England, can boast of magnificent results; and already it is an accepted operation in properly selected cases. Péan's peculiar method of operating is by removing portions of the tumour, *morcellement* (as he terms it), till it is small enough to be easily turned out of the abdominal cavity. He then makes a pedicle of the cervix, and secures it in the lower angle of the abdominal incision, as we formerly did with the pedicle in ovariectomy.

The late Dr. Wright of Cincinnati, the most successful operator in our country, tied the broad ligaments separately, amputated the uterus, then scooped out the cervix funnel-shaped, and brought together the opposing surfaces antero-posteriorly, united them by suture, and dropped the stump back into the peritoneal cavity, and closed the wound. Thus the amputated cervix was covered over with peritoneum, which protected the viscera against the dangers of adhesion to a raw cut surface.

Schröder of Berlin does the same, not knowing he had been preceded by our countryman, Dr. Wright.

And now comes Zwann of Holland (International Medical Congress), who greatly modifies Péan's method of operation. He makes the abdominal incision large enough to draw the tumour out of the cavity at once. After this, he then rapidly introduces three or four temporary sutures, closing the incision sufficiently to prevent the prolapse of the intestines. He next encircles the pedicle with a strong elastic cord, on the principle of Esmarch's bloodless method. He then amputates the tumour just above the cord, and finishes the operation, as Péan does, by transfixing the pedicle antero-posteriorly, securing the ligatures one on each side, and bringing it out at the lower angle of the wound and fixing it there. After this, the abdominal incision is neatly brought together by sutures. The advantages claimed by Zwann are: 1. Facility of operating; 2. Protection of abdominal organs against sudden chill; 3. Prevention of prolapse of intestines; 4. Bloodlessness of operation.

One of the most important advances in peritoneal surgery in connection with bleeding uterine fibroids is Battey's operation to bring about the menopause. It is likely to be substituted entirely for the more formidable operation of extirpation. It is less dangerous; it promptly arrests the bleeding. The fibroid growth begins immediately to decrease, and in some instances it has wholly disappeared.

Freund's operation of extirpating a cancerous uterus by abdomino-vaginal section has not fulfilled the expectations of its author.

Spencer Wells has recently performed successfully a Freund-Porro operation, extirpating a pregnant uterus at the sixth month, in which the cervix was cancerous (BRITISH MEDICAL JOURNAL, October 29th, 1881).

Bantock has also lately extirpated with success a cancerous uterus by Freund's method. These gentlemen have greatly simplified the operation (*ib.*, November 12th, 1881).

Half a century ago, or more, Blundell suggested the removal of the cancerous uterus by the vagina, and performed the operation. The Blundell vaginal operation has recently been performed successfully by Professor Beverly Cole of San Francisco. He separated the cervix uteri from its attachments with a Paquelin cautery, pulled down the uterus, secured the broad ligaments, and removed the uterus by a comparatively bloodless operation.

Dr. Lane of San Francisco, late Professor of Surgery in the University of the Pacific, has performed this operation successfully. So has Dr. Clinton Cushing of San Francisco. Thus we see Blundell's operation for extirpating the uterus through the vagina has so far been monopolised by the surgeons of San Francisco.

Extirpation of the spleen cannot be claimed as an offshoot of ovariectomy. According to statistics worked up by the late Dr. Otis of the Army Medical Museum, Washington (*Medical and Surgical History of the War*, etc., part second, surgical volume, page 152), the spleen has been extirpated between 1549 and 1849, sixteen times with but one death; and, between 1849 and 1869, ten times with five deaths. The deaths were from hæmorrhage, immediate or secondary.

Splenectomy has lately been done by Péan, Spencer Wells, Martin (of Berlin), and others. I assisted at Spencer Wells's last operation. The patient died of secondary hæmorrhage. The spleen weighed ten pounds, and there were three pounds of blood in the peritoneal cavity. In this operation, it is important to tie the pedicle in segments, to guard against the possible slipping of the ligature.

Extirpation of the kidney by the lumbar region has been often done successfully. Martin (of Berlin) has removed the kidney six times by abdominal section, with four recoveries. The operation has been done by others.

[To be continued.]

MEDICAL MAGISTRATE.—Dr. Leeper has been appointed a justice of the peace for Fermanagh County.

OBSERVATIONS

ON

EXCISION OF THE KNEE IN EARLY LIFE.

By WILLIAM STOKES, M.D.,

Professor of Surgery, Royal College of Surgeons, Ireland.

IN a contribution to Operative Surgery, published by me in the *Dublin Medical Journal* some years ago, in which special attention was directed to the operation of resection of the knee-joint, I mentioned that the procedure was one which all reflecting surgeons must admit to be still *sub judice*. The statistics of this operation then quoted went far to justify this remark; so unfavourable were they, that some surgeons of ability and experience went so far as to advocate an abandonment of the operation altogether. Though there are few, if any, who would go so far as this in the direction of complete abandonment, yet still surgical opinion is in a curiously unsettled condition in reference to the merits of the procedure. In illustration of this, I may mention the opinion of one or two authorities of eminence who have recently written ably on this subject. Mr. Holmes maintains that "excision of the knee is one of the indispensable resources of surgery, and is useful in all three classes of cases—viz., in those where otherwise amputation would be indicated; in those where expectant treatment might succeed, but is dubious; and in cases of vicious ankylosis". Mr. C. Macnamara, on the other hand, is of opinion that "excision of the knee will year by year become less frequent in our hospitals". Mr. Mac Cormac has stated truly that there is no operation "about which controversy has more hotly raged". In Germany, also, the same wide difference of opinion in reference to the merits of resection is observed. Recently, Koenig, of Göttingen, has stated, at the congress of German surgeons in Berlin, in a communication on Early Excision in Tuberculous Disease of the Joints, that it was only when the general condition of the patient was seriously implicated, or when there was any danger of the occurrence of this, that resection should be done. I am glad, however, to observe that a doctrine so questionable did not meet with general acceptance; Dr. Hüter in particular, a surgeon of well-deserved repute, attaching a much higher value to the functional results of resection in such cases than the author of the paper did.*

These opposite views, I think, fairly represent the existing state of surgical opinion on this important topic. I cannot think, with Mr. Holmes, that the operation should ever be regarded in the light of a substitute for amputation, as the indications for the latter should never be those for the former. In other words, if the injury or disease be of such a nature as to indicate amputation, resection should hardly be contemplated. As regards, however, the question of adopting the operation as a substitute for any less formidable method of procedure, including expectant treatment, the comparative merits of these can, I think, fairly be contrasted. Doubtless, if cases in which ultimately resection may be indicated are obtained at a sufficiently early stage of the development of the disease, and expectant treatment can be efficiently carried out, a limb as useful, and an ankylosis as firm, may at times possibly be obtained in after-resection. The unfrequency of the operation among the wealthier classes must, to a great extent, be attributed to the fact that, in dealing with them, the joint-disease comes under observation at an early stage of its development, and so much more facility in carrying out expectant treatment exists; though I have no doubt that even among them many a limb has been sacrificed to a too exclusive reliance on a surgical inactivity which at times is the reverse of mastery. Among the poorer classes there are several reasons why expectancy, if I may use such a term, is impossible, or almost so. Among them may be mentioned the difficulty of keeping patients a sufficient length of time in hospital; the want of confidence that is observed among the poorer classes of patients in any course or plan of treatment, the effects of which are not soon apparent or tangible; and, lastly, that surgical advice is, as a rule, seldom sought for until the disease, whether it be in the bone or in the soft structures, is firmly established in the joint. In truth, we do not, as a rule, see the case until the line is passed that separates the stage where absolute rest, brought about by fixing the limb with gypsum, silicate of potash, starch or paraffin bandages, leather or poroplastic splints, or some other of the many recently introduced methods, all of more or less efficiency, combined with generous diet and general antisthmous treatment, may be of service in bringing about a cure. In fact, in the vast majority of cases we find the disease, not in an incipient stage, but having already taken

* *London Medical Record*, June 15th, 1881.

a firm and secure grip on the joint. What is the usual history of such cases? The mother observes that her child limps, and that there is a little "swelling" on the inside of one of the knees. At first she thinks there is nothing serious in it, there being "no delicacy in her family". After two or three weeks a neighbour probably is spoken to about it, who perhaps recommends a bread-and-water poultice, and comforts the mother by assuring her that the child will "grow out of it"—an opinion, I am sorry to say, which I have known on more than one occasion to be endorsed by medical opinion. Another neighbour recommends linseed-meal, while a third has heard that "sea-wrack" poultices are certain to succeed. Thus precious time is lost, and, after six or eight weeks of this ever-varying and useless treatment, the mother, finding the child growing worse, brings her to the district dispensary. Here the medical officer probably recommends rest, cod-liver oil, iodide of iron, blisters, or iodine, etc. But, in the present constitution of our Poor-law system, no means exist for efficiently carrying out any such line of treatment; and, if they did exist, it is very doubtful if they would be availed of by the classes that seek for dispensary relief. The child, becoming steadily worse, is finally brought to one of our metropolitan hospitals; and if Mr. A., the surgeon, who properly diagnoses gelatinous pulpy thickening of the synovial membrane, with probably ulceration of cartilage and condylar osteitis, be a believer in, and advocate of, the so-called expectant treatment, what then probably takes place? The child is admitted, and leather or poroplastic splints are carefully fitted, or a gypsum or starched bandage, or some other mode of rigidly fixing the limb, is applied. Moderate extension, perhaps, is also advised, and the usual antistrumous remedies are given internally. Things go on fairly well for perhaps two or three months, and then the patient's friends begin to be dissatisfied that the child is not yet up and about, and one of them has heard that Mr. B., another metropolitan surgeon, has frequently cured much worse cases in a fortnight. At once the idea seizes hold of the mother that she has made a mistake in taking her child to Mr. A., and the patient is soon transferred to another surgeon and another hospital. In this way one method of treatment after another is tried, and found to be ineffectual; the case goes on from bad to worse, until ultimately the last resource of amputation is arrived at. This account is no exaggerated and varnished tale, but a plain and truthful statement of what I have learned from my own experience to occur in a large proportion of cases that have come under my observation.

The condition which, in my experience, constitutes the majority of cases that lead eventually to the necessity for knee-resection in early life, is that to which the terms granular, gelatinous, or pulpy thickening of the synovial membrane, have been respectively applied. This condition, as a rule, is a sequela of either an injury or a low form of inflammation, one which comes on without any assignable cause, and is the visible sign or outcome of that to which, for want of a better term, we designate a strumous, scrofulous, or tuberculous diathesis. It was this disease that the older surgical writers looked upon—and, I think, with much reason—as incurable. Cases—which, however, are few and far between—have been recorded by Brodie and others in which recovery has been alleged to have taken place under the combined use of rest, pressure, and general "expectant" treatment. I think it doubtful, however, that such cases were true examples of the strumous form of pulpy degeneration, but that they were probably those in which the change in the serous membrane occurred as the result of acute or chronic traumatic synovial inflammation. I have had unusually large opportunities of studying the strumous form of this disease among the ill-clad and ill-nourished poor that seek relief at the hospital to which I am attached; and my conviction and belief is that this form of synovial degeneration, once fairly established, is not amenable to any form of expectant treatment, but is, in fact, the first act of a drama, the tragical termination of which is, as a rule, destruction of the joint.

When, in the essentially strumous form of the disease, the morbid action has advanced much beyond the synovial limit, and extensively engaged the other soft structures of the joint, and caries perhaps is also present, then the chances of success after resection, especially if the patient be anæmic and badly nourished, are largely diminished. The wound may heal without suppuration (thanks mainly to antiseptic after-treatment), the patient may leave the hospital, and the case be looked upon as a successful result; yet I have seen instances in which, eight, ten, or twelve months after the operation, there was distinct evidence of a return of the carious disease, indicated by abscess-formations and sinuses leading down to softened denuded bone—a condition which soon indicates amputation. This course of events I have not witnessed when the operation was undertaken at an early stage of the development of the disease.

The question was recently the subject of an interesting discussion at the Berlin Congress, as to whether there is evidence of articular tuberculous disease being either a primary or secondary phenomenon, the

outcome of a dyscrasia; in other words, whether tuberculosis, more particularly as regards its articular manifestations, is primarily local, but, as shown by Klebs, transmissible, and capable of producing, like cancer or syphilis, a general infection, is still a mooted and much-debated point. The latter view I am disposed to accept, and do so mainly from a clinical standpoint. The practical bearing and importance of determining the truth of this contention is obvious; for, assuming that the localisation theory be correct, then there is little that can be said against the early-resection aspect of the question, and removal of the joint before there is time for any of the secondary phenomena to develop themselves, is perhaps, even among the classes in which expectant treatment can be efficiently carried out, the best course that can be adopted for the patient.

Opponents to this operation, performed for the removal of the strumous form of gelatinous pulpy thickening, hold the opinion that the treatment by incision, injection, and drainage, fulfils all the requirements of resection, and is devoid of its risks. From this view I feel bound to express my unqualified dissent. The constitutional risks of a suppurative inflammation of the knee-joint, or of any large articulation, are only too well known to every practical surgeon to require proof to be given on my part; and, assuming that the patient resists the dangers attending this procedure, is his condition a better one than it would have been had a resection been performed? I think not. The object in both cases is to get a firm viscous or fibrous ankylosis; but what has the patient to go through before this is obtained, after the treatment by incision and injection? All the immediate and remote dangers of protracted suppuration; then necrosis and separation of the articular cartilages; and, lastly, the very protracted process of gradual fixation or ankylosis—circumstances that cannot be regarded as trivial in dealing with the class of patients whose cases suggest the adoption of such treatment, and who are, as a rule, delicate, ill-nourished, anæmic, and debilitated by previous long confinement and protracted suffering.

In addition to the alleged risks of the operation, it has been stated as an objection, that the limb after excision is always more or less atrophied, short, and often deformed. This view does not coincide with my experience or with that of my colleagues. I have quite recently had an opportunity of seeing three children on whom I performed resection, and in two of them there was hardly any perceptible shortening, and in none of them was there any atrophy or deformity. I believe the explanation of this to be that, the cases having been operated on at an early stage of the development of the disease, only a very thin slice of the articular ends of the bones was removed, and the osteogenetic function of the epiphyses, therefore, practically-uninterfered with. In none of these three cases, nor in any of the examples that have suggested these remarks, have I seen either atrophy or deformity. These two latter conditions were doubtless often seen formerly, and can easily be accounted for by the essentially faulty method of after-treatment that was adopted—one not yet altogether abandoned, but adhered to by a few wilful practitioners with an obstinacy that is singular but not instructive. The continuance of a septic system of wound-dressing, and keeping the limb in a clumsy wooden box—soon a nidus for vermin and filth of every description—for months, and without any efficient means of keeping it fixed and immovable, would of themselves be sufficient, indirectly at all events, to bring about these unhappy results, the frequent occurrence of which formerly has doubtless done much to bring the operation into an ill-deserved disrepute. I have a painful but vivid recollection of the dressing of cases of excision of the knee during my pupilage, and in the early years of my hospital career. On opening the box, the limb was found in a bath of pus, the lining-pads soaked with it, and the air about the patient filled with the sickening stench that ever attends large purulent collections. Then the saturated limb, and wadding, and greasy dressings, and all the other antique paraphernalia of ignorance, prejudice, or both, were removed, to be immediately replaced by similar dressings. This process used for a long time to be of daily occurrence, one always attended with trouble and anxiety to the surgeon, with pain, physical and mental irritation to the patient, and always with disturbance to the limb, and necessary retardation to the process of union. My colleague, Dr. Corley, has informed me that he remembers a case that occurred while he was a student, in which the after-treatment—one similar to what I have above described—extended over a period of eighteen months. In truth, all the recommendations and teachings of twenty years ago are found to be faulty. Instead of an extensive H-shaped incision, we adopt a single semilunar one. For making the bone-sections, the so-called resection-saw has been superseded by a broad-bladed resection one, by which a perfectly plane surface of bone can much more easily be made. Instead of a box-splint we use a gypsum bandage of the simplest construction; and, instead of dressings of lint and grease, we avail ourselves of the phenol dressings of Lister, one of

the greatest boons to surgery that this century has produced, if not the greatest.

I have spoken of the daily dressings of these cases that were formerly necessary. What is now the case? I find that three or four dressings are, in the great majority of cases, sufficient during the healing of the wound. In one of my last cases, two dressings would have been sufficient; for, on dressing it the third time, I found, not only everything perfectly aseptic, but the wound healed, and I regretted much that I subjected the patient to an unnecessary disturbance. In truth, there is no such test-case for illustrating the value of antiseptic surgery as excision of the knee-joint. It is much more so than ovariectomy, or any of the other operations connected with abdominal surgery.

There are many circumstances which militate against immediate union being obtained after a resection of the knee. In the first place, the cases requiring so formidable an operation are, as a rule, in a condition of great physical exhaustion consequent on long confinement, and probably protracted suffering, of both mind and body. The wound that is made is of necessity large; the operation, when done with the necessary care, occupies a considerable time. Two large freshly cut bone-surfaces are made, between which union is to take place; and, lastly, there is the great difficulty of keeping, no matter what appliance be adopted, the limb absolutely at rest during the process of union. As a proof of the great difficulty of getting ready union that used to be experienced, I may mention that formerly six, eight, ten months, or even longer, elapsed before union used to take place; and consultations frequently occurred, previously to operation, as to whether the patient would have strength to endure so protracted a suppuration. Now, as a proof that matters are completely revolutionised in this respect, I may mention that, in eight out of these twelve cases of knee-joint resection, union took place without the formation of a single drop of pus. Doubtless we now know better how to produce immobility of the limb during the process of union—a factor of an importance only second to antisepticism in promoting rapid, firm, and efficient union in these cases. Any movements between the freshly divided bone-surfaces, even though unattended with pain, or any obvious inconvenience to the patient, are, in truth, of serious moment. "By displacing," as Mr. Coppinger has observed, "and wounding the newly formed tissue by which repair is accomplished, they directly interfere with the reparative process itself; while, secondly, they favour the absorption of septic material by causing ruptures of the delicate granulation-films, to which Mr. Savory has prominently alluded, and on which so much depends as a material safeguard against infection". My experience quite coincides with his, that it is impossible to exaggerate the injurious effects in some manner produced by even slight movements of the bones, or displacement of the deeper portions of the wound.

The value of perfect fixation in promoting primary union is well exemplified, as Lister has pointed out, in the operations for hare-lip and in breast-excisions. On the other hand, in operations in which it is impossible to get perfect immobility, such as excision of the hip-joint, I have never seen primary union, nor am I aware of any case in which it has been obtained.

The method of fixation of the limb adopted in the Richmond Hospital is a modification of that of Dr. P. H. Watson, and it appears to me to fulfil, as perfectly as need be, all the required conditions. I may mention that the suppuration is not applied usually until some hours after the operation, when all oozing has subsided. An antiseptic bandage having been applied to the leg first and subsequently to the thigh, two metallic splints, made of common hoop-iron, are applied on the anterior and posterior surfaces of the limb, and then are fixed, first on the leg and subsequently on the thigh, by gypsum bandages applied in the ordinary manner, care being taken to leave the portion of the limb near the situation of the wound open, so as to allow the application of antiseptic dressings without any disturbance of the limb. I consider this method of fixing the limb far superior to any others with which I am acquainted, and it has the merits of cheapness, simplicity, and thorough efficiency. An objection has been made to the use of gypsum, on the ground of its liability to become softened by the action of the spray during the dressing of the wound. If, however, ready union take place, and the wound remain aseptic, the dressings will be so few in number that no apprehension need be felt in reference to the alleged probabilities of softening. If, on the other hand, frequent dressings be required, then it is quite easy to protect the apparatus by painting over the portion of it in the neighbourhood of the wound a solution of dammar resin in ether, or, what is perhaps more available and equally efficacious, paraffin.

There is an accident that has happened in connection with two or three of my cases of resection which, when it has occurred, has at the time been a source of much anxiety to me. I allude to hæmorrhage,

not at the time of the operation, but, as a rule, some hours subsequent to it. This has, in all the cases in which it occurred, necessitated reopening the wound. The hæmorrhage in all my cases I found not to come from any vessels capable of ligation or torsion, but from the freshly divided surfaces of the bones, which, previously to and at the time of the operation, were in a very hyperæmic condition. The method I adopted for checking the bleeding was to place a pledget of lint, soaked in a solution of chloride of zinc, between the bones for some minutes. The reopening of the wound, and application of the chloride of zinc compress, was done always under spray and all other antiseptic precautions; and no subsequent trouble was experienced, nor was the asepticity of the wound interfered with. The accident, though it can scarcely be placed among the "surgical calamities"—to use an expression of Sir James Paget—is certainly one which must ever be a source of grave trouble to the surgeon, and of possible danger to the patient. For some time, I have thought that the hæmorrhage was a reactionary one, and connected with, and to a great extent depending on, the application of Esmarch's bandage. Mr. Teale of Leeds has recently informed me that the accident has occurred on more than one occasion in his hands; and so convinced is he and his colleagues that it depends largely on the use of the elastic bandage, that in resections of the knee-joint it has been altogether abandoned in the Leeds Infirmary.

From the preceding remarks, the following propositions may I think be laid down.

1. Excision of the knee should not be looked upon as a last resource, but should be undertaken, if possible, before any profound organic changes take place.
2. Expectant treatment, to be efficient, must be undertaken at an early stage of the disease, and extend over a period of at least two years.
3. No better result than ankylosis can be looked for by this method.
4. In a patient with a predisposition to secondary tuberculous developments, the possibility of the recurrence of the disease after expectant treatment must be borne in mind.
5. In cases attended with prolonged suppuration, the chances of the occurrence of visceral, especially renal disease, must not be lost sight of.
6. Where the skin is unbroken, the disease limited, an efficient method of fixation applied, and a rigid system of antiseptic dressing of the wound adopted, primary union may, in the majority of cases, be anticipated.
7. When these latter conditions are fulfilled, excision of the knee-joint cannot be longer regarded as the formidable procedure it was formerly held to be.
8. The alleged unfavourable results of excision of the knee-joint in early life are opposed to more extended clinical experience.

A CASE OF SCIATIC NERVE-STRETCHING IN LOCOMOTOR ATAXY: WITH REMARKS ON THE OPERATION.

By JOHN CAVAFY, M.D., F.R.C.P.,
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THE ordinary medical treatment of locomotor ataxy is so unsatisfactory, and the prospect of even temporary benefit is so problematical, that any novel therapeutical method which holds out to us some reasonable hope of improvement is worthy of careful consideration and trial. Among the well-known symptoms of the disease are the so-called "lightning-pains"; these are often sufficiently severe to cause great suffering, and have demanded for their palliation the administration of anodynes, especially the subcutaneous injection of morphia. Although we may by this means control them in great measure, and render the patient's life more endurable, the necessity of constantly increasing the dose, and the establishment of the opium-habit with all its attendant miseries, constitute grave objections, and may even do more harm than good in some cases.

The operation of stretching large nerve-trunks is free from these objections, and has proved so efficacious in neuralgia that it was *primâ facie* probable that the pains of ataxy would also yield to this procedure. Accordingly, a little more than two years ago, Langenbuch of Berlin operated in this manner on a patient in whom the pains of ataxy were of great severity, and found, as he had anticipated, that the pains were abolished by the operation; but he also found, to his great surprise, that the characteristic ataxic movements of the lower extremities had disappeared. It is open to considerable doubt whether this first case was really one of locomotor ataxy; but the operation has since been performed several times on undoubted cases, and with results which have