. B., 32, iv-para, was admitted to the Maternity Hospital on 25th July, 1901. Her first pregnancy had terminated at full term, when she was delivered with "instruments." The child was dead. In the second, labour was induced at seven and a half months; again, the child was dead. In the third, labour came on spontaneously at the seventh month; and again the child was dead.

She stated that she last menstruated from 30th October to 3rd November, 1900.

She was not in labour when admitted. The examination of the pelvis showed a diagonal conjugate of 3½ inches. The transverse measurements of the pelvis were also below normal.

The operation was performed on 11th August, when it was calculated she must have reached "full time." She was not in labour.

The operation was performed in the usual way, the uterus being opened into by means of the longitudinal incision. The
child, a male, was readily extracted. It was asphyxiated, but soon recovered. It weighed 5½ lb. The placenta was situated on the left postero-lateral wall. The uterine wound was closed with catgut, and the abdominal in layers with catgut and silkworm-gut.

The puerperium was uneventful. The temperature was only once above normal, when it registered 100. The pulse was never above 90. There was no trouble with unusual after-pains from retention of clots. The stitches were removed on the sixteenth day, when the wound was found healed, with absolutely no trace of suppuration. The patient left the hospital on the thirtieth day after operation. The fundus uteri was then found fixed about 3 inches above the symphysis pubes.

Note on Case.—Everything ran an absolutely normal course. There was no disturbance from operating before labour had commenced.

CASE V.—Mrs. S., 26, ii-para, was admitted to the Maternity Hospital on 25th September, 1901. She was not in labour when admitted, but, as far as could be judged, had very nearly reached “full time.” The pelvis was found generally contracted, with a diagonal conjugate of 3½ inches.

The operation was performed in the usual way on 30th September. The uterus was opened into by a longitudinal incision. There was some little difficulty in extracting the child, as the incision was too small. The child was only slightly asphyxiated, however, and weighed 9 lb. The placenta was situated on the anterior wall, and was separated before the child was extracted. The uterine wound was closed with catgut, and the abdominal in layers with catgut and silkworm-gut.

The patient’s condition was perfectly satisfactory during the first two days. On the evening of the third day, however, the pulse, temperature, and respiration rose; she also complained of pain. On the following day the same symptoms were present, although less marked. I examined the wound, but found everything satisfactory, and no localised pain there. I felt sure the disturbance arose from the bowels, as she really did not look ill. This turned out to be the case, for the disturbing symptoms entirely disappeared after a thorough evacuation. The rest of the puerperium was quite normal. The wound healed by first intention. She left hospital on 30th October, perfectly well.
Note on Case.—The sudden rise in the temperature, pulse, and respiration on the third day was rather alarming. It seemed, however, entirely due to absorption from the intestinal tract, because it fell after a thorough evacuation of the bowels.

CASE VI.—A. D., 25, primipara, was admitted to the Glasgow Maternity Hospital on 27th September, 1901. Labour appeared just to be commencing. She had barely reached "full time," she thought. On examination the pelvis was found very much deformed, with a diagonal conjugate of 3 inches, and very considerable contraction in the transverse diameter. Her general condition was far from satisfactory, and she had double mitral disease.

Uterine contractions coming on regularly a few hours after admission, I decided to perform Cæsarean section. This was done in the usual manner, the uterus being opened into by a longitudinal incision. The child, which weighed 5½ lb., was extracted alive without much difficulty. The placenta, situated on the anterior wall, was removed before the child was extracted. The tubes were tied and cut. The uterus was closed with catgut, and the abdomen in layers with catgut and silkworm-gut.

For the first few days this patient's condition was very critical indeed. She suffered from great breathlessness, coughing, and restlessness, symptoms, however, attributable to the old-standing bronchitis and valvular disease of the heart. She was unable to lie down for some days, and so had to be kept propped up with a bed-rest. Gradually, however, the dyspnœa and orthopnœa disappeared. The abdominal wound healed by first intention, and the patient left the hospital on 6th November. Her general condition then was not quite satisfactory, and I wished her to go into a general infirmary and have further rest and treatment for the cardiac condition. That, however, she absolutely refused to do.

Note on Case.—The mitral disease was of old-standing, and for several years during winter patient had suffered from bronchitis. She had not been at all well during the pregnancy, breathlessness and coughing being often very troublesome. During the early days of the puerperium she was treated with one-sixtieth of a grain of strychnine and one-hundredth of a grain of digitalin, given hypodermically.
Case VII.—M. M., 23, primipara, was admitted on 27th October, 1901, to the Glasgow Maternity Hospital. Labour appeared to have just commenced. From the size of the abdomen she did not appear to have reached "full time," but she insisted, on repeated questioning, that she had. The pelvis was generally contracted, and had a diagonal conjugate of 3½ inches.

A departure from the ordinary incision of the uterus was made in this case. It was made transversely between the tubes, as recommended by Fritsch. There was very little bleeding from the uterine wound, and the child was easily extracted. It was alive, and weighed 4 lb. The placenta was removed with some difficulty, as both it and the membranes were very adherent. The stitching of the uterus was done in the usual way. This was certainly carried out much more comfortably than when the longitudinal incision was employed, as there was much less bleeding. The uterus was replaced, and a fold of omentum brought over the wound and anterior surface of uterus.

The recovery of this patient was uninterrupted. There was considerable shock, as evidenced by quickness of the pulse for the first two days, but otherwise she had no disturbances or discontents. The wound healed by first intention, the stitches were removed on the fourteenth day, and she left the hospital thirty-four days after the operation.

Note on Case.—In this case I employed Fritsch’s fundal incision for the first time. I was well pleased with it. The uterus, on dismissal, was fixed to abdominal wall some 3 inches above the symphysis.

Case VIII.—Mrs. M., iii-para, was admitted on 28th October, 1901, to the Glasgow Maternity Hospital. In both the previous labours the children were extracted with difficulty, and were dead. On the last occasion craniotomy had to be performed. The pelvis was of the flat rachitic type, the diagonal conjugate being 3½ inches. There seemed to be little if any deformity in the transverse diameter. She was not in labour when admitted, but it came on twelve hours afterwards.

I intended to do symphysiotomy in this case, and so allowed labour to go on until the os was fully dilated. I then put her deeply under chloroform, with the view of finally deciding. On examining her, and testing the relative size of the head and the pelvis, I found that there would probably be difficulty in extracting the child, and great separation of the pelvic bones
if I performed symphysiotomy. I therefore chose Caesarean section.

The operation was carried out as in Case VII, the transverse incision, "nach Fritsch," being employed. In this case I came right down on the placenta, which I removed before extracting the child. The child, which weighed 8 lb., was extracted very easily, and the uterine wound stitched with little trouble or bleeding.

This patient had a good deal of retching and vomiting during the first three days, but otherwise there were no unfavourable symptoms. The temperature was never above normal, and the pulse after the first three days was not accelerated. The wound healed by first intention, the stitches being taken out on the fourteenth day. She left the hospital on 30th November.

Note on Case.—Here, again, I was well pleased with the "fundal incision." The day she left hospital I examined the uterus, and found it attached firmly to the abdominal wall to the right, and about 4 inches above the symphysis pubis.

Case IX.—Mrs. N., 25, primipara, was admitted to the Glasgow Maternity Hospital on 15th January, 1902. She had been sent to see me some months previously by her medical attendant, Dr. Findlay, of Dennistoun, because of the extreme degree of pelvic deformity. We both made out the diagonal conjugate to be only 2½ inches. Caesarean section was recommended at that time, and she was advised to go into hospital a few days before labour was expected. Labour came on twenty-four hours after her admission.

The operation was performed when the os was well dilated. The "transverse fundal incision" was employed. The child was easily extracted, but the bleeding was profuse. The placenta was situated on the anterior uterine wall, but one part extended up to the higher part of the fundus, as the edge was met with the incision. The membranes were very adherent, and had to be stripped up in pieces with the fingers.

The puerperium was absolutely uneventful, and the patient made an excellent recovery. The stitches were taken out on the fourteenth day, when the wound was found absolutely healed and dry.

Note on Case.—In this case I was not so pleased with the "fundal incision," because there was so much bleeding. The extraction of the child was easy. When the patient left
hospital, the uterus was firmly attached about 4 inches above the symphysis.

The results in these cases, all the mothers and eight children saved, are very satisfactory. The reason for that, I believe, is largely the fact that few of the patients were in labour before admission, and only one had been handled outside of the hospital.

Where labour has been going on for some time, and especially when attempts have been made at delivery before the patients are sent into hospital, their chances of recovery are very considerably lessened. This may readily be seen by comparing the mortality in such cases with those who have had a few days' residence in hospital prior to operation. It is, of course, not always possible to send a patient into hospital before labour; many of the cases are never seen by the practitioner until labour has commenced. To send them in as early as possible, and without making futile attempts at delivery, might, however, be much oftener practised. The example of Dr. Findlay, in Case IX, might also be more often followed, and the patient thoroughly examined during pregnancy.

Another factor, which has very largely contributed to the satisfactory results, is the extreme care which is taken to avoid infection. Let me briefly refer to some matters in that connection.

The preparation of the patient.—She is first very thoroughly washed. All hair is shaven off the pubes and abdomen, and turpentine and alcohol, in addition to soap and water, are used for cleansing these parts. If time permit, dressings of 1 in 40 carbolic are applied over the abdomen for twenty-four to forty-eight hours prior to the operation. The vagina, and especially the fornices, are thoroughly washed out with swabs, soap and lysol being used. Simple douching I do not think is sufficient. The vagina is wonderfully free of pyogenic organisms, as a rule, but sometimes it is not. Quite recently I saw, in consultation, a case of septic abortion. The woman's medical adviser had never examined her; no one had examined her. Occasionally, also, we get cases in hospital where there is a febrile disturbance during the puerperium, and yet there have been no vaginal examinations made. The bowels of the patient are thoroughly and, if possible, repeatedly cleared out, and suitable diet given.

The operator and assistants.—The hands and arms are cleansed with soap and water, turpentine, alcohol, and perchloride 1 in 1,000. About ten minutes are taken to do
this. The assistants are limited, and indeed only three are required—a chief assistant (and here I must express my indebtedness to Dr. A. W. Russell, who has so willingly helped me in all cases), another to look after the instruments and thread the needles, and a fourth, a nurse, to look after the swabs. Two others look after the infant and collect the soiled swabs (for we never use a swab twice), but they have no direct interest in the operation beyond that, and so there is no chance of infection from them.

_Swabs, ligatures, dressings._—The swabs are squares of absorbent wool covered with gauze, sterilised in the steriliser, and packed ready for use. I always boil them immediately before operation. Usually about thirty are used at each operation.

The sutures used are catgut and silkworm-gut. The latter is boiled. The former, Hartman's prepared catgut, is boiled in absolute alcohol in a Jellet's steriliser for thirty minutes. Although supposed to be sterile when one buys the gut, I am not sure that it is always so. During last year I used it in twenty cases of abdominal section. One case died septic on the third day, a case of ruptured uterus; the gut, of course, had nothing to do with that result. All the other cases recovered. In the nineteen cases that recovered, all the wounds healed by first intention, except one. The case was one of an ovarian tumour, with a twisted pedicle, where suppuration occurred in the deep sutures in the abdominal wall. In that case the gut had not been previously boiled as described. Silk, sterilised by boiling, is used for tying the tubes. Only once was it used for stitching the uterus. The dressing used has always been double cyanide gauze.

_The operation._—In the first six cases Cameron's method of operating was followed. The incision into the uterus was longitudinal, and while cutting down on the membranes the pessary first mentioned by him was employed to control the hæmorrhage. I have sometimes seen its efficacy questioned, but I always wonder if such a critic has tried this ingenious device, for, personally, I have never seen it fail.

The uterine wound I close with interrupted catgut sutures, passed through the entire wall, except the mucous membrane, and over the lower part of this sutured wound I bring a covering of peritoneum with a continuous suture.

In two cases, the patient was not sterilised, because she was so strong and healthy. I am quite prepared to admit that the advisability of such a step is still _sub judice_. Many cases are now on record, however, where the operation has been
repeatedly and successfully performed on the same patient. If it be proved that a uterus which has been sutured is specially liable to rupture in a subsequent pregnancy or labour, or if the mortality in cases where the operation is performed more than once turn out to be unusually high, then I am perfectly prepared to sterilise the patient in all cases. Until, however, that is proved, I do not intend doing so, if the patient be a strong healthy woman.

The ordinary routine method of performing the operation was not followed in the last three cases. With them, I opened into the uterus by the "fundal incision" recommended by Fritsch. By that method the uterus is turned out of the abdomen, and an incision is made over the fundus transversely from one tubal attachment to the other.

Fritsch, and the advocates of this incision, claim the following amongst its advantages:—(1) The abdominal wound is much higher, and consequently the chance of a subsequent ventral hernia is less. (2) There is less bleeding. (3) The placenta is less frequently cut down upon. (4) The child can be more easily extracted. (5) The lower uterine segment is not injured, and the wound can be more satisfactorily stitched.

I hope to discuss this matter of the "fundal incision" in some detail in another paper. At present I would only say that I am quite prepared to admit that the fundal incision has certain advantages. The child can be very easily extracted, the uterine wound more satisfactorily stitched, and the wound in the abdomen is certainly higher up; but that there is less bleeding, or that the placenta is less frequently cut down upon, has not been my experience. In the six cases where I made a longitudinal incision, I came down on the placenta on two occasions; in the three cases where I made the transverse incision, I came right down on the middle of it once, and on the edge once. As regards the bleeding in the first two, there seemed to be less, but in the third the bleeding was very considerable, and was not controlled by sutures at each side, as has been the experience of some operators.

The most important question, however, and the one that will decide the fate of the fundal incision, is the after-results. In all my three cases, the uterus was very firmly attached high up to the lower part of the abdominal wound. The patients had absolutely no discomfort when they left, but I could not tell if intestinal adhesions were very extensive. In

1 This paper will shortly appear in the Journal of Obstetrics and Gynaecology of the British Empire.
the six cases where I employed a longitudinal incision, I found
the uterus fixed as after a ventro-fixation in all except one
case. The fixation, however, was not so high up, nor did it
appear so intimate as in the cases where I employed the
fundal incision.

MEETING VII.—12TH MARCH, 1902.

The President, Dr. Robert Jardine, in the Chair.

New Fellow.—Edward J. Primrose, M.D., was admitted an
ordinary Fellow.

I.—FRESH SPECIMEN.

By Dr. J. M. Munro Kerr.

Fœtus with deformity of the upper limb simulating a
foot.—Dr. Munro Kerr showed a full-time fœtus which he
had delivered some five days ago. The mother's medical
attendant had delivered the child by traction on the lower
limbs, and then passed his hand up to bring down the upper
limbs. Bringing down one, it seemed exactly like the lower limb,
as what appeared to be a heel was felt. The doctor imagined
that he had to do with either the condition of locked twins or
a double monster. On palpating the abdomen Dr. Munro
Kerr concluded that there was no second child, and that
what we had probably to do with was a malformation of the
limb. This turned out to be the case. After having brought
down both limbs, Dr. Munro Kerr perforated the after-coming
head, which seemed unusually large.

II.—DISCUSSION ON THE TREATMENT OF ABORTION.

Dr. Robert Jardine opened the discussion by reading the
following paper:—

In a recently published book the author says—"Abortion
is the term applied to the expulsion of the ovum from the
uterus before the formation of the placenta, i.e., before the
end of the third month." To decide whether or not this is a
true definition, it will be necessary to find out what he means
by the ovum. He says it consists of placenta, chorion, amnion,
umbilical cord, liquor amnii, and foetus. Now, suppose we take an abortion, say at the end of the first month, are we to consider the abortion to be complete if the representative of the placenta (the decidua serotina), and the chorion, amnion, with the small embryo were expelled? Ten days ago I was called to a patient who had been bleeding for some time, and had passed several large clots. In one of these I found a complete ovum, about the size of a pigeon's egg, with the decidua serotina at one end, but no trace of the deciduae vera or reflexa. According to the above definition this should have been a complete abortion, but an examination revealed that the deciduae vera and reflexa were still in the utreus. Unless the deciduae are considered to represent the placenta, which the vera and reflexa certainly do not, the definition just given is faulty. In my opinion many authors and teachers of midwifery err in not making it plain that it is not the ovum, but the ovum and the decidua, which constitute complete abortion. The true definition of an abortion I take it to be the expulsion of the uterine contents up till the end of the third month, that is, all which lies inside of the separation layer of the deciduae vera and serotina. From the end of the third month onwards until the foetus is viable, the term miscarriage is the correct one, but we are not dealing with this to-night.

I shall now shortly consider the treatment of the different varieties, but shall first say a few words on prophylaxis.

Prophylactic treatment of abortions.—There can be little doubt that an unhealthy condition of the uterus, prior to conception, is a very fruitful cause of abortions. Prophylactic treatment should, therefore, begin before conception. We should endeavour to get the uterus into as healthy a condition as possible by curing the endometritis or whatever may be wrong. During the treatment of endometritis, a patient should not indulge in sexual intercourse, as this not only retards the cure, but if she become pregnant before a cure is effected, an abortion will be almost sure to follow. I have seen a number of instances of this. In syphilitic cases appropriate treatment must be adopted, and must be persevered in during the whole pregnancy. In such a case the male element should also receive his share of treatment, but it is an exceedingly delicate problem to solve how to get both parents under treatment without causing discord. Other constitutional diseases, such as anaemia, &c., should be carefully attended to. If all abortions were properly treated there would be fewer recurrences.

The treatment of a threatened abortion may be summed up
in the one word—rest. Our aim should be to ensure rest, not only of the body, but also of the uterus. The first is obtained by keeping the patient quiet in bed, and the second by administering drugs which have a sedative effect on the uterus. Active purgatives must be avoided, but constipation must not be allowed. A small dose of castor oil or a simple enema may be used. For quieting uterine action various drugs are used, but of all the newer drugs in use I do not think any of them are better or as good as opium used in fairly large doses. Viburnum prunifolium is well spoken of, and I have certainly got good results from its use. Ergot is sometimes given in small doses, but I cannot say I have ever seen much good from its use. Its action is very uncertain, probably from the fact that the preparations are not always fresh. Opium and viburnum are the two drugs I commonly use. The patient must rest in bed for a week or so until all discharge has ceased. She must be careful not to overexert herself, and when the time of her next period comes round she should stay in bed for a few days. After she has quickened she may use greater freedom. If the uterus should be displaced, it should be put into its proper position and a suitable pessary fitted. Where syphilis is present, antisyphilitic remedies should be administered, and continued throughout the pregnancy.

Treatment of inevitable abortion.—This may be summed up in a very few words, viz., get the uterus completely cleared out. To accomplish this there are various methods in use.

If the cervix be sufficiently dilated, the whole uterine contents should be cleared out by passing the finger in. Ovum-forceps or the flushing curette may be used, but the finger is preferable, as you know what you are doing. This may be done without chloroform, but it is better to have the patient anaesthetised, so that you can be absolutely sure that everything is removed.

In a case where the discharge is free, but the os undilated, the best plan is to thoroughly plug the cervix and vagina, and wait. Full doses of ergot may be given. After twelve hours, when the plug is removed, it is not uncommon to find the complete uterine contents lying on the top of the plug. If the cervix be not sufficiently dilated to clear out the uterus with the finger or curette, the plugging may be repeated, but this should not be done frequently, as the pressure of the plug is apt to damage the mucous membrane of the vagina.

In some cases it may be desirable to clear the uterus at
once. Dilatation can then be effected by means of dilators, such as some form of Hegar's. The metal ones are the best. Tents are are sometimes used, but the difficulty of sterilising them is so great that I do not think they ought to be employed. The cervix should be dilated sufficiently to allow a finger to pass into the cavity. Of course, the curette may be used without so much dilatation, but it is exceedingly difficult to know when everything is removed unless you can explore the cavity with your finger. A hot douche should be used after the uterus is cleared out. As a rule, there will be no bleeding of any consequence, but occasionally there is a considerable amount, but it can be easily controlled by plugging with iodoform or aseptic gauze.

Treatment of an incomplete abortion.—In this condition the uterus should be cleared at once. The only satisfactory way is to put the patient under chloroform, and dilate if necessary, and clear out the uterus with the finger or curette.

In curetting for an abortion one has to be careful not to perforate the uterus. In some cases the wall is so friable that the instrument will penetrate it when very little force is being used. I have fortunately never seen this accident. The uterus is said sometimes to dilate before the curette, and so give the feel as if the wall had given way. I am inclined to doubt this very much. I have never yet seen a case recorded in which this condition was actually demonstrated. In every case in which the abdomen has been opened at once a perforation has been found, or else there has been a dilated Fallopian tube into which the instrument has passed. There is not much risk from the accident, provided the parts are aseptic. The uterus should not be douché d out after this accident has occurred for fear of the fluid getting into the peritoneal cavity. The uterine cavity should be plugged, but care must be taken not to force the plug into the rent. If there be much bleeding, or the parts are septic, the abdomen should be opened and the tear stitched. The uterus has been removed, and in a bad septic case this would probably be advisable, but, as a rule, it can be left. In some cases the uterine wall has been found so friable that great difficulty has been experienced in tying the stitches, as they cut through the tissues.

The dull flushing curette is the one generally advised for use in abortions. I have used it frequently, but in incomplete abortions I have more than once found it a useless instrument. If the decidua is at all adherent, as it often is in these cases, a large sharp instrument is much more useful, as much
less force is required with it than with the dull one. As I have already said, the finger is preferable to a curette, but in some cases you must use the latter instrument.

Treatment of a complete abortion.—In many books this is summed up in the simple statement that it requires no treatment, but with this I beg to disagree. It matters not whether the abortion be completed by nature or by artificial means—the subsequent treatment of the patient is the same. She should be kept in bed for a week at least, and have exactly the same care taken of her as after a full-time labour. Douching is not necessary unless sepsis arise. It is unfortunate that women, as a rule, rebel against resting in bed for more than a day or two after an abortion, and as a consequence many of them suffer from subinvolution, &c.

So far I have hardly mentioned the use of ergot in the treatment of abortions. It used to be, and I suppose still is, frequently given in inevitable and incomplete abortions. The result is sometimes satisfactory, but its action can never be depended upon. I have occasionally tried it, but have now given it up, except along with plugging and after the uterine contents are cleared out, when I sometimes use it. The last case in which I trusted to ergot gave me a lesson I shall not soon forget. As it also illustrates the importance of making sure that the uterus is really cleared out, I shall give short notes of it. Late one night I was sent for, to see a patient of a friend whose work I was doing. I was not told the nature of the case, so had nothing with me but some antiseptics, which I always carry. The patient, a multipara, said that she was three months pregnant, and that something had come away from her. The discharge had been going on for some hours. I found a small foetus, but nothing else except blood-clot. A vaginal examination revealed that the os was closed and nothing protruding. The bleeding had almost ceased. The question arose, was the uterus empty or not? If I had had chloroform with me, I would soon have definitely decided the point, but as it was in the night, and a long way to go for my instruments, &c., I decided to give her ergot. I must confess that I was not very well satisfied with myself, as I felt pretty sure there was still something in the uterus. The result was that when expulsion began severe bleeding set in, and by the time I reached the patient she was nearly pulseless. Under chloroform I cleared the uterus completely, and by giving a rectal saline injection and hypodermics of strychnine, managed to pull her through. She made a good recovery, and I believe credits me with having saved her life. All's well that ends
well, but I do not look upon the case as a particularly creditable one. It taught me the importance of always making sure that the uterus is entirely emptied, and never to trust in ergot.

_Treatment of a missed abortion._—When expulsion has commenced, the treatment of this condition is exactly the same as for an ordinary abortion, viz., to ensure a complete clearance of the uterus.

The difficult cases are those in which expulsion has not commenced. If one be sure of the diagnosis, should we proceed at once to clear the uterus, or wait until uterine action begins? If the patient do not suffer in any way, one may safely wait, but if there be any discharge, or the patient’s health be affected, the sooner the uterus is cleared the better.

I need hardly say that in dealing with abortions the strictest aseptic precautions should be taken.

_Dr. Samuel Sloan_ said that he would confine his remarks on this discussion to three things which his experience of abortions had taught him.

1. That retro-displacements, congenital or acquired, or partly both, _which had given no evidence of their presence_, were more frequently responsible for abortion in early married life than was generally supposed; and he advocated a systematic vaginal examination in all first cases during the first three months of pregnancy, timely treatment in practically all such cases resulting in prevention of abortion.

2. That ergot in a reliable preparation, such as M.K. & R.’s so-called ergotin pills, may safely be given in threatened abortion if the bleeding be severe and prolonged and not relieved by ordinary measures. In such circumstances the ergot will, of course, by diminishing the bleeding, increase the chance of prevention.

3. That the curette, in gross cases of septic incomplete abortion, is a useless and a dangerous weapon, the finger being the proper instrument there; though, in aseptic cases, or those in which the septic condition is limited to, and dependent upon, partially adherent or detached and retained membranes, the curette might be used, under the guidance of, and as an aid to, a finger.

_Dr. Munro Kerr_ agreed with all that was said of threatened abortion. In inevitable abortion he packed the vagina preferably to immediate emptying of the uterus. He did not
encourage the use of ergot. The use of the curette was right in aseptic, but questionable in septic conditions, as in the latter cases there was a danger of opening up fresh surfaces for absorption.

Dr. John Edgar said that in incomplete or inevitable abortion he always dilated and emptied the uterus as far as possible with the finger. Sometimes after separating the ovum Höning's manipulation (bimanual compression of the corpus uteri) was successful in bringing about expulsion of the ovum. If not, he used polypus forceps under guidance of a finger, and finally a blunt flushing curette. Instruments were to be used with caution, but the finger could not always take their place.

When the os was not easily dilatable, he always packed both uterus and vagina with iodoform gauze. He left this in from six to twelve hours, and seldom repeated it.

Dr. A. W. Russell said that, notwithstanding the frequent discussion of this subject, the last words had not yet been spoken on it, and we were not yet all agreed on the treatment of abortion. Regarding preventive treatment he became increasingly sceptical as to the value of the specific drugs that were so much lauded, e.g., aletris, viburnum pruni-folium, and he felt that he must depend more and more on rest, with dietetic and other regulative treatment. As to the treatment of inevitable abortion it was of the utmost importance in all cases, and from the very beginning of examination, to observe strictly the rules of asepsis. Even those of us who were accustomed to this in hospital and other special work knew how great the tendency was to be slack in this duty when the means were not at hand. It was probably on this account more than on any other, not only that acutely septic cases occurred, but also that so many pelvic ailments of a chronic inflammatory type were afterwards to be traced back to the occurrence of a "mishap." Septic abortion would be a much rarer phenomenon if the rules of asepsis were properly observed.

He was not disposed in treatment to make any distinction between complete and incomplete abortion, as he believed it to be almost impossible to tell when an abortion was complete, and in any case it was probably desirable to carefully remove with the curette the decidual as well as the other ovular structures. In this way you were pretty certain to remove any possible fragments of other tissues that might have been
left behind. He was quite sure that his results had justified the principles described.

In septic abortions he was aware of the difficulty as to the danger of the curette in perforating the uterus or in opening up fresh surfaces for absorption, but he was satisfied that there was a better chance of good results if he at least used the blunt flushing curette. He had in such cases, and after labour at full term, in this way removed decomposing tissues that were not likely to be otherwise so well taken away, and were, indeed, not believed to be present. If drainage were afterwards secured, and douching properly practised, the danger of absorption was removed.

Something required to be said about the after-care of the case. He thought the operator should see the patient till all danger was past, but if not, he should make sure that the after-treatment as to removal of gauze packing, douching, &c., was thoroughly understood and carried out. This was specially necessary in cases of septic abortion. It was only by such precautions and such treatment, he believed, that the remote results as regards absence of pelvic ailments of a chronic kind would be best secured.

Dr. J. Nigel Stark said that this important subject was well worth debate at this time, although in the history of the Society at least two discussions had already been held. He had opened the last one, five or six years ago, and it was interesting to look backwards and contrast the opinions then held with those of the present day. On the whole, of course, there were more points of similarity than of contrast, and the principal difference in practice seemed to be a more ready employment of operation in evacuating the contents of the uterus. When, a few years ago, Dr. Stark expressed the opinion that operative interference was frequently necessary to ensure complete emptying of the uterus, a good deal of dissent was expressed, and more reliance on the unaided powers of nature seemed to be held. Now it was more widely recognised that the two great dangers of abortion were sepsis and incomplete removal of the uterine contents. We all realised that an abortion gave us more anxiety and trouble than a full-time confinement, and this because in the latter we could, from the full dilatation of the parts, ascertain with certainty if everything had come away, whereas in the former small portions of placenta might easily be retained without our knowledge. In fact, it was often very difficult to distinguish between complete and incomplete abortions. With regard to
the method of operating when it was required, the curette was, in most cases, a more satisfactory instrument than the finger. If it were used with discrimination, knowledge, and caution, then its dangers had been over-rated. Often it was not possible to force the finger through a narrow cervix, nor to reach the fundus if this could be accomplished. A great many cases of incomplete abortion were admitted into the Samaritan Hospital, and, so far as Dr. Stark knew, no death or even serious consequence had followed the use of the curette with the most thorough antiseptic precautions and the after-swabbing of the endometrium with iodised phenol. The finger or fingers produced a certain amount of tearing, and left raw surfaces as did the curette, and much more force had, as a rule, to be employed with their use. In cases of missed abortion, it was more satisfactory to clear out the uterine contents, both to eliminate the risks of sepsis and to prevent subinvolution.

Dr. Scott McGregor spoke of the great friability of the uterine wall and the opening up of fresh surfaces as a danger in the use of the curette. He introduced and scraped with the finger and afterwards applied iodised phenol.

Dr. A. Rankin corroborated Dr. Stark's statement with reference to the use of curette in septic cases of incomplete abortion in one of the wards of the Samaritan Hospital for Women. In that ward the usual practice was thorough curettage, with douching, and the application of iodine liniment to the interior of uterus, again followed by douching. Iodoform gauze was then inserted through the cervix, but removed next morning, when the uterine douche was again used. After that, all that was required was vaginal douching till the patient left hospital. These cases invariably did well, and were discharged cured in from two to three weeks. Sometimes the temperature did rise one-half to one degree a few days after operation, but came down again in a day or two, when no further trouble arose.

In looking back over a period of some years, he could not recall any case of death taking place in the Samaritan Hospital after curettage for septic cases of incomplete abortion.

The cases Dr. Munro Kerr referred to, in which death took place after curettage, showed that this method of treatment was not free from danger, but still in hospital practice, as shown in the Samaritan Hospital, the risks were not very great. The cases detailed by Dr. Munro Kerr might
have been cases in which septic peritonitis or cellulitis might have been present before curetting was resorted to. In private practice the blunt flushing curette had been found very useful, and might obviate the danger referred to by Dr. Munro Kerr.

Dr. A. Miller said he prescribed opium and rest for the treatment of threatened abortion. The finger nail was not satisfactory in removing the uterine contents, and he often used the flushing curette in his private practice.

Dr. Jardine replied, and said he was pleased to find that some of the speakers did not agree with him in some of the points he had raised, and they had thus been favoured with different opinions, which was much more profitable than agreement. He had to confess that his experience of ergot had not been anything like Dr. Sloan's. In reference to recurrent abortions, he was quite aware that retro-displacements were frequently the cause, as he had seen a number, but as the discussion was on the treatment, and not the causes, he had not mentioned these specially. In recurrent cases disease or displacement was always at the bottom of the mischief. He had seen a case of eighteen recurrences.

In reply to Dr. Stewart's question as to why he plugged the vagina, he said that the plug controlled the hemorrhage, stimulated uterine action, and caused dilatation of the cervix. The plugging had, of course, to be done properly. He would not use it more than twice. Iodoform gauze might be left in for twelve hours, but not longer.

He had not specially referred to septic abortions, as he knew some of the speakers would take up that point. He agreed with Dr. Munro Kerr that there was less risk in clearing out these cases with the finger than with the curette. Of course, fresh surfaces had to be opened up when anything adherent had to be removed, but to curette the whole uterine cavity in such cases added materially to the risk. He instanced two cases in which he had had to remove bits of adherent placenta after full-time labour, with sepsis present. In one he had curetted three weeks after the labour, and in the other removed the bit of placenta with the finger, and in both violent sepsis had occurred.

Dr. Kerr disagreed with him as to waiting until uterine action occurred in missed abortions. One great difficulty was to make a definite diagnosis, and he cited a case in point. The patient had repeated hemorrhage for two months, and to
decide the condition of matters an examination under chloroform had been made. The uterus was enlarged and the ovum still in it, but whether or not the ovum was still alive could not be determined. He decided to wait, and the patient quickened in due time, and was delivered at full-time of a fine healthy son. Had he been hasty in emptying the uterus he would have made a very serious mistake. He also referred to a case reported by him last session, where he had diagnosed the death of the fetus at about four and a half months, and had advised waiting. The patient had gone to full-time in the enjoyment of good health, and the labour had come on in the usual way. No better result could have been got by interfering. Of course, on the slightest indication of anything going wrong he would interfere in these cases, but so long as everything was right he was inclined to wait.

Dr. Russell had stated that he considered that every case of abortion ought to be curetted, as it was impossible to make sure that everything was away. He entirely disagreed with that, as it was perfectly easy to decide the matter if the mass expelled was intact, and if not an exploration of the uterus with the finger would soon settle the point.

He agreed with Dr. Russell that too strict aseptic measures could not be taken in dealing with all cases. Happy-go-lucky methods were far too often adopted, and then men wondered where the sepsis arose from. The wonder was that so many cases escaped infection considering the careless way in which examinations were often made.

III.—SPECIMENS ILLUSTRATING THE CAUSES OF ABORTION.

BY DR. JOHN LINDSAY.

Dr. Lindsay demonstrated a series of specimens illustrating the causes of abortion.
MEETING VIII.—26TH MARCH, 1902.

The President, Dr. Robert Jardine, in the Chair.

New Fellows.—The following were admitted as ordinary Fellows:—Geo. S. Illingworth, M.B., C.M.; G. Brownlie M‘Kendrick, L.R.C.P. and S.Edin., L.F.P.S.Glasg.; David Watson, M.B., C.M.; J. J. Taylor Young, M.B., C.M.

LANTERN DEMONSTRATIONS.

A. By Dr. Thomas H. Bryce.

Dr. Bryce demonstrated the following:—
1. A series of photomicrographs of his preparations by Dr. J. H. Teacher, illustrating the maturation and fertilisation of the egg of the common sea urchin.
2. A further series, showing the segmentation stages of the egg in the same animal up to the sixteen-cell stage.
3. A complete series of preparations, shown by the projection microscope, illustrating the formation of the chick embryo, from the stage of the “primitive streak” to the forty-eighth hour, and completion of the embryonal axis.
4. In comparison with the last, a series of photomicrographs of sections of a double chick embryo of six somites, to demonstrate the anatomical characters of “duplicitas anterior” —a somewhat rare condition in the bird.

B. By Dr. John Lindsay.

Dr. Lindsay gave a demonstration illustrating the influence of albuminuria in the mother on the development of the embryo. He showed photographs of two embryos, both from the same patient, and both believed to be about the same age —viz., five or six weeks. One of them was greatly malformed, the other normal. The malformed embryo was aborted while the patient was suffering from albuminuria; the normal one when free from this complaint. The former measured 2·6 mm.; the latter, 6·3 mm. The malformed one was smaller than an embryo of fifteen days which was shown for comparison. That it had not been retained dead in utero was proved by photomicrographs taken with a high power, in which the nuclei
and cell outlines could be seen clearly defined; while the effects of maceration were seen in the blurring of the structures in sections from the larger embryo.

A series of sections from the malformed embryo were then thrown on the screen to display the internal anatomy. From these it appeared that the nervous system was ill-developed. The heart was entirely absent, the gut was greatly distended, and there was only one Wolfian body. A section through the coverings of the ovum exhibited the allantois in contact over a large extent of the chorion, but having no organic connection with it.

Meeting IX.—23rd April, 1902.

The President, Dr. Robert Jardine, in the Chair.

I.—Specimens.

1. By Dr. John Edgar.

Dr. Edgar showed a papyraceous foetus from a twin pregnancy. This specimen was kindly sent to him by Dr. Burges, who stated that the patient was a vii-para, labour being due on 17th March. The confinement did not, however, occur till this morning (23rd April). During the previous month the patient complained daily of slight labour pains. There was a considerable amount of liquor amnii, and the child, a male, was alive, healthy, and much larger than normal. A second foetus was found on examining the membranes. The specimen shown consisted of a well-developed and healthy placenta with the membranes still attached. Three inches from the placenta a flat circular thickening was evident, which proved to be a second placenta, pale, evidently fatty, and measuring 5 inches in diameter. Close to this was another thickening of an irregular shape, 6 inches long, 2 to 3 inches broad, and a quarter of an inch at the thickest part. This was the foetus papyraceus. It was enclosed in a separate amniotic sac, but with no liquor amnii. The amnion was adherent to both surfaces of the foetus. On stripping it off, the body of the foetus was found to be compressed antero-posteriorly. The head had rotated so as to look over the right shoulder, in which position it had been compressed laterally, showing the
face in profile. The head measured $2\frac{7}{8}$ inches vertically, 3 inches antero-posteriorly, and one-eighth of an inch in thickness. The arms and legs were flexed, and also parchment-like. The legs measured $2\frac{3}{4}$ inches in length, the upper part of the body 2 inches, the lower part an inch and a half transversely. The umbilical cord, still present, was, like the foetus, flattened. The death of the foetus probably occurred at four and a half months.

B. BY DR. A. W. RUSSELL.

Dr. Russell showed a double-channelled glass tube suitable for rectal douching. A glass partition in the tube guided the solution to perforations at the distal end, while several larger openings near the distal end on the opposite side allowed of a return flow to an exit at the proximal end of the tube, which could be stopped at will by a finger of the hand holding the instrument.

II.—CANCER OF THE CERVIX UTERI IN A CASE OF ADVANCED PREGNANCY: ABDOMINAL HYSTERECTOMY.

BY DR. A. W. RUSSELL.

Matthews Duncan long ago remarked that there was "scarcely any disease, however formidable or however loathsome, in spite of which sexual intercourse and conception may not take place;" but the conditions favourable to the progress of pregnancy to the full time in a cancerous uterus can very seldom be present, and such cases are therefore rare. Cancer of the body of the uterus probably always prevents development of the ovum. It is not so with cancer of the cervix, which has been found to occur as a complication of pregnancy once in about 2,000 cases (22 in 41,000, according to Scheibe), and there are already several hundreds on record. Cohnstein reported 134 cases up to 1873, and Theilhaber collected 165 cases between 1873 and 1894. Olshausen, Fehling, and Noble, amongst others, have reported groups of cases. Leinzinger has also recorded a case in which pregnancy took place even after curettage for well-marked carcinoma.

A large proportion end in abortion (Cohnstein, 29 per cent; Müller, 34 per cent; Lewers, 40 per cent), and this takes place usually about the third month (Hauke).

Cancer of the cervix uteri complicating advanced pregnancy is of rare occurrence, and it involves much more serious issues. The patient whose case I wish to describe, and whose uter"
I now show, had reached the end of the sixth month of her first pregnancy. She was 46 years of age, and had been married less than a year. On 4th October, 1901, she had a sudden and alarmingly profuse haemorrhage, which was checked by plugging the vagina. As serious haemorrhage recurred the following day, I was asked by her, medical attendant, Dr. A. A. F. Steen, to see her. The first thought was naturally of placenta praevia, but vaginal examination discovered at the cervix uteri a dense hypertrophied posterior lip with rough surface, and there was an offensive vaginal discharge, the odour of which was perceptible even in the air of the room. The pregnancy had reached the beginning of the seventh month, but patient was not conscious of anything amiss up to the end of August, after which she began to observe a little malodorous discharge. The disease, though well marked, was definitely localised in the posterior lip of the cervix. We decided to recommend immediate operation, and not wait for a viable child.

The vagina was douchéd, and afterwards well plugged with iodoform gauze steeped in hazeline. The patient was removed on 7th October to a private nursing home. Unfortunately, during the following night another very serious haemorrhage took place, the blood running beyond the rubber sheeting, saturating the bed mattress, and reaching the floor. The risk of further haemorrhage seemed as serious as the danger of operation, so we decided to operate two days afterwards, and to remove the uterus and its contents without preliminary Cæsarean section. It was found that the uterus, on account of its elasticity, could be drawn through a comparatively small abdominal incision. The patient was put in the Trendelenburg position. The ovarian arteries and the round ligaments were tied in the usual way with catgut, and the uterus so far separated from its lateral attachments. The bladder was then reflected, and the uterine arteries were secured. At this stage specially wide sterilised lint guards were spread behind the uterus right into the hollow of the sacrum, and covering the whole of the intestines above. As the bulk of the uterine tumour interfered with us, a strong silk ligature was tied round the cervix, and the uterus was amputated below it. The cervical stump was then as quickly as possible excised. The abdomen was well flushed with warm saline solution, which discharged itself by the vaginal opening. Iodoform gauze was drawn through the vagina, and then the abdominal wound was closed. The operation took quite an hour and a half, but it involved comparatively little haemorrhage. The
previous severe losses of blood, however, together with the
shock of such an operation, seemed to prove too much for the
patient, as she did not rally very well; and, in spite of
stimulation and watchful nursing, she became weaker again
during the later hours of the night, and died on the afternoon
of the next day. There are several important points that
deserve consideration:—

1. The diagnosis.—Although this was an early stage of
cancer, it was not difficult to diagnose it. There had been no
previous hæmorrhage and no pain to warn the patient—only
the malodorous discharge for some six months previously, and
that should itself have excited suspicion. Though I believe
that in this case the cancer developed entirely after conception
had taken place, the result might have been very different if
operative treatment had been possible before the exhausting
hæmorrhages had taken place.

2. The age.—It has been noted in statistics that where
carcinoma and pregnancy coexist, the patients are, on the
average, much younger than those in whom carcinoma alone
is present. Most of these patients, however, were multipara.
In this case the patient was only recently married, and it was
her first pregnancy. It is probable that the growth may have
been encouraged by the change in her mode of life, involving
greater congestion and activity of the sexual organs.

3. The operation.—As the disease was limited, and radical
operation seemed possible, I felt myself bound not to consider
the life of the child, so I had no difficulty in deciding not to
delay till the child was viable. The patient and her husband
confirmed this. I had to choose between the vaginal and the
abdominal routes, and took the latter because I feared the
risk of greater hæmorrhage by the vaginal method at this
stage of pregnancy. I decided not to do a preliminary
Cæsarean section, because the child was still small, and I was
sure that I could get the elastic uterus through a comparatively
small abdominal wound. Although the operation was not
successful, I am satisfied that I took the right course. In
undertaking so serious an operation at a time when the
patient is not in the best condition for it, from previous loss
of blood and other drain on the strength and interference
with nutrition, it is the surgeon’s duty to see that every
precaution is taken, and among the important questions is the
choice of the anaesthetic, and I regret that I did not use ether
in such a case as this. I also regret that I did not give an
intracellular intravenous saline injection instead of contenting
myself with the saline solution in the abdominal cavity, much
of which soon escaped by the vagina. If these additional precautions had been taken, it might have made all the difference to the heart’s action, and the patient might have been saved.


By Dr. A. W. Russell.

Cases of cancer of the cervix and the operations for its removal are now familiar to all of us, and we have more than once specially discussed the subject in this Society; but to-night I wish to report the following two cases, because they specially illustrate the advantage of radical treatment in cases which are at first judged to be too far advanced for operation.

Case I.—Mrs. M’G., 33 years of age, had had seven pregnancies, the first five of which went to full time; the next, three years ago, and after an interval of three years, was an early abortion; and the last terminated two months ago in a premature labour at the eighth month, the child living only two days. She complained of irregular vaginal haemorrhage, alternating with a yellowish and latterly malodorous discharge since the last confinement, two months ago. On 14th June, 1901, she was sent into the Samaritan Hospital by Dr. Douglas from the dispensary on account of malignant disease of the cervix. The vaginal roof was filled with a cauliflower growth, involving the whole cervix. The body of the uterus was small, movable, and apparently uninvolved.

Under chloroform, on 19th June, 1901, the cancerous material was thoroughly curetted, and pure formalin was applied to the raw surface, the vagina being afterwards packed with iodoform gauze which had been wrung out of corrosive sublimate solution (1 in 2,000). A fortnight later the patient was carefully examined, and had improved so much that it was decided at a consultation to attempt radical treatment. On 4th July, vaginal hysterectomy was performed. Only one or two special points need to be mentioned. An incision was made in the vaginal walls, round, but well clear of, the diseased tissue. The mucous membrane from this circumference was dissected towards the cervix, and the circular flap thus raised was stitched firmly across the diseased area, covering it in. Silk ligatures were used to secure the broad
ligaments as they were cut through, and the ends of the ligaments were gathered into the vagina and secured in the angles of the wound by means of one or two catgut sutures, after the pelvic cavity had been flushed with a warm saline solution through a double-channeled tube. A temporary iodoform gauze drain was inserted into the middle of the wound. She made a good recovery, and went home on 30th July.

This patient, who was in attendance in an adjoining room, had consented to be examined by two of the Fellows, and this was done by Drs. Stark and Maclennan.

Case II.—Mrs. C., widow, aged 57, has had six children, and has always enjoyed good health. The menopause came at least six years ago. There has been irregular vaginal haemorrhage for the last four months. On account of this bleeding, she was urged by her medical attendant, Dr. Lewis, six weeks ago to get special advice, and had consented, but a temporary improvement tempted her to postpone the consultation. There is now a purulent blood-tinged discharge from the vagina, and the odour is offensive. The cervix is hypertrophied and irregular in contour, owing to sprouting masses of malignant disease which readily break down and bleed. The disease extends specially along a laceration backwards and to the left. Her general health has suffered, and she has of late become thinner and weaker from loss of blood. The friends were advised that the diseased structures should be removed by curettage to save from further bleeding, and they were told that the case was not very hopeful for radical treatment. Next day the cervix was curetted, as already described. The examination under chloroform encouraged us to believe that the disease had not invaded the deeper tissues. After careful examination on 15th September, vaginal hysterectomy was recommended. On 21st September, the uterus was removed in this way, the same method being followed as I have described already. There was considerable difficulty in excavating the disease at the apex of the laceration on the left side. On 28th September, the vaginal discharge was distinctly foul smelling, and a careful search was made for any gauze packing that might have been left in vagina. This was found next day. Iodoform pessaries were now inserted daily. On 4th October, the ligatures were carefully detached, as the odour had not completely disappeared, and patient left the Nursing Home on 7th October.

On 9th October, as the discharge continued, I again searched
specially on the left side where it had been necessary to excavate, and I found still a small piece of very foul-smelling gauze. On removing this and cleansing the vagina well, the wound healed up in a day or two, and there was no further trouble.

I have seen the patient to-day (26th March), and have examined her. There is no evidence of recurrence; her general health has greatly improved, so that she is now fit for every ordinary domestic duty.

Remarks: Early Diagnosis.—Both of these cases are a lesson regarding diagnosis. In the first there were suspicious symptoms for at least a month before her admission; while, in the second, a consultation had been proposed at an earlier stage of the disease, but had been postponed. Skilled advice should be sought without delay whenever there is even slight irregular hæmorrhage.

Preliminary curettage and the efficacy of formalin in cases that are doubtful as to radical operation.—In both of these cases this preliminary treatment arrested the progress of the disease, and enabled us to decide deliberately as to further procedure.

The advantage of giving the patient the benefit of radical treatment.—This is to me the most striking lesson of these cases. Both were apparently hopeless cases, already in a miserable condition of health owing to repeated hæmorrhages and foul and extremely disagreeable discharges. After the operation they quickly regained strength, and now, after nine months and seven months respectively, they are in good health and able for the ordinary routine of domestic life, and, as they themselves declare, stronger than they have been for years, while there is in neither case at this date the slightest indication of recurrence. I do not report them as cases of cure, but to prove that, whether the disease ultimately returns or not, the operation has already been justified by the comfort it has secured for them.

Dr. A. W. Russell then showed the following instruments used by Pryor for hysterectomy:—(1) Forceps for securing the broad ligaments, (2) trowel-shaped anterior retractor, (3) three-pronged blunt bullet forceps, (4) intrauterine traction forceps.

Dr. J. Edgar agreed with what Dr. Russell had said regarding the importance of early diagnosis and treatment. He had
seen the first patient before operation, and again two or three weeks ago, so he could corroborate the statements with regard to her. He did not agree with what Dr. Halliday Croom had said some time ago, that hysterectomy in cases of cancer was worse than useless. As a preliminary to hysterectomy, he found curettage and application of formalin of considerable service. He had never seen a case of cancer of the gravid uterus. In such, he should in all probability prefer the vaginal route in operating.

IV.—A SARCOMATOUS ENCHONDROMA OF THE PELVIS DURING PREGNANCY.

By DR. ROBERT JARDINE.

Mrs. H., i-para, æt. 29, was sent into the Maternity Hospital from one of the mining towns near Glasgow. She had been under the care of a medical man for some six weeks, but he sent no history of the case, and even did not condescend to reply to a letter of enquiry sent him some days later. Unfortunately, we rarely receive a word of explanation along with the bad cases sent in.

Mrs. H. had been married for nine years. She was now pregnant about seven months for the first time. Her health had been good until she became pregnant, except that she had suffered from pain of an intermittent character in the back of both thighs for two years, particularly during the winters. When three months pregnant the pains in the thighs became worse, and about three months ago the right thigh began to swell. With the onset of the swelling, the pain in the right thigh became much more severe. The swelling of the right thigh gradually increased, and six weeks ago she had to take to bed. Since then, the swelling has increased, and at times the pain has been almost unbearable. For some time she has only been able to lie on her left side, and occasionally on her face. A pressure sore has formed over the left trochanter. The patient has lost flesh considerably.

Condition on admission.—The patient was pale and emaciated. She complained of severe pain in the back of the right thigh, and in the right side of the abdomen. The right leg was enormously swollen and oedematous, more especially the thigh and hip. The swelling extended up as high as the iliac crest behind and in front. A distinct swelling could be made out in the abdomen above the iliac crest, almost half way up to the umbilicus. This swelling
was quite distinct from the uterus, and was apparently attached to the ilium. It was particularly tender in the right inguinal region. The uterus was displaced towards the left side, and quite free from the tumour. The head of the child could be palpated lying to the left just above the pelvis. The fetal heart sounds were easily heard—strong, but rather rapid. On inspecting the labia, they were found to be free of oedema. On attempting to pass a finger into the vagina, the passage was found to be obstructed by a hard globular mass growing from the right of the pelvis. The pain was so great that the attempt had to be given up.

Next day I made a thorough examination under chloroform. The tumour was found to occupy the greater part of the pelvic cavity—growing from the right side, apparently from near the sacro-iliac joint. The finger was introduced past the mass with difficulty, but the cervix could not be reached. The vaginal mucous membrane was freely movable over the mass, which was soft and almost fluctuant at some points, and at others quite hard. A rectal examination confirmed the observations made per vaginam. A small hard nodule was made out in the anterior uterine wall near the fundus. On passing a catheter, the instrument went in obliquely to the left.

My diagnosis was that we had to deal with an osteo-sarcoma springing from the right side of the pelvis.

The prognosis was hopeless as regarded the mother. The child was still alive, but, as the pregnancy had barely reached the seventh month, it was very doubtful if an immediate Cesarean section would give a viable child. I decided to wait until there was a chance of getting a viable child. The tumour, I was quite sure, could not be removed.

The consulting staff of the hospital saw the case. Dr. Cameron quite agreed that it was a sarcoma, and that I ought to wait to give the child a chance. Drs. Reid and Sloan both suggested the possibility of the tumour being a simple one. They agreed with the proposed treatment.

As we failed to get any information from the doctor who had attended her, we questioned the husband to see if we could form any idea of the rate of growth. He informed us that he had last had connection about three months ago, and that for about a month previous to that he had occasionally experienced slight difficulty. This difficulty had not been very marked, and had not been experienced at any time previous till about four months ago. The rate of growth must therefore have been very rapid.
The patient was made as comfortable as possible by the use of opiates to relieve the pain. The bowels were obstinately constipated, and only relieved by aperients and enemata. There was a slight trace of albumen in the urine.

It was quite evident that the tumour was steadily growing. The swelling of the leg increased, and the vulva became œdematous. As the patient was evidently steadily losing ground, it was determined to do Cæsarean section on the ninth day after admission. Two days before the operation was done the foetal heart was quite distinct, but it could not be heard on the following evening.

Dr. Reid kindly gave me his advice during the operation, and Dr. Gibson assisted me. The abdominal wall was very œdematous, and the veins in it much engorged. The uterine incision was made in the anterior wall, and the placenta lay beneath it. It is rather curious that, of the last nine or ten sections I have done, I have had to go through the placenta in every one. The child was stillborn. Its head showed moulding from the pressure of the tumour. When the placenta and membranes were removed, there was a considerable amount of decidua lining the uterus, and this was swabbed out. On passing the hand into the uterus, it was found that the cervix would allow of drainage, so it was decided to stitch the uterus. A small fibroid tumour was removed from the edge of the incision. The uterus was flabby, but there was very little bleeding. A hypodermic of ergotin was given, and a saline injection under the breast. On examining the tumour, it was found to block the pelvic cavity, and to extend up the right side of the abdomen to about the level of the umbilicus anteriorly. The upper part was rounded, and quite soft. It was completely retroperitoneal, springing from the side of the pelvis. The broad ligament was opened up by it behind. The operation was finished by stitching the peritoneum and then the abdominal wall.

The patient rallied from the operation towards the evening, but cardiac failure began to manifest itself, and she died twenty-four hours later. At the time of the operation, the temperature was 102.4°F. It had been normal the evening before.

The post-mortem examination was done by Dr. Carstairs Douglas.

The right labium majus was enormously swollen and engorged; the left little affected. There was also some œdema of the abdomen and groin in the right iliac region.
On the right side the abdomen was more prominent in its lower part than on the left, and on palpation it felt distinctly more resistent.

The thorax presented nothing of special note. The heart was small, but apparently healthy. Both lungs were oedematous, and showed evidence of distinct passive congestion in their lower and posterior portions.

On opening the abdomen and carrying the incision through the wound, some serous fluid of a straw colour escaped. The parieties at the wound were rather soft, pulpy, and oedematous. There was no pus present. There was a commencing slight adhesion between the uterus and the parieties. The peritoneum appeared quite normal. The uterus was lying well up in the abdomen, the fundus as high as the umbilicus. On its anterior and upper part was a firmly sutured wound about 5 inches in length. The tubes and ovaries were healthy, the right ovary slightly enlarged. The bladder was moderately full.

On reflecting the abdominal parieties, it was at once apparent that the right half of the false and true pelvis was filled with a large pathological mass. This was rounded and nearly smooth on its superior, anterior, and inner aspects. The upper part was of a bluish tint, and felt soft and baggy. Its lower part was firmer and more flesh-tinted. It lay beneath the peritoneum on the posterior abdominal wall and pelvis. The dimensions were as follows:—

1. Superiorly, it rose to the tip of the eleventh rib and slightly above the umbilicus (about the level of the second lumbar vertebra).

2. Anteriorly, it grew forwards sufficiently to make a prominence in the right iliac region.

3. Internally, it reached the middle line at the level of the promontory of the sacrum. Above this, it gradually receded from the middle line of the body, while in the true pelvis, near the outlet, it rather exceeded this limit.

4. Posteriorly and externally, it was continuous with the pelvic wall.

5. Inferiorly, it was found on removing the whole pelvis that it had grown down under the pelvic arch; that it had incorporated in its substance practically all the upper part of the ischium and of the pubis and the ilium near the acetabulum. It had grown out of the pelvis also at the great sacro-sciatic notch, and had so eaten through the bones just behind the acetabulum that the ilium here had become quite detached from the ischium and pubis. The lower part of the growth was more osseous than the upper, and contained
Sarcoma of the pelvis.
many large spaces, some of them full of blood. It was very fragile, and easily crumbled. There was no distinct demarcating line of tissue to circumscribe it, but it projected in an irregular manner into the tissues of the thigh in its upper part. One or two small glands were enlarged along the right Poupart's ligament. Some enlarged retroperitoneal glands were also found. No metastatic growths were found. The right ureter, in its course to the bladder, was stretched over the tumour.

The spleen, kidney, and other abdominal organs showed nothing of interest. The liver was large, pale, and fatty.

The entire pelvis and tumour was removed, and I now show it to you, and also an admirable drawing which Dr. Lindsay kindly made (see illustration). To the left is seen the sutured uterus with the bladder below it. The tumour mass projects through the right side of the pelvis. The dotted line indicates the upper limit of the tumour at the time of operation.

The following is the report of the microscopic examination of the tissues, made by Dr. Douglas:—

"The microscopic examination of the growth showed it to be composed almost entirely of large, rapidly-growing cartilage cells, with here and there small groups of cells suggestive of sarcomatous degeneration. There were also cysts at places, so it may be an ordinary enchondroma with cystic changes, or with sarcomatous degeneration, or both."

It is impossible to decide when this tumour first began to grow. It may have been there before conception, and the sciatic pains would point to the nerve having been affected during the last two years. If it was there at the beginning of the pregnancy, it is quite certain that its rate of growth became very rapid after impregnation. The growth may have been simple to begin with, but there is no doubt of its malignant character finally, although it is difficult to demonstrate sarcomatous cells in it.

I regret that I did not operate a couple of days sooner, as there would then have been a slight chance of saving the child's life, but we had no warning of its impending death. I do not know what caused its death.

I am deeply indebted to Dr. Campbell Maclure for the careful notes of the case; to Dr. Lindsay for his admirable drawing; to Dr. Douglas for the pathological report; and also to Drs. Reid and Gibson for their assistance at the operation.
V.—LARGE PYONEPHROSIS RUPTURED INTO PERITONEAL CAVITY: ABDOMINAL SECTION: RECOVERY.

By Dr. John Edgar.

Mrs. M·L., æt. 21, was admitted into the Samaritan Hospital on 18th January, 1902. She was delivered of a child on 2nd September, 1901. Six weeks afterwards she noticed a lump in the right lumbar region. It increased steadily in size till admission. There was considerable pain, perspirations, but no rigors, also some pus in the urine, and she was emaciated and very anaemic.

On examination, a large fluctuant mass, measuring 6 inches vertically and 7½ inches transversely, was felt in the right lumbar region. It extended forwards to 2¼ inches to the left of the umbilicus. The surface was smooth, and the ascending colon lay superficial to it.

The uterus and appendages were normal, while the right ovary could be felt free at the lower margin of the mass, on a level with the pelvic brim.

On 24th January, the patient suddenly collapsed, the rectal temperature being 96° F. Vomiting set in. There were severe cramp-like pains and cold clammy sweat. Later, the temperature rose to 101·4° F., the abdomen being distended and tender.

I did not see her till twenty-four hours after the onset of collapse, when I found her practically moribund. The pulse was very small and running; the abdomen distended and tender; the features pinched, and expression anxious. The mass in the right lumbar region was no longer felt. The patient looked as if she would die within a few hours. Two of the medical staff advised against operation on the ground that it was hopeless. However, I made an incision in the right linea semilunaris into the peritoneal cavity, when a large amount of thin greenish-yellow pus escaped. I washed out the cavity with normal saline solution, and made an opening into the kidney on its outer surface, and a corresponding opening in the lumbar region. Two rubber drainage-tubes were passed through the lumbar incision into the kidney, and a glass drainage-tube through the anterior incision into the peritoneal cavity.

Strychnine, one-thirtieth of a grain, was injected hypodermically, and a pint and a half of saline solution was infused into the axilla. The patient rallied gradually. The anterior
wound healed quickly, and the patient was dismissed on 27th March.

I saw her yesterday (22nd April). She was looking well, much stouter, and not so anaemic. The lumbar wound is now being dressed every second day, and there is still some pus coming from the kidney, which can be felt in the lumbar region. It measures $3\frac{1}{2}$ inches vertically and 3 inches transversely. Its inner border is situated at the anterior scar, $2\frac{1}{4}$ inches to the right of the middle line.

VI.—CANCER OF THE RECTUM: RESECTION: RECOVERY.

By Dr. John Edgar.

Mrs. M'V., aged 53, was admitted into the Samaritan Hospital on 4th November, 1901, complaining of rectal hæmorrhage of thirteen months' duration. The menopause took place twelve years ago. She had five children, the youngest 19 years old. She had constant tenesmus, and for six months prior to admission, constant dull pain in the rectum. There was progressive emaciation, the skin being sallow and the eyes sunken.

On rectal examination, a papillomatous mass, measuring $1\frac{1}{2}$ inch vertically, was found an inch above the anus. It involved the whole circumference of the rectum, with the exception of a portion, an inch in breadth, on the left side anteriorly. The tumour bled on touch, and was movable. The inguinal glands were apparently normal. The uterus had undergone senile atrophy, but was otherwise normal.

The patient was anaesthetised on 6th November, 1901, and placed in the dorso-sacral position. An incision from the tip of the coccyx to the anus was made, and then carried round the margin of the anus. A finger being inserted into the bowel, the rectum was isolated by deepening the incision all round up to an inch above the upper margin of the mass.

The rectum was then cut away, bleeding points being caught in forceps and ligatured. The upper part of the rectum was then pulled down and united by mattress sutures of silkworm-gut to the anal margin. The incision between the coccyx and the anus was also sutured with silkworm-gut. The further history was as follows:—

17th November.—Pus coming from posterior wound for last three days.

18th November.—All sutures removed. The rectum has united well with the anus. Anus wide.
21st December.—Dismissed well. Has fair control over motions.

Remarks.—1. Colotomy was not performed. It was unnecessary in my opinion.
2. It is sometimes advised to slit up the rectum posteriorly. This, I think, inadvisable, because the discharge from the cancerous mass would be apt to infect the raw surface, and the rectum can be isolated more readily when left intact.
3. It is generally said that no attempt need be made to suture the bowel to the edge of the anus, as the stitches will be certain to tear through. Possibly it was because I used mattress sutures that they did not tear through. However that may be, the bowel united to the external opening by first intention, and so my patient has been saved the necessity of having bougies passed regularly to prevent a stricture.
4. In another case of this kind, I should drain the space behind the rectum for the first few days.
5. Patient has made an excellent recovery.

Dr. A. W. Russell, who had assisted Dr. Edgar at both operations, said that the cancer of the rectum was specially difficult to remove on account of its distance from the anus, but the plan he followed in freeing the bowel high up enabled him to keep clear of the diseased structure, and at the same time made it possible for him to bring the edge of the remaining part of the rectum sufficiently near the outer edge of the wound to secure healing. The recovery of the case of ruptured pyonephrosis was a remarkable instance of the triumph of surgery in desperate circumstances. The patient was moribund, and could not have lived through the day, so that the surgeon was justified in taking the most serious risk.

VII.—VESICAL IRRITABILITY AS A RESULT OF ACUTE ANTEFLEXION OF THE UTERUS, AND ITS RELIEF BY OPERATIVE TREATMENT OF THE ANTEFLEXION.

By Dr. A. W. Russell.

There are few disorders of the less serious kind that are more distressing to a patient than irritable bladder, and I am afraid that for want of well-directed treatment such cases are occasionally allowed to drift into a chronic condition, at times necessitating even the wearing of rubber reservoirs by day, and making continuous rest during the night an impossibility.
Many of these cases of chronically irritable bladder are due to an acute anteflexion of the uterus, or, to be more precise, to a retroposed, retroverted uterus, which has become acutely anteflexed.

I shall give you, as an example, a short note of a typical case.

Miss M., aged 27, a domestic servant, consulted me regarding vesical irritability, her complaint being that for some time she could not walk continuously for even a short distance without feeling the necessity to have her bladder relieved. Occasionally, too, in the house when much on her feet she had the same trouble, but it was most troublesome when she was walking even a short distance on the street, and she believed that she was getting worse. She reminded me that once, about three or four years ago, when she was in service in a doctor's house, I had been asked to see her. This, I then remembered, was owing to some slight inflammatory irritation in the neighbourhood of the uterus, and there was at that time no vesical irritability, and I had not noted any anteflexion. Her subsequent history pointed to the probability of this condition having developed within the last two or three years. After examining the urine, and finding it normal, I made a vaginal examination, and found the uterus pulled backwards and the body acutely anteflexed on a rather conical cervix which pointed almost in the axis of the vagina. I recommended her to have the uterus treated, and in a short time she entered a private nursing home. After the usual preparation, the cervix was dilated, and the uterine cavity was curetted. I then proceeded with what is described as Dudley's operation. I slit up the posterior wall of the cervix in the midsagittal plane as far as the point of flexion, and passed a silkworm suture through the tip of cervix at the point where the incision began, and entered again at the angle or deepest part of the incision, bringing the needle out on the vaginal surface of the cervix. I then reversed this order with the needle so as to bring it out at a point corresponding to the first point of entrance. The suture was tightened so as to carry the separated points of the posterior lip back into the angle of incision. Further suture was not necessary in this case, but extra sutures are sometimes inserted on each side of the main suture.

When the os uteri is thus brought backwards it sometimes happens that the anterior lip projects or is redundant. In such cases Dudley denudes a small oval space near the tip
of the anterior lip, and brings the two edges together with transverse sutures. This, he believes, removes the redundancy, and tends to straighten the uterine axis. No one who has not tried this simple operative treatment for acute or pathological anteflexion would believe that it could so markedly improve the position of the uterus.

The patient was allowed to get up in a few days, and she left the home within a week. She has reported herself several times to me since the operation, and is entirely relieved of her vesical irritability.

I saw to-day the first patient on whom I did this operation. Not fully understanding at the time the meaning or intention of the anterior denudation, I made it a sort of anterior colporrhaphy, which has resulted in a linear cicatrix. The contraction of this has, I believe, somewhat interfered with the success of the operation, as it causes some dyspareunia, and also by tugging on the bladder keeps up, to a slighter degree, its irritability. This I intend to remedy.

I have done this operation now in six cases of persistent irritability, associated in several cases with dysmenorrhœa, and also with sterility. In all cases the vesical irritability has been relieved, and the patient's misery has been removed, but as yet, though it seems to be a good idea for the relief of dysmenorrhœa and also for sterility, I have not got sufficient experience upon which to generalise. In several, other treatment, such as pessaries, dilatation, and curettage, had been tried without any effect on the irritability.

I am satisfied that it is the best operation yet devised for the cure of aggravated anteflexion with its attendant troubles. I was specially struck lately with the benefit it had brought to a lady who had been worried often by night as well as by day with vesical irritability, and who had worn pessaries to relieve rectal pressure, and had been curetted carefully, with only temporary benefit. She is now able to control her bladder, and vaginal examination shows that there is a corresponding improvement in the position and form of the uterus.

Dr. Edgar said he had not had a great deal of experience of Dudley's operation, because, judging partly by what experience he had and partly theoretically, he did not think the operation a good one. It was chiefly done for dysmenorrhœa. In such cases he had found dilatation and curettage under chloroform, followed by intra-uterine douching for a couple of
weeks, much more effective. As regards the claim that the operation cures vesical irritability, he was inclined to be sceptical, and if Dudley's theory be true, that the cause of the irritability is the shortening of the round ligament, he could not understand how this operation could lengthen them. The rational treatment, if one were to accept this theory, would be to stretch the ligaments.

Meeting X.—28th May, 1902.

The President, Dr. Robert Jardine, in the Chair.

I.—Specimen.

By Dr. John Edgar.

In the absence of Dr. Edgar, Dr. A. W. Russell showed a cancerous uterus removed to-day by vaginal hysterectomy, and also a microscopic section of the previous curetting. The following is an abstract of the history:—

Mrs. T., aged 64, has had five children, the last twenty-seven years ago. Menopause took place seventeen years ago. She has had prolapse of uterus for at least twenty years, and has required to wear a pessary for the last seventeen years. She began to see a little sanguineous discharge last January. A week or two ago she came to the dispensary of the Samaritan Hospital, where Dr. Carstairs Douglas saw her, and recommended her for admission into the hospital for plastic operation on the vagina and treatment of the cervix. The uterus was curetted by Dr. Edgar last week, and, as the material brought away by the curette was very suggestive of malignancy, the plastic operation was put off, and to-day the uterus was removed by vaginal hysterectomy.

II.—Gastrochisis in a Twin.

By Dr. John Lindsay.

The case occurred in the practice of Dr. John Ritchie, and Dr. Jas. H. Nicoll having received the specimen from Dr. Ritchie, and preserved it, kindly allowed me to dissect it and
publish a report. The specimen as received consisted of the fœtus with the placenta still attached (Fig. 1).

The placenta was that of a twin pregnancy from a single ovum, there being only one chorion, with two amnionic sacs. It was slightly oval in form, and about the average size of the organ in single births. Its fetal surface was divided into two portions, respectively equal to one-fifth and four-fifths of the whole, the division being effected by the line of reflection of the two amnions, which ran obliquely across the surface and had the umbilical cord of the absent twin inserted near one end. The smaller part, belonging to the malformed twin, was deeply stained with meconium, and was crumpled into a short cone, either on account of the peculiar attachment of the fœtus, or because it had occupied one of the upper angles of the uterine cavity. The amnion overlying it was gathered together at the edge of the placenta, and then became expanded into the covering of the hernia on the abdomen of the child. There was thus no proper funis, but the umbilical vessels, consisting of a single artery and the vein, ran in the wall of the hernial sac. The cord of the surviving child had the usual pair of arteries and the vein. No communication between the two sets of vessels could be found by dissection, yet, as in other single-ovum twins, there was probably some capillary anastomosis in the substance of the organ, as section across the place of union revealed no line of demarcation between the parts beyond the ordinary division into lobules.

The fœtus.—A practically complete dissection of the body was made, a portion of the spinal cord alone being omitted from the examination. Only those parts, however, which were abnormal are referred to below; when a particular structure is not mentioned it is to be understood that it was regularly constituted or modified only by distortion.

External appearance and skeleton.—It is most convenient to take these together. In size, the fœtus looked like one of seven months. The head and upper limbs were well formed; so also were the lower limbs, except that the dorsum of the left foot lay upon the front of the leg, the extensor tendons being shortened, and the anterior annular ligament of the ankle-joint lifted up and lengthened. The spine was distorted in the following manner. When the mesial plane of the skull and cervical vertebrae was placed perpendicular to the plane of the horizon, the dorsal region of the spine was seen to curve, at first slightly to the right, then very sharply to the left, so that the axis of the lumbar and sacral vertebrae ran at right angles to the middle plane, and the tip of the coccyx stood
FIG. 2.

Front aspect of the Lower Half of the Body.

a—Unnatural anus (urachal opening); b—Proctodæum; c—Left labium majus (?).
farther outwards than the left parietal eminence. At the same time the lumbar and sacral regions were thrown far forwards by an antero-posterior curvature, and the dorsal laminae of the sacrum were unossified, permitting the escape of a meningocele. The symphysis pubis was open to the extent of an inch, but the gap was bridged across by a ligament which formed part of the abdominal parietes. The iliac bones were bent backwards, the fossæ converted into slight convexities, and the bones otherwise so deformed that the femora lay along the back of the feet.

A hemispherical protrusion occupied the whole front of the abdomen from the epigastric region to the pelvis. It was covered by a thin, dark, and smooth membrane in direct continuity with the normal skin. On its antero-inferior surface, where skin and membrane joined, there was an oval foramen, three-eighths of an inch in length, from which meconium escaped (Fig. 2a). This foramen had clearly defined and rounded edges. In the left inguinal region there was an elevation of the skin, filled with and lying over a thick deposit of subcutaneous fat (Fig. 2c). Presumably, this was the left labium majus, but no evidence was obtained by dissection or microscopic examination to prove that it was so. At the bottom of a deep furrow, between the thighs in front, there was the entrance to a canal, which meantime may be called the meatus urinarius (Fig. 2b). No other part of the external genitals was present, and no trace was discovered of the anus or of any of the perineal muscles. The pudic arteries and nerves could not be found, but it is not certain that they were absent.

**The abdominal parietes.**—On the right side the external oblique muscle consisted only of the fibres which arise from the four lowest ribs; and these were inserted along the crest of the ilium, into Poupart’s ligament, and by a thick tendon into the body of the os pubis. The muscle was limited internally by a well-defined and thickened border curved to the neck of the hernial protrusion, the greater part of its aponeurosis being absent. On the other hand, the aponeuroses of the internal oblique and transversalis muscles were present, and while forming a conjoined tendon for insertion into the os pubis they, for the most part, blended with the wall of the hernia. There was no trace of the rectus on the right side, but on the left it was a stout, fleshy bundle. The broad muscles on the left were much degenerated, but maintained their proper relations to one another and to the adjacent bones. The aponeurosis of the external oblique and that of the trans-
versalis joined together along the inner border of the rectus, and were then continuous with the covering of the hernia.

To summarise these facts, the left half of the abdominal parietes, although ill-developed, was complete, while the right half was deficient in the rectus and in the greater part of the aponeurosis of the obliquus externus.

Of other irregularities in the muscular system, it may be mentioned here that the diaphragm, although not defective, had its convexity downwards into the abdomen instead of upwards into the thorax. The glutei maximus muscles were separated in their upper halves by the sac of the meningocele, but the protrusion of the sac was so slight that there was no indication of its presence on the external surface of the body. The sartorius of the left side had two heads of origin, one, as usual, from the anterior superior spine of the ilium, and the other from the lumbar vertebrae with the highest fibres of the psoas magnus, the two parts of the muscle uniting about the middle of the thigh. The peroneus tertius of the right leg was absent, and the psoas parvus was wanting on both sides.

The abdominal viscera.—These were uniformly stained of a dark colour, and so matted together by inflammatory adhesions that the dissection was rendered very difficult, and the microscope had often to be resorted to for the identification of parts. On that account the interpretation of certain points is made somewhat doubtful. The liver, bowel, bladder, and part of the internal genital organs were contained in the hernia under cover of the parietal peritoneum, which, to a large extent, was only loosely attached to the outer wall. The other organs occupied their proper places.

In the quadrate lobe of the liver there was a cyst about the size of a hazel-nut, and the organ was otherwise slightly modified in form by the abnormal disposition of the umbilical vein. The caput cæcum coli was scarcely distinguishable, as there was no vermiform appendix, and the colon was very little wider than the ileum. After a very short course the large bowel opened into the right upper corner of a sac, the dilated bladder, or cloaca, into the lowest part of which the vagina also opened. Concealing the orifice of the vagina, there projected into the cavity from below a small cauliflower-like excrescence, the bleached and furrowed surface of which, like that of sodden skin, contrasted strongly with the dark, smooth walls of the cavity. Histologically, this excrescence presented the characters of skin, and it was in continuity with the walls of a canal, the external opening of which has already been mentioned as the meatus urinarius. The
wall of this canal in the lower two thirds of its length showed numerous sebaceous glands; and fine hairs projected into the lumen. Obviously, the structure was an invagination of the skin. It extended upwards for a distance of 2 inches, its highest point being above the level of the pelvic brim; but whether it formed a completely perversus outlet from the cavity of the cloaca to the external surface was not ascertained. The histological characters of the canal, and its relation to the cloaca and the orifice of the vagina, clearly indicate that it was the proctodæum.

Normally the proctodæum is a very shallow depression of the perineal region, reaching in the female no deeper than the labia minora. In this case the ingrowth of the epiblast had gone far into the trunk of the embryo to reach the abnormally placed cloaca; or, union between the two having been effected at the usual level, the epiblast had been drawn out into a long tube by traction upwards on the cloacal structures. The importance of this point in respect to the causation of the whole condition of the fetus will afterwards be considered.

Urino-genital organs.—Both suprarenal bodies were well developed, but only the left kidney was found, and it consisted entirely of a conglomeration of small cysts. It is possible that a displaced and atrophied right kidney escaped notice among the many enlarged lymphatic glands of the abdomen, but as no trace of the right renal artery could be discovered on a careful dissection of the aorta, nor any evidence of the existence of the right ureter, it is more probable that the organ had never been formed at all. In that, as in some other respects, the present case would resemble one described by Drs. Marshall and Lindsay in the Glasgow Medical Journal of June, 1901.

The ureter of the existing left kidney had been broken into two parts. The part proceeding from the kidney ended in a mass of inflammatory exudation, in which, also, the left Fallopian tube was imbedded. The portion attached to the bladder was about an inch in length, and a probe passed into its vesical orifice showed that it ended in a cul-de-sac.

Of the internal genital organs but little can be said, they were so buried in inflammatory exudate. It is only certain that the vagina, uterus, and both tubes had been formed, but the ovaries were not discoverable.

The vascular system.—The abdominal aorta was remarkably shortened; the vessel and the roots of its principal branches could almost be covered by a threepenny piece. The single umbilical artery joined the right internal iliac, and there was
not the slightest rudiment of the corresponding vessel on the opposite side. The umbilical vein passed directly into the substance of the left lobe of the liver, forming no external communication with the portal vein or with the vena cava (ductus venosus). Artery and vein passing down inside the front wall of the hernia formed a triangle with the ligament that closed the pubic gap as its base; and immediately beneath the apex of this triangle, and so between the vessels, was situated the unnatural anus or urachal opening of the cloaca. In the heart there was a central perforation of the septum ventriculorum.

Etiology.—Fissura abdominis is as frequent among single births as in twin pregnancies, so that the character of the gestation in this respect might be considered to be of no moment in the causation of the condition. Nevertheless, the association of a normally developed twin with a foetus malformed in this manner ought not to be ignored in dealing with the etiology of the malformation in the particular instance in which it occurs. The regular development of the normal twin is at least a check experiment of the strictest kind, by which the validity of any hypothetical cause may be tested. Where one of the two embryos derived from a single ovum is unaffected, as in the present case, no hostile agency that would act on both alike, such as the toxicity of the maternal blood, can be regarded as the leading factor in the causation. An unfavourable environment, when it exists, may, indeed, have an important rôle to play in the production of the deformity, but its action must be secondary to a difference between the embryos themselves.

That embryos derived from the same ovum should differ in constitution from the very beginning of development appears at first sight to be improbable, but the improbability vanishes when one remembers that differentiation is effected even in the first pair of daughter cells that result from the cleavage of the fertilised ovum, since these become the immediate ancestors of different groups of cells that fulfil different functions in the subsequent development. It is a fair inference that differentiation may also be effected in the cell division that gives rise to two germinal areas in the one ovum, and the inference is strongly supported by many of the facts of twin pregnancy. Homologous twins occasionally display an extraordinary similarity, even to the simultaneous occurrence of like pathological conditions in both; but, in general, the phenomena of multiple pregnancy indicate the early establishment of differences between the embryos. The
disparity in size between twins at birth is a matter of common knowledge, and this disparity is sometimes so great as to have given rise to the notion of superfetation. Foetus papyraceus is another outcome of the struggle for existence between unequal competitors; and there is reason to believe that the struggle may sometimes end in the complete disappearance of one embryo, so that the twin conception ends as a single birth. But it is in acardiacus that the initial difference which may exist between homologous twins is most clearly shown. This difference is expressed in the more rapid development of one embryo, whereby it is enabled to preoccupy the available area of placentation to the total or partial exclusion of the other. The unsuccessful competitor then sinks to the status of a parasite, and its development, even more than its growth, is profoundly affected by the consequent malnutrition.

An original difference between the twins, and inequality in their rates of development similar to that which occurs in acardiacus, is manifested in Dr. Ritchie's case by the unequal division of the placenta; and the allocation of an abnormally small portion of the organ to the nourishment of the malformed foetus raises the question whether here also, as in acardiacus, the malformation was due to malnutrition. Not merely was there a seemingly inadequate placenta, but there was also only one umbilical artery, a point in which the specimen agrees with 50 per cent of the monstrosities of its own class, and with very many acardiac monsters. It has been held by some that defective closure of the body walls is due to insufficiency in the supply of the constructive material; and certainly in acardiacus, in which malnutrition has been demonstrated, this condition is of frequent occurrence. But in acardiacus the malnutrition is of an extreme kind, and is dependent on circumstances which did not exist in the present case. The acardiac monster is nourished wholly or chiefly by the effete blood of the other twin passing to it through the anastomosis of the placental vessels. It has already been pointed out that there was no continuity of the larger vessels in this instance, and the capillary anastomosis which doubtless existed would be rather to the advantage of the malformed foetus.

The apparent insufficiency of the placental circulation in the case is deserving of attention, but it must not be forgotten that in many examples of the same kind of malformation there is no such insufficiency. These last might indeed be regarded as likewise resulting from defective nutrition by assuming a faulty state of the maternal blood; but in the
absence of proof of such a condition they stand in the way of referring fissure of the body walls to malnutrition.

Dr. Ritchie's case cannot be taken as a minor form of acardiacus, as at first sight it appeared to be, nor can it be shown that the surviving twin brought about the deformity of the other by interfering with its nutrition. Nevertheless, there is ground for believing that the presence of a twin in the uterus was a factor in the causation of the malformation.

The chief value of the present case lies in the evidence which it offers in favour of the truth of Ahlfeld's theory as to the origin of gastroschisis. According to this theory, defective closure of the abdominal walls is due to the resistance of the vitelline duct retaining the bowel outside the body cavity, and so preventing the closing-in of the parietes.

Up till the beginning of the third month of development the vitelline duct (stalk of the yolk sac) remains attached to the ileum, and holds a loop of it within the root of the umbilical cord. It ought then to rupture, and allow the bowel to slip back into the abdomen. If it does not, umbilical hernia results. But for the grosser forms of hernia in this region something more is required. This, according to Ahlfeld, is supplied by the rapid accumulation of the amniotic fluid. Normally, the growth of the amnion tends to press the yolk sac gradually away from the body of the embryo; but if the amniotic fluid accumulates rapidly, and the stalk of the yolk sac is very resistant, the outward thrust may cause the whole of the viscera to be dragged out of the abdomen. Ahlfeld has demonstrated the persistence and large size of the vitelline duct in some cases of this kind.

Among the many inflammatory bands seen in the abdomen of this foetus there was one which attracted attention by its thickness and greater regularity of form. It ran from the mesenteric attachment of the ileum to the front wall of the hernia. Sections were made of it, and these were seen to contain two vessels and a spot of deeper staining. There could be no doubt that the structure consisted of the vitelline veins and obliterated vitelline duct, and its presence was so much confirmation of the truth of Ahlfeld's theory. But there was a difficulty about applying the theory without modification to the explanation of the abdominal hernia in this instance.

The band in question was, at least, 2 inches in length. It permitted the free movement of the bowel, and did not hold it at the summit of the hernia as one would have expected it to do had it been the source of traction. Nor did it appear likely
that it had acted in another way suggested by the same author, namely, by displacing forwards the allantois, and so preventing the complete closure of the body. There was, in short, only its large size in favour of its being the offending agent. On the other hand, there were certain points which indicated that the allantois had been subjected to traction. These were the upward displacement of the cloacal sac, and the great lengthening of the proctodeum. The abnormal course of the umbilical (allantoic) vein through the liver is also explicable on the supposition that it had been drawn forwards by the allantois, over which it ran, so that the

Fig. 3.

Diagram showing unequal development of homologous twins. A—Vacant space in the chorion into which the smaller embryo retreats before the pressure from the amnion of the larger one, causing traction on its allantois.

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liver substance formed for the most part behind it instead of in front of it, as it should have done. It remains to consider in what way traction on the allantois could have been brought about.

The forcing of the yolk sac away from the body by the growing amnion is made possible by the firm consistence and globular form of the sac; but the allantois naturally lengthens as the amnion grows; and it is, besides, soft, compressible, and elongated in form. In order to bring about the required result, the distance between two fixed points, the attachment of the allantois to the gut, and its attachment to the chorion, must be increased more rapidly than the ordinary rate of growth. For this to be effected by the amnion the amniotic fluid must be under greater pressure in front of the embryo than behind it, and that will be possible only when the amnion is adherent all round the embryo. The presence of a more rapidly developing homologous twin, however, supplies the necessary conditions without such large assumptions. The two embryos being attached close together, the amnion of the more vigorous one, spreading with greater rapidity over the inner surface of the chorion, will thrust the smaller one away from its point of attachment, it will at least exercise pressure upon it, and to escape this pressure the smaller embryo will tend to retreat into the vacant space left in the chorion, that is, away from its attachment, whereby its allantois will be dragged upon. The diagram (Fig. 3, p. 241) is intended to illustrate the supposed conditions.

III.—THREE CASES ILLUSTRATING THE INFLUENCE OF DISEASE OF THE OVARY ON THE COLON.

By Dr. T. K. Dalziel.

The group of cases which I bring before the Society to-night is of much interest, as possibly shedding some light on the etiology of one of the most troublesome affections of the nerves—colitis. For some years, the subject generally and its possible relief by surgical interference has been under my consideration, and, after a number of successful cases of short circuiting in tubercular and ulcerative forms of colitis, it became a matter of great interest as to whether relief might not be given in that type of the disease recognised as a neurosis, and which is usually, if not invariably, met with in females of so-called nervous temperament. The fact that in many cases little or no pathological change had been found post-mortem,
did not deter me from deciding to at least perform an exploratory incision, with the view of determining whether there might not be some organic mischief giving rise to this neurosis.

**Case I.**—Miss C., aged 40, I had seen some years before with Dr. Stark, suffering at that time from violent attacks of diarrhoea, rectal pain, and tenesmus. He had recognised the fact that the left ovary was diseased, and had recommended its removal. The patient, however, was averse to any operative interference. She was subsequently sent to me by Dr. Boyd, of Largs, into whose care she had passed about nine months ago, as she was suffering from marked symptoms of colitis, with occasional discharges of considerable quantities of membrane. In the Nursing Home, the observations of the nurses amply confirmed the amount of her sufferings, which were evidently so great at times as to cause anxiety. Associated with this colitis, there was also marked circulatory disturbance, the heart being very weak, and the pulse at times registering 120 per minute. Her symptoms were not materially intensified during menstruation. With the hope that by an anastomosis we might be able to allow the region of colonic trouble to be at rest, or that some adhesions causing irritation might be relieved, I advised operation. The colon, however, was found on examination to be normal. Only the left ovary was found to be the seat of cystic degeneration, with interstitial inflammatory changes, and it was accordingly removed, a proceeding which, it is to be noted, my colleague had advised some considerable time before.

**Case II.**—Miss H., aged 37, presented the symptoms of nervous colitis to a most exaggerated degree, and first came under my observation three years ago, the diarrhoea being very persistent—often ten or twelve times in the twenty-four hours—accompanied by attacks of faintness, and a most unusually rapid pulse. This condition varied from time to time, but did not seem amenable to any ordinary medicinal treatment; careful dieting, sedative drugs, and absolute rest only helping matters without giving any indication of establishing a cure. She had well-marked tenderness along the ascending and transverse colon, and to a less degree in the sigmoid flexure. In the hope that the irritation of the colon might be due to disorder in the appendix, that organ was removed by another surgeon, but without apparent relief. Eight months ago she again came under my care, and was then
confined to bed with persistent diarrhoea. She had attacks almost simulating catalepsy, lying unconscious for two or three days at a time, the pulse being generally over 120 per minute, while the temperature was abnormal. Little or no food could be taken, the digestive powers seeming to be almost in abeyance. There was marked swelling of the abdomen, from flatulent distension of the colon, and also the intestines. Some tenderness was complained of in the ovarian regions. Under these circumstances, I advised a laparotomy, when it was found that both ovaries were diseased, resembling in consistency and size a moderately large flabby oyster. There was no evidence of ovulation, and the possibility of their removal having previously been explained to the patient, both were excised. Some slight adhesions were found round the caput and the ascending colon, but not such as would account for the symptoms, and were evidently due to the slight irritation attending the removal of the appendix.

Case III.—Miss N., aged 21, seen by me in consultation with Dr. Cullen, had suffered from persistent constipation, apparently due to paralysis of the colon. The constipation was very extreme, and huge quantities of purgative medicines failed to give relief. She suffered from a slight degree of retroflexion of the uterus, and the left ovary could be felt distinctly enlarged. She had been a confirmed invalid for three years, unable to think or read, or take any intelligent interest in things around her. In view of the conditions found in the pelvis, and the apparent hopelessness of the case, I again advised an exploratory incision, found the colon flaccid and distended, replaced the uterus by ventral fixation, and removed the diseased ovary, which, as in the previous cases, presented marked evidences of cellular proliferation throughout the stroma.

The results of the operations in these three cases was that in Case I there has since been practically no further trouble with diarrhoea, and only very mild attacks of colonic pain. The patient, however, is still of a highly nervous temperament, suffering from headaches and feeble digestion.

In Case II, immediately after the operation, the pulse-rate commenced to fall, and within forty-eight hours was down to 80 per minute. There has not been since the operation any return of the colitis whatever, and the patient is able to take a mixed diet with good appetite. The most extraordinary feature of all, however, is the complete change in
her intellectual condition. Naturally a woman of strong commonsense and mental ability, she seemed at once to regain her balance, and, with the exception that she still suffers from considerable weakness—the result of her long illness—there seems little reason to fear but that she will be restored to life a useful member of society.

Case III, which, of course, is entirely different in its features from these two cases of colitis, recovered the power of the colon within a few days after operation, so that a small quantity of simple laxative was all that was required to evacuate the bowel. The mental condition also steadily improved, until now (three months after the operation) she is, as she herself puts it, practically quite well.

I venture to bring these cases before the Society as at least tending to throw some light on a possible cause of nervous colitis, and also because they suggest the propriety in many cases of carefully inquiring into the possible existence of some poison-producing diseased structure in cases of so-called neurosis. That the ovary is often at fault I have little doubt, and, while each case must be carefully considered on its merits, I venture to think that, where life has become a burden to the patient and her friends, the sacrifice of these organs, especially when in a diseased condition, may be amply rewarded by the restoration of the individual to health.

Dr. Samuel Sloan said he was a little puzzled to know if the ovary had anything to do with these cases. He had seen great benefit from the use of large enemata of vinegar and water. He asked if Dr. Dalziel had ever done laparotomy for a membranous colitis, and yet benefit had resulted although nothing further had been done.

Dr. Dalziel, in replying, said he could not answer Dr. Sloan’s question, as these were the only cases where he had opened the abdomen. He again drew attention to Case I, where only one ovary had been removed, and the patient was still neurotic. The other two cases had both ovaries removed, and were now not at all neurotic.

IV.—ON DIGITAL EXAMINATION OF THE ENDOMETRIUM.

BY DR. ALEX. MACLENNAN.

The two cases here reported are selected from a number which were examined in a similar manner. Indeed, digital examination of the endometrium is carried out as a routine in almost every case previous to curettage.
CASE I.—Miss F., was seen in the Training Home for Nurses in March of this year. She complained of dysmenorrhea, menorrhagia, general pelvic symptoms, &c., of many years' duration.

On physical examination, the uterus was found to be prolapsed, retroverted and enlarged, especially in the fundal region. The cervix was soft, with the os patulous and apparently dilatable. It was therefore decided to elevate the uterus, and to examine the endometrium with the finger; and, if the condition warranted, to curette. On account of the condition of the cervix, it was thought that a rapid dilatation could be carried out without rupture of the cervix. Under chloroform it was found that the fundus was movable, and that the adnexa were normal. The peculiar shape of the fundus made it seem possible that a myoma existed in the right and anterior aspect of it. The sound passed 3½ inches. Dilatation was carried out with Hegar's dilators up to No. 24, with extreme ease.

On the insertion of the finger, the reason of the easy dilatation became apparent, for a deep and extensive laceration of the cervix had occurred. The tear passed through the internal os, and extended from the external os upwards and through the left antero-lateral quadrant of the cervix.

The endometrium was found normal, but there was a myoma about the size of a walnut situated in the anterior wall of the uterus towards the right cornu. The curette removed practically nothing, and it was evident that the menorrhagia was due to the presence of the myoma, and exaggerated by the abnormal position of the uterus. The uterus was placed in an antevverted position, and the cavity packed with picric gauze. There was little hæmorrhage. The further course of events was uneventful.

CASE II.—Mrs. K., ii-para, was seen in April last. Menstruation had begun fourteen days before, and had lasted till I saw her. There had been no previous irregularity. Pain had not been present at all. The last confinement was normal, though the lochia remained red for a considerable period.

On examination, the vagina was found full of clot, and the os was open a little. The uterus was retroverted and enlarged. As there had been no pain, abortion was excluded tentatively. A dilated tube was carefully searched for, but the adnexa were normal. It was then decided to dilate the cervix, to examine the endometrium with the finger, and to curette if that were thought advisable. The sound passed a little over
3½ inches. The fundus was easily put into a normal position. On account of the severity of the haemorrhage, it was decided to treat at once. The patient was put under chloroform, and the usual cleansing of the vagina carried out. Dilatation was performed up to No. 24, and, in this case also, an extensive rupture of the cervix was found present when the finger was inserted. The endometrium felt normal, though soft. Curettage was carried out, and a relatively large amount of tissue was removed, especially from the anterior wall, where it felt softish to the instrument. One piece, about the size of a small split haricot bean, looked suspiciously cellular. Haemorrhage was very profuse. The uterus was put into a normal position, and its cavity stuffed with boric gauze, as was also the vagina. The packing was removed the next day. Further progress was uneventful. The microscopic appearances of the questionable tissue were peculiar, but Dr. Ferguson, who kindly examined it, considered them to be due entirely to an endometritis. The diagnosis was therefore one of subinvolution.

In the first case, the examination revealed a gross abnormality; in the second, the curette apparently did.

1. Indications for such treatment.—Is such dilatation invariably necessary before curettage? There are certain cases where this is not required, but these form the minority. Of course this also depends on what are considered conditions for curettage. The chief indication for digital examination of the endometrium is haemorrhage, either at the period, between times, or after the menopause.

Such a dilatation of the cervix magnifies the operation of curettage; but, if carried out with the proper precautions, the risks are very few indeed. Perhaps, to put the indications for its performance thus would be correct:—In all cases where it is expected that the curette is necessary, then a digital examination of the endometrium will be advisable in order to ascertain what amount of tissue there is to remove. It will occur to everyone that there are cases which will not therefore need to be so examined, but which will nevertheless require to be curetted. It may be stated that the curette will indicate how much tissue there is to remove, and that any tissue so removed can be microscopically examined. It is true that in the majority of malignant cases the curette will reveal the condition, but it does not do so in all. Again, the tissue which is selected for section may not be the proper piece, and the sections examined may not contain the disease, while
there are occasions where the microscopic examination is misleading. The curette may fail altogether to remove a small polypus. After curettage, if the uterus has for any reason to be split, it is surprising to find how much tissue intended to be removed has not been. In a case lately explored a condition existed which, had the endometrium not been digitally examined, would have been entirely missed. A sessile fold of mucous membrane was found attached to the fundus, and its removal necessitated the use of forceps. The microscopic structure of a sample of the tissue removed represented that of a glandular hypertrophic endometritis. Polypi of a more muscular or fibrous structure will escape notice even more readily. It is a notable fact that even comparatively large tumours can be overlooked during an ordinary bimanual examination.

Dysmenorrhoea, from whatever cause, requires to be considered in this connection. That dilatation of some sort is indicated in the treatment of this condition will be generally admitted; but that it indicates such a serious dilatation as to enable the finger to be inserted, will be questioned. I think that a perfunctory dilatation, even though it has been lately to some extent championed by Herman,¹ seldom cures dysmenorrhoea. Though pregnancy does not infallibly remove this pain, still the greatest number of cures follows it; and, during pregnancy and delivery, the entire uterus is very thoroughly dilated. If, then, the extensive dilatation required to admit the finger into the uterus can be carried out without great risk, it ought to be done, for not only does it ensure a thorough dilatation, but it permits the diagnosis of certain etiological features—notably, small submucous myomata which are situated in the lower uterine segment.

It is unnecessary to allude to dilatation of the cervix as a step to further treatment, but this is a most important point. Intra-uterine medicaments can be thoroughly applied; polypi, submucous or intramural tumours removed, &c., &c.

2. Contraindications.—By a careful examination before dilatation, extra-uterine pregnancy, salpingitis, perimetritis, cellulitis, &c., should be definitely excluded.

3. Technique.—That described by Falk,² which is the routine method in Schultze's clinique at Jena, is so detailed that I may be allowed to describe it in extenso.

"The pubes is shaved. The vagina is thoroughly douched with 1 per cent lysol solution. All instruments to be employed are boiled for fifteen minutes in soda solution. The vaginal mucous membrane is finally swabbed with gauze and 1 in 1,000 corrosive solution. A detailed vaginal examination, including sounding of the uterus, having been made, the cervix is caught with tenaculum forceps. With conical graduated bougies, the full capacity of the cervical canal is ascertained. The tenaculum is removed, and, if no haemorrhage follow, the patient is returned to bed. The temperature is taken every three hours to see how the endometrium reacts in relationship to the parametrium. Should haemorrhage ensue, the vagina is plugged, and the patient allowed to rest for twenty-four hours. If during the next twenty-four hours, there be neither haemorrhage nor pain, the further manipulation is proceeded with. The douching, &c., is repeated, and, with the patient in the genupectoral position, the first laminaria tent is introduced without touching either the external genitals or the vaginal walls. These tents are prepared as follows:—(1) A superficial layer is removed by scraping with glass; (2) they are boiled for two minutes; (3) they are next placed in a solution composed of 95 per cent carbolic acid and 5 per cent alcohol; (4) from this fluid the tents are removed when required, placed in boiling water till flexible, and then boiled for two minutes; (5) in sterilised gauze, the selected tent is bent to the required angle, placed in cold 1 in 1,000 corrosive solution, and is then ready for insertion into the cervical canal. After the insertion of the tent, the patient is kept quietly in bed. The temperature is taken every three hours, and, if it rise one degree, the vaginal tampon and the tent are removed, and the vagina and the uterus are douchèd. The pain from the swelling of the tent is usually borne without complaint. The tent is removed in twenty-four hours, and the vagina and uterus douchèd. The cervix is caught with forceps, and a few bougies passed as at first, then the second tent is inserted. It may be necessary to employ a third tent, in order to get a sound having a thickness of 16 mm. to pass easily through the canal. When this has been performed the patient is left overnight, and next morning is anaesthetised. The abdomen and genitals are carefully cleansed and covered with a sterilised towel having a slit opposite the vulva. The uterus is douchèd, and the examination proceeded with. Treatment succeeds diagnosis. The cavity is well douchèd, and medicaments applied. Polypi are removed—mucous as well as myomatous. Intramural myomata may require incision of the uterine wall.
Curettage may be performed. If hemorrhage be at all severe, the cavity of the uterus is packed with gauze for forty-eight hours."

This technique is, perhaps, a little too interfering, and is unnecessarily prolonged. It cannot be a good plan to block the cervical canal for three days where hemorrhage is present, and it is on account of this very symptom that such a degree of dilatation is especially necessary. Then, again, such a prolonged application of antiseptics to the vaginal mucous membrane, especially lysol, will be badly borne, at least, by private patients. The technique which I have employed is much simpler. A thorough cleansing of the vagina with soap and 1 in 100 carbolic solution is carried out. A vaginal douche of 1 in 100 carbolate of potash is employed twice daily for a few days previously where the case permits of such delay. The cervix is then dilated sufficiently to allow of the introduction of a tightly fitting tent, usually having a diameter of 8 to 10 mm. Before inserting the tent, the cavity of the uterus is well douched. After introducing the tent, the vagina is packed with gauze, and a quarter of a grain of morphia suppository placed in the rectum. In from sixteen to twenty-four hours, the packing and the tent are removed, the vagina and uterus douched, and the patient anaesthetised. Further dilatation with Hegar's dilators is performed if necessary. The examination with the finger is then proceeded with, and the free hand steadies and pushes down the fundus over the finger entering it through the cervix. The object of employing a tent is to avoid laceration of the cervix, which invariably takes place when rapid dilatation is employed. This occurrence complicates the operation considerably, and should be avoided. In the case of incomplete abortion, it may not be necessary to resort to the use of a tent at all. The great disadvantage of the tent is the pain which, in my experience, accompanies the stretching of the cervix. With the aid of the morphia suppository, however, it can be tolerated. The tents which I employ are prepared, after the manner of von Bergmann's catgut, with corrosive sublimate, and are kept in alcohol and glycerine.

Dr. Munro Kerr said that the main question to decide was —When is it necessary to explore the uterus? He considered it advisable when bleeding was the chief symptom.

Dr. Samuel Sloan thought that Dr. MacLennan's description of the method of dilatation savoured too much of undue interference, and asked what was meant by rapid dilatation.
Dr. G. Balfour Marshall said that he considered such indiscriminate dilatation of the uterus was not justifiable. It was sufficient in the majority of cases to dilate to No. 10 or 12 Hegar, which permitted of thorough removal of tissue. There might be a few cases where a small polypus would thus be overlooked, but a return of the symptoms would point this out, and a second operation would do no harm. In cases of dysmenorrhœa, dilatation up to even No. 10 Hegar was frequently extremely difficult, and to attempt to go further would simply result in extensive laceration, which would be harmful.

Dr. A. W. Russell said that much could be urged in favour of Dr. MacLennan’s contention for digital palpation of the endometrium, and he considered it to be absolutely necessary in cases of abortion and septic mischief in the puerperium. These were fortunately the cases in which dilatation, sufficient to admit the finger comfortably, was comparatively easy. Difficulty arose, however, when we came to deal with ordinary cases of narrow, elongated cervix with dense tissue, which could not be easily stretched to any extent by any of the usual means without tearing, however careful and patient the operator might be. There had certainly been cases of this kind, where he had wished that he could have palpated and even seen the endometrium; but he was sure that the educated hand, even through the medium of a probe or sound and the curette itself, could usually judge accurately of the condition of the uterine interior. Dr. Russell also considered that there was much greater risk of sepsis by the general adoption of this method, as the extreme precautions described by Dr. MacLennan were not likely to be always observed in practice. For these reasons he did not think that it would be possible or safe to give this method a wider application than it had already obtained.

Dr. MacLennan replied, and said, in answer to Dr. Sloan, that rapid dilatation took about half an hour in both of the cases. In every case dilated up to near No. 24 Hegar he had found that laceration took place, but it did not necessarily cause bleeding, and the condition was only found when the finger entered the cervix. In reply to Dr. Balfour Marshall, he said that he did not mean to infer that every case of dysmenorrhœa required this procedure, but that most were the better of it; while, if carefully carried out, it did not necessitate a worse prognosis.
V.—NOTE ON TWO INTESTINAL FOREIGN BODIES—(A) INTESTINAL CONCRETIONS FROM A CASE THAT SIMULATED MALIGNANT DISEASE OF THE BOWEL; (B) A PIECE OF LINT LEFT IN THE ABDOMINAL CAVITY AT AN OPERATION, AND REMOVED LATER BY A SECOND OPERATION AFTER IT HAD FOUND ITS WAY INTO THE SMALL INTESTINE.

By Dr. A. W. Russell.

A. Intestinal concretions, calculi, or enteroliths are frequently reported. The three concretions which I show to-night are evidently "oatstones," or avenoliths, and are chiefly interesting because they were mistaken for malignant growths, and the opinion was even given by a surgeon, after examination under chloroform, that the condition was too far advanced for operation. About six months ago, and several weeks after her examination under chloroform, these concretions, which are almost cubical in shape, and measure from 1 to 1½ inch across, were, after some days of very severe pain, passed per rectum. Although one or two can still be felt through the abdominal wall, the severe attacks of pain and diarrhoea from which she had suffered and lost health for many months disappeared, and she now enjoys better health than she has had for years, and is again able for ordinary household duties.

B. This piece of lint, gathered up into the shape and about the size of a hen's egg, as you see it, was removed by abdominal section some time ago from the small intestine of a woman upon whom I had five months previously operated for the relief of persistent and severe dysmenorrhoea, which had defied other means of treatment. During the operation—which was the usual one of double oophorectomy—a lint guard was placed over the bowel inside the wound until complete anaesthesia was obtained. This was necessary, as the abdominal wall was exceptionally thick, while the left ovary lay unusually deep, and the difficulty in getting it up was increased temporarily by imperfect anaesthesia. During the subsequent stages we all had in mind the fact of using the lint, and were certain it had not been left in the abdomen. The patient made an uninterrupted recovery, and a fortnight afterwards had been measured for the usual abdominal belt, when she began to feel some pain in the left side, and in the course of a few days the leg began to swell. This swelling increased, and extended to the right leg in less degree, so we
came to the conclusion that thrombosis had occurred. The swelling gradually subsided, and the patient being considered convalescent, was able to go to the coast two months after the operation. She was subject, however, to acute attacks of cramp-like pains in the abdomen, and the swelling of the legs, especially the left, never quite disappeared, and was readily aggravated so that much exercise was not possible. After seeing her several times I decided that something required to be done to relieve her of pain, as I believed the intense intestinal spasm was due to adhesions. The abdomen was again opened, Dr. Dalziel kindly co-operating with me. Adhesions of omentum to abdominal wall and to the intestines were separated, when spasmodic contraction was observed at one part of the small intestine, and immediately above it a small mass which slightly distended the bowel. An incision was made, with the usual precautions, and the piece of lint which I have shown was removed.

The patient made a good recovery, and her health was gradually restored. The pelvic pain for which the original operation was performed never returned.
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