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Original Communications.

TREATMENT OF THE TUBERCULOUS PROCESS AS FOUND IN JOINTS.*

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Mr. President and Gentlemen, — I shall alter somewhat the title of my paper as it appears upon your list, and shall address you very briefly upon the "Treatment of the Tuberculous Process as Found in Joints." Upon the invitation of the President to read a paper before this Association, I have selected this subject, not with the expectation of establishing any new tenets, nor of arraigning any orthodox ideas, but simply in the hope of exciting a discussion upon a subject which I believe to be of very great interest, not only to the surgeon but to the general practitioner. I am aware that there are certain definite principles of treatment, in more advanced cases, which are pretty universally accepted. Yet it is in the treatment of surgical tuberculosis in its earlier stages that the young surgeon encounters the gravest difficulties, and I am sure there are others present who, like myself, have been perplexed by the great diversity of opinion expressed by leaders of surgical thought in the discussion of the subject.

With your permission I will very shortly review the more salient points in the pathological process of the disease, as a knowledge of this is of course essential to the proper treatment of the condition.

Tuberculous disease of joints occurs most frequently in children of say from 3 to 9 years of age, and in growing youths, as in early life rapid tissue

transformations are going on in and around joints, and here the tortuous and multiplied capillary system affords excellent opportunity for the lodgment, and a rich field for the development of tubercle. Prior to puberty, the tuberculous process begins more frequently in the cancellous tissue of the ends of bones. After that period its starting point is probably more frequently the synovia. In the former case it is (a) central, or (b) perhaps more rarely peripheral.

On the synovia, or in the cancellous tissue may be seen the tubercles more or less discrete; in other words, the foreign infectious particles which give rise to the inflammatory process.

Should the process begin in the synovia, the membrane assumes an appearance of increased vascularity and thickening, spreading out laterally in tufts between the cartilages, whose substance they gradually invade, projecting their processes into the cartilaginous structure (as Bilroth says, like the tendrils of the vine into the parent tree). These projecting processes of synovia gradually honey-comb and destroy the cartilage, and thus work their way onward into the cancellous tissue of the articular end of the bone, leading to a condition of carious destruction.

When the disease begins in the bone the inflammatory process extends into and destroys the cartilage, or the cartilages may become completely detached or removed by absorption or degeneration.

The products of the inflammatory process (a) may be so devoid of vitality that a retrograde change begins, ending in caseous or carious degeneration and rapid generalization of the disease, the patient dying of tubercular meningitis, or phthisis, or leading to chronic sinuses which undermine the health; or, on the other hand (b), the process may be arrested by its enclosure in a firm tissue-wall, the result of the inflammation itself.

What I would more particularly wish to hear discussed, however, by the members of this section, and what I am sure would be more interesting to the greater number of those present, is the treatment to be adopted in these disagreeable cases. And here I fancy every one must have an experience peculiar to himself. When men of such undoubted repute as Mr. Croft and Mr. Barker, on the one hand, and Howard Marsh on the other, can deduce from an identical series of cases

* Read before the Ontario Medical Association, June, '91.

treated, principles of treatment that are diametrically opposed the one to the other, it is proof sufficient to my mind that this subject is as yet decidedly unsettled and indefinite, and that the lesser surgical mind may have an experience of its own without presumption.

Let us review most briefly then the different methods of treatment at present adopted, and the arguments advanced in favor of each. I presume we may classify the different methods as, I. The Expectant; II. The Operative; subdividing the latter into (a) Erosion, (b) Excision, (c) Amputation.

The expectant plan of treatment consists in maintaining the joint in a state of absolute rest, and building up the patient constitutionally with local treatment, as indicated more particularly in the subduing of local inflammation. By improving the patient's vitality we render the tissues more capable of resisting the invading force. By reducing local inflammation we render the soil less fit for the invading germ. Should the joint become distended with fluid, or caseous degeneration have occurred, it is pretty freely incised and drained.

The exponents of this plan defend their treatment on the following grounds:

I. The development of tubercle depends largely on "the fitness of the soil." But the period during which the soil is fit—and there is therefore danger of tuberculous development in joints—is quite limited, roughly speaking between the 3rd and 10th year. Therefore, if by well-known hygienic and palliative measures we can arrest development of tubercle during this time, can assist nature to encapsulate and isolate it during the short period, the joint is comparatively safe.

II. Heredity is certainly an important factor in rendering a joint liable to a tuberculous attack, but statistics prove that children of scrofulous parentage, and who may have strong evidence of tuberculous invasion, yet recover entirely with appropriate care, and without surgical interference.

III. The progress of an ordinary inflammatory process in the neighborhood may determine the course of a tuberculosis. For example, how often do we find the history of a tuberculous invasion in a joint, dating from some trauma in the neighborhood? As an apt illustration of this Mr. Marsh mentions the advance of a tuberculous epididymitis during a

gonorrhœal inflammation, and its recession when the inflammation subsided.

Therefore, he reasoned, should tuberculosis of joints be due to trauma, reduce the resulting inflammation and thus check the tuberculous process.

IV. Unhealthy surroundings often determine the invasion in those predisposed to the disease; yet it is equally true that when this is remedied and the patient placed under the most favorable hygienic conditions, and he is constitutionally built up, he will often recover perfectly.

V. Finally the gentlemen of the expectant school should claim that surgical interference is quite liable to excite generalization of the disease, and that it is impossible to be certain that every particle of tuberculous matter is removed unless the section go beyond the epiphysis. Now as the excisionist proposes to operate upon young children this would obviously destroy the utility of the limb. This is not by any means an ingenuous contention, and certainly adds nothing to the strength of the position occupied by the non-operators.

The excisionists believe briefly:

1. That tuberculosis is *practically* a malignant disease, or at all events, that it possesses the most dangerous elements of malignancy, viz.: inevitable systemic infection when not entirely removed.

2. That entire removal of the diseased portion precludes the possibility of generalization.

3. That excision shortens the period of suffering.

4. Finally that the operation should be done as soon as (so called) suppuration is present, or as Mr. [Barker thinks, as soon as the presence of caseation were even suspected. Because danger, generalization, etc.

If the first of the contentions be true, viz.: that tubercle is practically malignant in its nature, then I fancy the discussions were closed most decidedly in favor of early and radical operation. But is it true? Ashurst (in his *Encyclopaedia of Surgery*, Vol. I., pp. 831, *et seq.*) says in effect that the most reliable, constant and perhaps only definite proof of malignancy is the invasion of neighboring glands. This does not of necessity hold good in tuberculosis of joints, and although metastatic recurrence is a frequent incident in the natural history of both diseases, it does not follow that they are identical.

Erasion or thorough scraping away of the products of the disease is an operation very frequently performed in this city, and has much to recommend it. But it is, of course, only of value in those cases where the disease is confined to the synovial membrane or the articular ends of bones, and is not available in such joints as the hip, shoulder and elbow.

In reference to the two great schools, the non-operative and the excisionist, it seems to me that a rigid adherence to either would be unjustifiable.

The non-operator takes too much for granted in considering a quiescent encapsuled mass of tubercle to have no longer a pathological significance. He wishes to consider as dead, that which is *only sleeping*, and which may be roused into lamentable activity and vitality, by the first shock of traumatism or exposure.

The excisionist, on the other hand, is apt to be too radical in his views, and to forget that the sacrifice of a joint is no trifling matter. Without laying down any hard and fast rule, each of these methods has its *role* in the treatment of this condition. Even amputation is sometimes a necessity, or at least the preferable method of treatment; as for instance was very well illustrated by a case operated on by Dr. Grasett some time ago in the Toronto General Hospital. Here a young man *æt.* 24, a farmer, had been suffering intermittently for 21 years, from tuberculosis of the knee-joint. Finally the limb became useless to him. The disease had extended far above and below the joint, and his general health was suffering. To have excised would have required the removal of a large section of bone, with little hope of securing bony ankylosis, and in his occupation the result would have been worse than useless. Amputation was obviously the preferable operation and it was accordingly done.

Each case then should be treated upon its merits, but I think there are certain broad principles which should guide us. If we acknowledge the possibility of the permanent recovery of a tuberculous joint without systemic infection, and bearing in mind the pathological process which takes place during the progress of the disease, I think a point of vast importance is the early diagnosis of the condition. This is often quite difficult owing to the possible absence or trifling nature of pain, the small amount of swelling, the indefi-

nite history and the absence of constitutional symptoms. Having diagnosed tubercle, however, provided the disease is seen in its *earliest stage*, I believe we are justified in every case in adhering to the expectant plan, so long as the disease does not appear to be progressing unfavorably. The joint is fixed immovably and the patient confined to bed, only until any acute symptoms have subsided. The local application of counter-irritants has not, in my short experience, proved of any value. The best counter-irritant is rest to the part. This may be secured by any of the numerous well-known permanent dressings, for a time at least, followed by a fixative-apparatus the most admirable of which is probably Thomas'. The patient is got out of bed and placed among the best hygienic surroundings at the earliest possible moment. In children, more especially, this plan works admirably. Notwithstanding our best efforts, however, caseation is liable to occur. This we recognize by the plastic waxy condition of the neighborhood which pits on pressure. Hitherto having followed the expectant plan carefully, we must now diverge therefrom. We have reached the point when the diseased product has become, or is about to become, a direct menace to the life of the patient, and conservative surgery warns us to remove that product.

A tolerably free incision is made into the joint and all diseased product removed by erosion. This operation, however, is only of definite value when the disease is obviously superficial. Where the disease originates in, and is as yet largely confined to the synovial membrane, that sac is drained by the aspirator and injected with an emulsion of iodoform, as recommended by Mansell Moulin. In those joints in which erosion is not practicable, this is the proper time at which to excise. Should the starting point of the disease be in the bone an early incision should be made down to the diseased area, and all diseased bone thoroughly removed by the sharp spoon. Should this necessitate considerable destruction of bone, and more especially should the joint be already involved, then it seems to me the more rational method would be immediate excision.

Should sinuses form and resist our best efforts at healing, excision or amputation should be our resort. Of course, in the case of the poor man, unable or unwilling to undergo a somewhat pro-

longed treatment, more radical interference is no doubt justified even early in the disease.

My ideas as to the importance of early radical operation are perhaps not warranted by statistics, but I would just like to say that, after careful examination of available statistics, they appeared to me peculiarly unreliable and indefinite, the patient's career, subsequent to apparent recovery, not having been followed for a sufficient length of time.

Perhaps my ideas are also biased by the occurrence in my practice within the last two years of two deaths, resulting from tubercle of the knee-joint. Erosion was done in each case with every precaution. The one, a child of five years, died of tubercular meningitis four months after the operation, when we supposed he was making an excellent recovery. The other, a married lady, *æt.* 22, seen in consultation by my colleague, Dr. Teskey, died a short time ago of pulmonary phthisis. I am of opinion that free and early excision would have saved these two lives. The *post mortem* table, too, has furnished me with several examples of the imperfect removal of the disease.

For the sake, then, of obtaining the opinions of those present upon this most important subject of treatment, I would make the following propositions:

I. In the early stage, *i. e.*, in the stage of so-called "growing pains," slight limp and swelling—absolute rest to the joint with tonic treatment and improved hygienic surroundings for the patient. Persevere longer in the child than in the adult.

II. The moment caseation or retrograde change begins—a somewhat free incision with erosion, if necessary and possible; but should the process have extended beyond the cancellous ends of the bones, immediate excision is indicated. Never remain satisfied with erosion unless absolutely positive you have got entirely beyond the disease.

III. If, on opening the joint, the disease be found confined to the synovial membrane, the less radical operation of aspiration is indicated.

IV. If the disease be as yet confined to the end of the long bone and the joint not yet invaded, removal of dead bone and diseased products with the sharp spoon should be tried, with the hope of arresting the process. But should the destructive process still continue, excision is indicated.

V. In those joints where thorough erosion is

impossible, excision would be indicated at that stage at which erosion would be done in such joints as the knee.

VI. The early radical operation shortens the period of suffering.

VII. Frequently, in case of the poor man, instead of the word excision in the above propositions we should read "amputation."

PERI-UTERINE CELLULITIS.*

BY J. H. JARDINE, M.D., LONDON, ONT.

In this age of progress and mental activity, when it is our boast that we know more than what has been known in any other period of time; in this age of discovery in the microscopical world, when the atom itself has nearly been found, and molecules are mapped out and bounded; in this age of physiological research when the vital process is observed in Nature's laboratory, and the vital principle is just beyond the horizon; in this age when the female pelvis explored from within and without, is no longer a mere *clausum*, and the female organs of reproduction are exposed to the attack of the surgeon's knife with impunity, and it is generally believed that the average woman could get along very well with, say one-half of them; in this age of speculation and theory; it is well for us sometimes to sit down by the bedside and giving nature a fair field and no favors, see how she eliminates poisons from the system, and repairs the ravages of disease.

The female pelvis is exposed to a great number of mishaps. During menstruation the vascular congestion is great, and a slight chill at any time may change the physiological into the pathological. Copulation brings with it congestion, sometimes physical injury, and it may be animal poisons. Parturition has as its accompanying pressure or engorgement, bruising, laceration, and a general disturbance of the vascular and nervous supply. And with nature's powers thus weakened the omnipresent germs find a nidus, and the wonder is that their ravages are not more serious than we find them. During resolution, absorption of poisonous matter, or extension of inflammation may cause serious mischief. Disease, too, may spread from

* Read before the Ont. Medical Association, June, 1891.

the bladder, rectum, peritoneum, uterine appendages or uterus, and, lastly, surgical interference or appliance may do more harm than good, and inflammation result from this source.

From whatever source the disease may come, the cellular tissues of the pelvis being large in quantity and loose in texture, extensive spread of the disease is the rule, and recovery is generally slow.

A glance at the female pelvis will suffice. The uterus and its appendages (ovaries broad ligaments, Fallopian tubes, round ligaments), with the vagina in the centre, the rectum behind, and the bladder in front, are practically imbedded in the cellular tissue, which helps to support and nourish them, at the same time binding them to the pelvic walls, whilst the peritoneum covers all like a roof, sending folds down between the bladder and uterus, and between the uterus and rectum. Now, although as above stated, inflammation may be derived from numerous sources, such is the resistance of nature's powers to the attack of disease, that seldom do we have serious attacks of cellulitis save as a sequelæ of abortion or parturition, and then the symptoms are very much like those of pelvic peritonitis, with which it is often associated, just as pleurisy and pneumonia accompany each other.

The first notice given of the disease is a chill, accompanied by rise of temperature, with pain over right or left ovary, followed (in puerperal cases) by lessening or cessation of lochial discharge, with a peculiar foetid smell. The pulse is increased, and usually rises to 100 or 120. Vomiting may be present, but not often. Dysuria is often a prominent symptom. The pain may remain over the right or left side or it may spread, and pelvic or even general peritonitis result. In about one week from the onset, hardness is felt in one or both iliac fossæ, which gradually increases for some time, then one or two things happen; either the swelling or other inflammatory symptoms subside, and absorption takes place, with a general and rapid recovery, or the swelling localizes itself, pus is formed, and a pelvic abscess is the result, if in the meantime the patient has not succumbed to the severity of the disease. The length of time a patient may suffer from pelvic abscess is most variable, lasting for, from a period of six weeks to six months, one year, or even eighteen months, and then making a good recovery.

As to the frequency of the disease, I may state that it is not a common complaint in itself, and by itself, but as a concomitant of peritonitis, metritis, ovaritis, salpingitis, general septicæmia, or as a result of operative interference and surgical appliance, it is by no means infrequent. Of the idiopathic cases, most, if not all, are a result of septic absorption. In traumatic cases I believe, induced abortion is the most frequent cause. I have been able to secure a record of about 150 cases from my own practice, and that of Dr. Moorhouse, Niven, Eccles, and others, of the city of London. Of these five died, fifteen resulted in pelvic abscess discharging into the bladder, rectum, vagina, carpass, triangle, and right and left iliac fossæ, but none into the peritoneal cavity. The cause of death in all was exhaustion. Nearly all these cases of abscess were in strumous persons with a family history of phthisis or other scrofulous disease.

Now, as to treatment, I will simply give you my own practice in a typical case, knowing full well that there are many other methods equally good if not better. First and foremost of them all is absolute cleanliness, not only of the patient herself, but of the bed on which she lies, and of everything in the room or coming near her person. This is not only as a curative but as a preventative measure, and if the case is a puerperal one I use carbolic acid injections, one part of the acid to 60 or 70 of hot water; or sometimes bichloride washes, one in 5,000. These I use for two purposes: First, a disinfectant, and, secondly, as an emollient. Indeed, in all cases hot water injections afford marked relief to the patient.

Secondly, rest, absolute rest, if possible, of both mind and body is a *sine qua non* in the treatment of these cases.

In the third place I use turpentine stupes, followed by poultices, and about the third week a blister, to be again followed by poultices.

Fourthly, I use as medicine a pill of opium, calomel and quinine in the early and acute stages of the disease; following this generally with a tonic and supporting system of medicine, stimulants as required, and a diet suited to the exigencies of the patient and the stage of the disease. The bowels are occasionally to be well moved, either by a purgative or enemata.

In treating cases in which the abscess has formed

an armed neutrality is the best. Watch the pointing of the abscess. Open in a favorable site, if possible, and rely on disinfectant washings and dressings, especially dry dressings. Of these I prefer the naphthalized jute; and if the case becomes very tedious, and the sinuses extensive, operative interference even to the length of abdominal section, and free incision may be required, but I have never had need to resort to this rather formidable procedure, although I am sure some cases would be benefited by it, and much shortened in their course if the life of the patient were not saved by the timely intervention.

I will not take up your time by recounting all the diseases from which it is to be differentiated, suffice it to say that I have little faith in malarial fever as a result of abortion or parturition, and keenly scrutinize all cases with rise of temperature following these two conditions.

Now, in conclusion, I will simply give deductions from a study of these cases:—

1st. Idiopathic cases are generally of a septic origin, and traumatic cases are mostly secondary to peritonitis, metritis, salpingitis, ovaritis, or surgical interference or appliance.

2nd. In puerperal cases, antiseptic douches, whilst lessening the liability to septic absorption, and thus removing one of the chief causes, is as a routine practice unnecessary, and thus used, apt to do more harm than good.

3rd. As a rule it is a self-limited disease, often however, of a rather chronic character.

4th. Treatment shortens duration and lessens suffering and exhaustion.

5th. The fatality is about one in twenty-five.

6th. Sterility and malposition of the uterus are the most serious *sequelæ* of this most formidable disease.

Reports of Societies.

GYNÆCOLOGICAL AND OBSTETRICAL SOCIETY OF BALTIMORE.

MAY MEETING.

The President, Dr. Henry M. Wilson, in the chair.

Dr. Brinton read a paper entitled, "A Day's Work in Obstetrics." Under this title he related the following cases:—

1. A case of podalic version. 2. A case of normal labor. 3. A case of shoulder presentation; efforts at

version unsuccessful; vagina ruptured; the woman dying undelivered. 4. A case of placenta prævia lateralis, treated by internal podalic version, mother and child saved.

Dr. Mittenberger.—There is some discussion in regard to the preference for high forceps and version. I prefer version, but the profession is divided, and the choice comes to a matter of skill and individual practice.

Dr. Neale.—One of the points claimed for version over high forceps is, that in version the narrower diameter of the head comes first. It has been claimed that the same condition is brought about in the use of forceps, by the diminution of the diameter of the crown, so that they are less than those of the base of the skull. I cannot see how this is, for certainly the forceps do not as a rule compress sufficiently to reduce the diameters of the crown to less than those of the base of the head.

Repeated attempts at version have often given bad results when the uterus is contracted and retracted; when there is a neglected cross birth and the child is dead. After a moderate attempt at version has failed, decapitation should be performed by means of Braun's hook; it is certainly a comparatively easy and safe procedure. I have no criticisms to make upon the treatment Dr. Brinton adopted in his cases.

Dr. Brinton.—Since this case of rupture of the vagina has been reported, it has been stated by a pathologist of this city that it is the only one on record. I would like to ask if any of the gentlemen present know of any such cases?

Dr. Mittenberger.—There are certainly on record many cases of rupture of the vagina. I have seen at least two such cases.

Dr. T. A. Ashby.—I once passed a sound through the uterus. The sound went in easily, and could be felt just below the umbilicus. Before this the patient had had pus running slowly from the uterus, which had evidently had its origin higher up. There were no bad symptoms; the woman rode home a distance of eight miles and was not heard from. I once attempted to remove an epithelial growth from the vagina, and all at once the intestines came down. I cleaned away the diseased tissue, closed up the opening with a purse stitch and the wound healed promptly. The patient lived eleven months.

Dr. Geo. W. Mittenberger read a paper upon "Superfecundation and Superfecundation."

Dr. P. C. Williams.—I had a case recently of ovulation during lactation. A lady came to me who had continued to nurse her child and is now five months pregnant. These cases show that there may be ovulation without menstruation, and led me to agree with Dr. Mittenberger.

Dr. Ashby.—I have had cases similar to Dr. Williams. I have been surprised at the frequency with which menstruation returned after apparent removal of both ovaries and tubes. One of the first cases upon which I operated, was one of hystero-epilepsy. I thought I had removed all the ovarian tissue, but found subsequently, that I had not. She began to menstruate about eight months after the operation, and afterwards suffered from metrorrhagia. Three years later I examined her under chloroform and found a small tumor. I operated and removed a small portion of an ovary. She recovered promptly and has not menstruated. Her health is good and there has been no return of the hystero-epilepsy. I have had other cases in which some parts of the ovaries had been left behind. These women continued to menstruate. In those cases where I have succeeded in removing the ovaries entirely, I have not observed the return of menstruation.

Dr. B. B. Browne.—I attended a woman a few years ago who had had seven children and had never menstruated. She was married before menstruation began, and had had children very frequently. I think superfetation does occur. It certainly does occur in uterus septus. The removal of the ovaries has little to do with the cessation of menstruation, but the tubes have much to do with it, and it is when a portion of the tube remains behind that menstruation continues. Metrorrhagia will occur when the tube is closed at the outer extremity. When a part of the ovary is left, of course a part of the tube is left also.

Dr. W. E. Moseby.—My experience has been such as to make me believe that menstruation does not depend upon the presence of the Fallopian tubes, nor is it independent of the ovaries. Eighteen months ago I opened a lady's abdomen for a severe case of chronic pelvic peritonitis with double pyosalpinx. Both tubes were tied close to the uterus and secured, but after a diligent search no trace of either ovary could be found. Dr. W. H. Welch, to whom the specimens were shown, expressed the opinion that the ovaries had probably been destroyed in the inflammatory process. The patient made a good recovery after very prolonged drainage, made necessary by the sloughy condition of the pelvic contents and the fecal fistula, which persisted for several weeks. This patient for months has been menstruating regularly and freely every three weeks. In all probability some portion of ovarian tissue escaped destruction. In another case in which I took special pains to remove every particle of each ovary and both tubes on account of severe hæmorrhage, the patient has not had a show during the last twelve months.

Dr. Ashby.—Mr. Tait has maintained the position of Dr. Browne for several years. In one case the patient had been suffering from hæmorrhage or tubal

origin; I removed both tubes and one ovary. The other ovary having undergone cystic degeneration it was impossible to remove all the ovarian tissue. This patient has been cured of her metrorrhagia, but still menstruates.

Dr. Opie.—It seems quite well established by *post-mortem* results, that all cases of menstruation following oöphorectomy, are not due to failure on the part of the surgeon to completely remove the ovaries.

The utero-ovarian ligament, however, is sometimes very short, and the button-like section beyond the ligature, which, in such cases, contains ovarian stroma, may keep up a dominating influence. Again, the anatomical shape of the ovary gradually sloping off into the ligament, causes a part of the ovarian tissue to be left on the uterine side of the ligature in spite of the utmost care on the part of the operator.

The rule after child-birth seems to be that menstruation is in abeyance for a variable number of months, but cases have doubtless occurred in the experience of most obstetricians, when it has been uninterrupted during lactation. I have met with a number of cases when women have conceived during lactation, when there was no accompanying monthly flow. Dr. Tait thinks that during, and even after, the menopause, ovulation goes on, though the mucous membrane is disqualified for securing a fecundated ovule. Ovulation may be going on during lactation, but the mucous lining of the uterus may not be well qualified for menstruation or fecundation.

Dr. Burk, of New York, who has a dairy farm, has been performing some interesting experiments, to find out the mode of securing the best quality of milk. He has determined that the heifer, after the removal of the ovaries, can be made a perpetual milker, and that the milk is of better quality than in cows subject to ovulation and impregnation.

Dr. Brinton.—With reference to menstruation after the removal of the ovaries, we have the statement that one or two per cent. of women have supernumerary ovaries, and possibly the return of the menstruation is due to the presence of the third ovary.

Dr. Mittenberger.—Dr. Browne laid much stress upon the fact that menstruation continued when obstructed tubes were present. Menstruation has nothing to do with the passage of the ovule along the tubes, but is due to the immaturation of the ovule. Therefore the tube may be obstructed as much as you please and there will be no results. Battey and Engelman have reported a number of cases of pregnancy after the ovaries were apparently removed by skillful operators. In other cases the ovaries, supposed to be removed, have been found *post mortem*.

Dr. Browne.—In most cases where the ovary and tubes are removed the lumen of the tube is obstructed by the ligation.

Dr. Ashby exhibited a specimen of a ruptured tubal pregnancy, which he had removed from a patient seen in consultation with Dr. Arthur Williams, of Elk Ridge, Ind. The patient was 34 years of age, and gave birth to one child ten years ago. She conceived in February of this year, and about the eighth week of gestation was seized with violent symptoms of intra-pelvic hæmatocele. Dr. Williams was called in, and after examination, diagnosed the condition as a ruptured tubal pregnancy. I saw the patient with him the following day, and upon examination confirmed the diagnosis. The patient rallied from the shock of the first rupture, and one week later a second rupture took place, though not followed with such violent and dangerous symptoms as in the first instance. The surroundings of the patient were so unfavorable that she was removed from her home in Anne, Arundel Co., to the Medical General Hospital, where the laparotomy was performed. Upon opening the abdomen her pelvic was filled with bloody serum, blood clots, and evidences of general peritonitis. The omentum was in such a condition that it was found necessary to remove about three-fourths of the tissue. The patient was critically ill from the 3rd to 5th day from symptoms of intestinal obstruction. Her bowels were moved by administering one grain doses of calomel every hour for twelve hours—every other method having failed. The patient has made a successful recovery. This is the third case of tubal pregnancy I have removed by laparotomy within the past two years, all of them having recovered.

DR. CANNIFF'S SERVICES.

We have much pleasure in copying the following from the *Toronto Globe*. It speaks for itself.

To the Editor of the *Globe* :

SIR,—I trust you will give me space in the columns of the *Globe* to make some remarks respecting one who has faithfully served the city for seven or eight years. I have been hoping and expecting that some one more competent to do so than myself would render honor to one to whom honor is due. Perhaps it is an example of "out of sight out of mind." The splendid work accomplished by Dr. Canniff in public health matters has never been duly recognized. When he commenced his career in sanitary reform there was great ignorance and indifference among the citizens and their representatives in the Council, and even no longer ago than the time of Mayor Manning the medical officer was told by the mayor that such an officer was unnecessary. I have been cognizant of the proceedings in connection with that office, and duly read the carefully prepared

and lucid reports issued from time to time from the health office, and know whereof I speak. At the present time there is a general interest felt in sanitary matters, but it was Dr. Canniff who first aroused that interest, and created the desire among citizens to have healthy homes. Looking back I call to mind that it was his action which caused filthy University Creek to be superseded by a sewer, as well as the equally polluted Garrison and Rosedale creeks. Who was it but he who first, and time and again, called attention to the fact that the wells of Toronto were foul and unfit for domestic use, and who was the means of having hundreds closed? I remember when some seven years ago he sounded the alarm that Toronto Bay was no better than an immense cesspool. For years he urged the abolition of privy pits, tried to have abattoirs constructed and slaughter houses abolished, and at almost every meeting of the Local Board of Health urged the construction of crematories and endeavored to protect the citizens from impure milk and ice. In his report to the Board in the spring of 1890, he stated that he knew the character of the ice in the various ice houses, and asked that he might be authorized to compel the dealers to use separate wagons for pure and impure ice, and to have painted upon each different labels, as that in no other way could the safety of the public from impure ice be secured, but the Board declined, and there is strong probability that the increase of typhoid last season was due to polluted ice.

The idea to have the smallpox hospital on the island east of the gap was proposed by Dr. Canniff three years ago. His management of smallpox cases and prevention of the spread of that loathsome disease was his great success. When there was an epidemic in Buffalo three years ago, and the disease was brought to Toronto in seven different places, all of them in crowded streets and houses, the disease did not extend from one of them, a result the late President of the American Public Health Association declared to be marvelous. Year after year the sanitary condition of the island received his careful attention. Some of his recommendations with regard to the filling up of the lagoons or connecting them with the bay, so as to prevent stagnation and have a current through them, were followed. Others were neglected by the Board and Council. When dead fish collected on the shore they were gathered up and disposed of. He made arrangements to have the garbage removed to where it would not endanger the public. Through his instrumentality the slips were dredged out, and when possible at hours when the public were not passing.

Anyone who will look at his yearly reports will see how the Medical Health Department grew and developed under his guiding hand. It may not generally be known that he was in his office at 8

or 8.30 a.m. in summer and 9 in winter. Every report of every inspector was examined by him and instructions given. In spite of manifold obstacles he succeeded in having houses unfit for human occupation vacated. Notwithstanding an indifferent, lukewarm or a hostile board and enemies in authority he made Toronto a healthy city, as the mortuary returns show. This will be seen by his last annual report. Toronto was then far ahead of all the cities in the Dominion. Enemies of the department were continually declaring or insinuating that his system was bad or that there was no system, and not a month before he resigned, out of despair and worn out by worry and discouragement, he asked that veteran sanitarian, Dr. Oldright, to examine his mode of procedure, and this is what Dr. Oldright said: "In pursuance of your request that I should examine into the system adopted in your office and express my opinion upon it, I have to say that I have looked at the various forms and traced the successive steps for the abatement of nuisances and correction of insanitary conditions, for the limitation of infectious diseases, for the regulation of dairies, slaughter houses, junk shops, etc., for recording and filing reports of work done, and for the execution of such other sanitary work as appertains to the office of a local medical health officer. I have had opportunities of seeing the methods employed in Chicago, New York and Boston; and I am glad to be able to say that those adopted by you are similar, and equally well adapted to attain the ends in view."

ONE WHO KNOWS.

Toronto, June 24.

Selected Articles.

ON ULCERATIVE DISEASE OF THE UPPER RECTUM AND SIGMOID FLEXURE.

I wish to call your attention to-day to these two cases, which you will find of great interest and which will repay a very careful study.

You see here two men of about the same age—forty years. One is a strong, muscular carpenter, who has come to us from the South; the other a nervous, slight clerk. The former tells us that he was taken down about a year ago with what was considered at his home an acute dysentery, that he was in bed three or four weeks, and that he has never recovered; that he has lost during the past year about thirty pounds of flesh, though during the past few weeks he has regained some of the lost weight; that he has constant and almost unbearable pain at the end of the spine during the day, but is free from it at night; that

he has six or eight bloody, slimy stools also during the day, and that the faecal matter which he passes is flattened and tape-like, but that he is not troubled with passages of any kind during the night. Mark the effect of rest in ulceration of the rectum!

I have examined this man with my finger, and the examination is negative. Since he has been in the hospital I have also had his passages saved and examined, and we are able to verify his statements concerning them. They are a mixture of blood, mucus, and foul-smelling pus, and the faecal matter is flattened and ribbon-like.

Take now the history of the other case. He tells me at the beginning that he knows he has a stricture of the rectum. He, too, has been suffering for about a year, though his troubles came on gradually and not suddenly, and during that year he also has lost about thirty pounds of flesh, but, like the other man, he has regained some of it during the past few weeks. He has no pain at any time, though pain is what has brought the other patient to us for relief. At first he tells very much the same story about his passages as the other patient. He, too, has frequent slimy stools and mis-shapen faeces, but when we come to question him more closely we find a decided difference. Both go often to the closet; but this man passes no blood and no pus—only a tablespoonful of clear mucus, and the stools in this case are not flattened, but are lumpy and come away in irregular pieces of varying size and shape. You see how necessary it is, with the most intelligent patients, to be exact and searching in your questions. I have also examined this man's rectum with the finger and I find nothing, and I have brought the patients before you for further examination and diagnosis.

Both of these men represent a class of case the diagnosis of which is attended by as much difficulty as anything in the whole range of medicine or surgery. They come under the care of physician and surgeon alike, and it is entirely possible two examiners of equal acumen will differ in the diagnosis. In fact, I am about to differ absolutely in one of these cases from a man whose opinion I thoroughly respect and whose honesty is unquestioned.

We are here in the presence of disease of just that part of the alimentary canal which it is most difficult to examine—the upper part of the rectum and lower part of the sigmoid flexure—of that part which can neither be reached by the finger from the rectum below nor by the hand from the abdomen above. And ulceration with stricture of this part of the bowel is more dangerous than when lower down, where the rectum is more firmly attached and less movable. One of these patients has flattened, tape-like stools. A stricture in this part of the gut tight enough to cause this symptom

may without warning cause fatal intestinal obstruction, while the same amount of constriction in the middle or lower third of the rectum would be devoid of immediate danger, for the simple anatomical reason that where the rectum is fixed the whole expulsive force of the body can be brought to bear upon the fixed point of obstruction, and fæces can be crowded through a passage so small as scarcely to be noticeable, while in stricture higher up the expulsive effort may easily cause a bending and turning of the gut upon itself which shall render the obstruction complete.

Let me mention a case which will convey very clearly what I mean.

Two years since a patient was sent to me for an examination with the same general history and symptoms that these men have, only he was in better health and seemed to have less serious trouble. He passed a little blood at times, but there was no deformity in the stools, and there had been little or no emaciation. But he was a physician and was troubled about himself. He had pain deep down in the left iliac fossa at the brim of the pelvis, and he was convinced that the blood and mucus in his stools came from a point upon which he could almost place his finger when he pressed down into the pelvis. I examined him with a bougie, and a good-sized one passed without difficulty; I examined him from above and could detect nothing. He had slight hæmorrhoidal trouble, and it was suggested that possibly the blood might come from this. He did not think so, but asked me to remove them. It was done, but after a week the blood reappeared. I then suggested an exploratory laparotomy, which he declined, and I did not urge it, more than half believing the trouble transitory. He returned to his home at a distance, and a few weeks later we heard of his sudden death from intestinal obstruction. The autopsy revealed a small cancerous annular stricture in the lower part of the sigmoid flexure.

Are either of these patients in the same danger? In both, the diagnosis of stricture at this point has been made, and in the one who is passing only mucus the opinion has been given that the disease is probably malignant. From that opinion we shall differ, and for the following reasons. First let us put him on the table and examine him.

Taking a No. 7 rectal bougie of soft rubber, we attach the nozzle of a Davidson syringe to it, and proceed to pass it up the rectum. I did this yesterday, and had a very remarkable sensation. The bougie went up about five inches and stopped, as it usually does at that point. Water was injected through it gently, and after about four ounces had been thrown up there was a sudden giving way of an obstruction, which frightened me, and the instrument was withdrawn. The patient had, however, experienced no sensation,

and after waiting a few moments I took the next smaller size and tried again. Again the same obstruction was found at the same point, and, as the water was gently thrown in, the same sudden overcoming of the obstacle, but this time so distinct that the patient was startled, and inquired anxiously the cause. The bougie passed on its full length. The cause of the obstruction which so palpably gave way under the pressure of the water I do not know. I never appreciated the same sensation before, but it was probably a fold of mucous membrane, or the sudden unfolding of a slight invagination.

That examination was made yesterday, and we will now repeat it with the larger-sized instrument which failed yesterday. You see it is stopped at the promontory of the sacrum, which means nothing, and we have recourse to the distention with water. This time there is nothing out of the ordinary. With the usual amount of pressure the bougie passes its full length, and on withdrawing it there is no blood or pus upon it and none flows from the anus, nor has the patient experienced any pain. He is only much surprised that we should so easily have accomplished what others have failed to do and have assured him could not be done because he had a stricture.

Now, has this man any symptoms of stricture of the rectum? None. And the bougie does not indicate a stricture. Had he well-marked symptoms of stricture, I might not put much weight upon the fact of the easy passage of the bougie, for that is only twelve inches long, and a stricture might be just beyond, or the stricture might have been passed by the bougie without our detecting it, on account of its large caliber. But the man has no symptoms of any ulcerative process. His bowels act irregularly and unsatisfactorily, it is true, but so do those of many constipated men. He passes mucus sometimes three or four times a day; so do many people who are suffering from intestinal catarrh. He does not pass pus; he has never passed blood; there is nothing to indicate any destructive process in the bowel; his loss of weight may easily be accounted for by malassimilation of his food; the bougie fails to find any obstruction or any raw and bleeding surface; and for these reasons we tell the man that he has no cancer, that he has no stricture of any sort—in fact, that he is suffering simply from a very common but very intractable affection, intestinal catarrh. We shall put him on an absolute milk diet at a venture, give him small doses of morphine with bismuth for a few days to allay the irritability of the intestine, and you shall see the result.

Now let us take the other patient—the one first described, who is passing blood and pus. In this case also it is necessary to examine the upper rectum and sigmoid flexure, but to do so we shall not, as in the last case, make use of the bougie.

What we most wish to determine here is not the mere existence of ulceration and stricture, for that we know from the symptoms, but the character of the process, whether malignant or benign, and on this point the bougie can give no light. Again, the bougie is a dangerous method of examination in just such cases as these. If an obstruction is met, even the usual one at the promontory of the sacrum, we dare not use even the ordinary amount of force necessary to overcome it for fear of doing fatal injury, for an ulcerated gut may be torn with very little apparent pressure. The rent does not occur from forcing the bougie through the stricture, but from carrying the stricture onward on the point of the instrument in the attempt to pass it.

The point on which the differential diagnosis as to the character of the disease in this case will rest, is the amount of induration and thickening at the ulcerated point. Have we here a large destruction of the mucous membrane, with cicatrization in some places and advancing destruction in others, such as is caused by dysentery; or have we an annular deposit of cancer, from which is coming the blood and pus? To know this we must try and get the disease within reach of the finger, and for this purpose we will etherize the patient and pass the hand into the rectum.

While this is being done, let me give you some other information about the patient, which you will see has a very direct bearing upon the possible line of treatment.

The man is married, has four small children, is a day laborer, and has no means. He cannot even remain in the hospital any length of time for treatment, lest those dependent upon him should want. He has come north with the delusion that he would be cured in a week and return to his work. The problem before us, therefore, is to place a man who is too sick to work into condition to earn a living for his family in the shortest possible time. Now, supposing that we find here simple dysenteric ulceration, what are we to do? Ordinarily the treatment would be prolonged rest in bed, absolute milk diet, and local applications of nitrate of silver or other things—a treatment lasting many weeks, and holding out no certainty even of ultimate cure. On the other hand, should we find malignant disease we should at once do colotomy. All this has been thoroughly explained to the patient, and the decision has been left entirely to him. He knows that if the disease be non-malignant, we can by a colotomy put him back at his work in three weeks; and because of his poverty and the family dependent upon him, he has chosen that method of relief rather than the prolonged and uncertain medical treatment. So, whether malignant or non-malignant, we shall now open the sigmoid flexure; but first we will try and decide which.

At the risk of being tedious, I am going to dwell a moment longer on the indications for the operation in this case. The operation itself is no novel sight in this clinic, as you know, although there will be no one or two points in the technique of this one to which I shall call special attention; and it is much better you should all understand when to do the operation than merely to watch me open this patient's abdomen, bringing the sigmoid flexure out of the wound, and fasten it there. You are all practitioners; an exactly similar case to this may come under your care at any moment; let me ask you if you know of any better treatment for this case than colotomy? Is the case curable by any other means? Possibly. Were the patient able to give us even a month of time, other means would certainly be tried, and I have seen them succeed in just such cases. Certainly I should not do this colotomy at this time unless the patient chose this treatment after a thorough understanding of the case. But after a few weeks of unsuccessful medical treatment I should just as certainly strongly recommend it; and I am willing to do it now, because I know it will at once cure his disease if, as we suppose, it is not malignant. His pain will cease as soon as the gut is opened and the distal portion washed out. He will be able to work at the end of the three weeks, which he can not possibly be by any other plan of treatment. The operation is attended by scarce any danger in his general good condition; he will be comfortable after it is done, and, should he desire it, the artificial opening can be closed when the ulceration is healed. These things we know by past experience. I have taken great pains in many of these colotomies to have the class follow the after-histories of the patients, and hear their conclusion in their own words, and you have yet to hear the first word of dissatisfaction, or to see the first patient desirous of going back to the old order of things. I have a letter here, received this morning, from one of the patients operated upon just a year ago which I have brought for your benefit. We will leave out the thanks and give you the gist of the whole matter: "The artificial anus is nothing. I have a movement from it every morning and think nothing about it the rest of the day. I would not go back to the old condition of things for any amount of money." And this is from a lady in the higher walks of life, the wife of a physician, one of the neatest women in her personal habits I ever have seen, and yet one who had suffered many years from non-malignant ulceration, and was generally spoken of in the city where she resides as "the lady with the air-cushion."

Need I say anything more? If the diagnosis is right in this case, the man will be cured, able to work, and in every way comfortable in a few weeks after this operation; and if wrong, the

same procedure is doubly indicated, for then we are dealing with malignant disease.

My only object in thus dwelling on the indications for the operation in this case is to do away in your minds with the old and popular idea that an artificial anus is a disgusting deformity to which even death itself is preferable—an idea which, I am convinced, those of you who follow my clinic for any length of time will abandon. And yet this same idea governed my own practice, I am sorry to say, for many years; and I count now more than one death which might have been avoided, and much suffering that might have been relieved, had I but accepted the plain teaching of the experience of others on this point and set aside my own foolish scruples.

Proceeding now with the operation, you see that, after the abdomen is opened, the sigmoid flexure presents in its natural position. In this particular case we have to make an opening which shall be completely efficacious in diverting the flow of fæces from the rectum, and which shall entail as little injury to the gut as possible, in order that we may close it in the future with as light an operation as possible, should it be found desirable. To accomplish the first I shall introduce my silver wire under the gut, as usual, and make the sharp spur, which so effectually presents all subsequent passage of fæces beyond the artificial opening. To provide for the second, I shall draw the gut only partially outside the abdominal cavity, shall in its incision avoid as much sacrifice of its wall as possible, and generally try to provide an outlet for the fæcal matter, which can be closed by a subsequent plastic operation which shall not involve an opening into the peritonæum. I have explained to you before how this inguinal incision has this advantage over the lumbar—that almost any form of artificial anus desired can be made at the choice of the operator, while in the lumbar operation the opening must always be essentially the same.

You see that, as the gut is brought to the surface and the suspensory silver-wire suture passed through its mesentery, one longitudinal band is in a most favorable position for suture to the skin. After a few silk sutures have been passed through this, you see that I can bring the whole caliber of the gut above the cutaneous margin and fasten it there, or that I can bring only half the caliber out of the abdomen and fasten the gut in that position. The latter is what we shall do, and the result in these two cases we will see that you are informed of later.

NOTE.—Ten days after operation. Gut opened on second day; solid, involuntary evacuations since. Patient up about the ward. The other patient on milk diet markedly improved. Entire cessation of mucous discharges.

Three months later. The patient with the

intestinal catarrh practically cured. The man with ulceration gained eight pounds in the first month and returned to his home. A subsequent letter reports some pain and discharge still, but no trouble from the artificial anus, which he has become accustomed to and does not regard.—Charles S. Kelsey in, *N. Y. Med. Jour.*

THE UTILITY OF VIVISECTION.

Under the present stormy sea of politics lies a question that will sooner or later come again before Parliament: "Shall vivisection be totally prohibited in the United Kingdom?" And as medicine has nothing to hope from outsiders, we cannot afford to maintain an attitude of indifference, unless we are content that British laboratories should become mere parasites upon the Continental ones.

It is not the professional agitator that we need reckon with, but the not inconsiderable mass of worthy people who have been moved by "much speaking" and gross mis-statement to ask, "Is not vivisection immoral and useless?"

If it be useless the charge of immorality need hardly be advanced; but with the great mass of evidence we possess that experiments on animals have *not* been in vain, there is everything to be gained by fair and open discussion of the subject.

Hard as the anti-vivisection party has labored to explain away the discoveries of Harvey and Hunter, it has done little save make itself ridiculous. We are told that Harvey *might* have discovered the circulation of the blood by means other than vivisection; but the dreamland of what might have been is too vague for any save a nation of Laputians, and the fact remains that Plempsius, of Louvain, refused to credit Harvey's discovery till he himself had experimented on certain dogs and watched the flow from their arteries.

The story of Hunter and the stag is known to every student, and the lives saved and the sufferings relieved by that trifling vivisection have now passed beyond all count. Beyond count, too, are the vast number of revelations that experiments on animals have brought forth in more recent times. Few of those who regard medicine in its true light, as applied physiology, will deny the honour due to Majendie and Rokitansky for their investigations upon the action of strychnine; to Traube, for working out the effects of digitalis; to Cohnheim for his researches on inflammation; and when our eminently practical countrymen, Lister, Spencer Wells, Fraser, Horsley, and others tell us that experiments on living animals contributed largely to their success, and thus toward reducing the sum of the world's suffering, does it not savor of the ridiculous when some pseudo philosopher who cannot distinguish the perineum

from the peritoneum assures an admiring audience that no discovery in medicine has ever been aided by vivisection.

Most medical men are aware that digitalis went not very long ago by the misnomer of "the opium of the heart," showing the utter ignorance that prevailed as to its true action. Used blindly it killed as often as it cured, till men set it aside as almost too dangerous for common use. When a tyro screws down the safety valve no wonder the boiler bursts, and it was only when its physiological action had been ascertained by experiments on animals that digitalis could take its proper place in the *Pharmacopœia*. How many drugs could we use with any degree of accuracy but for these experiments? "Even the action of our simple purgatives," writes Dr. Wm. Murrell, "has been worked out on the lower animals."

To those who harp upon the uselessness of vivisection I commend the following by Dr. Wilks. "I would ask the reader to picture to himself a platform on which Pasteur and Virchow, Owen and Huxley, Humphry and Foster, Simon and Fraser, unite in the statement that the remarkable advance in Medical Science and Art during the last twenty years is due to experiments upon the lower animals; and immediately after a sincere rural dean and a conscientious auctioneer unite with equal solemnity in stating *their* opinion 'that experiments upon animals have led to no useful result. I do not doubt their sincerity, or their modesty, or their good faith; they only lack a sense of the ludicrous'" (XIX Cent., Dec., 1881); but if further proof were wanting we could find it in the very camp of the enemy. Mr. Hutton, one of the champions of the opposing party, in an article in the *Contemporary Review*, April, 1882, admitted the utility of these experiments whilst opposing them on moral grounds, whilst another champion, Lord Coleridge, bears testimony as follows: "I do not say that vivisection is useless, and I am sure I never have said so." Such admissions must be thorns in the flesh of the more fervid members of the party like Cardinal Manning, Miss Cobbe, and Mr. Lawson Tait. And here follows another curious point—Mr. Lawson Tait denies the utility of vivisection, but does not seem to have many qualms about its morality: "Certainly anything and everything ought to be done to convict a poisoner, and if nothing short of that would do I would advocate the performance of a hecatomb rather than that such a scoundrel as Lamson should escape."

In short, the justice admits proof of utility but throws out the Bill on moral grounds, whilst the surgeon is prepared to admit the morality if the utility could be proved. A bad day truly it would be for the Anti-Vivisection Society if these gentlemen met on the same platform to advance their diametrically opposed views.

If we take this question of utility out of the arena where the scientist meets the ultra-philanthropist and submit it to the cold impartial scrutiny of the cautious man of business, we find that the insurance companies of France refuse to accept cattle that have not undergone Pasteur's protective treatment against anthrax.

Let our opponents revel in the failure of Koch's treatment if they will, but let them not forget that the open and above-board work of British laboratories is a very different thing from the secret experiments which afford no opportunity of confirmation or expansion.

Upon the question of utility hangs the moral aspect of vivisection. No one contends that it can be lawful and right to inflict needless pain on the lower animals, any more than it would be justifiable to amputate human limbs where there was no hope of cure. But the position of those who would prohibit experiments on animals, even whilst they admit their value, is hard to understand. Suppose one of these sensitive gentlemen, on a lonely Scotch moor, had the misfortune to shatter his own leg instead of a grouse's, would he object to the messenger for medical aid lashing and spurring his horse up hill and down at a frantic pace? And if the animal dropped dead at the doctor's door, I suspect he would consider the animal's sufferings of less moment than his own. From all time man has made use of the lower animals for his own ends, and we recognize no *cruelty* nor immorality in depriving a horse of his freedom and of his sex in breaking the spirit Nature has endowed him with, and then setting him to drudge day after day, thereby shortening his life one-half. We do not blame a man for whipping on a lazy beast, nor for thrashing the dog that stole the family joint, and I have yet to hear of an anti-vivisection mouse-trap that chloroforms its victim before crushing its life out; and if this is looked on as a natural and proper thing, by what logic is the physiologist condemned who seeks to save life and alleviate suffering at the cost of a few pangs to the lower animals? To argue that they suffer in the same degree as we do is absurd. I remember long ago setting the broken leg of a favorite cat, and the animal purring during the operation. On another occasion a rabbit, from whose head I removed a large tumor, munch-ed lettuce heartily immediately after.

The solo sung by a human being during the setting of a fracture is in quite another key, nor would one be ready for a salad immediately after being trephined. Even savages do not suffer in the same degree as civilized men. The fact that the more developed and highly strung a nervous system is the more acutely does its possessor feel pain has totally escaped the notice of the anti-vivisectionist.

If high and low suffered alike, the boiling of a

live lobster, the swallowing of a live oyster, or the gentle art of angling, would be devilish beyond description.

But beyond balking the physiologist the anti-vivisection party do not seem to have much interest in the lower animals. No protest seems to be raised when they suffer in the interest of sport. One prominent member of the society excuses sport because there is courage and danger in it, and the animals "die game."

When two vagrants were brought before a magistrate not long since for grossly ill-treating a performing bear, they had to be discharged because the bear was not a domestic animal, and was entitled to no protection save from the physiologist.

Give ear, then, Bill Sykes and Co.; it was lawful for you to flay, burn, or boil wild animals at your pleasure as long as you did it to gratify your devilish instincts, but you, O humane and educated savant! make but one unlicensed injection into a frog and there is a society at hand to see fine or imprisonment inflicted upon you for the sin of trying to benefit your fellows.

From this branding of the physiologist as a more cruel and debased character than the common-place ruffian, one would expect to find that vivisection in England had reached the highest point of cruelty. Yet what are the facts! Taking the average of experiments on animals year by year, 75 per cent. of these are painless, 20 per cent. involve no greater suffering than the prick of a needle, whilst only one per cent. entail as much suffering as would ensue from the performance of any ordinary surgical operation upon the animal.

Operations, and painful operations, such as castration, are daily performed on the brute creation without chloroform, and for far less weighty reasons than those which sway the physiologist, and yet who cries shame?

The aim of the anti-vivisection party is to suppress this species of scientific research in *Great Britain*, yet in all the long, wearisome tirades that I have heard or read, I have failed to find one instance where any authentic charge of barbarity has been brought against any British investigator. In a furious blast against vivisection delivered not long since by the Hon. Bernard Coleridge in the House of Commons, the honorable member, after denouncing the abominable cruelties practised in this country, has to go as far as Strasburg to find a scapegoat in the person of Goltz. The Secretary of State, in reply, said: "The honorable and learned member has suppressed entirely the fact that under the Vivisection Act the things he mentions are impossible in this country." That the Hon. Henry Matthews is no mere partizan is evidenced by another remark of his: "I am not myself enamoured of this system of physical research." (*Hansard*, cccxxv., 878-887). If the orators of the Total Abolition party had the honesty to tell

their hearers that vivisection in this country must be performed under a license from the Secretary of State; that its object must be to save life, alleviate suffering, or teach important lessons in physiology; that all experiments must be conducted in licensed rooms and not in secret; that no public exhibitions are allowed; that all experiments must be open to the Government inspector, and that a report of all such experiments is laid before the authorities—then I imagine the public would be apt to inquire of them what all their fuss was about.

The justice of the crusade against vivisection can be further estimated by statements of some of the crusaders. One of these, the Rev. Noble Scott, writes me as follows: "I agree with you that our British medical men are, with very few exceptions, true gentlemen. . . . Even those who have vivisected have mostly done so in the humanest manner possible."

In his evidence before the Royal Commission in 1876, Mr. Colam said he did not know a single instance of wanton cruelty on the part of British scientists, that he believed anaesthetics were used wherever possible, and that any cases of inhuman conduct were exceptional and rare, and not chargeable upon the profession at large.

Many others of the more liberal minded of the party have not hesitated to testify in the same way, and have not been backward in condemning the extravagant language of the more violent partizans.

The gross untruths and insults hurled about by these latter do not form a very wholesome atmosphere for the Anti-Vivisection Society to exist in, and yet in the clearer air of plain truths and undeniable facts the anti-vivisectionist exhibits more of the ridiculous than of the sublime, more of Don Quixote than of King Arthur.

With some of the ultra-orthodox members of the party, dogmatism and not humanity may be the leading string. Physiology has of late brought strange facts to light that smell of heresy. Physiology must be gagged if possible. A pamphlet by some of these weak-kneed enthusiasts sets forth the fact that as sin and death arose in the beginning by eating of the tree of knowledge, so the continued nibbling at it will be productive of greater sin, and the moral is, abolish vivisection.

There is one test by which our opponents can show their sincerity and heroism. If vivisection and its results be accursed let them refuse to avail themselves in time of sickness of the remedies worked out by experiments on animals. I have suggested this on one or two occasions, but it has made no converts.

To the members of the Anti-Vivisection Society, therefore, I commend the principles of honest Davie Deans—"If he didna satisfy me that he had a right sense of the right hand and left hand deflections of the day, not a goutte of his physic should gang through my father's son."—*Hosp. Gaz.*

ON PEROXIDE OF HYDROGEN : A PHYSICAL, MEDICAL RESEARCH.

Peroxide of hydrogen was discovered and described in the year 1818 by the illustrious French chemist, Baron Thenard. In 1860 I made my first report to the Medical Society of London, and in 1862, I made a second report on the medicinal use of the peroxide. I had by this time used it in two hundred and twenty-three cases of disease, including phthisis, diabetes, anæmia, sub-acute and chronic rheumatism, strumous enlargement of the cervical glands, mesenteric disease, pertussis, chronic bronchitis, chronic laryngitis, mitral disease and dyspepsia. In epitome of results I drew the conclusions ; That in diabetes the peroxide reduced the specific gravity of the urine, whilst it rather increased the quantity ; That in chronic and sub-acute rheumatism it afforded relief ; That in valvular disease of the heart with pulmonary congestion it gave relief to the dyspnoea ; That in mesenteric disease and in jaundice it caused an improvement in the digestion ; That in pertussis its effect for good was very remarkable, since it cut short the paroxysms of cough, and seemed decidedly to shorten the period of the disease ; That in chronic bronchitis it lessened the dyspnoea, and rendered the expectorated matter less tenacious ; That in chronic laryngitis it gave pain on being swallowed, and did not appear to be useful ; That in anæmia it did not of itself render any service, but favored the good effect of iron ; That in the first stage of phthisis it caused improvement in the digestion, and in the latter stages gave unquestionable and even wonderful relief to the breathlessness and oppression, acting, in fact, like an opiate without narcotism, and assisting oxidation.

In the discussion which followed upon the reading of this paper I was warmly supported in several points by Drs. Gibbon, Symes, Thompson, and Gibb, all of whom had been prescribing the peroxide on the suggestion, made in my previous paper of 1860. Dr. Gibb bore special testimony to its value in affording relief during the last stage of phthisis, for which I had recommended it in the case of a member of his own family. But the most important new observation I had to communicate to the Society in 1862 was that in free and frequently repeated doses the peroxide could be made to produce a modified salivation, a fact which led to two suggestions : firstly, that in the use of mercurial and iodide preparations it was the chlorine or iodine in them which caused the ptyalism ; secondly, that the peroxide would be a good substitute for mercury and the iodides in the treatment of syphilis.

Hydrogen peroxide must be looked upon as water containing so many atmospheres of ozonized

oxygen. It is an ozonized oxygen atmosphere in solution. It is not, however, a mere mixture, but a peculiar chemical compound. The oxygen can be made to accumulate, volume by volume, until the volume of water, say as much as would fill a pint measure, can rise to ten, twenty, thirty, and some say even a hundred and twenty pints of oxygen, before complete saturation is reached and a volatile body is formed. We hold, therefore, in a specimen of the peroxide, condensed oxygen combined either with the hydrogen of the water, or with the oxygen of the water, or with the elements HO acting as a radical. There is here not much difference, at first sight, from what is common in combinations where there is accumulation of one element on another ; as, for example, in the combination of carbon with one equivalent of oxygen in carbon monoxide, and carbon with two equivalents of oxygen in carbon dioxide. But now comes a distinction. The combination of the added oxygen in hydrogen peroxide is stable in the presence of some substances, unstable and easily evolved in the presence of others. Some substances, inorganic or organic, when added to the solution are neutral ; other substances, inorganic or organic, evolve the oxygen and are themselves unchanged ; a third kind evolve the oxygen, and with that some of their own contained oxygen ; a fourth kind absorb the oxygen into themselves.

To an animal deep under chloroform I introduced the peroxide solution, directly, by injecting it through a fine needle into the lung structure itself, puncturing through an intercostal space. This caused an oxygen diffusion into the lung, during which the animal lived, in one instance for five minutes, with the respiration entirely cut off.

In an experiment on the muscles of an animal under choloform I repeated what I had already done for removing muscular rigidity, but in a different way. Ammonia injected into a living muscle excites contraction tetanic in character. When this had been produced, the peroxide solution warmed to the temperature of 100° Fahr., was injected slowly, with the effect of producing relaxation. In a further trial the muscles of a narcotized animal were brought into contraction by a Faradic current, and in this state the muscles were injected with the solution at blood temperatures, with the effect of overcoming the resistance produced by the current, and of relaxing the muscles until the tension was increased.

Purulent matter possesses strongly the power of liberating oxygen from the peroxide, and probably the white corpuscles of the blood do the same. It may also be that the minute organisms called bacteria have the like power. In all cases the starting of the process is one of infinite subdivision of particular kinds of matter having a common property, and we may expect that in due time the common mode of their action as reducers of such

compound bodies as peroxide of hydrogen, will be discovered. This is one of the most important problems for solution in the whole range of medical science and art, because every condition of disease in its acute form, involving organic change of structure, depends primarily on the decomposition of oxides of the tissues.

In testing the action of the peroxide on natural organic structures which liberate oxygen from it, I observed, as related above, that the fluid oxygen causes, in some instances, decomposition of the organic matter. The same fact was observed with abnormal organic material like pus. When pus is placed for observation under the microscope, mixed with the neutral peroxide solution, the phenomena are most interesting. The pus corpuscles are, for a time, driven about as if they were alive. They move in all directions, assume ovoid shapes as they squeeze through masses that may obstruct their course, and after many variations of form and movement come to a standstill, like amorphous matter, dead, so to speak, and entirely disorganized. This effect of the peroxide in destroying pus cells led me very early in these researches to use the solution for the treatment of suppurating surfaces, and with great success.

THE WORK OF LEUCOCYTES.

A study of the relation of bacteria to disease is of great interest, and sheds abundant light, not only on the nature of specific diseases, but also on that of inflammation. In "Evolution and Disease," J. Bland Sutton reviews the leading facts connected with the evolution of the inflammatory process as manifested by a complex organism. Most complex organisms are pervaded by a corpusculated fluid, which may circulate throughout the organism by traversing lacunar spaces, or by means of narrow tubular passages possessing distinct walls. This fluid serves as a living medium to all parts of an organism. The red blood-corpuscles carry oxygen, as is well known, and the white fulfil some very extraordinary functions. Should a portion of an animal die, leucocytes attack it, and if it be small, will cluster round and, by a process of intra-cellular digestion, devour it. If the part to be removed is large, leucocytes effect a separation between it and the living body. Not only are dead or damaged portions of tissue thus disposed of, but useless parts—such as the tails and gills of tadpoles, remains of larval organs, and the tails of ascidians—are slowly removed by the same process. Animal tissues are incapable of resisting an attack of leucocytes. An examination of the milk-teeth of children or puppies at the time they are shed, will attest the digestive powers of these cells. An ordinary magnifying glass shows the irregular

edge of the crown to be full of bays and recesses; and the microscope reveals the presence in these spaces of leucocytes, which during life were busily engaged in destroying the fang of the tooth and thus causing it to fall out. Small pieces of clean sponge introduced into animal tissues disappear in a few days; while indigestible objects—glass, needle, or a fragment of metal—are surrounded by a large number of leucocytes that are soon transformed into neutral tissue which isolates the intruders from neighboring parts. Should the intruded body contain particles of dirt offensive to these cells, their action is intensified to a degree highly disastrous, for they die in the conflict, and in a few hours the foreign substance is surrounded by a fluid—pus—containing the dead cells. When this fluid is evacuated, the cause of the disturbance often escapes.

Leucocytes, in their behavior to foreign bodies, may be compared to bees. When the offender is small it is quickly stung to death and cast out. When large, it is deprived of life and rendered innocuous by a covering of wax. Leucocytes also attack pathogenetic bacteria, and attempt to destroy them. This amoebic warfare may be described from attacks actually witnessed by Metschnikoff in the water-flea *Daphnia*. Spores gained an entrance into the body of the crustacean, germinated, and were dispersed by the blood over the body (in *daphnia* the blood circulates in lacunar spaces), and deposited where the blood moves slowest, viz., in the cephalic and hinder portions of the mantle cavity. In these places heaps of conidia collect. The leucocytes are not idle. They attack and devour the conidia, take them into their interior, and digest them. If a conidium is too much for one cell, others join it, from a giant cell, and thus struggle with the invader. Should the leucocytes overcome the spores, the *daphnia* lives. If not, the conidia overrun the crustacean and death is the result.

Similar processes in animals more highly organized take place, the defending power of leucocytes being well illustrated in avian tuberculosis. Tuberculosis is unfortunately widespread in man; but in birds, especially those that live on grain, it is more common than in human beings. The liver and intestines of birds that have met their death from this cause, present numerous pale-yellow, rounded nodules, the centres of the larger ones containing pus. The smaller ones are homogeneous, containing in the centre small circular cells with larger ones—giant-cells—lodged among them; outside these a layer of smaller cells; and, lastly, a layer of fibrous tissue. The microscope reveals minute bacilli clustered in the centre of the mass and occupying the interior of the cells, especially the giant-cells. In nodules of moderate size, caseous material surrounded by a zone of cells containing bacilli, occupies the centre. Ad acent

nodules may coalesce and thus produce large masses. Blood-vessels connected with the nodules frequently present clusters of bacilli in their interior. The author (Sutton) is convinced that these bacilli, from whatever source arising, are introduced into the alimentary canal and find their way into the walls of the intestine. Here they are attacked by the leucocytes, which surround, ingest, and destroy them. The bacilli may be too numerous for the leucocytes, and the point where they gain entrance into the tissues be transformed into a battle-field. Large numbers of other leucocytes quickly reinforce their comrades. Many of these die, others fuse and form giant-cells. The dead leucocytes form pus and give rise to the caseous centre in the nodules. From these nodules the bacilli are conveyed by blood-vessels, or are even carried away by the leucocytes—a giant cell sometimes containing fifty bacilli—and initiate new struggles in distant parts. When bodily conditions are favorable, bacilli multiply very rapidly and overrun the whole system, nodules arising in the liver, lungs, brain and skin. Function is interfered with and death results. In addition to local troubles, bacteria produce general disturbances, one of the most important being fever.

The behavior of leucocytes to pathogenic bacteria constitutes the essence of the inflammatory process. This is essentially a local struggle between irritants and the white cells of the blood. When the whole of the blood is engaged in the struggle—as in ague, pyæmia, anthrax—we have general inflammation or fever. The different varieties of fever depend on the habits of the bacteria, some being virulent and irritating to the tissues, and others slow in attaining maturity. Inflammation takes place in plants; for example, the gall on leaves due to the deposition of eggs in their interstices by insects. Each insect produces in this way a different kind of gall. One leaf may thus present at the same time several varieties of inflammation. It simplifies our notions of morbid processes to find that the phenomena known as the repair of wounds, inflammation, and fever, are manifestations of the same process by which a child loses its milk-teeth, the tadpole its tail, or the stag its antlers, rather than to look upon such conditions as the result of some special law.—*Medical Record.*

EARLY STAGE OF DISEASE OF THE SPINE IN CHILDREN.

It is a simple matter on paper, but not always so in actual practice, to say whether a child has or has not early vertebral ostitis. Those who have seen most of spinal disease in children will be the least likely to dispute this statement. In

a doubtful case the child should at once be placed flat in bed and kept flat until all equivocal symptoms have passed off. The lecturer had met with instances in which the practitioner, though suspecting the invasion of ostitis, had allowed the child to run about, because the existing symptoms were not sufficiently obvious to enable him to form a positive diagnosis. Attention was directed to two methods of examining for spinal caries which were as widely adopted as they were antiquated and unsatisfactory. The first was that of pressing upon the spinous processes from the nape of the neck downwards. The disease being in the body of the vertebræ, pressure upon the tip of the spinous process was hardly likely to give trustworthy information. Often, indeed, there was neither pain nor tenderness in the affected region. The second method is that of applying a hot sponge along the spine. Any child would be apt to wince under this test, even though its spine were healthy. On the other hand, if its spine did happen to be diseased it would by no means follow that the hot sponge would give information of that fact.

Though there is often no local pain with spinal ostitis, there are often complaints of symmetrical peripheral pains which are too frequently ascribed to "rheumatism" by those who do not trouble to seek out their cause.

Before proceeding to examine the child, it is well to question the parents as to the complaints of aches or pains, and to notice how the child holds himself. Probably he will be standing unusually straight, with his head and shoulders somewhat thrown back in order to keep himself in a position of stable equilibrium, the centre of gravity having been advanced by the collapse of the softened vertebræ. As regards pain it may probably have been complained of in the back. But very possibly there may have been no complaint of that nature, the child having suffered only from peripheral neuralgias. These distant pains are usually symmetrical, and it is strange how the very terminal filaments of the sensory nerves are those chiefly concerned in it. Thus in cervical caries there may be pains in each side of the neck; or, the third and fourth nerves being implicated, over the pectoral regions and shoulders. The lecturer then brought in a child directing attention to its stiff and straight pose, and to the fact that it supported itself by holding on by his mother's dress. On being questioned, the mother said that the child's constant complaint was of "headache in the chest." Intercostal pains which were carelessly ascribed to "pleurodynia"—whatever that was—or to "rheumatism," were often the result of vertebral disease. So also with "belly-aches," pains in the hips, thighs, legs and feet; in the arms, elbows, and hands.

Several naked children with various spinal affections were then brought in. Attention was called

to the fact that straightness of the spine in the cervical and lumbar region was as characteristic of vertebral caries as was the angular projection which so quickly appears in the case of caries of the dorsal vertebrae.

After all, stiffness was the most important sign of early spinal disease. Two boys of about the same age were placed side by side upon the floor; one of them had dorsi lumbar disease whilst the other had a sound spine. The latter could put his head between his knees, his back assuming a beautiful, convex sweep. The other boy could not bend down at all. Two children were then brought in whose projecting spinous processes offered strong suggestion of vertebral caries. Their back-bones could, however, be freely bent and turned in every direction, and were manifestly destitute of inflammatory trouble. Their mothers said, moreover, that they had not complained of pains, and that they could run about and play with other children without showing unusual fatigue.

As regarded the treatment of the early stages of spinal disease, Mr. Owen summed up his advice in one word, REST—absolute and continuous rest. The child should be placed on a narrow horse-hair mattress with the head securely steadied between very large sand bags, only a small, flat cushion or pillow being allowed beneath the nape of the neck. When the pains had become a matter of almost "ancient history"; when it was certain that no abscess was forming, and when, with the lapse of many months, it might be considered that all tubercular inflammation—and these cases are always tubercular—had passed away, some kind of rigid support might be employed. To substitute a plaster of Paris or a poro-plastic splint, however, for absolute rest in the horizontal posture, was one of the commonest errors of the present time in connection with the treatment of early spinal disease.—Edwin Owen, F.R.C.S. in *Med. Press*.

CHLOROFORM OR ETHER?

The *British Medical Journal* has performed a signal service to the Hyderabad Commission in placing before the profession Dr. Julliard's views on chloroform and ether. The leading article in the *Journal* of April 25th, 1891, is incomplete, however, and ought to have included the London statistics so opportunely brought forward by Mr. Roger Williams in the *Lancet* of February 8th, 1890.

According to Dr. Julliard's statistics, deaths from chloroform amount to 1 in 3,258, and from ether to 1 in 14,987 administrations. According to Mr. Roger Williams, the statistics of the London hospitals show that deaths from chloroform amount to 1 in 1,236, and from ether to 1 in 2,754 administrations. On the other hand, the statistics of chloroform administered on Syme's

principles form an unbroken record of inhalations from 1848 to 1891 without a death. The *British Medical Journal* regards Dr. Julliard's figures as "a most valuable statistical summary," but this summary would obviously be much more useful if it were accompanied by a description of the method of administration pursued in all the cases from which it is compiled. There are two distinct methods of chloroform administration in vogue. In one the pulse, as well as the respiration, is taken as a guide; in the other the pulse is never under any circumstances taken as a guide; and it is manifestly unreasonable to compare the risks of ether and chloroform without stating with regard to chloroform which of these methods is employed. The importance of this point lies in the fact that there is not one case of death from chloroform recorded, in which it was proved that the pulse has never been taken as a guide, no death from chloroform has ever occurred. It should be stated that in Syme's practice, as in my own, the anæsthetic was always administered by students and not by specialists. *If the pulse is affected under chloroform it indicates chloroform poisoning either direct or through abnormal respiration. All the chloroformist has to produce is harmless anæsthesia with regular breathing, and without poisoning, and of this the pulse can never be any test whatever; it is, therefore, positively dangerous and useless to take it as a guide.* The following table places the available figures in a most striking light:

Mortality Statistics of Chloroform and Ether.

Anæsthetic Employed	Source of Statistics.	Period.	Number of Deaths to Administration.
Chloroform	Julliard	Not stated	1 to 3,258
Ether	Julliard	" "	" 14,987
Chloroform	St. Bartholomew's Hospital (Roger Williams)	10 years, 1878 to 1887	" 1,236
Ether	" "	" "	" 2,754
Chloroform	Syme and Lawrie	43 years	No death.

If statistics are of any value, this table ought to carry conviction with it, because it shows clearly that chloroform administered on Syme's principles is even less dangerous than ether administered in accordance with the most approved methods. But the Hyderabad Commission has no desire to institute further comparisons between them. All we say is, let anybody use ether who chooses, but if chloroform is to be employed, let it be given in the right way. Surgery cannot yet do without chloroform, and the only way to give it with invariable safety is to be guided, as Syme was, not by the circulation, but entirely by the respiration. What Dr. Julliard says about ether I can say, *mutatis mutandis*, about chloroform. During fourteen out of the seventeen months that have elapsed since the Hyderabad Commission demonstrated that the key to the safe administration of

chloroform consists in regular breathing, I have given chloroform several times daily. Not only have I not had any deaths, but I have met with no accident of any kind. I have not once had to do artificial respiration or pull forward the tongue. Neither have I had to interrupt an operation in order to ward off any accident due to chloroformisation. There is no element whatever either of luck or of chance about these results. Any surgeon can administer chloroform without risk who will take the trouble to assure himself that the patient's breathing is normal and regular throughout the administration, and to stop the inhalation in good time, that is, directly full anæsthesia is produced. Statistics such as those of Dr. Julliard and Mr. Roger Williams, which are intended to show the danger of chloroform, are, as my table proves, susceptible of a very different interpretation. If they help to prove anything, it is that no anæsthetic is absolutely safe except chloroform administered on Syme's principles, and the more proof we have of this kind the better.—Edward Lawrie, M.B., in *Brit. Med. Jour.*

THE THERAPEUTIC USES OF
OXALIC ACID.

Among the many remedies recommended in late years for amenorrhœa, the one that has proved most valuable in my hands, is oxalic acid, as suggested by Dr. F. Paulet.

It has none of the objectionable, and nearly all of the valuable, qualities possessed by the other emmenagogues. It is not unpalatable, non-irritating to the stomach in medicinal doses, certain in its action, has no oxytocic properties, and, more valuable still, it may be used in all cases of amenorrhœa where an emmenagogue is applicable. I have used it for four years in all such cases with the best possible results.

It was while using the acid in the above mentioned cases that I discovered another valuable use of the drug, which I have never seen referred to, and that is its sedative action in acute cystitis.

The following are a few of the many cases in which I used it, and I have yet to record the first failure.

CASE I.—Miss C., aged 26. Had once been under homœopathic treatment two or three years for spondylitis and uterine prolapse. Had developed, several months previous to my first visit, a vesical inflammation, primarily through the continued use of cantharidic blisters, without proper precautions. This condition was aggravated and kept up by the prolapsed condition of the uterus. For the cystitis I gave her the following :

- R.—Acid. oxalic. gr. xvj.
- Syr. aurantii cor., ʒj.
- Aquæ pluv., q. s. ʒiv.

Sig.—Teaspoonful every four hours.

The result was all that could be desired—the acute symptoms all subsided immediately, and a few days saw her completely free from the vesical irritation.

CASE II.—Mrs. A., widow, aged 75. She has had several attacks of cystitis. Treated her with hyoscyamus, triticum repens, corn-silk, and pichi at different times, with rather unsatisfactory results, the inflammation continuing two or three weeks at a time. When another attack occurred, I gave the above prescription. The result was magical. In less than twenty-four the pain, tenesmus, and frequent desire to micturate had all disappeared, and, after two or three days, no evidence of the trouble remained.

CASE III.—A. B., aged 18. He retained his urine several hours after a desire to evacuate the bladder occurred. The distension was so great that he had much difficulty in emptying the bladder, when he did make the attempt. The result was an attack of acute cystitis. The pain and tenesmus were great, and the desire to urinate occurred every fifteen or twenty minutes. Gave the acid, and in two days he was completely cured.

CASE IV.—Mrs. J., aged 60, married. Complained of frequent desire to urinate, accompanied with pain and straining. Gave the acid, and directed her to avoid straining, etc. Found her better next day. Three weeks later found her worse than ever. The tenesmus was almost constant, and the urine dribbled away most of the time. Her limbs were swollen, and nephritis was suspected, though no albumen was found, but the microscope afterwards revealed casts in abundance. I again gave the acid, and within three days all pain and straining had disappeared, although some soreness remained several days longer. She was able to retain the urine several hours, and had no further trouble with the bladder.

The above cases have been selected to show the different causes that produced the cystitis in which the acid was used. The causes might be multiplied, all showing the same marked results.

The action of the remedy is rapid and the results certain, and it may be used in all cases of acute cystitis, from whatever cause, care being taken to use either rain or distilled water, to prevent the formation of oxalate of lime.—A. W. Marsh, M.D., in *Coll. and Clin. Rec.*

OBSTRUCTION OF THE BOWELS.

Dr. E. W. Mitchell, of Cincinnati, reports two cases of successful treatment of obstruction by means of olive oil, this method of treatment being the result of a suggestion of Prof. Langdom. One of the patients, a man fifty-three years old, had had an operation for strangulated inguinal hernia on the left side, twenty months previously. When

seen for his present trouble, he had not been well for a day; there had been severe colicky pains and vomiting after each attempt to take food. Enemata were given on this and the following day with little result. Morphine was given, and large enemata through a rectal tube, introduced as far as possible, produced no effect. Almost two quarts of dirty fluid was withdrawn through a stomach tube. Two ounces of sweet oil were ordered to be taken every hour. Tympanites during the afternoon and early evening had rapidly increased. There was much prostration, no nourishment having been retained. During the night, half a pint of oil was taken. In the morning there was less prostration; there had been a small fluid passage.

An enema, now administered through a rectal tube (English gum catheter, No. 16) returned slightly discolored, and containing a trace of oil. There was a recurrence of vomiting, but the oil was continued. About noon the bowels began to move, and several fluid stools were passed during the following night. On the next day the stools became formed and contained pus in small quantities. The case was probably one of fecal impaction—there were no evidences of typhlitis or perityphlitis.

The second case was that of a young man twenty-two years old. The bowels had not moved for forty-eight hours, and he had been suffering from tormina and vomiting. Large doses of cathartics had already been taken. Thorough examination failed to find any evidence as to the point of obstruction; the hernial openings were clear, there was no point of tenderness, no tumor, the abdomen was quite tympanitic. He was treated by sulphate of magnesia, repeated clysters through a rectal tube introduced as far as possible into the bowel, and sufficient morphine to control extreme pain. This treatment was continued for two days with no benefit, the tympanites increasing, vomiting becoming stercoraceous, and the patient much prostrated. The administration of sweet oil was then begun; a pint was taken within three hours, most of which was retained, although he had been vomiting everything. Three hours after beginning the bowels began to move, and a good recovery ensued.

Dr. Langdon mentioned in the same journal eight cases where relief had been obtained from large doses of olive oil.—*Cincinnati Lancet-Clinic*.

SOME RECENT STATEMENTS CONCERNING DIPHTHERIA.

Upon the subject of diphtheria there is no greater living authority than Löffler; even Klebs, with all his discoveries, must take second place. Such being the acknowledged position of the for-

mer investigator, the synopsis of what he knows of diphtheria must prove of great interest. They are given in twelve paragraphs in the *Pacific Record*, translated from *Correspondenz Blatt fuer Schweizer Aerzte*, as follows:

1. The cause of diphtheria is the diphtheria bacillus. It is found in the excretions of the diseased mucous membranes.
2. The bacillus is expelled with the excretions. It may be deposited on anything in the neighborhood of the patient.
3. Diphtheritic patients contain bacilli capable of infection as long as there is the least trace of diseased tegument in existence, and even for several days after their disappearance.
4. Persons affected with diphtheria should be vigorously isolated as long as there are any bacilli present in their excretions. Children who have been affected with diphtheria should be kept removed from school for at least four weeks.
5. The bacilli of diphtheria preserve their vitality for four or five months in particles of membrane in dry condition. For this reason, all objects which may have come into contact with the excretions of diphtheritics, such as linen, bedding, drinking and eating utensils, clothing of the nurses, etc, should be disinfected by boiling water, or treatment with water vapor of 100° C. Rooms which have been occupied by diphtheritics should be disinfected with the same carefulness. The flooring should be washed repeatedly with hot sublimate solution (1:1000), walls and furniture should be rubbed with bread.
6. Investigations on the vitality of diphtheria bacilli in moist condition are not concluded yet. Possibly these bacilli preserve their vitality, when in moist condition, even longer than in dry condition. Humid and dark dwellings seem to be especially favorable to the preservation of diphtheritic virus. Such dwellings, therefore, have to be subjected to sanitary measures, especially in view of their thorough drying and accessibility of light and air. In moving from one house to another, great care should be taken for thorough disinfection of dwellings which have been infected.
7. Diphtheria bacilli will continue to thrive outside the body at temperature of 20° C. They grow very well in milk. For this reason the milk trade should be subjected to careful supervision. The sale of milk from dairies where cases of diphtheria have been located, should be forbidden.
8. The diphtheria-like diseases of the numerous species of animals, of pigeons, chickens, calves, hogs, are not connected with the diphtheria bacillus of man. For this reason the diphtheria-like diseases of animals are not to be dreaded as sources of diphtheria in man.
9. Klein's statements on etiologic identity of the disease observed by him in cats, with diphth-

eria in man, have no demonstrative value as yet ; they require further confirmation.

10. Lesions of the mucous membranes of the air passages favor attachment of the diphtheritic virus, while susceptible individuals may be attacked by the disease without such lesions.

11. During prevalence of diphtheria peculiar care should be bestowed on keeping the oral, nasal and guttural cavities of children perfectly clean. Besides this, prophylactic rinsings of the mouth and garglings with aromatic waters or weak sublimate solutions (1 : 10,000) are recommended for children.

12. An influence of determined meteorological elements favoring the spreading of diphtheria has failed until now to be ascertained in a positive way.—*Kansas City Medical Index.*

ARSENIC AS A DRUG.—There are certain forms of skin disease against which arsenic appears to possess specific power ; for instance, pemphigus diutinus or persisting pemphigus and allied disease. In connection with the liberal administration of this drug I have had repeated opportunities of observing its effects upon the palms and soles. It makes these itch, burn and perspire. In the instance of the soles, the profuse perspiration has on several occasions caused the epidermis to peel. In the treatment of common psoriasis, although the effect of arsenic is quite as definite and certain as in pemphigus, it is not nearly so immediately curative. In the large majority of cases it will in the end, if well pushed, cause the eruption to disappear, the patches sometimes becoming congested and irritable. It seldom, however, brings about a complete cure. I believe that both its efficiency and its safety are in ratio with the youth of the patient. My experience as regards the effect of arsenic in lichen planus has not been uniform ; some cases improving, and others doing better under tartar emetic. In regard to the value of arsenic in eruptions of the eczematous type, my impression is that if given in anything like full doses it usually makes the eruption worse. In cases of common acne, sycosis (non parasitic), and various other chronic affections of the skin, I often add small doses of arsenic to the other remedies used. Arsenic is supposed to brighten the complexion, make the skin more transparent, and give glossiness to the hair. If it really affects this, which I have doubt, it does so only when used sparingly. The effect of the drug as a direct tonic I think is due to and depends on the smallness of the dose. In elderly persons, unless the disease imperatively demands it, I never prescribe this drug. Very few persons have an idiosyncrasy for arsenic, and the young bear full doses well. Arsenic is an undoubted cause of peripheral neuritis, and it is noted by Christison that local and

unsymmetrical forms of paralysis are caused by its continued use. During its medicinal use numbness and tinglings are frequently observed. Herpes zoster is also sometimes caused by arsenic. Neilsen, of Copenhagen, found that in 520 cases of psoriasis in which arsenic was prescribed 18 cases had herpes. As to the effect of arsenic on the general health when administered during long periods, my impression is that when given in small doses its effects are inappreciable, and there is no danger of a cumulative influence. The toxic symptoms of arsenic when given medicinally are numbness, and tingling of the palms and soles, loss of flesh, irritation of the conjunctiva, diarrhoea and gastric symptoms, and sometimes extreme irritation of the bladder.

A number of cases have been noted where arsenic has caused death, when used in large doses for long periods of time, with paraplegic symptoms. The effect of arsenic upon the skin in persons previously in health are that (supposing the doses to be large) the skin becomes dry, harsh, brown and muddy looking, though there may be perspiration on the palms and soles. In extreme cases scaly patches may form, and in some parts, in addition to dryness, corns may form, very rarely degenerating into epithelial cancer. Arsenic will also cure recurrent herpes. Whilst I think that our clinical knowledge of this powerful and most important drug has much advanced during the last twenty-five years, we cannot claim to have made any discovery as to its mode of action. We know that it will cure some diseases, and cause others ; that it has some peculiar affinity for nerve tissue, and some peculiar influence upon nerve function, but further than this we cannot go. Recent observations leave us the creed that while we may, as heretofore, avail ourselves freely of its services we must closely watch its effect, and be prepared, if need be, to forbid its use.—Hutchinson, *British Med. Jour.*

THE PART PLAYED BY MICROBES IN SUPPURATION.—In the course of a discussion at the recent French Congress of Surgery on the different forms of suppuration examined from bacteriological and clinical points of view, the following conclusions were laid down by M. Verneuil (*Revue de Chirurgie*, May) : (1) microbes are necessary for pyogenesis, pus is the function of microbes ; (2) there are many known pyogenic microbes, but the number of these has not yet been made out ; (3) some are constantly pyogenic and nothing more, others seldom produce pus and are pre-eminently infective ; (4) the centres of suppuration are in some instances, mono-microbic, in others poly-microbic ; (5) in poly-microbic purulent centres there are three kinds of association—one of different agents that are all invariably pyogenic, another of invariably with occasional agents of suppuration, and

a third of pyogenic with non-pyogenic agents; (6) a purulent centre originally mono-microbic may become poly-microbic; (7) a substitution of one kind of microbe for another kind may take place in a centre of suppuration; (8) the collection of pus may become a microbic, the pyogenic agent may disappear and the pus become sterile; (9) microbes which engender pus prevade the whole region of suppuration; (10) pyogenic microbes do not always excite suppuration nor at the time of invasion; (11) the vitality of pyogenic microbes varies in the different forms—some disappear very quickly, others retain their vitality for almost indefinite periods; (12) suppuration may in every instance be regarded as due to the presence of bacteria; (13) the specificity of microbic agents being assumed, it becomes necessary to make out the specific action of each form of microbe. From these etiological conclusions one may readily deduce certain therapeutical indications: (1) in cases of open suppuration, as, for instance, unhealed wounds and carbuncle, the treatment should consist in prolonged antiseptic baths, and in the application of antiseptic powders; (2) if the suppuration be intradermic, as in lymphangitis and erysipelas, the application of antiseptic powders will suffice; (3) if the suppuration be deep seated, one must penetrate into the collection in order to evacuate the pus and to sterilise it. Free incisions are useless; all that is necessary is to let out the pus through a small incision, and to replace it by a microbe-killing agent.

ON THE RELIEF OF PELVIC AND ABDOMINAL PAIN BY HOT COLON DOUCHES.—The writer has resorted to this procedure for various painful affections, such as renal colic, ovarian neuralgia, and inflammation of the broad ligament, severe pelvic pain, dysmenorrhœa, and one case of what appeared to be hepatic colic.

The proper method of using the remedy is as follows: The patient is to lie on the left side, with the left arm under the back, legs partly drawn up, hips on a pillow or folded blanket, the chest low; in short, in the Sims position. This position allows the patient to administer the injection by the use of the right hand. It is always better, however, to have an attendant administer the injection if possible. If an attendant gives it, the patient might better lie directly on the face, with a folded blanket or pillow under the thighs. The water is to be of a temperature not more than 112° F. nor less than 106° F. From a pint to two quarts of the hot liquid should be slowly injected, and retained for a few minutes. If there are fœces in the rectum, as is usual, the case, the injection and the fœces will be quickly ejected. Then at once have the patient lie down, and repeat the hot injection, using a larger quantity the second time. This will be retained longer, and

will almost certainly relieve the pain. When this is expelled the patient should lie down again, and about a pint of hot water should be injected; this will be retained if the patient lies quiet, and it will be discharged from the system through the kidneys. If the patient is at all weak, it is wise to administer a stimulant before giving the injections.—W. E. Forrest, in *Med. Record*.

ACUTE SYNOVITIS.—Dr. Owen (*Practitioner*) describes nine cases of traumatic effusion into the knee-joint, treated by tapping. In some instances the aspirator was employed, but in others he used a hydrocele canula. Strict asepticism was enjoined, and care taken to prevent the access of air to the joint. He had never known trouble to follow, and employed tapping as a routine treatment in patellar fractures and simple distention. As a rule the puncture is made to one side of the patella. When withdrawing the canula the track is obliterated by firm pressure with the finger. The skin puncture is covered with a scrap of lint dipped in collodion, or by a little pad of dry wool. The knee, together with the upper half of the leg and the lower half of the thigh, is then enclosed in lateral splints of house-flannel and plaster of Paris. The limb is fixed in the extended position, the foot being slightly raised. The firm pressure which is made around the joint is comforting, and it effectually prevents further effusion into the synovial membrane. "Having watched the effect of this method of treatment, I can honestly say that, should I have the bad luck to be the subject of acute traumatic hemarthrosis or sero synovial effusion of the knee, I should most certainly have the joint treated in the manner described. And I should ask that the site of puncture might be first numbered by the application of a little piece of ice and some salt."

WHEN TO STIMULATE.—Perhaps no better rules based on the condition of the heart can be formulated for the administration of stimulants than those which Stokes has laid down for our guidance. The following, according to him, are the physical signs which seem to indicate the early use of stimulants:

1. Early subsidence of the first sound, observed over the left ventricle.
2. Diminution of the first sound over the right ventricle.
3. The heart acting with a single, and that the second, sound.
4. Both sounds being audible, but their relative intensity being changed, so as to represent the action of the heart of a fetus *in utero*.
5. With these signs, progressive diminution of impulse, which occasionally becomes imperceptible, even when the patient lies on the left side.—*Therap. Gaz.*

THE CANADA LANCET.

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TORONTO, AUGUST, 1891.

THE LATE HOMŒOPATHIC CONVENTION.

Our homœopathic brethren have been convening at Atlantic City. So far as may be judged, the meeting was not occupied to any great extent in the consideration of scientific subjects, but rather in vaunting homœopathy, and belittling the allopaths. They also spent a good deal of time in getting ready to place on record their dissatisfaction with the present condition of medical legislation.

The fact that insurance companies discriminate against homœopathic examiners, was the cause of a paper being read by Dr. H. C. Cowperthwaite. It seems that the hardheaded business men who manage the insurance companies of the world, object to having men act as examiners, who are not educated in medicine and surgery,—wisely having the financial interests of their institutions at heart. Now, while we do not for a moment wish to insinuate that there are no homœopaths who are professionally educated, we are of opinion that when such is the case, it is not because of, but in spite of, homœopathic science. Surely a corporation doing business with the public and for its directors, and with the interest of its patrons at heart, should have the liberty to say who is, and who is not, competent to act as an officer for such corporation. But the insurance companies are to be coerced. One company in answer to an enquiry as to why such appointments were not made replied "Our business will be conducted in future, as in the past, on strict *business principles*," (the italics are ours). Whereupon a homœopathic con-

temporary says, "If homœopathic physicians will interest themselves and their patrons to the extent of refusing to take insurance in any company not having at least some homœopathic physicians on their examining staff, the companies will soon find that it is a correct and strictly business principle to have representatives of the new school of medicine on their staffs. When you are asked to take out a policy, be sure to enquire if the company has homœopathic physicians as examiners. If not, decline to take insurance in the company, and the end will soon be reached."

The same journal, in referring to the very full reports of the Convention which appeared in the daily papers, says: "Allopathic bigotry and intolerance, even on an occasion like this, could not be suppressed. The serpent of jealousy showed its malicious and venomous head, and was justly rebuked by one of the great daily papers."

This is refreshing, especially when the whole medical and surgical work done at the Convention comes to be considered, which was, if the reports of the proceedings may be depended upon, almost nothing. A painting of Hahnemann was unveiled with the following: "O senseless image of the mighty dead, could those dumb lips but speak the words that we would hear, could those dead eyes but flash the truth, blest indeed would we be. And could thy spirit from its earthless home but come and bless us for our duty done, then, in the cause for which you lived and died, the travail of your soul is satisfied."

Dr. Crouch, in a paper of suggestive title, viz., "The Ethical basis of the separate existence of the Homœopathic School," said some things which showed a true scientific (!) spirit, and much tolerance. For instance: "To increase peristalsis, where deficient, or to arrest by drug poisoning, where in excess; to force or diminish secretions; to accelerate or retard the circulation; to stop all voluntary and many involuntary activities, and demand that it be called sensible or scientific doctoring, is a travesty upon logic and a caricature of common sense."

The learned doctor who wrote the above, says further on, that "The 'allopath' has no more actual science than the Indian medicine man, who essays to cure by blowing feathers and beating tom-toms." That also, "The 'allopathic' principle of practice is not one whit in advance of that

of prehistoric man, nor in any way changed except by the unfortunate doctrine of the illustrious Galen."

A paper on "Backache," by Edwin T. Blake, of London, was read, and apparently pretty well discussed. So far as we can discern, the lecturer thinks that the trouble is caused usually) and the chief caution was, notwithstanding the fact that he is a homœopath, as to the *cause*), by say, a "bent whalebone or the button on a heavy shirt; a non-woollen trouser waistband, soaked with sweat and causing resultant chill."

Some of them who followed in the discussion had discovered various causes for the trouble, as a knot in a corset string, a heavy silver watch pressing on the intercostal nerves, etc. One doctor concluded that backache was due to deficient circulation, and she "first taught her patients how to breathe." And so on.

It is a pity that many educated men, and such there are in the homœopathic school, should countenance by their presence such nonsense as we hear gravely put forth as leading tenets in the faith. "Dynamization by attenuation," may sound very well in ignorant and unlearned ears, but in this present day of earnest scientific research, of the new science of bacteriology, of pathology, of the microscope and instruments of precision, the expression seems to us foolish.

The disregard of pathology which homœopathy allows is perhaps the weak point in the system. If we understood the matter correctly, the whole science consists of a knowledge of a list of symptoms of disease on the one hand, and a list of the symptoms produced in healthy men by various drugs on the other. It could only be under such a system that the remark that "*Rhus*. acts best in the *right* hip," and "*Stram*. has remarkable control over the disease in the *left*," could pass unchallenged, and without the speaker being silenced.

Yet a body of men and women, holding such views, is held up for our admiration as the "scientific school of medicine," they are the "five hundred of the ablest physicians of the world," and "the results of the deliberations of this scientific body will be felt for years to come." It is enough.

THE ABORTION OF SYPHILIS BY EXCISION.

A great deal has been written *pro* and *con*, on the possibility of the prophylaxis of syphilis by early excision of the primary sore. Delightful as it would be to the patient to feel that after infection he could, by a simple ablation of the sore, be saved from the long and tedious treatment for syphilis, recent consensus of opinion is almost unanimous against the possibility of any such happy consummation. Dr. R. W. Taylor, in a recent paper in the *Med. Rec.*, gives, very clearly and concisely, the reason *why* such excision does not cause abortion of the disease. He remarks that as late as ten or twelve years ago excision of chancres as a prophylactic measure was quite common, while M. Jullien and a few others still hold to its utility. The writer gives details of four cases, which, when carefully studied, go to show that even in the first days of infection the poison is not limited to the seat of the lesion, but is widely extended. He mentions a case recorded by Berkeley Hill, in which the removal of the infected (torn) surface, as early as twelve hours after cohabitation with a syphilitic woman, did not either suppress or abort the disease.

"Ricord in his later years has said that he considered the destruction of the infecting chancre as absolutely useless (in a prophylactic sense) no matter how early it is done. That it is certain that even before its appearance that syphilis exists, and that even if the entire penis should be amputated before the chancre showed itself, syphilis would follow nevertheless."

In conclusion, Dr. Taylor says: "In this essay I have sought to show why syphilis is not aborted by excision of its initial lesion with a liberal slice of the surrounding parts. The reason, succinctly stated, is that (contrary to the present view) the syphilitic infective process is from the very start a quite rapid one. That the poison strikes directly for the blood-vessels and causing there its peculiar changes, runs along them with astonishing rapidity. Thus it gains a foothold in parts beyond the reach of the knife, the caustics, or electrolysis. In fact, the tissues of the whole penis in very early syphilis are, we may say, honeycombed by these infected vessels. These observations just presented, backed by the evi-

dence of the failures in chancre excision, go to show that beyond the chancre there is sufficient syphilitic poison to infect the whole economy, and that the initial lesion, though the visible and exuberant evidence of syphilitic infection, may be removed without in any way altering or modifying the course of the disease. It is rather too early to inquire into the *modus operandi* of the maturing syphilitic infection, but it seems probable that this vessel cell-growth goes on and on until the whole economy is involved, and that then the explosion occurs which we call the evolution of the secondary period of the disease.

"I am as yet unsettled in my mind as to whether or not these observations will lead to the definite opinion that anti-syphilitic treatment should be instituted just as soon as we positively see the first appearance of the chancre."

CANTHARIDES IN CANCER.—More than twenty years ago (*Lancet*) it was reported that the Russian peasants were in the habit of using some kind of beetle as a remedy for cancer. since that time some observations have been made which would appear to point to the possibility of cantharides being of some use for this purpose. In 1860 Dr. Wilms excised the left breast for a tumor of the size of a small walnut, which was shown by the microscope to be a reticular carcinoma. It returned, and was again excised a year after the first operation. A mixture of tincture of cantharides and camphorated wine in mucilage was now prescribed, and was continued for three months. The patient, who was a widow at the time, afterwards married again, and gave birth to two children. She is still alive, and there has been no recurrence. Again, in 1880, a somewhat extensive cancer of the breast was operated on in the Augusta Hospital, after which the patient was treated with cantharides, and was known to have had no return of the tumor six years later; indeed, she is believed to be alive and well at the present time. Once more, in 1879, a stricture of the œsophagus, evidently of a carcinomatous nature, developed somewhat rapidly in a female patient; she was treated with cantharides, and a decided improvement took place, so that she was able to swallow pieces of food if they were well masticated. She is alive still, but feels, however, some incon-

venience from the stricture, and at times is obliged to have recourse to the cantharides. The above interesting facts are published by Dr. Wolfert in the *Berlin Klin. Wochenschrift*.

SUMMER DIARRHŒA.—Carharrer gives the following in bad cases (*Medical Standard*) :

- R—Acid salicylic, gr. ss.
- Crete precip., gr. x.
- Glycerin, ʒ ij.
- Aq. rosæ, ʒ xiv.—M.

Sig.—ʒj. every hour for a child one year old.

The following are useful in intractable cases :

Loomis' diarrhœa mixture—

- R—Tr. opii, ʒ ss.
 - Tr. Rhei, ʒ ss.
 - Tr. catechu co. (U.S.P.), . . . ʒ j.
 - Ol. sassafras, ʒ xx.
 - Tr. lavandulæ co., ad. . . . ʒ iv.—M.
- Sig.—ʒj. every four hours for adults.

Squibb's diarrhœa mixture—

- R—Tr. opii, ʒ j.
 - Tr. capsici, ʒ j.
 - Spts. camphori, ʒ j.
 - Chloroformi (pure), ʒ iij.
 - Alcohol, ad. ʒ v.—M.
- Sig.—ʒj. every five hours for adults.

Velpeau's diarrhœa mixture—

- R—Tr. opii,
- Tr. catechu co. (U.S.P.),
- Spts. camphor, each equal parts.—M.

HYPNOTIC EFFECT OF WARM BANDAGES.—

Warm baths, as is well known, produce a calming effect, and tend to bring on sleep, and Allдорfer has attempted to apply such a method in patients where a sedative effect is desired and yet where a bath is inapplicable (*Jour. de Méd. de Paris*) His method consists in wrapping the lumbar region and belly with linen cloths soaked in warm water, and then covering them with oiled silk or rubber cloth, so as to prevent evaporation, while the whole is kept in place and loss of heat prevented by a flannel cloth. This procedure is of ready performance, and the author says that by this simple means he has obtained the most astonishing results in the treatment of insomnia. By dilating the large vessels of the intestinal tract, by the warmth applied, a condition of anæmia of the brain is produced, favoring sleep. These large intestinal

vessels have very properly been termed the waste-gates of the circulatory system.

BROMIDE IN EPILEPSY.—The most satisfactory results are obtained by combining the bromides with some vegetable agent for producing cerebral anæmia (*Kansas Med. Jour.*). The combination also tends to produce tolerance. Among the best agents are the calabar bean, belladonna and cocculus indicus, or their active principles. Combining the bromides tends to prevent bromism, while it increases their physiological action; and while the potassium salt produces diarrhœa the sodium constipates. A very good formula, increasing the salts as required, is:

R.—Brom. of ammonium . . . gr. v.
 Brom. of sodium gr. v.
 Brom. of potass. gr. x.
 Tinct. belladonna gtt. x.
 Aromat. elix. ʒij.
 Pure water ʒj.—M.

Sig.—Three times a day.

TREATMENT OF FISSURED HANDS.—Says the *Jour. de Méd. de Paris*: after having washed the hands in tepid water, apply a small quantity of the following solution to the fissures, and let it dry:

R.—Tannin 1.0 gramme.
 Glycerin 20.0 grammes.
 Water 100.0 grammes.—M.

At night, on retiring, the following salve should be applied:

R.—Ext. of ratanhia . . . 2.0 grammes.
 Lanolin 50.0 grammes.
 Vanillin 0.10 gramme.
 Rose Oil gtt. ij.

M.—*et. fiat unguentum.*

Gloves should be worn at night.

DANGER OF MOVING TYPHOID PATIENTS.—Late-published experiences of the Pennsylvania Hospital (*Times and Reg.*) illustrates an important point for medical officers and others to remember. It is clearly shown that typhoid patients brought to hospital before the end of the first week, unless suffering from a very virulent type, are likely to recover. Parallel cases brought in during the second week show three times the mortality. A simple climax is completed by the following clear and concise statement:—"When brought in the

third week the mortality is terrific; it is a miracle if the patient does not die." These striking facts are borne out by the experiences of fever hospitals in Great Britain. To move such patients then after the first week is very dangerous.

CHOLAGOGUE TABLETS.—Huchard (*La Méd. Mod.*):

R.—Sodii benzoatis, }
 Sodii salicylatis, } of each . . . ʒj.
 Rhei pulv., }
 Ext. nucis vomicæ, gr. v.

Ft. tabellæ No. xx.

Sig.—One at each meal.

GREENISH DIARRHŒA OF BABES.—The *Med. Rec.* gives the following:

R.—Zinci. sulpho-carbolas., . gr. ijss.
 Lactopeptine, gr. xij.
 Bismuth subnit., gr. xvij.—M.
 Et. divide in chart No. xii.

Sig.—One every two hours until relieved: then increase the interval and give as necessary to control the bowels.

Books and Pamphlets.

NOTES ON NEW REMEDIES; including those on the Additions to the British Pharmacopœia of 1890, compiled by E. B. Shuttleworth, Dean, and Professor of Chemistry, Ontario College of Pharmacy, Lecturer on Pharmacy at Trinity Medical College, Toronto; Editor of the *Canadian Pharmaceutical Journal*, etc. Toronto: Monetary Times Printing Co., 1891.

This little work of 87 pages will be invaluable to the physician and student. Very few men in actual practice have either the time or opportunity to become acquainted with the host of new remedies which have lately been put upon the market. Some of these are indispensable, some useful, and many useless. Their merits, on the contrary, are discussed for the most part in serial literature, to which Mr. Shuttleworth has free access, and he has taken pains to make the enumeration practically complete up to the present time. We heartily commend the work as being very useful to all who are in any way connected with the healing art. Mr. Shuttleworth's well-known skill as a teacher and his reputation as a thoroughly practical pharmacist, renders it unnecessary to mention that the work is practical.