The early recognition and treatment of puerperal sepsis.

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Puerperal sepsis is a condition of such profound importance to the general practitioner and to the gynaecologist alike, that the necessity of its early recognition and of its appropriate treatment should be made as familiar as possible to all members of our profession who are likely to meet with such cases. It is commendable that the Gynaecological Section of this Congress has thought fit to have a discussion on this subject, and I feel very much the honour of being asked by the Secretary, Dr. Rothwell Adam, to contribute the opening paper. It was with great pleasure that I consented to undertake the task, because it is a subject which necessarily appeals to one who, like myself, is frequently called upon to treat such cases.

Although fully aware of the diversity of opinion there is as regards treatment, and also that any particular method advocated may meet with a considerable amount of criticism, I nevertheless felt that these very conditions would make my task the easier, inasmuch as the idea is to promote discussion. And after all one can only give his personal experience and convictions, and the fact that there is such a diversity of opinion, may be looked upon as an indication that no line of treatment has given absolute satisfaction.

We are constantly reading records of the results obtained in different maternity hospitals, showing that amongst intern cases the rate of mortality from sepsis has been reduced to the vanishing point, and that the morbidity ratio has been, and is being, continually reduced, owing to the antiseptic and aseptic precautions enforced. But a study of the death records as given by the
Registrar-General, and a knowledge of the number of cases of puerperal sepsis which are sent into the gynaecological wards of our general hospitals, cannot fail to convince us that the disease is still too frequent, especially as it is one that can, to a very large extent, be classified as preventable. Another fact that is brought home to us is, that in so many instances such patients are not sent into hospital till they are so profoundly septic that any line of treatment necessarily offers little chance of recovery.

**Prophylaxis.**

There is no class of case which better illustrates the truth of the saying that "prevention is better than cure," and this in itself is sufficient excuse for devoting part of the time allotted to me in dealing with the prophylaxis of sepsis.

As I have just said that puerperal sepsis is rare in properly conducted obstetric institutions, and relatively common outside, the only rational conclusion we can arrive at is that outside conditions must be at fault. I do not wish to be accused of condemning the routine practice of medical men in their conduct of labour, but I do wish to draw attention to the large number of women who are, and always will be, attended by midwives. It has been conclusively shown that, in England and Wales, about 60 per cent. of confinements are attended by midwives, and in some districts as much as 80 per cent. It has also been conclusively shown that puerperal infection occurs most frequently amongst women attended by ignorant and often untrained midwives, and that the greater number of cases occurring in the practice of medical men are after complicated and instrumental deliveries. We may naturally assume, too, that in a considerable number of these latter cases, the medical man has been called in by the midwife because of some abnormality. In Australia, the proportion of cases attended by midwives without medical supervision is certainly much less than the figures quoted, as we have not the same slum population as in the larger centres in England.

One very forcible thought that comes to me is that something ought to be done, presumably by the Federal Government, in order to enforce the registration of midwives, and to ensure that women who undertake this duty should know at least the elements of antisepsis and asepsis. It is self-evident that there is ample scope for such legislation in a country where the dearth of population is
such a crying want; also that such legislation should be directed by members of our profession.

Here, again, it is not intended to depreciate the excellent work already done in this direction by the different Nursing Associations, the R.V.T.N.A. and the A.T.N.A. especially. Apart from the classes that such nurses must necessarily cater for, i.e., people in a position to pay two to three guineas a week, there is a large class for whom the above fees are prohibitive, and who, unless they are willing to go a maternity charity, must perforce put up with the less expensive, often highly estimable, but untrained women, who for from twenty to thirty shillings a week, undertakes to look after the patient during her lying-in period. According to the cleanliness or otherwise of this nurse, and her anxiety to help on the pains by making vaginal examinations, so is the risk of infection, and under such circumstances we may be well surprised that cases of puerperal infection are not more common than they are.

How this condition is to be remedied, whether by having a class of trained midwifery nurses available for such cases, possibly on the lines of the hourly nurses in America, or by having a separate Midwifery Branch of the District Trained Nursing Association, is a question that needs serious consideration. While absolutely untrained women, probably whose only qualification (sic) is that they have had children themselves, are allowed to attend these cases, there will always be a large mortality list in obstetric work outside hospitals. It seems that the proposal to raise up a class of trained nurses who will, amongst the poorer classes, undertake normal midwifery cases without medical supervision, while from the medical point of view, perhaps not a scheme to be lightly advised, is from the point of view of public safety and the saving of many useful lives, a lesser evil than letting the present system go on. From a perusal of the Medical Journals, it is evident that many complaints have arisen from the working of the Midwives' Act in England, but it must be remembered that a large proportion of the present midwives, though registered, are absolutely untrained in the proper sense of the word. As these gradually die out, better conditions will prevail, for it is just the ignorant, untrained women who is ready to undertake a responsibility that a trained midwife would decline to accept.

It cannot be too strongly insisted that puerperal infection is merely wound infection, and once this is recognised, no further
excuse is necessary for adopting every precaution to prevent such infection. The argument that confinement is a normal process, and that Nature ought to be able to deal with the condition, does not mean that we ought never to aid Nature. While the gravity of interference by the hand, or by instruments, is to be strongly insisted on, we must remember that prolonged labour is dangerous, both from the condition of exhaustion, and from the increased liability of the patient to sepsis because of the lowered vitality of the tissues. So we should not wait till the temperature begins to rise, and the pulse to flag before assisting the patient, but when such intervention is necessary, our great safeguard lies in the following out of the principles of surgical cleanliness.

The use of scopolamin and morphia in labour has seemed to me to be of use in diminishing pain and lessening exhaustion, and during the last two years I have used it as a routine practice.

The general recognition of the fact that, in the great majority of cases, infection is carried from without, and, as a natural corollary, the fewer vaginal examinations the better, is of the greatest importance, and though we have not yet got to the stage that vaginal examinations can be altogether dispensed with, perhaps, more stress is to be laid on efficient sterilisation, not only of the hands, but also of the patient’s vulva before examination.

It has been suggested that rectal examination with the gloved finger will obviate the necessity for the introduction of the finger into the vagina at all. Personally, I have tried this in many cases, and at different stages of labour, but find that, while sufficient in cases where the presenting part is low down, in other cases, owing to the thickness of the rectovaginal septum, sufficient information cannot be obtained. Practically, I have found rectal examination useful only in those cases, where, as a rule, vaginal examination can be dispensed with in any case, viz., in multiparæ and in primiparæ, when the presenting part is low down in the pelvis. If a real gain were evident from this method of examination, the natural repugnance to rectal examination might be overcome. In speaking of the prophylaxis of sepsis, another point to be remembered is how frequently septic symptoms develop after the fifth or sixth day, indicating often that infection has been conveyed, not at the confinement, but in manipulations during the puerperium. This fact emphasises the importance of antiseptic and aseptic precautions during this period also.
The ordinary details of the aseptic and antiseptic conduct of labour, while most important, and here I might especially mention the routine use of rubber gloves, have been so fully and ably dealt with in many recent publications, that they may be assumed to be fairly well agreed on. Another factor in the prophylaxis of sepsis that may be mentioned is the effective treatment of purulent vaginal discharges, so often gonorrhoeal, during pregnancy, and to this end the application of strong antiseptic solutions, silver nitrate or argyrol, has seemed to me more effective than routine douching, which fails to really get at the seat of infection. Recent reports of the use of yeast and zymin preparations for this purpose would seem to promise excellent results. Naturally, we all recognise the importance of maintaining the patient's health during pregnancy, realising that the better her general condition at the time of confinement, the less likelihood of sepsis, and should this occur, the patient is in a better condition to withstand it. The prophylaxis of sepsis will, therefore, largely consist in a thorough realisation and carrying out of these different methods in the care of the patient.

The two parts of the title of this paper go well together, as the best chance of instituting effective treatment lies in recognising the condition early. The recognition of the more acute types of infection, which force themselves urgently on the practitioner's notice, is not difficult; but a certain diagnosis, in many cases when there is a slight temperature and a quickened pulse rate during the puerperium, may at first not be at all easy.

The suggestion of the Conference of the British Medical Association in 1906, to define more clearly what are to be considered morbid cases, viz., any case where the temperature between the second and the eighth day rises twice to 100°, certainly seems a step in the right direction. We know that very many cases which come under treatment as ordinary pelvic inflammatory trouble, have really had their origin in the puerperium, and had efficient treatment been carried out at this stage, when the infection was localised in the uterus, these patients would have been saved much suffering, and sometimes mutilating operations. There is certainly good ground for believing in the truth of the dictum, that success in obstetric practice should be judged rather by the percentage of morbid cases than by tables of septic mortality.

When we come to consider the symptoms which indicate infection during the puerperium, the most reliable are—(1) Temperature
(2) Pulse Ratio; (3) Involution of the Uterus; (4) Changes in the Lochia.

**Temperature.**

A rise of temperature during the puerperium is always to be looked upon as possibly indicating some infection till it has been proved otherwise. During this period it is within our knowledge that transient rises of the temperature are often put down to such conditions as constipation for instance, because on the free evacuation of the bowels everything again becomes satisfactory; but are we right in assuming that there was no uterine condition at the root of it all? In many such cases a more rational explanation is that the loaded rectum, the recumbent posture, and possibly also some backward deviation of the fundus, have in conjunction interfered with the lochial discharge, damming it back, and that the straining produced by the purgative assisted the uterus in expelling this discharge, and so put an end to the absorption of the toxins. That this is quite feasible is evidenced by the fact that microorganisms have been proved to be present in the lochia in over 30 per cent. of normal cases of labour, and also by the knowledge that a similar degree of constipation would not cause a temperature in the non-puerperal patient.

The same thing is illustrated in some cases where the temperature goes down after washing out the uterus, where the explanation that the drainage of the lochia has been rendered more efficient is much more rational than that the infecting organisms have been killed or inhibited in their growth by an antiseptic which could not have penetrated the fibrinous lining of the uterine cavity. I have for several years as a routine practice had the head of the puerperal patient’s bed raised, with the idea of favouring the lochial drainage. The rationale of this old-fashioned idea, which was advocated by Harvey two and a half centuries ago, is fully supported by recent bacteriological investigations of the lochia. While I have not included bacteriological examination of the lochia amongst the factors which may help in the diagnosis of septic infection, it is not intended to minimise the importance of information that such examination may give, but from the nature of the special knowledge and apparatus required, it is recognised that this cannot be a routine proceeding in the great majority of cases in private practice.

When infection takes place during labour, a temperature occurs fairly soon; an exacerbation of temperature, with possibly a rigor,
often indicating that the infection has spread beyond the uterus itself.

Temperature occurring for the first time after the fifth or sixth day very often indicates infection subsequent to labour, or to an increase in the virulence of saprophytic organisms, or to an added or mixed infection, especially by the bacterium coli commune or streptococcus, or both combined.

INCREASE IN PULSE RATE.

The pulse rate, or rather the pulse ratio, in regard to the temperature present, is naturally a most important symptom, and a relatively rapid pulse rate, in the absence of previous hemorrhage, is always an early and suspicious symptom of some infection.

DELAYED INVOLUTION OF THE UTERUS.

A relatively large uterus in regard to the period of the puerperium, and especially if the uterus remains tender, is always a suspicious symptom. The correct management of the third stage with the presence of a wall involuted, hard uterus form one of the best criteria of a normal puerperium.

In regard to the question of retained membranes, I am of opinion that the exploration of the uterus, especially with the bare hand, for suspected pieces of membrane, is more dangerous than leaving them to come away themselves, and that it is quite unnecessary if lochial drainage is efficient. Naturally, where the membranes can be seen in the vagina, or hanging out of the vulva, it is advisable to remove them. The presence of a full bladder or a loaded rectum, and the use of a tight abdominal binder, which may cause retroversion, and so hinder drainage and delay involution, are other factors to be remembered.

CHANGES IN THE LOCHIA,

The character of the lochia, though not always of help, may sometimes be of diagnostic importance. In the so-called saprophytic infection, and especially in bacterium coli communis infection, the lochia is offensive, but in the severe streptococcic infection the lochia are not, as a rule, offensive at all. A profuse purulent lochia coming on early, often indicates gonorrhoeal infection. Sudden cessation of scanty lochia is often indicative of severe infection, but I have several times seen cessation of the lochia associated with high temperature from other causes, pneumonia or pyelitis, where the subsequent progress of the uterine condition was quite satisfactory.
While there is a fairly definite agreement as to the method of prevention of infection, there is considerable difference of opinion on the one hand, as to the methods of local treatment when the condition of sepsis has developed, and on the other, whether it is advisable in such cases to resort to any local interference at all, but merely to trust to general supporting treatment and attempts to raise the local and general resisting powers of the patient.

Here, again, the recognition of the principle that puerperal infection and wound infection are identical in origin and character, modified only by the anatomical relations of the wounded area, seems to me to indicate the line of treatment. In the great majority of cases the infection is at first localised, and this is naturally the ideal time to institute local treatment, so that the necessity of the early recognition of infection again impresses itself on our notice.

Although in some of the acutest forms of sepsis, the infection has become generalised almost from the start, here even it is at first uncertain that disinfection of the source of origin of the infection may not be of service in limiting the supply of organisms and toxins that are being absorbed. The chief objections raised against routine local treatment are that the protecting wall of leucocytic infiltration in the uterus may be disturbed, and that antiseptics applied locally cannot penetrate deeply enough to kill all microorganisms present. The researches of Bumm have, however, conclusively shown that in cases of severe septic infection by the most virulent microorganisms this protecting wall of cell infiltration is imperfect or absent. The interior of the uterus offers an ideal place where, if we believe at all that antiseptics can kill microorganisms they can be applied sufficiently strong to kill any organisms present. The argument of laissez faire is supported by the fact that sometimes in such cases the intensity of the infection has been increased by curettage or washing out, because fresh areas are opened up for absorption; but if the protecting barrier is already inefficient, no material harm can come of cleaning out infective material and disinfecting locally, and organisms which have already got beyond the possibility of being reached cannot be made more virulent.

The whole question hinges on whether we can any longer differentiate between the so-called saprophytic type of infection and the septicæmic type. Where the symptoms are manifestly due to absorption of toxins from retained putrid material, it is generally admitted that its removal is indicated, and when this is effectively
done the results are excellent. It has been proved that in cases of retained putrid material in the uterus, saprophytic organisms are themselves capable of producing generalised infection, and even if the saprophytic organisms do not cause such infection, they may act as a stimulus to pathogenic organisms present or accidentally introduced to become more virulent. We are not yet able to definitely foretell when such added infection may take place, and it seems safer to look on every septic case as possibly infective.

TREATMENT.

Broadly speaking, I am of opinion that treatment should be instituted on the following lines:

1. Thorough clearing out of infected material from the uterus and efficient local antiseptic treatment.

2. Doing all that is possible to increase the patient's power of resistance to the infection. Under this heading, besides general measures, will be placed the use of vaccines and serums, and substances such as nuclein, &c., which are supposed to act by increasing phagocytosis.

3. Ensuring efficient drainage subsequently.

Once we have decided that a case is septic, the sooner local treatment is carried out the better. The first question to be considered is that of anaesthesia, as treatment to be effective is necessarily painful, and manifestly we do not wish to further depress the patient's vitality. I have tried scopolamin and morphia in severe cases, followed possibly by a few whiffs of A.C.E., but in the less severe cases find ether well borne. After putting the patient in the lithotomy position, a thorough examination of the vulva and vagina is made, any stitches being let go, and infected lacerations swabbed with an antiseptic. I formerly used iodised phenol, formalin, or biniodide in spirit, and since reading Dr. Gordon's article on the use of medical izal for this purpose, about eighteen months ago, have used this preparation altogether, and have been more satisfied with it than with any other antiseptic. It is not particularly painful, even pure, does not cause superficial coagulation necrosis, and in using it for the interior of the uterus it has distinct haemostatic properties. It certainly seems to clear up sloughy fibrin-covered infected areas much more quickly than any other antiseptic that I have tried, and I have never seen any symptoms which could be put down to absorption after its use.
Next, attention is turned to the uterus itself, and, after examining the interior with the finger, it is thoroughly curetted with a large, sharp curette. I am of opinion that, if curettage is to be done, it can only be efficiently done with a sharp instrument, as a blunt curette so often rides over pieces of adherent placenta. In curetting, I like to hold the fundus with the left hand in order to minimise the risk of perforation, but, with a broad curette, this is not very likely, though the uterus in these cases is admittedly soft and flabby. Here I would say that, in my experience, it is quite exceptional not to find a considerable quantity of decidua and fungous-like debris, even in cases where the lochia has been absent or not at all offensive. The presence of this material in an infected uterus must mean a very favourable nidus for the growth of organisms; and, in my opinion, it is far better removed. Also, while such material is present, an antiseptic applied locally cannot be expected to properly reach any organisms present. After the uterus is empty, and the endometrium removed down to the muscular layer, the next step is to disinfect the uterine cavity, and for this purpose it is rubbed over energetically with a swab soaked in pure medical izal, endeavouring to reach the whole of the interior of the cavity. If the uterus contracts well after this treatment, it seems to be a favourable sign. Lastly, the uterus is lightly packed with gauze soaked in 1-20 solution of izal, or with gauze liberally powdered with iodoform. The gauze is removed in 24 hours, and is not reinserted.

In the after-treatment, the head of the patient's bed is kept considerably raised, and, in severe cases, frequent injections of saline by the bowel or subcutaneously are used. Strychnine and ergot, or quinine, together with hot antiseptic vaginal douches, are employed, in order to stimulate the uterus to contract and retard accumulation of lochial discharge, but no further local treatment. The general treatment in regard to stimulants, free feeding, and general care, usual in septic cases, is carried out. If serum or vaccine treatment is to be adopted, it is injected as soon as possible after curettage.

I have had no experience with the use of Crede's ointment or of collargol, but have seen several cases which were treated by intravenous injections of formalin with no good result, and
in one case with apparently decided bad results, so much so that I do not feel inclined to try the treatment further. I have used Fourchier’s treatment of subcutaneous injections of turpentine, but, apart from certainly causing local abscesses, it had no appreciable effect. The use of injections of nucleic acid has greatly interested me, and I have convinced myself that a definite leucocytosis does follow its injection in normal cases, and in septic cases have thought that it may have done good. The use of antistreptococcic serum, polyvalent and otherwise, has not, in my experience, proved of definite value.

In the only case in which I have used a vaccine made from the organisms isolated from the uterine discharge, in this instance a staphylococcus, the patient recovered after a long illness. Though this was a very severe infection, and I expected the patient to die, as far as one could judge clinically, and from an examination of her chart, the improvement could not be put down to the use of the vaccine. In this case the only reaction that was obtained was when a dose of 750,000,000 staphylococci was given instead of 250,000,000, owing to a mistake in standardising the vaccine. The vaccine was given without reference to the opsonic index, and perhaps the dosage was too small.

The report of two cases treated by Dr. H. C. Lloyd certainly does make one hopeful of this method of treatment as an adjuvant; but it seems to me that efforts to deal with the organisms at the site of infection must always be our first aim, and, after that, vaccine therapy is certainly a logical effort to help the patient in her fight against toxins already absorbed.

Dealing, as one necessarily does in hospital practice, with cases in which the infection is well advanced when they are admitted, my personal opinion is that the treatment above described has been more effective than by washing out or curettage without uterine disinfection. Though one does not expect severe cases to recover forthwith, it has seemed to me that such cases were better for having had their source of supply of infecting organisms cut off or diminished.

Pryor’s treatment of septic infection, by opening the posterior cul de sac and isolating the uterus with iodoform gauze in those cases where the symptoms did not subside after disinfection of the uterine cavity, gave promise of being of great service,
but apparently other observers have not had the same brilliant results as were recorded by the late Dr. Pryor himself. One cannot help feeling that amongst his records of successful cases were many that would have recovered without this operation.

I have frequently had the fluid obtained from the pouch of Douglas, in septic cases examined microscopically, and know how often it contains organisms, bacterium coli communis especially, but also streptococci and staphylococci. There are also large numbers of leucocytes which have succumbed in their fight against these organisms. The presence of this fluid in the pouch of Douglas would seem to be a favourable sign, as indicating well marked reaction to the infection. Pryor claimed that this fluid was practically always sterile after the first dressing with iodoform gauze, and looked on the getting rid of this fluid as an essential part of his treatment. The rationale of this treatment is, that it causes a blocking of the larger lymphatic vessels at the back of the uterus, and so prevents further infection by this route. Also, the iodoform gauze, besides acting as a local antiseptic by the liberation of iodine, causes a localised inflammatory reaction, and this accession of leucocytes may also help in limiting the infection. The procedure is therefore to be looked on as not only curative in some cases, but as a prophylactic, and for this reason it should be resorted to early, but naturally not till after the uterine cavity has been efficiently disinfected.

I have seen, and have had many striking instances of recovery after this procedure, especially in post-abortum cases of sepsis, and even where no fluid was evacuated from the pouch of Douglas. In post-puerperal cases, however, it is not an easy matter to isolate an organ which may extend anywhere up to the umbilicus, and in these cases I have not been very favourably impressed with the results of this proceeding. It may be that the rest of the lymphatic supply is so hypertrophied at about full time that the blocking of the posterior lymphatics is not sufficient to limit the infection. So that, latterly, in early post-puerperal cases, I have not opened the posterior cul de sac except with the idea of affording drainage where peritonitis or localised inflammatory exudation has been present.
There still remains the consideration of various major operations in cases of puerperal sepsis. That the operation of hysterectomy has been proposed and practised for this condition indicate that it was felt that good could be done by getting rid of the source of infection. Between the years 1892 and 1902 the operation, judging from the records in obstetrical journals, was pretty extensively performed in all classes of septic infection. The concensus of opinion at the Conference in Rome in 1902, when this question was discussed, was one of marked disapproval, except for certain well-defined cases, such as infection in childbed, associated with cancer of the cervix, localized abscesses in the uterine walls, and infection associated with the presence of sloughing or infected fibroids. Personally, I have not yet met with a case where the possible good to be obtained has seemed to justify this operation.

Another operation that has been advocated in cases of puerperal pyaemia is ligature of the thrombosed pelvic veins, with, in some cases, clearing out the contained thrombus. Dr. Lendon, of Adelaide, has recently recorded a successful case where the operation was done by the intra-peritoneal route. Dr. Moore, of Melbourne, has also recorded similar cases. It seems to me that the almost absolute uncertainty of diagnosing the extent of the thrombosis, and the fact that most of the less severe cases tend to recover without any major operation, as indicating that the thrombosis is probably a conservative process, will form valid objections to the general adoption of this operation, even when, as has been proposed and carried out, the ligation is performed extra-peritoneally.

**Puerperal Peritonitis.**

The last condition to be considered is the treatment of puerperal sepsis, where peritonitis, general or more or less localized, is actually present. Unfortunately, it is at this stage that patients are so frequently sent into the wards of a general hospital, and here, at any rate, we are at no loss to know what the prognosis of the case is if nothing be done. The look of the patient, the pulse rate, the slightly if at all raised temperature, the vomiting, the distended and immobile abdomen, with very often the condition of euphoria of the patient, leave no room for
conjecture as to how the end will come. The chief question is as to how much or how little is to be done to be effective. The treatment of general peritonitis following appendicitis has made us familiar with the various stages that have been gone through, from the total evisceration and endeavour to wash away infective organisms, to the method of simple incision and providing for efficient drainage, while adding as little as possible to the strain of the patient's already poor condition. While the outlook for these cases is unfavourable, though records up to 60% of recoveries are noted, it is to be looked on as a distinct advance that we can hope to save some of them. The extra strain of the anaesthetic is always a factor against the chance of the patient, and perhaps we will find spinal anaesthesia a distinct advance in these cases; but whatever is done has to be done quickly, and as little anaesthetic as possible used. In localised cases curettage and disinfection of the uterus, with provision for drainage by opening the cul de sac, will be sufficient. In cases where the peritonitis is general, I have made a small incision above the pubes, and sometimes in one or both flanks, and inserted flanged drainage tubes. Sometimes I have not washed out at all, but, as a rule, I wash out through the anterior drainage tube under slight pressure when the fluid escapes through the loin tubes, but I avoid handling the intestine as much as possible. Lastly, the uterus is curetted and disinfected, and a drainage tube put into the pouch of Douglas, and hot saline again run through the suprapubic tube. The flushing tube described by Blake ("Annals of Surgery," 1906) seems to be a useful appliance for this purpose. Everything is done as quickly as possible, and the patient put back to bed in Fowler's position, and the constant saline drip by the bowel adjusted as soon as possible.

The free administration of strychnine and stimulants, to tide these patients over the shock of the operation, is of great importance, and the outlook would seem to depend largely on whether the dose of toxins already absorbed is too great for the patient to deal with. Naturally, the use of serums or vaccines, and anything we can do to raise the resisting power of the patient, will have their place here. While the prognosis in many cases is not encouraging, we know that we have given the patient, as
far as we know at present, the only chance she has of recovery. That there is something more to learn about the course of these cases is indicated by the fact that, though we may have a number of successive cases which recover after the treatment, almost making us think that we had at last a panacea, other cases, which, from a clinical aspect at any rate, looked more hopeful than some of those which have recovered, are not able to overcome the toxins already absorbed. We have as yet no means of estimating with certainty the virulence of the infecting microorganisms or the resisting power of the patient in each individual case, and our chief hope of success lies in instituting eliminative treatment as early as possible.

ALCOHOLIC CIRRHOSIS OF LIVER—EPILOPESY—RECOVERY.

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The patient, the subject of the above malady, was a publican by trade. For the last few years and prior to that had been a butcher. He first came under the care of Dr. Main, of Malmsbury, complaining of swelling of the abdomen, shortness of breath, loss of flesh, and debility generally. On seeing him with his medical attendant, the abdominal distension was noted to be very extreme, the parietes tense and resistant, and fluctuation easily appreciable over the whole abdominal surface. Dilated cutaneous veins were visible both medially and laterally. Patient was a thin wiry-looking man of medium height, and had enjoyed excellent health till his present illness. His face was sallow and markedly pallid, the eyes watery-looking, and the conjunctivae of a faintly yellowish colour. Tongue slightly coated, appetite poor, complains of some thirst. Rate and rhythm of pulse normal, but tension high. Amount of urine passed in the twenty-four hours diminished, loaded with urates, and contains a trace of albumin. As the condition of his liver, spleen and abdominal organs generally could not be defined owing to his distended abdomen, he was at once tapped and the fluid drawn off. An examination of the abdomen after the withdrawal of the fluid, revealed an enlarged liver coming well below the costal margin. On palpation, the surface was found to be rough, and
distinctly indurated and nodular. There was no tenderness on pressure. The spleen was easily palpable. In other respects, the abdomen on careful palpation showed nothing further abnormal. This tapping was followed by further tappings at intervals of about six weeks, until he had been tapped four times in all. As this was not attended with any apparent diminution in the collection of the fluid, and as his health was fairly good, a more radical operation was proposed and agreed to.

He was admitted to the Kyneton Hospital, and after some preliminary treatment was operated upon. A straight incision was made a little to the right of the middle line above the umbilicus, and the abdominal cavity opened. After the fluid had been drained and sponged away, the peritoneal surface of the liver was freely rubbed with gauze, the friction extending as far as possible over the front surface. The parietal peritoneum was treated in a similar manner over the epigastric region, and contiguous to the liver as well. The spleen was not interfered with, but the peritoneal friction was carried in its direction as far as possible. Beginning as far over on the right side as it was possible to go, the great omentum was sutured to the parietal peritoneum with fine catgut. This suturing was carried over the middle line, and as far to the left of it as possible. The incision in the abdominal wall, which was a little over four inches long, was closed in layers, except at the lower part where a wick gauze drain was inserted. Voluminous dressings were applied, and the operation completed.

For nearly three weeks after this the discharge was copious and constant, but with constant changing and scrupulous care in aseptic details, no inflammation or any trouble whatever intervened. The general state of the patient during this period was satisfactory. The appetite had improved a little; the tongue was cleaner, and the secretion of urine certainly more copious. His bowels, which, prior to the operation, had been at one time confined and at other times loose, were now nearly regular. During the time that has elapsed since the operation a good deal has been attempted in the way of firm bandaging, especially in the upper abdomen, to favour the adhesion of the roughened surfaces.

It appears from the notes taken at the time that, at the end of the fourth week, the abdominal incision had closed, and that the abdomen itself was quite flaccid, but with indications of a physical kind that some fluid was still present. In about three weeks more all
evidences of the presence of fluid had disappeared, nor was there the least sign of its presence during the patient's lifetime. As the patient lived for five years afterwards and enjoyed excellent health, the operation may be held to have been highly successful.

Many cases are now recorded where a like success has been attained, and it would seem almost imperative, in the view of such results obtained, that the method should be given a trial after tapping has been tried and failed. Exactly what anastomotic vessels are brought into play it is difficult to say. The anastomotic circulation that is established in obstruction of the portal system is fairly extensive. When obstruction is practically complete, however, it is quite insufficient to maintain the circulation; but when supplemented by operative measures, the result is frequently successful.

The natural anastomotic vessels are the following:—Certain of the superficial branches of the liver, with the phrenic veins; the veins of the round ligament, with the epigastric veins; the haemorrhoidal veins, with branches of the internal iliac; the gastric, with the oesophageal veins and veins of the pancreas, parietes, viscera, &c.—Woolsey.

The most important anastomosis is that between the gastric and oesophageal veins at the cardiac end of the stomach, whereby blood from the portal system is enabled to reach the systemic circulation by means of the azygos veins and superior vena cava. Whether the good results are attributable to the anastomosis, the prolonged drainage, or the changes induced in the hepatic, and, perhaps, the splenic peritoneum, or all combined, is a matter not yet accurately determined—Jacobson and Rowlands.

Although Talma was the first to put this operation into practice, the credit undoubtedly belongs to Mr. Rutherford Morrison, of Newcastle-on-Tyne, of not only doing a successful case, but on putting the operation on the basis that it has since rested. The result has been that a large number of cases have been operated upon, some of them with most satisfactory results. When it is remembered that a fully developed cirrhosis of the liver is nearly always uniformly fatal, its success can easily be appreciated. According to the last authority quoted, "there is not enough evidence available at present to enable us to arrive at any accurate conclusion." But an operation that has been successful in nearly 50 per cent. of the cases operated upon, is surely fairly conclusive evidence.
THE IMMEDIATE TREATMENT OF INFANTILE PARALYSIS OF UPPER LIMB.

WILLIAM MACKENZIE, M.D., F.R.S. Edin.
Lecturer on Applied Anatomy to the University of Melbourne.

Epidemics of poliomyelitis, from the therapeutic point of view, can only be of value where some systematic method of treatment is decided on, and thus a comparison may be instituted with results obtained from previous treatment. Admittedly, upper limb results in infantile paralysis have not been good, and the surgical treatment is much more unsatisfactory than in the lower limb, the chief procedures being arthrodesis of the shoulder, shortening of tendons on the back of the wrist, and skin excisions to bring arm and forearm in apposition where the hand is useful. In this paper an endeavour will be made to show the benefits of immediate and absolute rest in this condition, and the method by which this is ensured.

As the writer has previously pointed out,* a muscle is rested only when it is placed in a position where its work is zero, and its origin and insertion are as nearly as possible on a level, since the resumption of function (which should be gradual) is always easiest along a straight line. This is well exemplified in the case of the deltoid and biceps muscles, which, with the quadriceps, may be truly said to represent the "furchtbarkeit" of infantile paralysis. The function of the deltoid being to raise the arm from the side to a right angle, its zero position would be represented by the latter. In that position, it is maintained by means of the upper limb splint previously described, and it is coaxed into action, not by removing the splint and allowing the limb to drop, but by gradually altering the angle of the splint, such alteration being pari passu with the amount of recovery present; and similarly, the biceps is not rested by mere flexion, for the long head crossing the shoulder-joint is still overstretched, and not only should we have flexion of the forearm, but the arm should be raised as in the deltoid cases.

In testing for recovery, this should be done with the patient lying down, and the affected limb resting on a pillow in the same position as when in the splint, and it is surprising when tested in this way what a large amount of power a biceps may show which we previously regarded as functionless. Then, again, with the patient lying down, we may have good deltoid and biceps function, but sit

the child up, and the amount of movement is much less, obviously since the leverage is greater, so that not only have we to coax our muscle to functionise with the limb in the easiest position, but similarly with the position of the limb relative to the rest of the body. It is absurd to test a child with weak deltoid and biceps for the first time sitting upright. Commence in the reclining position, then gradually raise the body by means of pillows to the point beyond which effort becomes manifest, and so finally we arrive at the upright position. It was on these lines that I resolved to treat all the cases I saw, using the splint formerly described, and which is best associated with complete recumbency, secured for convenience by means of a double Thomas' splint, so as to obtain a physiological rest for muscles, nerves, and spine. I saw in all eighteen upper limbs, and the results may be considered under three classes:

**CLASS I.**—This represents cases treated within ten days of the onset of the illness, and corresponds to ten upper limbs. They were all cases of deltoids, extensors, biceps, and supinator affection, and all were immobilised without massage for from ten to twelve weeks, and of these nine recovered. They were not cases that would have recovered spontaneously, for in the writer's experience the spontaneous cases rarely last more than a week, and in these the improvement was gradual. The case that did badly was that of a child with four limbs and muscles of back and neck, and marked meningeal symptoms. The other limbs have recovered, but the right arm, though improved, is still unsatisfactory.

**CLASS II.**—In this, which represent a series of three, I place cases not rested within four weeks of the onset, the longest time being seven weeks. In all three we have got a recovery in the reclining position, and in two on the splint for eight months, also in the mid upright position, and I feel certain that with patience, all three will ultimately be coax to functionise in the upright position.

**CLASS III.**—In this, representing a series of five, I place cases treated with electricity and massage, but no splinting, and with over three months' history. In all, the limbs hung powerless, owing to paralysed deltoid. The most that can be hoped for from the splint is biceps action, and improvement in the condition of the muscles of the wrist and hand. I think it is futile to expect return of deltoid function, and possibly the best to be done for these is the operation of arthrodesis of the shoulder, as devised by Professor Vulpius, of Heidelberg, by which we get brought into play the action of
accessory shoulder muscles. In one of these cases seen seven years after the onset, in spite of years of massage and electricity, the limb hung powerless at the side, without least evidence of biceps function.

This represents my series seen in twelve months. I endeavoured to treat all systematically, and the results coincided with what I deductively assumed they would be. The cases were not picked; they did not recover immediately, and were all known to the students attending the clinic. Above all, we could observe other cases, not so treated, to contrast with our treatment. It seems we are unable, electrically or otherwise, to estimate the recuperative power of a muscle, in the same way as we are unable to absolutely prognose whether an acute illness will be fatal or not. I have seen a quadriceps recover after many years with rest, that was considered electrically as hopeless, and that in spite of knee contracture.

The all essential thing in this treatment is that it must be immediate. To me it admits of no delay. It is a recognition of the principle that the muscle will work, but to work it must be coaxed. It is antagonistic to the principle that whips the tired horse. The muscles are immobilised as soon as seen, and not left to hang till the splints are ready, in perhaps a week's time. We would rest a fractured bone immediately, or surgically clean a compound fracture, and why differentiate in the case of a nerve or muscle. Seeing a case in the acute stage, say with one limb affected, I would place the other three limbs in the position of repose, and candidly believe that a possible affection of these other would be slight, or not at all.

To keep a muscle at rest seems contrary to the older conceptions of treatment—mais c'est une revolte. Yet the splendidly nourished condition of a limb after three months' immobilisation bears witness to the treatment. Of course all cases will not recover. We are bound, as in all diseases, to meet cases with poor resistance, especially syphilitic, or with a big poisoning, and of course to speak of anything as being curative is fallacious. The object of this paper is to present the results of treatment, and the belief that, with immediate physiological rest, the necessity for mechanical or operative treatment later will be minimised, and in the majority of cases rendered unnecessary.

In conclusion, the objects in treatment must be carefully explained to the person in charge of the case. Antiseptic surgery, if not
carried out in its entirety, is valueless, and similarly with splinting. And there are so many chances for leakage, such as changing the splint, massaging, testing for recovery, and above all the interference of friends. It may be hard to realise that a child with complete paralysis of both lower limbs may be immobilised in a double Thomas’ splint with feet extension for twenty-one weeks; that the only work given the muscles is the work they can actually perform, and then but twice a week; that at the end of that time the child is able to raise two well-nourished limbs to a right angle, with knees extended, and that no pelvic tilting is present. Yet such is a fact, and it suggests some interesting inductive propositions.

CHRONIC PANCREATITIS—OPERATION—RECOVERY.

W. R. Groves, M.D.
Surgeon to the Kyneton Hospital.

AND

ROBERT B. Duncan, M.D., F.R.C.S.E., F.F.P.S.

A period of nearly nine months has elapsed since the following report was made, and the patient’s condition remains so far satisfactory. There is no doubt but that the little that was done has been of marked and material benefit, but in what way the rectifying of such a small adhesion so materially benefited an undoubtedly grave condition it is impossible to say.

Some light is thrown on this point, admittedly obscure, by a passage in the recently published work of Robson and Cammidge—The Pancreas: Its Surgery and Pathology. Speaking of chronic pancreatitis, the authors say—“In several of our earlier cases of chronic pancreatitis, the abdomen was opened, and the biliary ducts and the swollen head of the pancreas were exposed and manipulated without finding gall-stones. Whether it was that the manipulation of the parts displaced and pushed on a stone from the common duct into the duodenum, or that the breaking down of adhesions relieved tension, the fact remains that, in a number of such cases, the patients completely recovered and remained well.”

Thanks however to a better understanding of pancreatic lesions generally, such cases are becoming fewer, and the conviction is increasing that, in nearly every case, there is some well-defined and often removable cause.

The symptomatology of this disease is of great practical interest. Especially is this so when it is remembered that the diagnosis of pancreatitis, and some affections of the gall-bladder or bile ducts is almost impossible. The subject is too extended to discuss here, but in such cases it would be well to examine the urine for the now well-defined “pancreatic reaction.” In the above case, for instance, the patient had all the symptoms of gall-stone colic in a marked
degree, yet an operation revealed the case to be one of chronic pancreatitis. In all doubtful cases, then, the chief reliance should be put on a careful examination of the urine, and scarcely less attention should be paid to the state of the faces. In both directions, information of the utmost value will be obtainable.

Miss L., aged 21, a twin. When first seen she was complaining of severe pain in the "pit of the stomach," where there was marked tenderness on pressure over an area the size of the palm of the hand in and towards the left of the epigastrium. There was no marked constitutional disturbance, and the patient was obviously of neurotic disposition, yet there was no doubt that the pain and tenderness were genuine. No vomiting. There had been some dyspepsia for some time, and the present pain was aggravated by taking food. There was a past history of several sudden seizures of colicky pain in the same region, severe, and usually accompanied by vomiting. No attack ever occurred previous to an injury to the upper part of the abdomen, which the patient thought the probable cause of her condition. Various doctors who had seen her in these attacks had ascribed them as being due to gall-stones. The patient could never remember being jaundiced, and she had never vomited blood. The patient's complexion was of a very sallow muddy kind, but she was not obviously jaundiced. The position of the tenderness was over the stomach region, and well away from the gall-bladder, and altogether it was difficult to reconcile oneself to the diagnosis of gall-stones. Gastric ulcer seemed more to fit in with her present condition, and a test meal of toast and tea infusion was given in the morning, followed in an hour's time by the passage of a stomach-tube, but no stomach contents were recovered, and the patient objected to a repetition of the process, so that no stomach contents were examined. A week's rest in bed with gastric sedatives and no food by the mouth appeared to quite relieve her, and no return of the pain occurred for a month or so, when suddenly one afternoon she was seized with what was probably the most severe attack of the colic, accompanied by persistent vomiting, which she had ever experienced. Dr. R. B. Duncan was present during this attack, and continued to see the case with me till her recovery. The pain was only temporarily relieved by morphia, and kept recurring at intervals, till she was operated on about fourteen days later. During this period she was kept under observation in a private hospital. The tenderness as before was always more marked in the epigastrium and towards the left hypochondrium rather than in the gall-bladder region. Once during this period there was a trace of bile in the urine, but it was not till after the operation, when the patient's sallowness changed to a clear healthy colour, that it was recognised that some degree of jaundice was really present. By exclusion, gall-stones were thought to be the probable condition present, though the position of the tenderness was atypical.

An exploratory operation was advised, and Dr. Duncan operated, assisted by myself, Dr. Phillips administered the anaesthetic. An incision made over the gall-bladder showed that organ to be empty and healthy, but the cystic duct was kinked somewhat by an adhesion, which was divided. No gall-stones could be found
LARYNGEAL TUMOUR—TRACHEOTOMY AND THYROTOMY.

JOHN MURPHY, M.D.

Surgeon to the Throat, Nose and Ear Department, St. Vincent's Hospital.

Benign new growths in the larynx are of fairly common occurrence, but rarely are they seen to attain to the size of the tumour in the case which I am recording. Their presence in their early stages, when they are small, leads to symptoms which cause the patient to seek surgical relief. The method of treating the tumour must vary with its nature, size, and location. In this case the tumour was a fibro-myxoma, very large, and growing from the under surface of the left vocal cord. I was of opinion that an endolaryngeal operation was not suited to the case, owing to the danger of wounding the vocal cord. Under local anaesthesia—eucaine and adrenalin—I performed tracheotomy, and then thyrotomy, and so removed the growth.

The patient, J.P., æt. 48, a strong, healthy-looking labouring man, was sent to the throat, nose and ear department of St. Vincent's Hospital early in December last, by Dr. White. His voice was very husky, and he complained of great dyspnoea.

On laryngoscopic examination, a rounded tumour was seen filling up the larynx, and springing from below the vocal cords; with inspiration, the tumour was retracted into the trachea; with expiration, it was partly pushed between the vocal cords. The
tumour filled the space between the cords, which were dilated to their utmost extremity, with the exception of about one-sixth of an inch in the posterior part of the larynx.

He gave a history that, about five years before, he had coughed up a tumour from the throat. As the tumour had a sessile attachment to the under surface of the left cord, and with a history of a previous tumour, I decided that an endolaryngeal operation would be unsatisfactory, more especially as by this means removal is often incomplete, and if any part of the pedicle or base is left behind, recurrence is the rule. Moreover, by this method the vocal cords may be considerably damaged, as more or less avulsion has to be done.

On December 18, the patient was somewhat cyanosed, his breathing was difficult and stridulous, and he informed me that he almost suffocated during the previous night.

On examining the larynx, the tumour was found to have enlarged so that a mere chink was left through which he was breathing. His condition was very urgent, and he was sent in for immediate operation. Owing to the great dyspnœa, a general anaesthetic was not advisable. Under local anaesthesia the trachea was opened, and a tracheotomy tube inserted; as soon as this was done the breathing was completely relieved. The area over the thyroid cartilages was anaesthetised, a vertical incision made, and the thyroid cartilages, which had become partly calcified, were divided near the midline with a saw. By retracting the alæ of the thyroid cartilages, and opening the mucous membrane in the upper part of the larynx, the glottis and the tumour were exposed to view. The mucous membrane in the lower part of the larynx, and the attachments of the vocal cords anteriorly, were not divided. The interior of the larynx was painted with a solution of 10 per cent. cocaine and 1 in 2000 adrenalin.

The tumour, which was about one inch long by half an inch wide, was lifted up through the glottis and its base cleanly severed; several small papillomata were removed from the under surface of the left cord. The bases of the growths were curetted. The cords having been seen to lie in exact apposition, the mucous membrane of the larynx was united by a few catgut sutures. The perichondrium of the divided alæ was sutured, and the wound closed. The patient was feeling comfortable and breathing quietly through the tracheotomy tube.

After forty-eight hours the tube was removed, the risk of oedema of the larynx being then practically gone, and then he could breathe easily through the larynx.

On January 28, 1909, the tracheotomy wound had healed, and the patient was up and about feeling well; breathing normal.

The advantages of the open method in operating in large tumors of the larynx are the splendid exposure of the parts affected, and the certainty with which the growth can be cleanly and completely removed without any great damage to the larynx.
REPORT ON STATISTICS OF TUBERCULAR DISEASES OF CHILDREN IN THE MELBOURNE CHILDREN'S HOSPITAL.

STEWART W. FERGUSON, M.D.
Clinical Assistant, Children's Hospital, Melbourne.

[Read in Section of Pediatrics, Eighth Australasian Medical Congress.]

In the following record of tubercular statistics in patients at the Children's Hospital, I regret I can only furnish particulars regarding in-patients, as the out-patient records are not reliable.

The figures cover a period of ten years, and comprise the years 1898-1907, inclusive.

During this time 12,918 cases were admitted to the hospital for treatment, and of this number 1,003 or 7.75 per cent. were suffering from some form of tubercular involvement.

I have subdivided this number under the following divisions:

<table>
<thead>
<tr>
<th>Disease</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generalised tuberculosis</td>
<td>212</td>
</tr>
<tr>
<td>Joints</td>
<td>377</td>
</tr>
<tr>
<td>Spine</td>
<td>149</td>
</tr>
<tr>
<td>Phthisis</td>
<td>104</td>
</tr>
<tr>
<td>Glands</td>
<td>64</td>
</tr>
<tr>
<td>Peritonitis</td>
<td>58</td>
</tr>
<tr>
<td>Bones (apart from joints)</td>
<td>25</td>
</tr>
<tr>
<td>Kidney</td>
<td>5</td>
</tr>
<tr>
<td>Tenosynovitis</td>
<td>2</td>
</tr>
<tr>
<td>Cerebral granuloma</td>
<td>1</td>
</tr>
<tr>
<td>Unclassed</td>
<td>6</td>
</tr>
</tbody>
</table>

Of the total number of 1,003 cases, 250 died in hospital, thus constituting a mortality of 25 per cent.

Of this number, the various forms of generalised tuberculosis claim 194, leaving fifty-six deaths from localised tuberculosis lesions.

A certain number of generalised tuberculous cases (sixteen) were removed from hospital prior to death, and so are not included in these statistics. Of the remaining fifty-six deaths, twenty-two were from phthisis, fifteen from peritonitis, ten from hip, four from spine, four from glands, and one from kidney.
GENERALISED TUBERCULOSIS.

In dealing with dissemination of the tubercle bacillus I have endeavoured to make a division between tubercular meningitis and the other forms of generalised tuberculosis, at any rate, as far as clinical observation will permit.

In a very large proportion of the meningitis cases, the only other lesion found at the post-mortem examination is the focus from which dissemination commenced.

Most commonly it is in the bronchial glands, or, perhaps, the hip or spine, but the only evidence macroscopically is in the meninges.

There is also another class of case in which clinically the symptoms are those of meningitis only, any evidence of dissemination elsewhere being masked by the meningeal symptoms, the other lesions being only found at the post-mortem examination. These classes of cases I have grouped under the heading of meningitis.

The pulmonary and typhoid types I have grouped together under the heading of generalised tuberculosis, the former, however, in number greatly predominating over the latter; the latter, in Melbourne, at any rate, being a comparatively rare form of tubercle dissemination in children.

The total number of both in the ten years was 212, of which the meningitis group claim 170, and the generalised forty-two.

The Meningeal Form.—The statistics as regards age distinctly point to the disease being more frequent in the early years.

Up to and including the age of three, there were eighty-one cases, or 47½ per cent. This percentage is really greater than the figures represent. For a large number of the years quoted, children were not admitted to the hospital under the age of two, and a large number of infants with tubercular meningitis were treated as outpatients, whilst practically all older children with this condition were admitted.

The figures in full are:

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 12 months</td>
<td>14</td>
</tr>
<tr>
<td>1 year</td>
<td>19</td>
</tr>
<tr>
<td>2 years</td>
<td>32</td>
</tr>
<tr>
<td>3</td>
<td>16</td>
</tr>
<tr>
<td>4</td>
<td>14</td>
</tr>
<tr>
<td>5</td>
<td>16</td>
</tr>
<tr>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>Under 7 years</td>
<td>13</td>
</tr>
<tr>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>11</td>
<td>3</td>
</tr>
<tr>
<td>12</td>
<td>4</td>
</tr>
<tr>
<td>13</td>
<td>4</td>
</tr>
</tbody>
</table>
This shows fairly clearly the decreasing tendency with advance of years.

Another rather striking fact noted was the marked increase of cases occurring during the last three years, 81, or 51.7 per cent. occurring in 1905-1907. To my mind, there is no doubt this was due to the increased prevalence of measles. During these three years measles was very rife, and I can well remember during my period of residence at the hospital having a series of twenty-five cases within a few months, every one of which gave a history of measles a few months previously, and all of which had disseminated from a caseating bronchial gland.

Two of the total number of 170 cases recovered, as a result of repeated lumbar punctures. In one, tubercle bacilli were discovered in the cerebro-spinal fluid; in the other, although no bacilli were obtained, the clinical features left practically no room for doubt. Mortality was consequently 98.8 per cent. As regards the focus from which dissemination originated, exact numbers cannot be quoted, as autopsies were not held on all. An overwhelming majority, however, originated from glands, and of these the bronchial group were far and away the most frequently involved. In fact, it was a striking exception in making a post-mortem examination to find the bronchial glands uninvolved. Next in frequency were the cervical and retroperitoneal, in that order. A still fewer number originated from a focus in the spine or hip. In four of the series, the primary lesion was phthisis.

*The Pulmonary or Typhoid Type.*—There were forty-two cases of the total 212 which fall under the heading of the pulmonary or typhoid type, and of these, as before mentioned, the pulmonary greatly predominate.

Post-mortem results show the lungs to be the most frequent seat of sowing, a uniform distribution throughout both lungs being most frequently seen, usually accompanying caseous bronchial glands.

The under surface of the diaphragm and the spleen were the next most common situations in which tubercles were found. I think there is no doubt that the number of cases in this series is considerably underestimated, owing to the difficulty of establishing clinically a correct diagnosis. I know of many cases which have been regarded as simply broncho-pneumonia. In children, the onset and course are both often rapid. The clinical picture
presented often shows all the features of acute broncho-pneumonia, and the true diagnosis is often only made on the post-mortem table.

As regards the age incidence, the same condition of affairs is noted as with the meningitis group, i.e., its much more frequent occurrence in the earlier years. In this series, 43 per cent. of the cases were two years old or under.

JOINTS.

In-patient statistics do not furnish a perfectly true account of the relative frequency of the involvement of the various joints as hips, knees, and ankles, being those joints concerned in locomotion, are more frequently admitted as in-patients than shoulders, elbows, or wrists; but at the same time, since the introduction of treatment at the hospital of hips and knees by Thomas' splints, very large numbers of these cases are now treated in the out-patient department.

The in-patient statistics show that the hip-joint is involved in more than 75 per cent. of the cases, and, although I cannot quote out-patient statistics, but speaking from a five years' almost daily experience there, I can say the figures would probably be further increased by inclusion of out-patient records.

Of the 1,003 cases, there were 377 tubercular joints, and of this number 291 involved the hip-joint.

Next in frequency was the knee-joint, while the joints of the upper extremity were comparatively seldom involved.

The exact numbers are as follows:

<table>
<thead>
<tr>
<th>Joint</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hip</td>
<td>286</td>
</tr>
<tr>
<td>Knee</td>
<td>43</td>
</tr>
<tr>
<td>Ankle</td>
<td>10</td>
</tr>
<tr>
<td>Tarsus</td>
<td>11</td>
</tr>
<tr>
<td>Pelvis</td>
<td>6</td>
</tr>
<tr>
<td>Elbow</td>
<td>5</td>
</tr>
<tr>
<td>Wrist</td>
<td>4</td>
</tr>
<tr>
<td>Shoulder</td>
<td>4</td>
</tr>
<tr>
<td>Double joints</td>
<td>7*</td>
</tr>
</tbody>
</table>

SPINE.

In bone or joint tuberculosis the spine is more frequently affected than any other region, with the exception of the hip-joint. In the ten years under consideration, there were 149 cases of spinal caries. The dorsal lumbar and cervical regions were affected in that order, while there was one case of coccygeal involvement.

* Including 5 hips.
PHthisis.

There were 104 cases of phthisis in the list, and this includes those cases of tubercular broncho-pneumonia. Several of these cases were complicated with lesions elsewhere, the combination of spine and phthisis being more frequent than any other.

The diagnosis of this condition in a child is often extremely difficult if the sputum does not contain bacilli. A condition of chronic bronchitis, in which physical signs often persist for months, and which in itself is not tubercular, furnishing the most frequent source of error.

Then, again, there is no doubt that many cases of tubercular broncho-pneumonia running an acute course are regarded as simple, their tubercular nature, like that of the disseminated cases, being only discovered at a post-mortem examination.

There are two examples of the difficulty in collecting reliable statistics in the absence of post-mortem records.

Glands.

The sixty-four cases recorded must only represent a very small percentage of the cases of tubercular adenitis, as these would be chiefly treated in the out-patient department. The large number of cases of bronchial glands have been omitted, owing to the difficulty of proving their tubercular nature. The frequency of their involvement has been emphasised before.

Apart from these, the cervical group were involved in 70 per cent. of the cases. Next in frequency were the retroperitoneal. As regards age incidence, nothing particular was noticed, the condition being equally common at all ages.

Peritonitis.

There were fifty-eight cases of tubercular peritonitis, with fifteen deaths.

Cerebral Granuloma.

It is worth while noting that only one case of tubercular granuloma occurred in the series. This is in striking contrast to the figures quoted by McCrae, Archives of Pediatrics, April 1908, who states that in his series tuberculoma of the brain was one quarter as frequent as tubercular meningitis.
PERFORATED GASTRIC ULCER—OPERATION—RECOVERY.

FRANK A. NYULASY, M.B., B.S.

It has recently been strongly urged by leading authorities on gastric surgery that gastro-jejunostomy should be performed as a routine in all cases of perforation. That this is not always necessary or advisable is shown by the history of the following case:

E.B., an anaemic girl, aet. 25, had some three or four years previously being under my care for an attack of vomiting of blood, which I attributed to a gastric ulcer. By keeping her in bed, and under appropriate treatment, she appeared to have got quite well in about six weeks, and remained so, with the exception of one or two slight attacks of indigestion, due to dietetic indiscretions, till the evening of December 21, 1907. At about 9 p.m. on this date, while walking some two hundred yards from home, she was suddenly taken with most violent pain in the stomach and faintness. She went into a friend's house near by, but getting no relief, walked home with some assistance, when household remedies, such as hot foments, were applied to the abdomen. The patient obtaining no relief by these means, I was sent for, and arrived about 11 p.m. The patient was deathly pale, she had an anxious expression, and was suffering acute pain. There was great pain over the abdomen, most marked in the epigastrium, distension, with diminution of liver dulness, and rigidity of the abdominal muscles, but no vomiting. The pulse was very rapid and feeble, and the temperature 101° F. Clearly an "acute abdomen."

As the patient was suffering intensely, I gave her a quarter grain of morphia hypodermically. I then told the friends that in my opinion she was suffering from the sudden perforation of a latent gastric ulcer, after the ingestion of improper food (cold tongue and cheese,) taken for tea at 6 o'clock, and that an immediate operation was necessary to save her life. She was accordingly removed to Myrnong Private Hospital, arriving there at about half-past one in the morning, and half an hour later I commenced the operation, her temperature then being 100° F., pulse 120, respirations 26, and very shallow; she looked extremely bad, and was in great pain.

Operation.—The abdomen was opened in the midline, directly over the stomach, and blood-stained fluid welled up immediately the abdomen was entered. On drawing up the stomach a small
perforation, with some flakes of lymph, was found on the anterior wall, near the cardiac orifice. The stomach wall round the opening was a good deal thickened and congested. The opening was simply closed by a suture or two, and then inverted by Lembert’s sutures of silk, and the surrounding parts well cleansed by sterile gauze. The abdomen was now opened below the umbilicus, and a great quantity of thin turbid fluid swabbed out by means of sterile gauze and forceps. The whole abdomen was got as dry as possible without any irrigation. The lower wound was then closed, but a rubber drain, leading down to the perforation, was put in the upper wound by way of precaution.

Patient was now returned to the ward, where she was given 5 m. of strychnine hypodermically, and a saline injection. She said the pain was much easier, and she was inclined to sleep; she then slept till seven the next morning (three hours), when she was given a nutrient enema, having previously passed urine voluntarily (3 x). Complaining of a little pain in the region of the wounds. Temperature 97°6° F., pulse 120, respirations 28. She was now propped up by five pillows, as recommended by Moynihan, and said she was “pretty comfortable.” There was no vomiting. From this onwards she progressed very satisfactorily, and left the hospital five weeks after admission. She has been steadily improving and gaining in weight ever since, and is now in better health than she has been for years.

I would like to add that the patient’s condition being so bad at the time of operation, I inverted the ulcer in the stomach by means of one layer of Lembert’s sutures, instead of the two recommended by Moynihan, and discarded the idea of gastro-jejunostomy for the same reason. Her recovery was due to prompt operation.

Soured Milk. There is no doubt that Metchnikoff is responsible for much public indulgence in soured milk, but there is likewise no question that a large section of the world’s population had “got the habit,” as the Americans say, from a dim and distant past. In Egypt they drank soured milk before the pyramids were thought of, and in Eastern Asia and Northern Europe it is consumed at the present day, both as a national food
and as an habitual drink. Metchnikoff, in reply to numerous requests, has published a pamphlet on the subject (London—John Bale, Sons and Danielsson), which will constitute a chapter in a work yet unpublished. Those who are familiar with this distinguished scientist's literary style, need no assurance that this latest work is interesting reading. Metchnikoff insists on the boiling of milk before souring, and this involves a little extra care in subsequent souring. "Boiled milk, in order to undergo thorough lactic fermentation, must be inoculated with ready-prepared 'seed.'" This is provided in "lacto bacilline" powder or tablets, which are a pure culture of lactic acid bacilli; and curdled milk should be made from skim milk, which has long been consumed in Ireland as "buttermilk." So does custom not infrequently anticipate scientific reason. "I believe, then," writes the author in a concluding sentence, "that lactic ferments are capable of rendering great service in combating intestinal putrefaction, but I hasten to repudiate the idea that these microbes possess the property of determining longevity, or of averting old age, except in so far as they make for a high standard of health; after all, these are questions which cannot, at present, be profitably discussed."

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**Research Defence.**

Every action provokes a reaction, and the outcome of the recent virulent abuse of medical scientists and the profession generally by persons signing themselves anti-vivisectionists has been the formation of a Research Defence Society. This society, which was only founded in 1908, has now 2250 members, and its executive includes distinguished names in every department of art and science. A volume of selected publications has been issued (London: Macmillan and Co.), which form an interesting and valuable evidence of the earnestness and high purpose of its contributors. A summary is given of the experimental work done on animals during 1907, and 96.5 per cent. of experiments were simple inoculations, or some procedure not requiring a cutting operation. It is often difficult, when faced with the need of refuting anti-vivisectionist statements, to recall the precise facts and figures that will serve. This little volume will prove of great service in that direction, and is quite suitable for the layman as well as the medical man, who is anxious to have his arguments in orderly array. Although the anti-vivisection movement has gained little or no ground in Great Britain, it shows signs of becoming an
American agitation, and no doubt will appear in due course in our own midst. When it does, it will best be met with confident reasoning, and a perusal of the work in question will greatly aid such an attitude of mind.

In the modern armamentarium against tuberculosis, cod liver oil has to a large extent dropped out of notice. It has been regarded by many as a rusty out-of-date weapon, never very effective, and no longer worth considering. Yet the older physicians were very positive as to its value, and they rarely drew erroneous conclusions from personal experience. Wells, of Manchester, has recently published a series of observations on tuberculous pigs, to determine the effect of cod liver oil upon nutrition. His conclusions point to the fact that cod liver oil has properties which aid tuberculous pigs to assume and maintain better nutrition than those on similar diet without it. He further found that when the oil was administered in the form of an emulsion, composed of glycerine, and hypophosphites of lime and soda (Scott's Emulsion), "its efficacy was enhanced in marked degree;" and this was true for tuberculous and non-tuberculous pigs alike. The dose was 0.3 c.c. of oil for each two pounds of animal weight. The general public has never quite lost its faith in cod liver oil, and a new endorsement by the profession would doubtless be hailed with much satisfaction. At least cod liver oil fulfils two requirements which the public mind inevitably associates with great efficacy. It is intolerably nasty to taste, and possesses anything but a sweet savour. The emulsion, however, approaches to palatability, and the objectionable odour of the oil is successfully disguised, so that if Dr. Wells' conclusions be correct as to its superior value, the old terrors of the pure oil would no longer be insisted upon.

British Medical Association
(VICTORIAN BRANCH)

ORDINARY MONTHLY MEETING

WEDNESDAY, MAY 5, 1909

(Hall of the Medical Society of Victoria, 8 p.m.)

The President (Dr. G. CUSCADEN) in the chair, and 30 members present.
Dr. Julian Smith showed X-ray negatives, illustrating the use of bismuth pastes for injection in sinuses, to show their extent.

Minutes of last meeting were read and confirmed.

Professor Osborne read a paper on "Metallic Balance in Saline Aperients."

Mr. Judah Jona, introduced by Professor Osborne, read a paper on "Adrenalin as Emergency Treatment in Cases of Poisoning."

The President thanked Professor Osborne for the paper, and congratulated Mr. Jona on his interesting research, and thanked him for communicating it to the Association.

Mr. Kent Hughes also spoke in complimentary terms of the paper.

Dr. A. V. Anderson was elected a representative at the Annual Meeting at Belfast in July next.

The meeting terminated.

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**Australian Branches.**

**New South Wales.**

Dr. Abbott delivered a retiring address as president of the New South Wales Branch of the British Medical Association. He dealt exhaustively with the dispute between the Branch and the Lodges, and urged that Sub-Committees should be appointed to watch the lodge matters. It is proposed to build a hall for the requirements of the Branch, and at a cost of £21,850, including the cost of the land. Dr. Abbott put forward a proposal to raise this sum as follows:—Cash in hand, £1500; debentures of £10 to be issued for a sum of £10,000, bearing interest at 4 per cent. A mortgage of £10,000, to be given on the building, would complete the amount.

**Queensland.**

Dr. A. Stewart read a paper, entitled "The Early Recognition of Consumption"—a plea to the profession. He was of opinion that the present disinclination to diagnose early consumption is a matter requiring attention. "Therefore, we cannot evade facing the fact that a great proportion of our profession cannot or will not diagnose incipient phthisis. To those the frank question is often asked by their patients, or their friends, as to the actual state of the lungs, when evasive answers are given to this important matter by such expressions as 'weak lungs,' 'only run down,' etc., ad nauseam." He insists tubercle does not require the presence of bacilli for positive diagnosis. He uses Koch's old tuberculin for diagnostic purposes in doubtful cases. He recommends Rapke's method.
Dr. Espie Dods read notes of three cases of death due to acute septicemia. First was a barman, who complained of feeling ill on January 22 at 10 p.m. Next day at 3.3 p.m. he became delirious, and died in ambulance on the way to the hospital. Post-mortem.—All organs were congested. Heart flabby, but no valvular disease. No organisms were isolated, but this was owing to delay in examination. Guinea pigs inoculated with “material” showed no signs of sickness. Second case, a publican, complained of pain in chest, and died same evening. Post-mortem.—Organs congested, and numerous petechial spots. Specimens examined at Bacteriological Institute showed staphylococci. Third case, a married woman, complained of feeling unwell on January 26, and died same evening after admission to hospital. Post-mortem.—Organs much congested; numerous small hemorrhages. Abdomen contained two pints of pale yellow fluid. Glands in axilla and groin enlarged and congested. Bacteriological Institute reported diplococci and streptococci. Guinea pig inoculated did not show any signs.

Dr. Dods remarks the first two were reported as suspected plague, and that all three occurred within five days. He regards them as acute septicemia.

Dr. L'Estrange read a paper on “Barany’s tests in labyrinthine affections.” The method consists in the induction of a nystagmus, and depends on the fact that in a normal labyrinth nystagmus, as measured by a stop watch, has a generally constant duration. Three methods have been employed—(1) Rotation of the body on a turning stool; (2) the injection of cold water, by means of india-rubber bag and Hartmann’s attic canula; (3) electrical induction. L’Estrange finds, of all labyrinthine affections, syphilis gives the most constant and marked reaction to Barany’s test. The test gives some indication of part of labyrinth affected, and enables one to distinguish with some precision between affections of the vestibular apparatus, the cochlea, and the semi-circular canals.
of substances in solution, the composition of each spring being
given in two columns, containing in one the amount per thou-
sand of each ion present, e.g., kations—potassium, sodium, etc.,
anions—chlorine, sulphate, carbonate, etc.; and, in the other, the
probable combination in which these exist in the water. The
calculation of this alone must have cost a great deal of labour,
not to mention the collection of data given under the heading
of each spring in regard to the climate, altitude, population, etc.,
of the district, curative properties of the waters, and references
to the literature on the subject.

Besides the tabular composition of the springs, there are
coloured plates giving a graphic representation of the composi-
tion of each, so that one can see at a glance which constituents
predominate. Maps of the German Empire showing the rain-
fall and distribution of the springs and sanatoria are also given.

From this point of view the book must be looked upon as a
work of reference which would prove useful to practitioners
in Australasia, as indicating the kinds of cases which would
benefit most at these spas in Europe, or at springs with a similar
composition in this part of the world.

But it is to the first part of the work that we wish to draw
special attention, as it is a part which will well repay perusal.
It contains a clear and concise account of the most important
facts relating to balneology in general. There is first a chapter
on the geological aspects, in which the source of the water
in mineral springs, the origin and nature of the dissolved sub-
stances, the most suitable arrangements for catching and dis-
tributing the mineral waters, are considered; then there is a
chapter on the chemistry of mineral waters in general, followed
by an up-to-date account of radio-activity, in which reference
is made to Rutherford's work on the alpha, beta, and gamma rays.
The universal presence of these rays and emanations in all
springs, their power of penetrating solid substances, including
animal tissues, their physiological action, and, in concentrated
form, lethal power, are all touched on in a way which suggests
the great possibilities which underlie these facts when applied to
the treatment of disease, and which also suggests explanations
of certain results in balneology which were previously obscure.
Other chapters treat of the pharmacology of the salts found in mineral springs, the therapeutics of baths and springs, and the classification of mineral waters.

As a whole, the work is a model of what must sooner or later be done for the mineral springs of this and of other countries. The language is clear and easily understood, even by those who possess only a mediocre knowledge of German.

J. M.


The latest addition to the Nothnagel series is a volume on the Diseases of the Heart, and in it the high standard of excellence is maintained—in fact it is one of the best and most complete of the whole series.

The volume comprises five sections, three of which—"Insufficiency of the Heart," "Endocarditis," and "Valvular Disease"—are contributed by Theodor von Jürgensen, of Tubingen, while the remaining two—"Diseases of the Myocardium and Nervous Diseases of the Heart," and "Diseases of the Pericardium"—are by Krehl, of Greifswald, and Schrotter, of Vienna.

It is unavoidable that, in dealing with subjects so closely associated with each other, that there should be some repetition and overlapping.

The authors present numerous illustrative cases, the majority of which they have had under their own personal care for years, and, as most of them are of great interest, a perusal of the histories alone is very instructive, and of considerable value.

The description of endocarditis (by which von Jürgensen means those forms other than of a rheumatic nature), varies somewhat from that given and accepted in English text-books. Some of his cases he has been able to closely observe for years. The commonest forms of pathogenic organisms which are the causative factor of this condition are the staphylococci, streptococci, diplococcus of pneumonia, and gonococcus; other forms are also found, but it is difficult often to fulfil the requirements of Koch to prove indisputably that the organism is the true cause of the disease.

This particular form of endocarditis may come on insidiously, and in many respects bears a resemblance to that associated with
acute articular rheumatism, but can be distinguished by certain peculiarities:—(1) Tenderness of the bones, especially of the shafts of the long bones. (2) Dull aching pain, and less swelling of the joints as opposed to an acute arthritis of rheumatic origin. (3) The want of specificity of the salicylates as compared with rheumatism. (4) The tendency to embolism. As regards treatment of this condition, it may be summed up in rest and "symptomatic therapeutics." Von Jürgensen places no reliance on serum-therapy, but a hopeful view is expressed in reference to vaccine treatment. On this point, Barr, Bell and Douglas' very successful treatment of a case of Infective Endocarditis published in the Lancet, of February 1907, is referred to.

A most instructive section is that on Diseases of the Myocardium, by Krehl. A complete account is given of the clinical, anatomical and pathological condition of the heart. His views on cardiac asthma are interesting and instructive. Although he recognises that, possibly, a number of factors must be considered, he is not in accord with the French observers that toxic and nervous causes play an important part in the production of this very troublesome form of dyspnœa. He is inclined to the view that it is chiefly a mechanical one, a disproportion, more or less marked, between the functional capacity between the right and left ventricles. The condition occurs in chronic myocarditis, nephritis, and sclerosis of the coronary arteries. The physical signs vary greatly; in the milder forms there may be nothing detected on auscultation, but in the severest types there may be all the signs of exudation into the alveoli, with serosanguineous expectoration, i.e., an acute pulmonary oedema.

The medicinal treatment of cardiac insufficiency is practically digitalis. The substances contained in digitalis have a direct influence on the heart, and with little or no action on the vasomotor system. The form in which digitalis is administered by the Germans is the infusion, as it is believed to be less toxic and better borne than the other preparations. Little or no reliance is placed on digitalin.

Baths and other hydrotherapeutic procedures employed to strengthen the heart are thoroughly reviewed, and instructions given for the production of artificial baths.

The task of translating from the German the monographs presented in this volume was entrusted to Professor Stengel, of Penn-

This book, published this year, is a reprint of papers by the late Sir J. Fayrer and Sir Lauder Brunton, and furnishes the results of a protracted and systematic series of investigations on the nature and action of the poison of Indian venomous snakes. The whole research is the outcome of work begun in India forty years ago by...
Fayrer, with the object of providing an antidote that might be efficacious in neutralising the action of snake poison. The papers are republished in the hope they may be useful to other workers in the same field.

Appended is a paper by Major Rogers, reprinted from the Proceedings of the Royal Society for 1904, giving an account of the experimental work carried out by him on the use of permanganate of potash as an antidote.

W. H. S.

Diathesis and Ocular Diseases. By A. Maitland Ramsay, M.D.
London: Balliere, Tindall and Cox.

Text-books do not usually devote to treatment sufficient detail to be as helpful as the practitioner frequently wishes, hence the need for books of this class. The various diatheses, in their influence upon diseases of the eyes, are illuminatively and helpfully dealt with, and the necessary treatment is fully and clearly described, the very latest innovations receiving their just meed of appreciation. Dr. Ramsay has previously published an excellent Atlas of External Diseases of the Eye, with coloured plates, and a description of Eye Injuries and their Treatment, both of which have been well received by ophthalmic surgeons. The present book will profitably take its place on the practitioner's shelf, beside the two last-mentioned.

A. L. K.


This little book will be useful to nurses training in gynaecology.


A very excellent manual for nurses. One of the best of its kind we have seen.

The Medical Annual, 1909. Bristol: John Wright and Sons, Ltd.

This popular volume continues on lines now familiar to every practitioner, so that there is no need to describe its general features. The new issue well maintains the high standard attained in the past, and the bulk has not been increased. There is a specially
full article with numerous illustrations on Diseases of the Nasal Accessory Sinuses, and the plates are very helpful. A number of other articles are also profusely illustrated, and there is the usual supply of information on varied topics of interest to medical men. It should find a place in every medical library, and particularly in those of men whose busy practice prevents them from giving the time necessary to follow medical and surgical progress in the weekly journals.

**Aids to Medicine.** By Bernard Hudson, M.D. Camb., M.R.C.P.

This is a new volume in a series well known to students. There are so many excellent small manuals on the same subject that it is difficult to perceive the need for cram-books. Dr. Hudson seems to have succeeded well enough in compiling what can at best be only a last minute remembrancer to students preparing for an examination.

**New Editions.**


This report retains the high standard of previous editions, and deals in detail with most of the important parasitic blood diseases of tropical climates, and the responsible insect hosts. The text is beautifully illustrated with many exceedingly good plates. In view of the increased importance to Australia of tropical diseases, which must of necessity be a question of great significance in the near future on opening of the Panama canal, a comprehensive study of the subject, as presented in this report, must prove of great value to medical practitioners generally throughout the Commonwealth. The supplement to this report is in the form of a review of some of the recent advances in tropical medicine and kindred subjects, and forms most interesting and comprehensive reading; an exceedingly useful epitome of recent knowledge, which should prove invaluable to medical officers of public health.

The director, Dr. Andrew Balfour, is to be congratulated on the excellence of the work done, and the high standard of excellence attained.

R. J. B.
Practical Application of Wassermann's Reaction:

An interesting discussion took place in New York on the above subject, which we take the liberty of reprinting from the New York Medical Record, March 13, 1900:

Dr. Boleslaw Lapowski said the reaction was not a specific one in the bacteriological sense, in that it was not directly due to the products of syphilis, but it might be considered as a clinically specific sign of syphilis, owing to the great number of syphilitic cases where the reaction was positive, reaching the average of 90 per cent. In a very small number of non-syphilitic cases, such as malaria and leprosy, the reaction was also positive while no syphilis was present. The positive reaction indicated only the presence of syphilis in the organism, but not necessarily the focus of the syphilitic disease. In cases of doubtful diagnosis the positive reaction was of great importance, especially for the surgeon. Many operations would be avoided, and active specific treatment substituted. A positive diagnosis meant syphilis, but a negative one could not always be considered as proof of absent or cured syphilis, as a negative reaction might occur in cases with manifest syphilis. In shaping our plan of treatment, the reaction was not entitled to any more weight than was given to any other clinical symptom of syphilis. We should not be influenced by the reaction alone, but by other considerations, such as the age of infection, the tolerance of the patient to mercury, etc. The value of the reaction in the treatment was limited to those stages of syphilis in which we formerly abstained from treatment because, not being able to demonstrate the activity of the syphilitic virus, we acted upon the supposition that the syphilis was either inactive or cured.

Dr. H. Noguchi, of the Rockefeller Institute for Pathological Research, demonstrated briefly a reaction evolved by him during some experimentation with the various albumin reactions in the spinal fluids of general paralysis and other disorders. This was obtained as follows:—0.1 c.c. of the spinal fluid to be tested was placed in a test tube, whose diameter was 1 cm. or less. To this was added 0.5 c.c. of a 10 per cent. solution of butyric acid. The tube was now heated until the fluid was bubbling, and while still hot 0.1 c.c. of a normal (4 per cent.) solution of sodium hydrate was added. In nearly all spinal fluids an opalescence or cloud occurred, but in the spinal fluid of general paralysis the cloud soon separated into a definite flocculence which was characteristic. The flocculence usually appeared in a few moments—rarely requiring more than twenty minutes. The reaction shown by Dr. Noguchi had the advantage of being positive in a quantity of 0.1
c.c. or less, and of being a qualitative as well as a quantitative test. What the flocculence might mean was not known, but it might consist of some globulin fraction which was found only in syphilitic or metasyphtilic disorders of the nervous system. That the reaction was not entirely quantitative, Dr. Noguchi said, was shown by the fact that many fluids from non-paralytic cases gave much richer clouds than those from paresis, but in such cases the clouds did not flocculate.

Dr. Charles Wood M'Murtry said that while these newer methods, especially that of Noguchi, were exceedingly interesting, he thought that for the sake of clinical accuracy we should confine ourselves to the Wassermann reaction—the complement fixation test as laid down by Wassermann-Neisser-Bruck. The speaker suggested that obstetricians should carry test tubes in their obstetric bags and obtain some of the blood that was lost in delivery, to be utilised for the purpose of securing blood serum for the Wassermann test. This would lead to the detection and treatment of many cases of latent syphilis in apparently healthy women and babies. In abortions, miscarriages, premature deliveries, or the birth of dead fetus, the test would prove of great value. Another suggestion he made was the various health boards should add the Wassermann test to their facilities for diagnosis, so that even the more modest practitioners could avail themselves of this test in treating the poorer classes of patients. Syphilis was a highly dangerous, infectious disease, and as such merited the attention of our health authorities.

Dr. James Pedersen, quoting Dr. Francis Carter Wood, said that such tests as the Wassermann usually passed through four stages, namely, the stage of universal acceptation, the stage of doubt, the stage of almost total neglect, and, finally, the stage of equilibrium—when its true value had been determined by much testing and research. He thought Dr. Lapowski's paper stated admirably the present status of the test under discussion, namely, that it was, and probably always would be, a laboratory aid to the usual clinical facts on which a diagnosis must be based. The test should not be regarded as pathognomonic.

Dr. B. Sachs said that he had personally applied the Wassermann test in about one hundred cases, and eighty of these he had full control of. While the technique of the method was not easy, it could be acquired by a little patient study, and he advised as many practitioners as possible to take the time and trouble to do this. In every hospital and in every clinic there should be at least one man—preferably one of the younger members of the staff—who was fitted to make these examinations. The value of the test was admitted in all the clinics abroad, and it was a distinct help in the recognition of late syphilitic manifestations. Dr. Sachs thought energetic treatment modified the reaction, and that it became less and less positive.
X-ray Carcinoma:

Rowntree (Lancet, Mar. 20, '09), in an account of an experimental enquiry into the conditions which precede X-ray carcinoma, writes:—

It has long been widely believed that squamous carcinoma is intimately connected with chronic irritation. The real point for discussion is whether X-ray dermatitis merely stands in the same relationship to new growth formation as other pre-cancerous conditions, or whether the X rays have some special action which disposes epithelium to malignant degeneration.

Concerning the very numerous conditions of chronic irritation which are closely associated with cancer, viz., chronic ulcers, scars—particularly the scars of burns—leucoplakia, paraætin eczema, Paget's eczema, lupus, chimney-sweep's warts, etc., I would particularly draw your attention to two points. (1) The comparatively small percentage of cases in which carcinoma arises as a complication of these conditions; (2) the malignant growth in these cases is practically always single.

On the other hand, it is noteworthy that of eleven cases of X-ray cancer, no fewer than five had multiple lesions—separate and distinct carcinomatous growths either on different fingers or on different hands. In the first case, as already mentioned, there was a growth on each hand and one on the chin.

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It would appear that these facts establish an important point of difference between X-ray cancer and other forms of malignant growths. With X-ray cancer may be considered another condition, which is characterised by multiple epithelial growths. I refer to xeroderma pigmentosum. Very early in the history of X-ray dermatitis it was recognised that it in many ways resembles xeroderma pigmentosum. In this disease grave pathological changes arise in the skin, apparently as the direct outcome of the exposure of, presumably specially disposed, individuals to the action of ordinary sunlight. The condition—which usually begins in infancy—is characterised in its earliest stages by the appearance of abundant freckles on those parts usually exposed to the light. A striking augmentation in the number and depth of pigmentations occurs with each succeeding summer until they are of large size and nearly black in colour. Subsequent changes are of two kinds, one or both of which may be found in any given case. First, small rounded areas of skin undergo atrophic change, leaving depressed avascular cicatrices. Secondly, localised overgrowths of epithelium may occur, resulting in the formation of warty masses, which in certain cases have become carcinomatous. In a hitherto unpublished case, the notes of which Dr. J. J. Pringle kindly placed at my disposal, freckling was noticed at two years of age, and the condition became gradually worse and worse; scarring of small isolated patches of skin occurring, particularly on the lower eyelids, with the result that ectorrion and troublesome conjunctivitis followed. Finally, a brown warty growth appeared on the side of
the nose. The resemblance to X-ray dermatitis is rendered still more striking by the fact that numerous cases of xeroderma pigmentosum are recorded, in which actual carcinomata have supervened, and at an age when squamous-cell carcinoma is practically unknown under other circumstances. Thus Gaszman reports a case in a boy at the age of eight. X-ray dermatitis and xeroderma pigmentosum, considered as conditions which dispose to the formation of carcinoma, would appear, therefore, to have much in common, and to be differentiated from all other states which precede cancer.

In reference to the treatment of X-ray cancer, there is little doubt that the growths, though histologically they are squamous-cell carcinoma, are in the majority of cases of a low degree of malignancy. It is possible, therefore, indeed, it is probable, that instead of resorting to amputation of the finger or of the hand, simple excision of the growth might safely be carried out. Among the cases I bring before you, in spite of extensive primary growths, in no instance has there been invasion of the lymphatic glands up to the present time. This fact suggests that where a wart or an ulcer has resisted treatment it should be freely excised without delay, and that even though histological examination may reveal the presence of carcinoma, no further operative measure need be undertaken. This limited excision, however, is probably not indicated in cases where an ulcer has attained the macroscopic appearances of ordinary carcinoma. The malignant or non-malignant character of many quite considerable ulcers can only be determined microscopically. An ulcer may appear quite superficial and simple in character to the naked eye, and yet under the microscope may reveal an extensively infiltrating carcinoma.

The practical application of what has gone before is of chief importance in connection with the X-ray treatment of malignant growths. There has been, and there still is, considerable divergence of opinion not only as to the kinds of growth which should be subjected to treatment, but also as to the manner in which the best results may be obtained. All observers are agreed, however, that it is only in very superficial conditions that amelioration can be confidently anticipated.

Of all malignant growths, rodent cancer is the most superficial, and it is the only variety in which really good results have been obtained. But even in this conditions the results are discordant, in some cases the tumour disappearing after two or three exposures, in other cases healing only to break down again, or not healing at all.

It is possible that in certain cases the dose administered has been so large as to have induced a condition analogous to an X-ray burn; or, in other cases, it is probable that a dose just sufficient to induce retrogression of the superficial parts of a growth may, in the deeper portions, stimulate to increased activity.
Caesarean Section:

Porter (Journal Amer. Med. Assoc., Mar. 20, '09), in a paper, entitled "Elective Caesarean Section," concludes as follows:—

The accumulated experience of competent operators warrants the assertion that the danger of hernia is practically nil. That the danger of Caesarean section is not materially increased by some hours of labour in the absence of infection, I am convinced. That infection increases the danger of Caesarean section more than it increases the danger of obstetrical operations is not proved. Hirst (who has done 80 Caesarean sections, with five deaths), in his letter says—"My recent experience convinces me that Caesarean sections may be done with impunity after hours of labour, if the woman is not infected and the technic of the operation is as good as it ought to be: the mortality even in infected cases need not necessarily be excessively high."

We are warned by many writers that there is danger of having unnecessary Caesarean operations if we emphasise the lack of danger in favourable cases. This danger is a real one, perhaps, but that it is as great as is that arising from the all-too-prevalent notion that high forceps, version and other obstetric operations, require no particular skill lacks proof.

The point I wish to make here is that the so-called obstetric operations require for their proper conduct just as much skill as does Caesarean section. Indeed, I am of the opinion that the inherent difficulties of the obstetric operations are greater than are those of Caesarean section. All the operations under consideration require skill and judgment, and it is little short of criminal for one who is not possessed of both to undertake any one of them.

The following conclusions are presented:—

(1) In patients with contracted pelves, Caesarean section should supplant the obstetric operations in many cases, and practically always in primiparae.

(2) In placenta praevia centralis Caesarean section should be the operation of choice if the child is viable.

(3) In eclampsia occurring at or near term in a first pregnancy, Caesarean section is the best method of delivery, except in cases where the child is relatively small, or the vagina and pelvis capacious, when Dührsen's operation might be given the preference.

(4) Women requiring abdominal section at term for the removal of uterine or ovarian tumours should be delivered by Caesarean section immediately before or after the tumour is removed.

(5) In the case of an elderly primipara at term with a vigorous child, with a normal pelvis, but with rigid soft parts, who is unusually sensitive to pain, whose nervous equilibrium is unstable, and whose physical condition is below par, Caesarean section done before labour has begun, or at its very beginning, offers a better chance of life and health to both mother and child than the so-called conservative operations.
(6) It is not to be forgotten, of course, that one of the chief arguments in favour of Caesarean section as against other operations is the fact that it entails no risk to the child; hence, in case of a dead or dying child, this argument carries no weight, and, therefore, it will not infrequently happen that because of a dead or dying child, a conservative method will be better in a case which, were the child vigorous and viable, and the other conditions the same, Caesarean section would be the better method.

The Month.

MELBOURNE PEDIATRIC SOCIETY.—The Monthly Meeting of the Society was held on 24th March, 1909, at the Children's Hospital. Dr. F. Hobill Cole was in the chair, and there was a good attendance of members and visitors. After the routine business of the meeting had been concluded, the following cases were shown:

(1) Case of Pneumococcal Septicaemia, shown by Drs. P. B. Bennie and W. A. Wood. (2) Vesical Calculus in child, aged 18 months, removed by the President. Stone was phosphatic, of presumably six months' duration from the history, and measured 1 inch by ¾-inch. (3) Case of Tubercular Meningo-Encephalitis, shown by Dr. Stawell. The Calmette Ophthalmic reaction was strikingly illustrated. There were many irregular and unusual manifestations in this case, which had begun last December. (4) Case of Cirrhosis of Liver in child, shown by the President. History was of long duration—enlarged nodular liver, ascites, enlarged spleen, dyspnoea, oedema, 80-90mm., Hg. blood pressure; blood normal, family history good. Causation is obscure, and was attributed to some congenital specific condition, but the serum gave a negative Wasserman reaction. (5) A curious abnormality of the hip and knee was shown by Dr. W. A. Wood.

Dr. W. H. Summons, who has just returned from Europe, delivered a lecturette on "Some points of interest gleaned during a trip abroad," which appeared in the April number of the Journal. Much interesting discussion, both on the lecturette and on the cases exhibited, took place.

A hearty vote of thanks to the lecturer by the President concluded the meeting.

At the April meeting of the Pediatric Society several interesting cases were shown. The President (Dr. F. Hobill Cole) exhibited a case of sacral tumour, probably a lipoma obscuring a spina-bifida, with partial paralysis of the lower extremities, bladder, and rectum, and double talipes. Dr. W. A. Wood showed a case of imperforate anus. Drs. Douglas Stephens and Harvey Sutton showed an interesting series of cases of idioglossia in one family. Dr. R. R. Stawell gave a most instructive lecture on "Some considerations in the treatment of acute
toxemias in childhood." This paper was discussed vigorously by several of those present.

A very successful gathering, under the auspices of the Melbourne Medical Association, was held at the University on May 11, when Prof. Berry demonstrated a number of anatomical preparations. The evening was most interesting and instructive, and was very largely attended. Prof. Berry has kindly promised to supply a description of the preparations shown, which will appear in our next issue.

Attention is drawn to the following notice, and those interested are requested to communicate with Dr. E. R. Whitmore, Manila:—

It is proposed that the first meeting of the Far Eastern Association of Tropical Medicine be held for a period of nine days, opening Sunday afternoon, March 6, 1910, and closing with a business session at Baguio, Benguet, the summer capital of the Philippines, on Monday, March 14, 1910. The following has been adopted as the outline of a programme:—

**AT MANILA.**

Sunday afternoon, March 6.—Opening session.
Monday, March 7.—Protozoology, Helminthology.
Tuesday, March 8.—Cholera, Plague, and Leprosy.
Wednesday, March 9.—Surgery and Obstetrics; Diseases of Children.
Thursday, March 10.—Fevers in the Tropics, including Malaria, Typhoid, etc.
Friday, March 11.—Dysenteries; Beriberi.
Saturday, March 12.—En route to Baguio.

**AT BAGUIO.**

Sunday, March 13.—Tuberculosis.
Monday, March 14.—Climate, Hygiene and Sanitation.
Business session.
Return to Manila Monday night.

It is proposed that the daily sessions begin at 9 a.m. and continue until 5 p.m., with an intermission from 12 to 2 for luncheon. The sessions on Tuberculosis, Climate, Hygiene, and Sanitation, and the business session will be held at Baguio, in the Benguet mountains.

A suitable social programme will be arranged.

**The Jamieson Memorial Fund.** The following additional subscriptions have been received towards the "Jamieson Memorial Fund": —

| Medical Students' Society | £5 5 0 | Dr. T. H. Boyd | £1 1 0 |
| Chas. Bage | £1 1 0 | H. Godfrey | £1 1 0 |
| Chas. Alsop | £1 1 0 | C. Marshall | £1 1 0 |
| Crawford Mollison | £1 1 0 | Vivia Sproule | £1 1 0 |
| W. Moore | £1 1 0 | Clara Stone | £1 1 0 |
| | | J. Opie | £0 7 6 |

H. DOUGLAS STEPHENS, M.D., M.S.
(Representing Past Students).

R. A. ROBERTSON
(Representing Present Students).

Hon. Secretaries "Jamieson Memorial Fund, Melbourne Hospital."