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REPORT OF CASES TREATED WITH SUPER-HEATED DRY AIR.

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AS the treatment of disease with super-heated dry air has been so thoroughly discussed during the last two or three years, I have decided to limit myself almost entirely to personal observations with a report of a few cases that have come under my care.

Some time ago, becoming interested in the subject and convinced that the treatment was rational, I obtained an apparatus of the following description:—

The apparatus proper consists of a long copper cylinder open at either end which closes during the treatment by means of a metal door at one end, and a curtain of Turkish towelling at the other. There is a trap door in the top of the cylinder to which reference is made below. The heat is obtained by means of Bunsen burners placed beneath the cylinder. The hot air passes up inverted funnels into a square chamber where it is stored and then conducted up through a series of perforations into the treatment chamber. The temperature is indicated by a high temperature thermometer projecting through the roof, the bulb of which is inside the treatment chamber. In addition to the apparatus proper I use a steam roller bed as shown in photograph. This enables me to treat my patient with as little unnecessary exertion as possible, a most important item in many painful conditions. The bed is provided with poor-heat-conducting mattresses.

METHOD OF GIVING TREATMENT.

The remedy should be applied at least one hour after a meal and with as little previous excitement and exertion as possible. The patient is clothed in a long flannel robe, lies on the roller bed, and has a blanket wrapped around him from the shoulders down. This causes a certain amount of absorption of the moisture as it exudes from the skin and also helps to promote sweating.

The pulse and temperature are taken and the urine is examined before the patient enters the cylinder.

The position of the patient while taking treatment is, I think, important. I endeavor to get the greatest direct heat applied to the affected part. The roller bed with the patient in position is now run into the treatment-chamber, where the heat as shown by the thermometer varies from 100°F. to 200°F. according to the circumstances of the case. I find that it is in every case preferable to begin with the temperature of the cylinder about 100°F. and let it gradually rise, as the patient is less nervous and the skin gradually becomes accustomed to the super-heat. It only takes 20 minutes from the time the gas is first turned on to acquire a heat in the treatment chamber of 300°F.

During the treatment I frequently open the trap-door spoken of above. This acts as a ventilator changing the air; it also allows the air that is charged with the evaporated moisture exuded from the skin to escape, thereby completely drying the air in the cylinder. This is really the secret of the treatment, for if the air is allowed to remain moist in the cylinder, the patient will probably scald long before the required temperature is reached. The trap door serves still another purpose; it enables me to watch the conditions of the parts of the patient that are being subjected to the heat.

The pulse and temperature are taken during treatment.

The average duration of the treatment is 45 minutes, but varies somewhat with character of disease, and temperament of patient.

PHYSIOLOGICAL AND THERAPEUTIC EFFECTS NOTICED.

LOCAL: Dilatation of all the superficial blood vessels causing a free circulation through that part.

A uniform reddening of the skin.

Removal of any turgescence and stasis previously present.

Free perspiration; great relief of any pain and restoration of mobility, especially when the want of movement is due in any degree to pain.

GENERAL: The pulse increases in strength and rapidity from 10 to 20 beats per minute, neither noticeably full nor dicrotic; small nor irregular. One hour after the treatment the pulse is generally lower than before entering the cylinder.

General profuse perspiration and dilatation of the blood vessels.

A sensation of relaxation and comfort.

Temperature increases from $\frac{1}{2}$ to 2° F., average 1° F.

Increase in number of respirations from 2 to 6 per minute.

Stimulation of lymphatics and nervous system.

More vigorous contractions of the heart.

Lowering of blood pressure. Increased alkalinity of blood enabling the uric acid to be dissolved more freely, thus relieving pain and nervous depression consequent upon its presence, and a heat reaction causing some molecular change in the great nerve trunks.

Analysis of urine shows sp. gr. increased slightly. Solids increased especially chlorides—3 grs. per diem; uric acid and urates also increased. No albumen present. I have observed no ill effect from the treatment. The patients complain of no disagreeable head or heart symptoms during

or after treatment. They generally derive comfort and not pain from the super-heat and express a feeling of exhilaration and refreshment.

When I consider the patient has been in the cylinder long enough, he is wheeled out on the roller bed to cool off for half an hour. He then gets an alcoholic rub down and massage or electricity if ordered.

I append a few cases notes

CASE 1. Patient a man aged 35 who was suffering from a varicose ulcer on the right leg 1 inch in diameter together with the usual dilated veins, stasis, discoloration and chronic fibrous connective-tissue thickening that accompanies such a condition. Patient was suffering considerable pain; walked quite lame.

First treatment, Sept 3rd, 1900. Patient prepared in usual way; both limbs placed in treatment chamber up to the hips. Cylinder temperature on entering chamber 100° F. Maximum temperature used 290° F. Duration 35 minutes. During the treatment the patient perspired freely and said he was very comfortable, the leg felt much easier and although he was more conscious of the heat at seat of the ulcer, it was not painful. On his removal from the cylinder, a large amount of the turgescence and sweating had disappeared, the dilated veins had been reduced to a very great extent, the limb presenting a more healthy appearance. Patient walked home with very little discomfort.

Second treatment, Sept 6th. Since last treatment the patient has been more comfortable; varicose conditions somewhat improved. Ulcer looks a little healthier. This treatment was commenced with cylinder temperature at 180°F., reaching as high as 300°F. and continued for 45 minutes.

Third treatment. Given 10 days later. Similar to second. Ulcers much reduced in size and taking on healthy action. Much less swelling of leg and no pain. Did not hear from the patient for a month when he stated ulcer was completely healed, the leg not giving him any trouble. The only other treatment used was a dry dressing of boracic acid, the patient working through treatment.

CASE 2. Patient aged 22 years, was first troubled with rheumatism in his back two years ago; has suffered more or less from it ever since. About a year ago it developed in the ankles and he was laid up for six weeks. Went to Mount Clemens baths, for two weeks with very little benefit. Complains of a good deal of pain in both ankles and back. Ankles, somewhat swollen and puffy; no reddening; tender to touch. Patient had an attack gonorrhoea at time rheumatism first appeared.

First treatment, Nov. 30th, 1900, Temperature on entering cylinder as shown by thermometer was 230° F. Maximum temperature 300° F. Duration of treatment 3.30 p.m. to 4.10 p.m. During treatment he perspired very freely and complained of no discomfort.

Second treatment, Dec. 3rd, 1900. Report says pain in ankles has quite disappeared since last treatment and back slightly improved.

This patient received six treatments in all. In one of the treatments I noticed the thermometer showed the temperature in the cylinder to be as high as 320° F. while patient perspired freely and felt comfortable. Have seen patient occasionally up to a month ago, and although he still complains of a very occasional pain in the back, is otherwise well.

CASE 3. Woman aged 42. Disease began Jan'y, 1900; both shoulders stiff and painful, also elbows and wrists, movement of these joints limited. All phalangeal joints are enlarged; cannot flex fingers to palm; knees are enlarged and painful, movement limited; ankles swollen. Patient has been unable to walk for three weeks; can only stand up for a very short time with assistance. Has had cough and lost flesh, appetite poor.

First treatment, Nov. 21st, 1900. During treatment patient says she never perspired so freely before. Maximum temperature of cylinder 310°F.

Second treatment, Nov. 24th, 1900. Says her knees have been very painful since last treatment.

Third treatment, Nov. 27th, 1900. Patient seems very weak and poorly in herself. Hands and wrists more swollen and painful. Cylinder temperature of only 290°F. used.

Fourth treatment. Patient feels better; appetite improved; no change in joints.

After giving eight treatments without benefit this case was abandoned on account of the extreme weakness and lung condition, which showed phthisis.

CASE 4. Patient a medical man, age 32; had pains in his left leg about a year ago but not very severe and in a short time went away entirely until July, 1900, when they returned after he had been bathing. Has felt pains more or less ever since. About three weeks before coming to me got feet wet, when an acute attack of sciatica set in. Tried to keep up for two weeks but at the end of that time was obliged to remain in bed. Pain severs in neighborhood of the sciatic notch. More acute at times and prevented sleep. Has tried hot application, massage, electricity without benefit: in fact the latter increases the pain. All drugs were of no avail.

First treatment, Nov. 23rd, 1900. Patient perspired freely; said he felt better than after any of the other treatments he had taken.

Second treatment, two days later. Maximum temperature in cylinder 310°F. Patient reports that the pain has been less acute and resting better at night.

Patient, after taking four treatments, complained of no pain except when he walked; was able to sleep much better. He afterwards took two weeks treatment at St. Catharines mineral baths and returned quite well. He has not complained since.

CASE 5. Patient florid, full-blooded man, aged 55, had an acute attack of rheumatism in his feet 34 years ago, but was not troubled much with it for some 9 years when he had another attack, which was not so severe. It came on suddenly and lasted for about 10 days. Present attack came on 6 weeks ago: both feet and ankles are considerably swollen and painful, left one in particular. Movement in both limited. There is a patch of eczema on the top of the head extending to the forehead. It has been there for three years. Cannot sleep on account of pain. Has taken everything in the way of drugs for the rheumatism without any benefit. Has also used hot dry air applied locally without avail.

First treatment, Dec. 1st, 1900. Patient's skin did not act very freely although the thermometer showed 330°F. Said ankle was not so painful after treatment.

Second treatment, Dec. 5th, 1900. Patient felt much better and was able to walk better for two days after last treatment. Feet and ankles a little more painful.

Third treatment. Since last treatment patient has been sleeping better and until to-day has been able to walk with less pain. There was no pain in the feet after this treatment.

Patient took eight treatments. He continued to improve: ankles became less tense and swollen and says his health has not been so good for years. The eczema shows decided improvement. An ointment of ichthyol 10 per cent. also used.

In a letter I recently received from this patient he writes: "I must say the treatment has exceeded my expectations; I am much better in every way than I have been for the past four or five years. When not moving about I am almost free from pain. It is only when walking that I feel an occasional twinge. Should I, however, have a relapse you may be sure I will be after you and the hot air treatment again."

CASE 6. The patient, a professional singer, aged 27, suffering from periodical attacks of acute laryngitis and catarrhal inflammation of upper respiratory tract for which he has taken the dry hot air treatment several times in the United States with beneficial results. Present attack, two days duration, patient quite hoarse, almost constant dry, hard cough; post pharynx and larynx shows acute catarrhal inflammation, temperature 99°F.

First treatment, Dec. 10th, 1900. Patient preferred to take the treatment without covering of any kind. Maximum temperature in treatment chamber 310°F. Patient perspired freely; did not complain of feeling the heat uncomfortable. Voice clearer after treatment, felt exhilarated. Continued treatment next day stating that he was feeling much improved. Had slept much better. Patient left my house each day after treatment, walking a distance of two miles with the thermometer at zero. Met patient on the street about a week later, when he said he had left the cold in my hot air bed.

CASE 7. On the 19th of May, 1900, patient, a man aged 25 was working on the railroad between two freight cars, when the car behind him ran on his right heel and held his foot fast. Patient had on a very thick boot or the foot would have been completely crushed. The doctor who attended to him at the time said there were no bones broken.

Patient was in bed 5 weeks at the time of accident and then was only able to walk with crutches; did not work for 5 months. Has had some rheumatism in the right shoulder.

Present condition shows some discoloration, swelling, immobility and tenderness of foot and ankle. The pain in the foot extends from the instep to the big toe and there is considerable swelling on the outside of foot. When patient walks he does so chiefly on heel of right foot as he does not seem to be able to spring on the fore part of the foot.

First treatment, Feb'y 18th, 1901. Was followed by massage, both legs up to hips in cylinder. Patient perspired freely.

Second treatment, 2 days later. Several adhesions seemed to give way under massage.

After second treatment, patient said foot did not hurt him as much; seems more moveable.

During the 5th treatment many adhesions gave way and ankle joint much more moveable and did not grate so much.

After 6th treatment patient stated he could spring off the front of the foot much better, walking giving him very little pain: none otherwise.

Patient received 12 treatments and made an uninterrupted recovery.

CASE 8. Man aged 42, had an acute attack of lumbago on the 19th April which confined him to bed for four days. He took hot water baths and rubbed embrocations until skin raw without any beneficial results. Patient suffering considerable pain in lumbar region.

First treatment, April 25th, 1901. Perspired freely, but complained of neuralgia in head while taking treatment. Pain in back felt somewhat relieved.

Second treatment, April 27th. Patient states that he had a severe attack of neuralgia after the first treatment. He, however, is subject to neuralgia. The lumbago is better than last day. After 4th treatment patient reports that he is feeling very much better; has no pain in the back to-day at all. This patient took three weeks treatment at St. Catherines mineral baths and made an excellent recovery.

CASE 9. Patient, male aged 45, had an operation for a urinary trouble (probably stricture) about 6 months ago, and pain in back came on about two weeks later. Has suffered a great deal of pain in the back ever since. Complains of a boring sensation in both heels; has tried cupping, mustard leaves, liniments; had back cauterized, also tried hot air treatment in Royal Victoria Hospital, Montreal. The latter he said seemed to do him the most good, and his physician in Montreal ordered him to continue them in Toronto. Patient is very nervous and depressed; suffers from insomnia. He took 10 treatments without any apparent benefit, one day feeling a little better and the next not so well, so I decided he should discontinue the treatments for a time and watch the results. I received a letter from him dated Aug. 21st, last in which he says:

"I am feeling quite a little bit better and I hope I will soon be well."

CONCLUSIONS.

I find the super-heated dry air a most valuable addition to the ordinary treatment of all rheumatic affections, gout and interstitial neuritis. Of rheumatoid arthritis, that distressing and almost incurable disease, my experience has been too limited to speak. Yet most encouraging reports have been published by such well known men as Dr. Kessler, Brooklyn, Knowsley, Sibley, Dr. Willett, London, and Prof. Stewart, Royal Victoria Hospital, Montreal. The treatment almost instantly relieves pain, causes rapid absorption and repair of tissues, aids elimination and has a marked sedative action on the nervous system. To obtain the most benefit I find it necessary to subject a considerable

portion of the patient's body to a temperature of from 280° F. to 320° F. This brings about marked constitutional changes which mean better local results. I found decidedly less relief from local treatment alone. The treatments must follow one another at short intervals at first, as patients relapse if any length of time supervenes. The results are often not apparent for some time after treatment.

PUERPERAL INSANITY.

By ERNEST HALL, M.D., L.R.C.P., Ed.

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MRS. X., aged 39, of low grade of intelligence, family history suggestive of mental deficiency, her two brothers being considered somewhat "green." She was the mother of two children, last confinement attended by midwife and very tedious. Some days after a medical man was called and ordered a creolin douche, which gave her great pain. Each douche was followed by from one to three hours of wild delirium. She would leave the house, when not carefully watched, and wander towards the city. This condition continued, with slight interruption, for three weeks, when I was called to see her. The patient was apathetic, careless as to domestic duties, yet apparently devoted to her child.

Examination showed no abnormality, save the uterus slightly sub-involuted; pulse, temperature and urine normal. The treatment was free catharsis and hot douches; withdrew baby from the breast and gave tonics with plenty of food, frequently administered. Patient was better for a few days, when she relapsed into a semi-melancholic condition and complained of intense headache. Fearing that there might be some abnormality of the endometrium, I curetted, finding a piece of placenta no larger than a bean. Her recovery was complete and she has continued in excellent mental and physical health ever since.

I am aware that, to the superficial reader, there is nothing startling in this brief history of a not very extraordinary case, only a mild case of puerperal insanity, in a patient with a decided predisposition, mental and physical health following upon a simple curetting. I do not advance the opinion that the operation was the means by which the insanity was relieved, or that the combined treatment was responsible for it. We speak with less degrees of certainty as our vista widens.

As yet we do not fully know the psychic and physical interrelationships. It is ours, for some time yet, to observe and deduce, with the hope that some day we may speak with a greater degree of certainty regarding matters which, as yet, are largely undecided.

There is one lesson that many of our number have yet to learn, although it has been so often repeated, viz., that we must look at all forms of insanity through the physical medium. We must remember that the abnormal psychic manifestations, called insanity, depend upon some physical or chemical change in the elements of the nervous system,

and that, in its turn, is the result of some pathological condition or process, which may be active in any part of the system. Upon the general practitioner this conception of insanity lays new responsibilities, for it is he who first meets with these cases. It is his duty to consider the patient presenting symptoms of insanity, as one suffering from physical disease, and to proceed, as with cases in which no mental abnormality is present, to determine the nature and location of the lesion, and to resort to such means as he may deem necessary to restore the abnormal conditions and to remove the diseased structure. In many cases the cause will elude his skill, and in others the restraint of asylum life may be necessary, but in many cases the cause is not clouded in such a degree of obscurity as we had formerly thought and often is comparatively easily determined. Although we cannot say that a given pathological condition is causative, we know that not infrequently the removal of local disease is followed by restoration of the mental faculties, and the nearer the disease lies to the more sensitive sympathetic centres, the greater the probability that it is at least a factor in the production of mental derangement, for we must remember that insanity may be the result of the focusing of many morbid influences.

It is not expected that the general practitioner have the *tactus eruditus* of the specialist, but we do presume that he is able to diagnose, if not treat, the more frequent lesions, and should the case present unusual conditions, that he have the sincerity to associate himself with someone of greater experience than himself in these cases. If systematic examination were made of every case presenting indications of insanity, and appropriate treatment given,—treatment that would give a sane patient suffering from the same physical disease, our asylum commitments would appreciably diminish.

Of sixty cases of puerperal insanity, admitted into Royal Edinburgh Asylum, 43 had a temperature above 99, and 23 were above 100. Dr. Clouston says that in no other form of insanity is such a temperature result found. The causes of the rise of temperature was given as; "acute brain excitement," "inflammation of the womb," "meningeal inflammation," etc.

Dr. Clouston states that there is no doubt that the chief cause of death in cases that have been properly fed is septicæmia, and that there may be septicæmia in a puerperal case, with purulent peritonitis, metritis and phlebitis, and yet the patient never complain of local pain; and even on pressure there may be no uterine or peritoneal tenderness.

One point of very great importance regarding insanity and on upon which very many of our foremost authorities agree, is that "the presence of some physical disease, apart from the brain, the brain appears to take on a degenerative process, which is irreparable when the abnormal action has been present for some time with a permanency of the insanity, too often uninfluenced by the restoration of the afflicted organs."

Referring to the exciting cause of this form of insanity, Dr. Clouston says; that "the great physiological cataclysm itself, the pains of labour, the mental excitement and stress, the loss of blood, sepsis with the open blood vessels liable to absorb every particle, the sudden diversion of the stream of vital energy from the womb to the mammae, the reflex dis-

turbances to the brain from the reproductive organs; these, together or separately, are the causes that, acting on an unstable brain hereditarily, set up one of the most violent storms that the physician has to treat.

Dr. Byron Robinson, in speaking of the intimate connection between the uterus and the whole organism, says; "The organ which has the most intimate connection with the cerebro-spinal axis, the abdominal and pelvic brain is the uterus. This intimate nervous connection of the uterus with the nervous system increases with the ascending scale of animal life. So far as I can observe, the uterus is connected with the abdominal brain by twenty or thirty strong nerve strands."

Traumatism of the cervix, especially rupture, is without doubt one of the great causes which combine to disturb the psychic harmony, and in this connection Dr. Byron Robinson says; Irritation from this, (ruptured cervix), is transmitted over the hypogastric plexus to the abdominal brain, where it is reorganized. It should be remembered that any irritation, (force vibration) will travel on the lines of least resistance; and in the direction of least resistance from the abdominal brain in toward the organ having the greatest number of nerve strands. The irritation, re-organized, will flash out on all the plexuses. Reaching the liver, it will disturb the hepatic rhythm, causing an over production, an under production or an irregular production, of bile, glycogen and urea, and finally the functions of the liver suffer impairment. Suppose we follow this same irritation to the digestive tract.

At Auerbach's plexus it will cause colic, lethargy, or fitful peristalsis, and at the plexus of Billroth-Meissner, it will induce diarrhoea, constipation, or development of gases—fermentation. These disturbances, after a painful progress of from six months to two years, culminate in indigestion. Then comes malnutrition, which results from long-continued indigestion. The third stage is anaemia from malnutrition. The fourth stage is neurosis; the ganglia have been long bathed in waste-laden blood. Finally psychosis may arise. Hence endometritis may induce; (a) indigestion, (b) malnutrition, (c) anaemia, (d) neurosis, and (e) psychosis.

The evidence adduced from this case and from the conclusion of Dr. Clouston goes to caution us first not to consider that the development of puerperal insanity marks the limit of our production and to consign these cases to state care; but, knowing that disordered mentality means abnormal physical action to investigate closely the condition especially of these organs which during the preceding period have been exposed to traumatism and to septic invasion, and to leave undone nothing which our fruitful therapeutics can suggest, until these invasions are exhausted and not until then, should such cases be sent to the asylum.

ORTHOPEDIC TREATMENT OF DEFORMITIES AND DISABILITIES RESULTING FROM DISEASES OF THE NERVOUS SYSTEM . . . SPECIAL REFERENCE TO TENDON TRANSPOSITION.*

By B. E. McKENZIE, B.A., M.D., Toronto.

OF the various nerve affections which cause disability and deformity, acute anterior poliomyelitis is the most common. This affection is marked by atrophy of the muscles involved, by altered electrical reactions, diminution or loss of the reflexes, and by a peculiar distribution of the paralysis according to function rather than anatomy.

JOINT EQUILIBRIUM.

The normal condition of the joint implies that the muscles exercising control shall be able to maintain an even balance. If at the knee the quadriceps femoris be completely paralyzed or reduced in power the antagonistic group, the ham strings, will so disturb the balance as to make flexion easy and habitual while complete extension will be difficult or impossible. In a similar way any one of the various deformities which occur at the foot may be produced.

MECHANICAL TREATMENT.

Until comparatively recent years the only aid given to these patients was afforded through the use of appliances generally consisting of steel braces strapped about the legs and attached to the boots. Both in books and in practice even at the present time this method of dealing with weakened limbs is far too common. There are many of these patients who are suffering from disability arising from various forms of paralysis who do not know the means that can be employed, through the help of modern surgery, for their relief. Some of the most brilliant and successful results are obtained in the management of these cases.

The constant use of braces and straps tends to prevent a development which might otherwise be induced. Braces cannot be given up entirely. Wisely employed they may be of great service, but they are employed not infrequently in cases where other means could be employed to better advantage and sometimes where the patient would be better without any treatment.

INFANTILE PARALYSIS.

There is another peculiarity of infantile paralysis which is worthy of note in this connection. It has been said above that the distribution of the paralysis is according to function rather than anatomy. It is also interesting to notice that the lower extremity is affected much more frequently than the upper. Both of these facts are of great importance in treatment. The differences of function between the upper and lower extremity is very marked. In order that the hand and arm may be of

* Abstract of the paper read at the recent meeting of the Canadian Medical Association in Winnipeg.

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service it is necessary that the fingers should be capable of considerable dexterity. They need the deftness which can finger a musical instrument, tie a knot, grasp a handle, hold and use a needle, etc. The lower extremity serves comparatively well its purpose if only it can be a secure and substantial post to bear the body weight. Its comparative coarseness of function makes it more amenable to treatment in the manner which is to be referred to in this paper.

Instances of the functional rather than the anatomical distribution of the paralysis are as follows: When the quadriceps femoris is paralyzed the sartorius though having the same nerve supply generally escapes, and the tibialis anticus, though it have a different nerve supply, is generally associated with the quadriceps in the paralytic disability. It will be noticed that in walking the quadriceps femoris and tibialis anticus act together and are thus associated in function. In the upper extremity the supinator longus generally escapes in spite of the fact that all the extensor muscles of the forearm are paralyzed and though these are supplied by the same nerve. The supinator longus, however, is generally affected along with the deltoid biceps and brachialis anticus with which it is associated functionally.

MUSCLE TRANSPOSITION.

The muscles causing movement at a joint should maintain an even balance among themselves but in the case where one or more groups are paralyzed there is a lack of control and inability to move the limbs in certain directions. No surgical intervention can add to the sum total of the power manifested by the muscles producing movement at, for example, the ankle, but a readjustment may be made so as to establish a more even balance. The effect of the peronei when unopposed is positively harmful and if nothing better can be done the tendons should be cut so as to permit correction of the deformity. This procedure would, however, lessen the sum total of power possessed by the muscles at the ankle, hence a transposition of the peronei is made. The tendo Achillis having been freely exposed and the peronei tendons having been cut subcutaneously in front of and below the external malleolus these latter are reached at a point where they are close to the incision made over the tendo Achillis and are drawn from their sheath. The proximal segments of the peronei are now inserted into the tendo Achillis as close as possible to the os calcis. It is generally advisable to shorten the tendo Achillis before the peronei tendons are sutured.

Circumstances having permitted the writer to cut down upon such a graft after a lapse of some months it was exceedingly gratifying to find the most satisfactory union.

After healing it will be noticed that the power of the active, unparalyzed peronei, which before were harmful in their action, is transposed so as to permit the muscles to pull upward at the insertion of the tendo Achillis. Thus, without lessening the sum total of power manifested at the joint, its action has been so rearranged as to establish a better balance of the foot and to change its position so as to bring it more directly and effectively under the body weight, thereby improving its function.

A similar plan of procedure may be adopted when other groups of muscles are paralyzed or paretic at the ankle. At the knee the operation called for when the quadriceps femoris is paralyzed and the sartorius unaffected is to remove the sartorius from its insertion at the inner border of the leg and suture it into the aponeurotic tissue above the patella.

An experience dating from Dec., 1892, up till the present and covering a large number of cases warrant me in speaking of this as being not a doubtful but an assuredly successful operation.

Before deciding what tendons to transpose and where to insert them each case should be studied carefully with a view to determine exactly the effect produced by the action of each muscle both at its original and its new insertion.

The paper was summarized as follows:

1. Many patients who seek the advice of the orthopedic surgeon are suffering from some form of nervous affection—usually chronic.
2. When deformity exists it should be corrected.
3. When there is a lack of balance at a joint an effort should be made to restore equilibrium.
4. Tendon transposition is an effective means to secure this end in selected cases.
5. Braces and splints should not be employed except in meeting the clearest indications.
6. Mechanical means wisely employed may do much to supplement the defective lower extremity.
7. Arthrodesis of a "flail" joint is often better than mechanical aid.
8. The gymnasium is a powerful means of enforcing the discipline which is essential to successful treatment of so many neuroses.
9. Amputation should seldom or never be done simply because of paralysis of the lower extremity.

A CASE OF OPIUM POISONING.*

BY DR. F. W. MARLOW, M.D., C.M.

Member of the House Staff of St. Michael's Hospital for year 1900-1901).

THE patient E. S. male, age 38, was brought by the ambulance to St. Michael's Hospital in an unconscious condition at 10.30 a. m. Friday, Oct. 5th. He was taken to the emergency ward.

Relaxation of the extremities was complete. The respirations were slow and shallow; the pulse fairly good. The temperature per rectum was 96 1/5. There was slight cyanosis of the face and ears. The pupils were equal and contracted almost to a pin-point. Sensation in the cornea was absent. The breath exhaled gave a distinct odor of some preparation of opium.

The diagnosis was readily made out to the opium poisoning and it was afterwards learned that the patient had taken an ounce and three-

*Read at a meeting of the Toronto Post-graduate Society.

quarters of a mixture containing two ounces of laudanum and one ounce of paregoric.

Respirations ceased in less than ten minutes after admission. Treatment was begun at once and the detail of it with the effects produced was somewhat as follows,—

The stomach was washed out thoroughly and the washings gave the characteristic odor of the poison. Atropine gr, 1/100 was given hypodermically. The body was stripped and wet towels were applied in a lively manner to the legs and trunk. Artificial respiration was commenced as soon as the breathing ceased.

Cyanosis of the face, ears, hands and feet was marked at times and at other times almost completely disappeared. The pulse remained fairly good, varying in rate between 90 and 120.

Permanganate of potash solution was injected hypodermically and was also introduced into the stomach by means of the tube. Inhalations of oxygen were given with the artificial inspirations and seemed to lessen the cyanosis temporarily. Blood was depleted from a vein of one of the lower limbs to the extent of ten ounces and a subcutaneous transfusion of normal saline solution to the extent of one hundred ounces was administered. The urine was drawn off by a catheter. An enema of strong black tea was given and was partly retained. The tongue was held forward and the artificial respiration was kept up continually.

At 2. 30. p. m. the patient was taken to the battery room, his condition being apparently unimproved except that the pupils were not quite so contracted as they had been. The stomach was washed out again, this time with a weak solution of permanganate of potash, and afterwards strong black coffee was introduced into the stomach. A mixed current of electricity was applied with interruptions, with one electrode on the foot and the other applied to different parts of the trunk. At 5.00 p. m. the stomach was again washed out and this time with normal saline solution and afterwards one and a half pints of strong black coffee were introduced.

At 6.30 p. m. the pupils which were a little more dilated began to respond slightly to light and sensation began to return to the cornea, there being a slight movement of the eyelids when the cornea was touched. The limbs began to show signs of resistance, and the cyanosis was much lessened. At about 6.45 p. m. the patient opened his eyes of his own accord and gave utterance to the words "I am dying" although he was not yet breathing for himself.

The electrical stimulation was kept up and absorbent cotton slightly moistened with strong ammonia was held to the nose.

At about 7. 00 p. m. the patient began to show signs of breathing and the artificial respiration was interrupted in order to see what the patient would do. At 7 15 p. m. he was breathing at the rate of five respirations per minute. The rate increased gradually and the artificial respiration was discontinued at 7. 30. p. m. which was almost nine hours from the time at which it was commenced. The electrical stimulation was discontinued at this time.

The stomach was washed out again with normal saline solution and there was no trace of the last coffee introduced. More coffee was in-

roduced. Vomiting occurred and again coffee was introduced and was retained.

Consciousness gradually returned and at 10.00 p. m. the patient was fairly rational, and at 11.00 p. m. was able to walk about with a little assistance. He was very drowsy and would go to sleep rapidly if left alone.

He was taken to bed and kept aroused until morning. Sulphate of magnesia was given in repeated doses until several free evacuations occurred. Enemata were also given and the urine was drawn off frequently. Coffee was given from time to time and was readily swallowed. Vomiting was frequent until morning.

In the morning the respirations and temperature were normal and the pulse about one hundred. Broths, egg-noggs, milk and water were given freely, and in addition to these were given stimulants in the form of strychnine (hypodermically) and whiskey by the mouth.

The patient was allowed to sleep on Saturday, but was very restless most of the time.

On Sunday morning he was a little brighter and was resting comfortably. The temperature was slightly elevated, the pulse rate about one hundred and twenty and the respirations normal. There were no indications of the presence of pneumonia.

At 12.30 p.m. the patient became delirious and at about 2 p.m. lapsed into unconsciousness. The respirations became rapid and shallow and the pulse very weak, the rate being about one hundred and fifty. An additional hypodermic injection of strychnine gr. 1/30 was given and he rallied slightly and again became conscious for a little time.

An attempt was made to draw off the urine as before with a soft rubber catheter, but it could not be passed. A hard catheter was passed, but no urine could be obtained.

Almost immediately afterwards the patient became rapidly cyanosed, the radial pulse was lost and the heart ceased to beat before respiration ceased, making it evident that the immediate cause of death was failure of the heart, which had done its work so well all the time the artificial respiration was being kept up.

Two peculiar phenomena were observed and are worthy of mention. As soon as the hard catheter was withdrawn after the last attempt to draw off the urine, there occurred an emission which was apparently seminal. Also immediately following death there occurred a peculiar twitching and tremor of the hands and feet, which continued for about five minutes.

Death occurred at 2.30 p.m. on Sunday, October 7th, the patient having been in the hospital fifty-two hours.

No post-mortem examination was made.

POST TYPHOIDAL ULCERATION AND ABDUCTOR PARESIS OF THE LARYNX.

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EXAMINATION of the larynx during the course of an attack of typhoid fever is seldom made, partly because of the slight character of the laryngeal symptoms, but chiefly because of the difficulty of making a laryngoscopic examination, while the patient is compelled to lie recumbent.

The record of a case of ulceration of the vocal cord, attended by paresis of the abductors, is therefore worthy of mention, especially as the lesion itself is rare among the recorded typhoidal lesions of the larynx.

I am indebted to Dr. McKibbin for the following notes:

F. S. Act. 41. Glass-blower, married. Father died at eighty, of bladder trouble, mother at seventy-eight, of pneumonia, a brother at seventeen, of a tumour in the left side of the throat, occurring during convalescence from typhoid. The remainder of the brothers and sisters are all living and in good health. Has been always a healthy man, and has followed his occupation for twenty years. Height 6 ft. 3 in., weight 170 lbs. No history of syphilis. Consulted me on March 23rd, on account of run down condition. Quit work on April 6th, with symptoms resembling la grippe. On the 15th, took to his bed with symptoms of typhoid, and temperature of 103°, and followed a characteristic course for four weeks. On the 6th of May, symptoms of laryngeal irritation developed, lasting three or four hours, and consisting of hoarseness, and a tendency to clear the throat. These attacks occurred twice a week, at night time generally. About this time also pneumonic symptoms developed in the upper lobes of both lungs. It was thought that this might have been tubercular, but examination of the sputum was negative, while the blood gave the typhoid reaction. The temperature remained high throughout, becoming normal on the 20th of June. For the next two weeks convalescence proceeded steadily. Every few days a spell of distressed breathing would occur, requiring medicated steam inhalations to give relief. Throughout the whole attack the patient exhibited a neurotic temperament, and the attacks of dyspnoea were markedly periodic. The temperature remained normal till the 9th of June, and immediately subsequent to the operation registered 100½.

I was called by Dr. McKibbin to see patient on Sunday, June 2nd. Found him lying prone, respirations increased slightly, expression anxious, voice hoarse. On palpation the neck revealed nothing, neither tenderness, swelling, or fixidity. The patient was able to sit up without increase of the dyspnoea, but the tracheal tugging was marked. There was nothing noticeable in the mouth or oro-pharynx, except the anaemia, which was decided, and extended to the parts bounding the laryngeal vestibule. The vocal cords were almost in contact and the patient seemed

unable to abduct them except very partially. The cords themselves were congested, and appeared swollen and somewhat nodulated, the swelling being chiefly confined to the inferior surface of the cords, the infra cordal portion of the larynx, appearing to be bounded on either side by a rigid wall, extending diagonally outwards from the free edge of each cord. The left cord was notched towards its posterior extremity, the notch being filled by a pure white slough, and measuring about 6 m.m. in each direction. The edges of the notch were congested, uneven, and undermined.

The examination produced an expulsive cough, which cocaine allayed, and apart from this there was no difficulty in making the examination.

The false vocal cords appeared unaffected except by the anaemia. The right arytenoid was swollen on the external surface. The patient was nervous and weak, and the examination brought on some nervous excitement, which was followed by an attack of dyspnoea. The patient was able to lie down however. Directions were given to continue the steam inhalations. A menthol and cocaine oily spray internally, and cold packing externally were prescribed. Did not see patient again till the following Sunday, June 9th. The breathing had been much relieved for four or five days, since then gradually more embarrassed. The previous evening there had been a very bad attack of dyspnoea, and the patient was much exhausted. The examination which was made again without any difficulty, presented a similar picture to that recorded above, with one exception, that a distinct crevice had appeared between the slough and the cord. Abduction was more deficient than formerly, and the rima glottidis was simply a narrow slit. Tracheotomy was advised, should the breathing continue embarrassed. At 3 p.m. the same day the condition became so much worse that unconsciousness set in, and when the patient arrived at the hospital, three hours later, he was insensible, and practically moribund. The trachea was opened in the high position, without waiting for an anaesthetic, and artificial respiration practiced. After breathing was restored, the tube was removed, and an attempt was made to obtain a view of the vocal cords from below. This was not entirely satisfactory, there was no evidence, however, of either ulceration or tumour formation below the cords, the walls of the infra-larynx being smooth, and sharply leaning toward each other. The patient was kept in a tent bed, filled with steam, and vaporized lime-water, and made a steady improvement, being discharged on the 21st day. Repeated examinations of the secretions from the tube were made with a negative result, nor was any adequate explanation forthcoming for the rise of temperature between the 12th and 14th days. The noisy respirations prevented any satisfactory examination of the lungs.

On the 10th of July the patient was examined in my office, and the following notes were taken :

Weight, 150 lbs, steadily increasing. When the tube is closed, the voice is almost completely restored, no difficulty in swallowing, no sensation of smothering, voice not easily fatigued. The nose is freely patent in both chambers, there is no anaemia, or lesion on the septum; the naso-pharynx is roomy, the lining membrane thin, and very closely adherent, with some congestion in the middle line close to the choanae.

The mucous membrane on either side of the septum, is markedly puffed about the middle. In the mouth and pharynx, the soft palate is anaemic. The isthmus faucium is capacious, the membrane of the posterior wall is thin and pale, and streaked with a muco-purulent secretion from the naso-pharynx.

Larynx: Epiglottis pale at the edge, the right half is folded back upon itself so that it appears as a line projected directly backwards from the central point of the apex, and thus partially conceals the cavity of the larynx. The right arytenoid is normal in outline, but somewhat anaemic, while the left is so placed as to lie in front of the right, and its contour is somewhat blurred by swelling of the internal surface, the capitulum of Santorini however, being plainly seen. There is no abrasion of the surface, and the color is normal, or nearly so. The vocal cords:— Both are slightly thickened, of a reddish pink color; the vocal process is plain in the right, but cannot be seen in the left, being probably hidden by the swollen, and misplaced arytenoids. The edges are even, and without abrasion. In phonation, the cords meet evenly, and exactly, but the right arytenoid appears to have the greater excursion, while the left has almost none.

The parts of the larynx below the vocal cords, the sinus pyriformis and the ventricular bands, etc., present no abnormality.

On July 17th. Weight, 160 lbs. Swelling of the left arytenoid lessened. Removed tracheotomy tube.

July 29th. Condition of throat as above, improvement continued in every direction, voice still a little foggy, tracheotomy wound healed, patient dismissed to the country.

In examining the literature of this interesting subject, the most satisfactory remarks are those of Friedrich, (1), who "divides the laryngeal phenomena occurring in typhoid fever into three main groups—Catarrhal conditions, ulcerations and patsies; oedema and perichondritis being regarded as accompaniments or complications of one of the three main divisions, and quotes Luning, as to the percentage of frequency of the occurrence of these phenomena—from clinical statistics 3 per cent, and from postmortem examination, 17 per cent."

He further states that, "clinically speaking, simple catarrh, and superficial ulceration, are the complications most frequently observed while deep ulcerations which lead to oedema, and perichondritis, or which when extensive present the so called diphtheritic form (laryngotyphus) are much rarer."

The pharyngeal and laryngeal mucous membrane, is often attacked by catarrh in the beginning of the disease—characterized by intense redness while the swelling of the mucous membrane is comparatively slight." Superficial ulcerations occur from necrosis of circumscribed portions of the swollen mucous membrane, and manifest a preference for certain regions—the faucial pillars, the free border or laryngeal surface of the epiglottis, the aryepiglottic folds, and occasionally below the glottis; they are rarely seen on the vocal cords." "At first there is diffuse catarrh, the membrane is darker in color, and slightly swollen in the areas mentioned; the epithelium breaks down and exposes a small

shallow ulcer, with a yellowish floor resembling herpes, these coalesce to form larger quite superficial ulcers, with clearly defined edges, without redness, or swelling of the adjacent parts."

Friedrich denies that these are the effect of decubitus, as there is no reason why, if we accept such an etiology, simple ulcers should not occur in any other disease attended with the same degree of prostration; or from contact and direct infection with typhoid bacillus, since the latter has only rarely been found in them. But believes that they are the result of a nutritive disturbance in the membrane, connected with the general typhoidal infection." They are benign, and heal without leaving a scar."

Friedrich also describes a class of case where the ulcer extends to the deeper structures, as the result of a mixed infection. These Eppinger styles "mycotic necrotic ulcers"; they invade the deeper structures, and eventually destroy the perichondrium and cartilage and are to be distinguished from a diffuse typhoid infiltration in every way analogous to the typhoid lesion in the intestinal follicles and originate in circumscribed areas containing adenoid tissue. These infiltrations lead to ulceration, the ulcers being distinguished from the former group by the hardness and swelling of their under mined edges." "The healing of these ulcers leaves defects and adhesions."

"Paralysis of laryngeal muscles occur chiefly in the stage of convalescence and present no characteristic type. The abductors must be regarded as most frequently affected." "It is a peripheral paralysis, and the prognosis as to recovery is favorable."

Lockart (2) divides the lesions into two classes—specific and non-specific according as they are the direct effect of the typhoid poison, or due to secondary bacteria, decubitus or diphtheria." In the specific lesion the adenoid areas are alone involved, in the sinus pyriformis, base of the arytenoids, ventricle of Morgagni, the anterior commissure, the inter-arytenoid space, the false vocal cords, and the lower part of the epiglottis." The process in these structures is identical with that in Peyer's patches." In the non-specific form, the lesions are catarrh, erosions, and perichondritis. The resultant scar persists.

Kobler, (3) calls attention to the existence of a characteristic affection of the epiglottis in typhoid." So long as the infiltration of the epiglottis exists the typhoid process is active."

McBride, (4) consider that the most "characteristic condition is infiltration leading to ulceration, and the parts most liable, are the under-surface of the arytenoids, and marked destructive changes may occur without corresponding subjective sensations." He also quotes Bergengruen, "that the typhoid bacillus cannot produce suppuration, as proved by the experiments of Klemm, but that it paves the way for attacks of the staphylococcus pyogenes aureus."

Lennox Brown, (5) expresses the view that, "laryngitis occurs as a late—probably also as a secondary manifestation of typhoid fever. In many cases the lesions depend upon the influence of decubitus. There is a strong tendency to active ulcerations, these principally occurring upon the ventricular bands. The lymphoid elements of the larynx are not only

especially prone to be attacked, but they share the same morbid changes which occur in Peyer's patches."

Shurly, (6) considers "parssis of the adductor muscles the usual form. The cause is either a neuritis, temporary cerebral lesion affecting the nutrition of the ninth nerve, or pressure from some adenopathy."

J. H. Hutchison, (7) concludes that "catarrhal or diphtheritic inflammation, and some times ulceration, are most commonly found in the posterior wall of the larynx, and may involve the vocal cords."

Watson Williams, (8) records one case of "acute laryngeal symptoms with dyspnoea, and extensive ulceration,"; and records a second case with "the posterior third of both cords, and the anterior surface of each arytenoid ulcerated."

He also quotes the opinion of Lucatello, that "the laryngeal lesions of typhoid are catarrh infiltrations, ulcerations, diphtheritic, perichondritis, and paralysis—exclusively attributable to the specific microbe of typhoid." William's suggests that this may be an explanation of a possibility of typhoid being infectious.

The case which I have recorded, does not correspond exactly, with any of the above descriptions, for the vocal cord bore the brunt of the affection. It is to be especially noticed that there was no pain, no hæmorrhage, no bright congestion of the pharyngeal and laryngeal membranes, no perichondritis, and no scar remaining.

The mal-positions noted in the detailed examinations, were present prior to the onset of the fever, at least there were no lesions present at any time, which would account for them, nor were they paralytic in appearance.

If the immobility of the cords were due to paralysis, the paresis was confined to the abductors, but the appearance may have been due simply to the swelling, and rigidity of the cords, and sub-cordal structures. It has entirely disappeared, and the voice, although gruff, is described by the wife to be quite as good as at any time prior to the attack.

The location of the ulceration on the true vocal cord is evidently one of the rarest forms of typhoid involvement.

There are several cases where tracheotomy was performed but in most of these it would appear that marked perichondritis was present.

BIBLIOGRAPHY.

- (1) Rhinology, Laryngology and Otology, and their significance in General Medicine. Translated, by Curtis.
- (2) New York Medical Journal.
- (3) Centralblatt, f. innere Med., Leipsig.
- (4) Diseases of the Throat, Nose and Ear, 2nd Edition.
- (5) Diseases of the Throat and Nose, 5th Edition.
- (6) Diseases of the Nose and Throat.
- (7) Pepper's System of Medicine.
- (8) Medical Annual, 1896.

TREATMENT OF ABORTION.*

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THE most frequent disturbance of pregnancy is one of the most interesting, and an event occurring once in every ten pregnancies demands close attention. The pronounced and often long-continued hemorrhages and the not infrequent infection of themselves produce serious disturbances of health, while the numerous chronic diseases which result from imperfect involution lead to abortion a peculiar importance. The limitation of the term abortion to the period preceding fetal viability is very convenient, and the treatment up to the sixteenth week can be satisfactorily standardized, as there is a happy coincidence in the arbitrary and pathological boundaries. Primarily every woman subject to conception must be regarded as aborting when hemorrhage occurs after one period is passed.

The treatment of abortion is best divided into general prophylaxis and the measures indicated respectively in threatened, inevitable, and incomplete abortion.

Prophylaxis is highly important and is addressed to the cause of habitual abortion, which may be syphilis, chlorosis, incipient tuberculosis, chronic inflammatory conditions of the genitalia, or malpositions of the uterus. Appropriate treatment of these diseases before pregnancy, with regulation of the bodily functions during pregnancy, will accomplish much, while the administration of the sedatives (opium, bromide, chloral, etc.), with mental and bodily rest at the critical period, will frequently enable the woman to go to term.

The consequences of an abortion sometimes predispose to another. Thus, subinvolution is common after abortion, for the contractions of the uterus are less powerful, the muscular tissue less perfectly developed and less responsive to irritation. The customary irritation is also diminished, since the stimulation arising from lactation and nursing is absent. The patient usually rises too soon, and the consequent pelvic congestion prevents proper uterine involution. Anemia may have a like result. As a prophylactic measure the uterus should be stimulated to contract by means of ergot for a reasonable period after an abortion, and hot douches may be added, provided they can be given properly. The patient should remain in bed much longer than after a normal labor. This is of extreme importance and should be enforced until the danger of subinvolution is passed.

The occurrence of abortion is marked by hemorrhage of some degree, accompanied by heaviness and abnormal sensations in the lower abdomen which are not necessarily painful. The blood is usually bright red, persistent, and free from clots. The os externum is found only partially

* Obstetrical Journal.

opened, the cervix closed or only slightly dilated; contractions are rarely present and typical pains are absent. This condition is recognized as "threatened abortion."

If the hemorrhage is due to disease which will be intensified by pregnancy or cause danger to the mother (tuberculosis or valvular heart disease), or the woman is anemic from repeated hemorrhages, the abortion should be accelerated if the fetus is dead. In making a diagnosis of fetal death some reliance must be placed upon the history of a previously expelled dead ovum and the presence of an intermittent discharge of fresh or brownish blood. Add to this the physiological signs of a hard, round uterus which, on repeated examination, does not show signs of growth, does not correspond in size to the period of pregnancy, exhibits loss of tension, and the diagnosis is reasonably certain.

If the cause of the abortion is not clear and the mother's life is not endangered, the ovum should be preserved, if possible. Besides the use of sedatives, the woman should remain in bed for two or three days after the cessation of hemorrhage and return to it if the symptoms reappear. When the cervix is closed and hemorrhage is so severe as to threaten the life of the mother, the indications are to stop the bleeding and empty the uterus. The tampon, uterine if possible, vaginal always, will accomplish the first and usually the second. Tightly applied, it may be left *in situ* safely for from twelve to twenty hours, and can be renewed if hemorrhage persists. Frequently the contents of the uterus will be found on the tampon when it is removed. A careful examination of the expelled particles must be made to determine whether the ovum is complete. Occasionally the egg is thrown off with the membranes intact, but usually only a mass of decidua mixed with membranes can be found.

Where the abortion is inevitable, the os is dilated, the cervix patulous, and the ovum near the cervix. Hemorrhage is persistent, increasing in quantity, and clotted. The unruptured sac, detached from the uterine wall, can often be pulled into the vagina with the finger: while even if the sac ruptures, the ovular remnants usually can be easily removed because of their low situation in the cervical canal. The entire egg, when released from its uterine attachments, is sometimes expelled by compressing the uterus between an external hand and two fingers in the anterior and posterior fornix (Hönig). When the egg lies wholly or largely in the uterine cavity it is much more difficult to remove, but under narcosis the finger can be carried through the canal and the mucous membrane efficiently cleared. Here also, in the absence of contra-indications, the tampon can be employed, and after twelve or eighteen hours the uterine contents will be evacuated or the os be found sufficiently patulous for digital or instrumental curettement of the cavity.

In pregnancy up to the third month it is often doubtful whether the egg has escaped, but in all cases where the phenomena of abortion have not lasted a long time the cervical walls are soft, the os internum patulous for the finger, and exploration will give the desired information.

Early in pregnancy the decidua is most important in an abortion, the membranes are less so, and the fetus is quite negligible; but with formation of the placenta the latter assumes the greatest importance, until in the latter half of pregnancy the fetus supplants it.

When the cervix is partly open and hemorrhage present the abortion is incomplete; and if the bleeding is severe, prompt evacuation of the uterus is imperative. Anesthesia is usually required and chloroform is to be preferred. The entire hand can be introduced into the vagina, if necessary, while the external hand grasps the fundus uteri and crowds it down over the index and, if possible, the middle finger of the internal hand. The ovum is separated from the uterine wall with the fingers, the uterine cavity carefully examined and then washed out with a two per cent. solution of lysol. The digital operation is more satisfactory and in a majority of the cases as easily performed as the instrumental.

When the rigidity of the abdominal walls does not permit the uterus to be forced down over the internal finger by the outside hand, when the fundus lies too high to be successfully reached by the finger, or when the abortion is too early to permit sufficient dilatation for the introduction of the finger, a skilful operator will obtain equally satisfactory results by forcibly dilating the canal with the Hegar or Goodell dilators. The danger of lacerating the cervix with these instruments is very slight. The cervix is pulled down and steadied by means of a curved four-toothed tenaculum forceps during the preliminary dilatation and also while using the curette. The sharp curette is desirable in early abortions. It is very important in these cases to examine the uterine cavity with the finger after the instrumental curettement, to determine the thoroughness of the operation. After the sixth month the sharp curette becomes dangerous, for the walls of the uterus are frequently so softened that the curette may scrape through to the peritoneum or be pushed through the fundus.

The normal uterus and vagina will drain very satisfactorily if let alone; hence, unless there is severe hemorrhage it is better after curettement to leave both the uterus and vagina free from gauze packing. The uterus is free to contract, the serous and other discharges flow away unhampered, and the chances of infection are greatly diminished.

The use of ergot to hasten the abortion by stimulating the contractions is very generally advised, but should be unhesitatingly condemned. The tetanic contractions induced by ergot are not favorable to the satisfactory emptying of the uterine cavity. The tampon accomplishes the same result more efficiently and certainly and is safe, while ergot is unreliable and dangerous. The use of ergot should be reserved for cases where hemorrhages threaten after the complete evacuation of the uterus, and cases of subinvolution.

The tampon properly applied is an invaluable aid in abortions. It stimulates uterine contraction, dilates the os, and stops hemorrhage both mechanically and dynamically, besides maintaining a condition of surgical cleanliness. The clot which forms on top of the tampon mechanically causes the separation of the ovum in a very natural and satisfactory way. The principal contra-indication to the use of the tampon is the presence of sepsis. After the sixth month, also, the uterus is so large that it can contain a large amount of blood, and here the vaginal tampon should only be employed in association with uterine packing. The tampon is applied with the patient on the table or in the cross-bed position. The

pubic hair is clipped. The external genitals are scrubbed with green soap and washed with lysol solution two per cent, followed by 1:4000 bichloride. Patient catheterized. Vagina washed with green soap and hot water, followed by lysol douche two per cent. The hands and instruments prepared as for a laparotomy. The portio vaginalis should be entirely surrounded by gauze (or cotton pledgets) introduced by dressing forceps or fingers under the control of the sight, while the perineum is depressed with a Sims speculum. Then on the broad base made by the pledgets and the os the vagina is gradually filled to the vulva and a binder applied. Unless the vagina is packed tightly enough the tampon fails in its mission, and if too tight it gives unnecessary discomfort to the woman. The temperature is taken every few hours, and a rise of 1.5° F. indicates the removal of the tampon. The necessity for asepsis in all cases must be reiterated; the fact that pregnancy and labor are physiological processes does not free the woman from danger of infection.

The introduction of substances from without constitutes a more serious menace to the woman than any evil she may develop unaided, hence it is desirable to avoid unnecessary interference of every kind, including the douche. The time for the douche is before and after curettement, to cleanse the canal and wash out any loose detritus from the uterus and vagina, and to provide for the elimination of germs introduced from without at the time of the operation; but here its function ends. It is unnecessary, useless, and injurious, both in normal labor and abortion, as the experiments of Krönig (confirmed by Menge, Döderlein, and Williams) have shown.

The germs in the vagina are normally in a state of attenuated virulence, being rendered so by the peculiar acid secretion of the vaginal bacillus. Wadsworth has shown that pathogenic germs only exceptionally persist in the vagina throughout pregnancy and labor, and where present in severe cases they persisted after repeated douching in 1:5000 bichloride. Krönig has also shown that the vagina requires more time to eliminate pathogenic organisms after douching than without. In normal cases the vaginal secretion renders the organisms inert in twenty hours; after douching thirty-six to forty-eight hours are required. The douche simply removes the protective secretion and gives the organisms a better chance to thrive. Furthermore, the attempt to sterilize the vagina by douching alone is no more reasonable than to attempt to sterilize the hands by allowing a few quarts of hot antiseptic solution to run over them.

In cases of abortion where sepsis is already present, as shown by the elevation of temperature and rapid pulse, or by a rapid pulse while the temperature remains near the normal, active interference is definitely and urgently indicated. The uterus should be curetted at once and the cavity thoroughly washed out with a hot one per cent lysol solution (bichloride to be avoided). When the uterus is thoroughly cleaned and irrigated it seems best to leave it entirely alone and assist the patient to antagonize the toxins which the uterus takes up. If treated at once these cases usually terminate happily, but when treated expectantly the results are not so satisfactory. It is well known that the fatalities from abortion are mostly among the cases criminally produced.

Where the patient is profoundly anemic from sudden or long-continued hemorrhage, the urgent symptoms can be temporarily relieved by the introduction of from one to five pints of normal salt solution by means of an aspirating needle and the douche bag both being carefully sterilized as well as the solution. The needle should be introduced under (not into) the mammary gland of one or both sides.

Under no circumstances can the use of tents be justified. They are unnecessary, imperfect, and incapable of complete sterilization. The introduction of styptics into the uterine cavity must be expressly condemned as unnecessary, always harmful, and sometimes dangerous. An exception is possible in the case of iodine, as the least objectionable.

Every abortion must be regarded as a severe surgical case and treated as such. The practitioner should impress upon his clientage that abortion is a very serious matter and requires the best judgment and skill obtainable in its management, for where one woman passes through these perils successfully many are seriously affected, either directly or remotely.

CAUSES AND TREATMENT OF HABITUAL CONSTIPATION.*

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CONSTIPATION seems to be too trivial a subject for an extended article without reviewing a great mass of matter which is apparently known to every physician. To relieve a temporary constipation may be simple enough, but to cure an established habit demands a carefully considered scheme of treatment. A cure, according to I. Boas, is when the intestinal function is performed in regular and sufficient manner, without the help of any mechanical or medicinal means, with a normal diet, or at least one approximately so. To fully understand the causes, and relief of habitual constipation, we must review our physiology as we learned it years ago, with the appropriation of new discoveries since

The liquid part of the food in the stomach is forced out in little gushes every 8 or 10 minutes, commencing a few minutes after eating a mixed meal. The finely divided food passes out with the liquid part, and the stomach should be emptied four or five hours after each meal. The acid gastric chyme, passing into the intestines is never fully neutralized by the bile and pancreatic juice and the contents of the small intestine is always weakly acid. It has commonly been accepted that the cellulose or woody fibre of vegetables was only slightly digested in man, and moderately in the herbivora, but the researches of Menicanti and Prausnitz show that when taken in a mixed diet, in quantities up to thirty grammes, from thirty to seventy-five per cent. is digested.

It requires about two and a half hours for the chyme to pass from the pylorus to the colon, 24 feet, and 10 to 16 hours to pass through the colon, 6 feet, then becoming fæces, to the sigmoid flexure, where it is

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retained until a few minutes before defecation. In passing through the small intestines there is absorbed: Of the water in the food and drink, 90 per cent.; of the albuminoids, 85 per cent.; of the sugar, 100 per cent.; of the starch, 96 per cent.; of the fats, 96 per cent. Most of the residue of the above named articles is absorbed in the large intestines, leaving in the fæces: Of fats, 5 per cent.; of albuminoids, 5 per cent.; of starch, 0 per cent. The small amount of the fæces, 70 to 110 grammes, contains 75 per cent. of its weight of water, 5 per cent. salts, and most of the remaining 20 per cent. is bacteria and substances excreted by the large intestines. When rabbits are fed on bread they soon die of constipation. If horn shavings, which are absolutely indigestible for them are mixed with the bread, to give bulk to the fæces, they have sufficient passages and thrive. The natives of Ceylon who live chiefly on rice, are said to add chopped straw to it, to give the required stimulation to the bowels.

Conditions for normal defecation.—1st: Sufficiently quick discharge of stomach contents into the intestines; 2nd: Healthy action of the nervous plexuses of Meisner and Auerbach; 3rd: Normal irritability of the intestinal mucous membrane; 4th: Proper consistence of fæces (70 to 78 per cent. of water); 5th: Enough undigested residue in the food to produce a daily fæcal passage of (4 to 8 ounces) 120 to 240 grammes; 6th: Action of the abdominal muscles produced by walking moderately, and by pressure during defecation. Although each of these conditions should exist for regular stools, neither the diminution nor failure of any one of them would necessarily lead to constipation. There is a compensating action, as in other systems of the body, on which a failure in function of one member of the system is compensated by increased action of other members. That the fæces shall have the proper consistence to allow them to pass easily through the colon and rectum, there must be such a proportion between the water discharged from the stomach into the duodenum and the amount absorbed from the whole intestinal tract, that the fæces will contain 70 to 78 per cent. of water. If this relation is much disturbed, in either direction, we have constipation or diarrhœa.

The most frequent original cause of constipation is the hyperchlorhydria or hyperacidity of young adults, in which condition, owing to the irritating excess of HCl., the pylorus remains closed too long after eating and the intestines fail to receive the necessary amount of fluids: the absorption from the intestine going on as usual, the fæcal matter must become too dry to pass easily along. The constipation commencing thus, leads to the atonic form and also becomes complicated with the mechanical forms, caused by alterations in the positions, caliber and curvatures of the large intestines.

In the reverse condition, in which the discharge of the stomach being normal, absorption from the intestines is excessive, we also have constipation, as seen in diabetes after excessive perspiration in persons when they first go to warmer climates, or work harder than usual. Where the liquid contents pass out of the stomach too quickly, a diarrhœa is produced, as seen in persons who drink large quantities of mineral water (iso or

hypertonic to the blood) too weak for the dissolved salts to have any purgative effect. In persons who have the pylorus removed or who have had gastro-enterostomy performed, when full meals are taken, not being held back by the pylorus, the contents of the stomach pass out quicker than the intestines can absorb it and diarrhoea is often seen.

The normal irritability of the small intestines depends mostly on Meisner's and Auerbach's plexuses, situated, the first-named, in the sub-mucous layer, and the last between the muscular layers of the intestines. The colon and rectum are under control of the splanchnic and sacral branches of the spinal nerves. The normal irritability is much lowered in hysteria; uncompensated heart disease; after the use of strong cathartics; after acute attacks of dysentery and diarrhoea.

The proper consistence of the faeces is, that it should be moulded into large cylinders, and should contain 70 to 78 per cent water. The faeces of persons living on starch and animal food exclusively are hard and scanty. To give the proper consistence requires vegetable fiber, which, as found in most fruits and vegetables, is a light spongy mass, capable of absorbing in its meshes 60 to 80 times its own weight of water under the ordinary intra-abdominal pressure, which has been found by Meltzing to be equal to 36 centimeters of water.

The cellulose exists in vegetables and fruits in the proportion of three-fourths of one per cent. to two and four-tenths per cent., as shown by the following table of analysis I have made (see Table No. 1). Coarse whole-grained bread, peas and beans, have a considerable undigestible residue, consisting chiefly of the silicious and fibrous coverings, which, when finely divided, absorb considerable water, and give bulk to the faeces, but not nearly in the same proportion as the cellulose of vegetables and fruits.

TABLE No. I.
ANALYSIS OF VEGETABLES.

Cooked.	Per Cent. Water	Per cent. Cellulose.
Cabbage	89.	1.23
String Beans	95.	2.4
Carrots	93.	2.0
Turnips	97.	1.4
Cauliflower	90	1.1
Spinach	89.	1.1
Celery	97.	1.3
Beets	94.	1.05
Lettuce	94.	0.72
White Bread	35.59	0.22
Coarse Bread	40.45	1.78
Figs, Dry	31.	and seeds 6.8
Prunes, Pulp	29.	1.0

CAUSES OF HABITUAL CONSTIPATION.

Faulty expulsion. Mechanical.	}	Bad habits.		
		Sedentary occupations.		
		Tumors, strictures, etc.		
		Weak abdominal muscles.		
		Defective innervation.		
		Spasms of sphincter ani from { Fissure.		
		{ Hemorrhoids.		
		Spastic constipation.		
Faults in Intestinal contents.	}	Deficient intestinal secretion.		
		Deficient bile secretion.		
		Food too absorbable.		
		Intestinal contents too dry.	}	Pyloric spasm.
				Excessive diuresis in diabetes.
Excessive sweating.				
		Excessive urine in meat eaters.		

Exercise has an important part in causing normal passages. Every step taken causes an alternate tension and relaxation of the abdominal muscles, and these alternations of pressure urge the contents of the large intestines forward. The effect of this has been very much overrated, for where constipation depends on gastric stagnation caused by gæstrectasis or gastropstosis, it is well known that under a rest-cure the bowels will act freely without any purgatives. The mechanical faults of expulsion I will only enumerate in this paper.

Defective innervation, causing constipation, is a decrease of the normal irritability, the result of conditions already enumerated or of a long established habit, commonly described as atonic constipation. Spastic constipation was first described by Cherschewski and Fleiner as caused by an abnormal contraction of the colon and rectum, characterized by small caliber passages of normal consistence occurring in neurasthenic persons, and relieved by treatment directed to the neurasthenia.

The second most frequent cause of constipation is a deficient bulk in the fæces from too absorbable foods. A healthy adult, weighing 150 pounds, living on white bread, potatoes, meat, eggs and fats, has a daily amount of 55 to 70 grammes of fæces. This is barely enough to stimulate the bowels to a daily passage. The substances are too freely absorbed in the intestines. It requires something which will give bulk-irritation. This is afforded by the husks of grain, in coarse bread, beans and peas, and by the fibre in fruits and vegetables.

The intestinal contents may be too dry from deficient outflow of liquids from the stomach, caused by the pyloric spasm due to hyperchlorhydria. Intestinal dryness may result from any form of stagnation of stomach contents. The fæces in these conditions contain 60 to 65 per cent. of water, instead of 70 to 78 per cent of water.

It is known that we cannot increase the nitrogenous tissues of the body by an excessive albuminoid diet, except in persons who have lost their normal amounts of nitrogenous tissue by sickness, or in those who are increasing their muscular development by work. In all other cases the more meat and albuminoids we eat, the more urea is formed. Urea being a powerful diuretic increases the amount of urine by absorption

from the intestines, and this is a cause of hard and scanty fæces in persons living on animal food chiefly. The amount of water in the fæces falls to 60 per cent.

Treatment.—In undertaking the relief of a case of habitual constipation, we must first of all find out if there are any faults of expulsion, which I have classed as mechanical, for most of these may be removed by surgical or mechanical methods. Considering the most obvious factors in producing regular passages, and the possibility of them compensating for others, we should try, first, to remove directly the principal cause. If this is not possible nor convenient, we may try to increase the action of other factors which, perhaps, are not deficient. For instance, if there is an atonic constipation due to sedentary habits, with diminution of the nervous intestinal irritability, if convenient, change the habits. We may stimulate the irritability by strychnia, or rubbing the abdomen with ice a few minutes, or apply ether spray each day, or roll an iron (5-pound) ball over the course of the colon. Failing in this (even if the consistence of the fæces is normal), we may make it softer by more liquid before meals, or more bulky by increasing the cellulose of the food.

The secretion and discharge of the various digestive fluids depend largely on the stimulation of the next preceding secretion. The entrance of the saliva with the food stimulates the gastric secretion. The passage of the acid gastric juice into the duodenum excites the pancreatic flow, and possibly the biliary flow; these in their turn probably excite the intestinal secretion. If there is no hydrochloric secretion by the stomach, the use of large doses of hydrochloric acid after meals will be likely to stimulate a deficient intestinal secretion.

Ipecac in small doses has been proven to excite bronchial secretion, and is used to some extent to increase the intestinal secretion. I do not know of any proofs of its action on the intestines.

Where the food is too absorbable and the weight of the fæces much diminished from the normal, 120 to 210 grammes (4 to 7 oz.) we should change the diet to have more insoluble fiber in it. Almost any vegetable or fruit will do, or the bread should be made of the whole grain flour. In diabetic constipation more water should be given. The constipation of young persons usually depends on hyperchlorhydria or other irritating acids in the stomach, which cause a reflex spasm of the pylorus and delay the passage of liquids out into the intestines.

Irritating purgatives, like aloes, colocynth, jalap, podophylin, are also held back in the stomach and do not act well, while the alkaline saline purgatives, taken hot and well diluted, neutralize the acid, exert a soothing action on the stomach, favor its discharge and supply the requisite water to the bowels for proper stools. Experience shows the adaptation of the alkaline purgatives to the young.

A very little saline in 250 to 400 grammes of water, or even hot water alone, will often relieve this class of constipations. Sweet oil and much fatty matter in the food have a soothing effect on the stomach and cause normal passages by promoting the discharge of the contents of the stomach into the intestines.

TABLE NO. II.
INFLUENCE OF DIET ON FÆCES.

Diet.	Amount taken daily.	Period of Trial.	Dry Fæces.	Wet Fæces.	Cellulose. Insoluble Vegetable Residuc.		Age and Weight of Subject.	
					In Food.	In Fæces.	Yrs.	Kilos.
Meat.....	834	3	17.2	68.8	.....	.....	22	72
Fish	733	3	17.1	68.4	.....	.....	22	72
Eggs	474	2	13.	52.	.....	.....	24	45
Cabbage	3830	3	73.	13.	46.80	.....	24	46
Rice.....	638	2	27.	108.	.....	.....	27	71
Fine Bread.....	615	3	25.	100.	3.65	.....	27	71
Coarse Bread.....	617	3	75.	300.	26.84	12.71	27	71
Carrots	1711	3	85.	340.	34.22	.....	24	46
String Beans.....	540	2	76.	.....	12.96	.....	24	46
Milk	2438	3	24.8	99.3	.....	.....	27	71

We find from the Table No II the effect of exclusive diets on the different classes of food on the fæces. These are not exactly fair tests of their effects on mixed diets, for some which are well digested and utilized in moderate quantities, are not well digested in large quantities. Milk diet is an example.

LOSS OF CASEIN AND FAT IN A MILK DIET.

Amount of Milk given daily.	Loss of Casein in the Stools.	Loss of Fat in the Stools.
Grammes.		
2000	5 per cent.	3 per cent.
3000	8 "	5 "
4000	12 "	6 "

In Table No. III which I now give, embracing my own experiments, the effect of vegetables in moderate quantities with a mixed diet is shown in a healthy man, 50, weight 165 lbs.

TABLE No. III.

AVERAGE DAILY EFFECT OF VEGETABLES, TAKEN WITH A MIXED DIET, OF THE FÆCES.

Vegetable.	Amount	Cellulose Contents.	Amount Fæces Wet.	Excess Fæces due to Vegetables.	Duration of Experiment
	Gram's.	Grammes.	Gram's	Grammes.	Days.
Carrots.....	240	4.80	225	165	3
String Beans.....	240	4.59	219	159	3
Turnips.....	240	3.36	200	140	3
Spinach.....	240	2.64	223	163	3
Cabbage.....	240	5.58	264	204	3
Cauliflower.....	240	2.73	153	93	3
Dry Figs.....	1:0	8.16 & seeds	189	129	3
Cooked Prunes.....	240	2.43	235	175	3
Whole Wheat Bread.....	617	11.00	300	200	3
Fine Bread.....	300				
and Meat.....	300	1.08	60	.....	3

From Tables No. II and III it will be seen that on a diet of meat, eggs and fish exclusively, or on a mixed diet of fine bread, meat and fats, the amount of fæces was from 52 to 68 grammes, an average of 60 grammes when no vegetable fiber or husks is taken; from Table III, we see that the insignificant amount of fiber or husks increased the fæces 19 times its own weight in the case of whole wheat bread; in spinach 61 times, and with prunes 71 times.

An objection is frequently urged on prescribing a considerable addition of green vegetables to the diet; that they will disagree and cause flatulence. This is true for vegetables as ordinarily eaten, but if they are in a state of fine division, which should be the case with all dyspeptics, they will rarely disagree. The division is made by rubbing through a coarse sieve or by mashing in one of the now cheap and common family grinding machines. Those vegetables which are naturally very fine (that is, in thin leaves) such as lettuce and spinach, are rarely found to disagree with dyspeptics.

THE MANAGEMENT OF FEVERS.*

BY I. N. LOVE, M.D., NEW YORK.

I FEEL highly honored in having been invited to read a paper before this Society, thoroughly representative as it is of a local profession that is surpassed by no other body of medical men in America, or any other country. I have selected to discuss in an informal way the management of fevers, and since selecting this topic I find that another essayist for the evening is to discuss "Is there a continued fever distinct from malaria and typhoid fever?" (1) I shall, in the views which I voice, touch upon this question.

Woodward, of "Typho-malarial fame," observed and wrote wisely and well, but arrived at conclusions which were too broadly presented, and gave us an addition to our nomenclature which is confusing and erroneous, and yet careful observing practitioners, of the Mississippi Valley at least, know that he graphically and correctly described the conditions, if not the theories, frequently confronting them in their regular autumnal work. It is being pretty clearly established that malaria, due to the plasmodium of Laveran, and yellow fever are carried into the human blood by certain breeds of female mosquitoes; whether this is the only medium remains yet to be determined. It has also been established by good authority that we may have a double infection, that is, an individual may be the victim of typhoid infection, plus malaria, though it does not occur frequently.

On general principles, the year around, everybody eats in excess, but this is doubly so during the hot months of the summer and fall, when the hydorcarbons are not needed for heating purposes. As a result at this season of the year the majority of the population in the warm zone are ripe for an interruption of metabolism, explosive disturbances, due to perverted secretions, all of which will not only produce continued fevers of shorter or longer duration as the case may be, but invite and render the victim susceptible to infections and greatly aggravate their virulence.

How many of the majority of us, after ten years of practice, are not able to treat seventy-five per cent of our fever patients, particularly among children, without the aid of quinine, and in utter disregard of the germs of Laveran or Eberth, they being fevers in fact due to catarrhal disturbances of mucous membranes and accumulated ptomaines, fermenting food and excretory matters in general. Those who practice at all among the Germans meet numerous cases of fever which the mothers and gross mutters very graphically and correctly attribute to a "spoilt stomach." All such cases are very promptly relieved and cured by a complete emptying of the alimentary canal and energetic attention to all the eliminating organs, coupled with judicious starvation for some days, and a gradual return to easily digested food.

* From *The Medical Mirror*.

I am strong in the belief that many of the autumnal fevers which last for weeks, and are sometimes fatal, are so only because they are too frequently interpreted as typhoid fever, not purged at all, and in many cases the secretions are checked and further perverted by mis-applied cold baths, when, had they been treated in the classical way of our fathers a few decades ago, by receiving a "puke, a purge and a sweat" and proper withholding of food, they would have been convalescing in a few days.

So, too, I am certain that the so-called malignancy and often fatality of typhoid fever, scarlet fever and other infections are dependent upon the same causes. I can better illustrate my point by citing a case of typhoid fever in a robust boy of twelve, growing rapidly, who was an enormous eater, eating each day as much as two average men would do. I saw him on the sixth day, and his temperature had ranged from the start from 104° to 106° , except for a short time, after cold baths, which, by the way, were very distressing to him, uniformly raising a riot, and which had been given by two skillful and energetic trained nurses, under the direction of the three conscientious, up to date attending physicians. Being familiar with the boy's voracious hungry habits, and that very probably he had for years averaged two large evacuations from his bowels daily, I was, on being placed in charge, anxious to determine the condition of his secretions. I found that in the beginning he had been given a few paltry pellets of 1-10 of a grain of calomel, which had been topped when his bowels were reported as having been moved. On examination I found his bowels greatly distended by gas and large masses of fecal matter. After washing out the stomach with a pint of hot water I gave at once a three grain dose of calomel and soda, followed in three hours by another. I personally gave a soap and water enema of one pint, followed at intervals of two hours by half a gallon high-up enema, using, as I always do, a large size soft rubber male catheter on the end of the syringe nozzle, until the bowels were collapsed, being absolutely empty. During this time I prevailed upon my patient, he being very intelligent and helpful, to drink a tumblerful of water every half hour. Any disposition to nausea was overcome by ice cloths to the mouth and mustard leaves to the pit of the stomach. The liberal use of water flushing of the alimentary canal from both ends, as it were, resulted not only in emptying the canal but in flushing the kidneys and arousing free sweating. Intestinal drainage was maintained from time to time there after by two to four ounces of aperient water washed down by a glass of hot water.

After the gut was emptied and active elimination was secured, the temperature fell to 102.5° , and ranged from 101° to 103° for ten to twelve days. Fever had gone at end of fifth week. At no time was a cold bath, which had been terribly demoralizing when applied, required. Sponging off with tepid water and a little alcohol was directed once a day.

Had the indications been promptly met in the outstart of this case, the illness would have been very light, as it was a mild infection. Had the management of his case continued as during the first week, he would, I think, surely have died, not of typhoid fever, but typhoid fever, emphasized and aggravated by autoinfection and intestinal distension.

That we may have continued fever of many weeks' duration due to sewer gas poisoning is evidenced by many cases which I could present from my case book, one, however, will suffice.

D. H., aged ten, at end of third week of low continued fever, came under observation, temperature ranging from 100° to 102.5° , thorough interrogation eliminated typhoid and malarial fever as causative factors, and we applied the convenient term gastric fever in lieu of a better one, the secretions generally being torpid and perverted.

Casually one morning, at end of my first week's service, and the fourth week of fever, sitting by my patient, close to the head of her bed, I discovered a terrible odor, which I promptly traced to the furnace register in the wall immediately back of her low bed. Following this odor to its source, I found the furnace pit in the graveled and cemented cellar below filled with sewage from a broken sewer pipe which drained the water closets and house in general. The floor being a hard cemented material was not penetrated by the filthy sewage, and the only exit was the furnace pit, the furnace not being in use, the conditions were not discovered.

This nursery room was small, the furnace register being close to the head of the sleeping child, and this particular heat pipe had not been closed by damper in the cellar, so full opportunity was given to the potent poisoning of the child, whose power of resistance was not sufficient to successfully cope with the sewer gas.

Had the discovery not been made we would have gone on blindly for an indefinite time and the child would more than likely have died. A removal of the patient to another house with ideal sanitary conditions, a sunshiny room, warmed when needed by an open wood fire, full ventilation, gentle stimulations of all secretions, an acceptable highly nutritious diet, with aid to digestion, after several weeks, secured a perfect recovery.

In the victims of fever, whatever the age, whether the fever be due to infection, perverted secretions, autoinfection, sewer gas or what not, we must keep ever in mind the gouty diathesis, both hereditary and acquired, and direct our treatment accordingly. In brief, in the management of fevers, whatever the origin or cause, I commend the following points:

1st. Prompt potent purgation, even though attendants report bowels as being open. A diarrhea is often nature's effort to rid itself of offending materials. Safe, gentle intestinal drainage should be maintained throughout the conduct of the case.

2nd Earnest regard for strenuous activity of all the eliminative organs is essential—and let it not be forgotten that the lungs are the most important of the eliminating organs—and an abundance of oxygen is a "sine qua non," and after this in degree of importance comes water in abundance.

3rd. Intelligent attention to nutrition demands the complete withholding of all food in the beginning for several days, later only the blandest, the most digestible articles in small quantities. The pushing of food cannot be safely done until the secretions have all been corrected and it is evident that the digestive organs are in no way crippled. Graves, when he said that he desired placed upon his monument, 'He fed fevers,' did not mean that it should read "He gorged, he stuffed fevers."

4th. Temperature can best be held down and the nerves tranquilized to the safe point by bathing, as in everything else, the pleasant and the easy way is the best. The stereotyped rigid water not only flushes the excretory organs, but cools the fever, and the cool bath also acts in this double capacity.

5th. In the handling of our fever and other patients we have adopted to advantage many ideas from the fanatical class formerly known as hydropaths, and so we may, to the great good of our clients, apply gentle manual massage, and even many of the manipulative methods of the so-called osteopaths, many a jumping joint, tired muscle, or restless nerve can thus be soothed to rest, and during convalescence a more industrious application serves as a stimulant and tonic.

6th. Let it be remembered that the sweetest word in our language is "rest." Sancho Panza said truly. "Blessed be the man who invented sleep." The doctor should ever keep in mind the words of the sacred book, "He giveth His beloved sleep," and sleep, complete rest at proper intervals, rest, physical and mental, are vitally essential to the victim of fever.

7th. "The Big Four Route" to health in all diseases, including fevers, is first, elimination; second, disinfection; third, nutrition, and judicious nutrition means little or no food during acute stage of disease, including stimulation; fourth, tranquilization—rest.

8th. We should not be so absorbed with the material methods of relief as to ignore the psychic. The latest breed of "fool fanatics" victims of delusion, for revenue chiefly, are giving us many "cues," and we should read correctly the lines which follow after.* It is our duty to study this question thoroughly, tolerantly, realizing to the fullest the power of mind over matter.

No matter what the age of our patient, we should be able to absolutely command or lead him in the direction of his best good, and we should thus be able to help him to command himself, but to succeed we must first become the complete rulers of our own selves.

Josh Billings, the humorist, expressed it well when he said, "I have often thought if I were a doctor that I would treat my patient and let his disease alone." We should study disease not less, but man more.

In closing permit me to quote a thought as given by the versatile, scholarly, gentle, sweet and tender "Amiel," who was a patient sufferer for many years, and probably endured much at the hands of many physicians: "Why do doctors so often make mistakes? Because they are not sufficiently individual in their diagnosis of their treatment. They class a sick man under some given department of their nosology, whereas every individual is really a special case, a unique example. How is it possible that so coarse a method of sifting should produce judicious therapeutics? Every illness is a factor simple or complex, which is multiplied by a second factor, invariably complex—the individual, that is to say, who is suffering from it, so that the result is a special problem, demanding a special solution, the more so the greater the remoteness of the patient from childhood or from country life."

* Christian Scientists.

"The principal grievance which I have against the doctors is that they neglect the real problem, which is to seize the unity of the individual who claims their care. Their methods of investigation are far too elementary—a doctor who does not read you to the bottom is ignorant of essentials. To me the ideal doctor would be the man endowed with profound knowledge of life and of the soul, intuitively divining any suffering or disorder of any kind, and restoring peace by his mere presence. Such a doctor is possible, but the greater number of them lack the higher and inner life; they know nothing of the transcendent laboratories of nature; they seem to me superficial, profane strangers to divine things, destitute of intuition and sympathy."

"The model doctor should be at once a genius, a saint, a man of God."

THE NATURE AND THE CAUSE OF PUERPERAL ECLAMPSIA.

By the Editor of the Journal of the American Medical Association.

AT the Ninth Congress of German Gynecologists at Giessen, May 29-31, 1901, eclampsia constituted one of the subjects for an exhaustive general discussion, which was introduced by Fehling and Ryder.* Inasmuch as this discussion probably represents quite fully the present views concerning the nature and cause of eclampsia it may be of some interest to briefly review the principal facts and opinions brought out.

In his report on the pathogenesis Fehling announced the following theses: Puerperal eclampsia is a distinct and characteristic process, which occurs only in the period of gestation. There is no special form of placenta, no special form of renal or hepatic disease in eclampsia; it is not necessarily connected with ureteral dilatation, but albuminuria is almost always present. There is no definite pathological anatomy of eclampsia. That it is contagious has not been shown, and there is no proof of Bouchard's claims that it is caused by an increased toxicity of the plasma of the blood associated with diminished or absent toxicity of the urine. Eclampsia is neither an hepatotoxemia nor a leukomainemia. The lesions of eclampsia are associated with the presence in the blood of some coagulative substance. Finally, eclampsia is an intoxication of fetal origin.

A very important contribution to this discussion is Schmorl's report on the pathological anatomy based on a thorough study of the organs in no less than 73 cases. From the results Schmorl finds that the process has a fairly definite pathological anatomy, thus invalidating one of Fehling's theses. When the whole complexus of morbid changes are considered one must agree with Schmorl. The kidneys without exception are the seat of albuminous and fatty degenerative changes with more or less necrosis. These changes affect the secreting tubules and occur in varying degrees of extent and intensity. Thrombosis is frequent in the glomerular capillaries, as also in the arterioles and veins. Ureteral dilatation is of no greater frequency than in the non-eclamptic. In three

*1. Report in *Centralbl. f. Allg. Path. u. Path. Anat.*, 1901, xii, 635-648.

cases there were hemoglobin infarcts and hemoglobinemia, but the exact cause could not be determined. In the liver there are albuminous changes in the cells, and hemorrhagic and anemic necrosis were present in 71 cases. In the two cases in which they were absent there was total thrombosis of the main stem of the portal vein. These necroses when small, are situated in the peripheral parts of the lobules and invariably accompanied with thrombosis of the inter- and intra-lobular capillaries and often also of the larger vessels. The necroses do not stand in any relation to the severity of the symptoms, and they are not due to traumatism during the convulsion, because there may be very few in cases with many severe convulsions and very many in cases with few and light seizures. In addition to secondary pneumonic processes, the lungs showed thromboses and hemorrhages in 66 cases. Fat embolism was also frequent, the source of the fat being, it is thought, the bone marrow, the subcutaneous tissue and possibly also the fat tissue in the pelvis. The most constant changes in the brain are small softening and hemorrhages, especially in the cortex, but also in the brain stem and in the lenticular nucleus. Thrombosis and possibly increased blood pressure during the convulsions are regarded as the cause of these changes. In the heart are degenerative changes, hemorrhages necroses, and thrombi, but the latter are not as common as in the other organs.

Schmorl does not attach any special importance to embolism of parenchymatous cells in eclampsia. Even placental cell embolism are not distinctive because it occurs in non-eclamptics. Schmorl is no longer disposed to attribute to placental cells the ability to liberate coagulative substances. He has not seen any other disease with the complexus of changes outlined in the foregoing. While no single lesion is absolutely characteristic or pathognomonic, the sum total of all the changes is as distinctive as in many other diseases. From the nature of the lesions he would assume that a peculiar substance enters the blood and leads to multiple thromboses. Whether this substance comes from the placenta or from the fetus cannot be settled at this time. Possibly the applications of the principles of cytotoxicity may throw some light upon this dark problem.

It is regrettable that careful and complete systematic bacteriologic examinations do not accompany this valuable report which is based upon such a wealth of observations. The relations of bacteria and bacterial products to thrombosis are of such importance that they surely merit consideration in connection with eclampsia; and the clinical picture and pathological anatomy of eclampsia do not of themselves definitely exclude a microbic etiology. Indeed, Albert advances the theory that eclampsia is a microbic intoxication from the decidua.

Strassmann deals with the question of the why and the when toxic substances are retained in case eclampsia is a toxic disease. Kundrat and after him Herzfeld advanced the theory that abnormal divisions of the abdominal aorta may result in such displacements of the ureters as to subject them to compression. The frequency of eclampsia in primiparæ and in twin birth, in contracted pelvis, and the fact that the attacks may cease after delivery, point to the influence of mechanical conditions.

He could not find, however, after an exhaustive investigation, any relation between puerperal eclampsia and anomalous division of the aorta.

In the same discussion considerable reference is made to physical and chemical conditions of the blood and urine in eclampsia. Futh and Kronig found that the maternal and fetal blood have the same osmotic tension and specific gravity, showing that if there are toxins in the maternal blood they do not cause increase in its tension or its gravity. Dienst observed an increased amount of fibrin in both the bloods in pregnancy, and he assumes that during pregnancy a certain amount of poison is produced in the fetus and taken into the maternal blood where it may accumulate in fatal quantities in case elimination is interfered with. Schumacher established that the urine of eclamptics is no more toxic than normal puerperal urine of the same concentration. He regards the toxicity of eclamptic urine when concentrated as dependent entirely upon its hemolytic properties due to its different tonicity from that of the serum of the blood. Schroeder notes that the freezing point of urine in eclampsia falls below healthy urine and sometimes below that of the blood. As the attacks pass away concentration increases, but the observations are not sufficiently extensive to permit any definite conclusions. In connection with this question reference may be made to the article by Stern in which he discusses osmotic pressure in its relation to uremia.

Veit did not find the maternal serum hemolytic for the blood cells of the fetus nor the fetal serum lytic for the maternal corpuscles. By inserting syncytial cells from the rabbit into the abdomen of geese the serum of the geese acquired the power of dissolving the placental cells of the rabbit—a placentolysin or syncytiolysin developed. Normally but few syncytial and placental cells enter the maternal circulation; should a larger number enter, lysins with toxic properties might develop, but Veit adduces no further evidence in favor of this idea.

Taking it all in all we must admit that eclampsia is a toxic disease in which coagulative substances exist in the blood, but the source of these substances has not been determined. No decisive proof is at hand to the effect that the intoxication is of fetal origin.

Mouth Wash.—

℞ Acid. salicylici,
Sodii bicarb.,
Sacchari āā gr. xv.
Spt. vini rect ʒ i.
Spt. menth. pip gtt. x.

M. S. Teaspoonful in a small cupful of hot water.

This is an excellent gargle for sweetening the breath.—*Medical Times and Hospital Gazette.*

Pruritis Ani.—

℞ Sodii hyposulphit 30 parts.
Acid. carbol 5 "
Glycerini 50 "
Aqua 450 "

Apply frequently by means of wet compresses.—*Medical Times and Hospital Gazette.*

SOME OF THE USES OF ELECTRICITY IN GYNAECOLOGY.*

By W. H. WALLING, A.M., M.D., Philadelphia, Pa.

IN taking up electro-gynaecology, let us first revert to current diffusions ions and resistance in order that we may better understand the procedures in the conditions to be studied.

If we use the current in the vagina, uterus, bladder or rectum these surfaces, presenting as they do less resistance than the dry epidermis, the effect will be much more pronounced from a given amount of current compared with the same externally applied. The greatest effect will be at the poles, the size and character of the electrodes largely modifying the action. If we wish to produce a cauterizing effect upon the uterine canal we must allow twenty-five milliamperes of current for every square millimetre of electrode surface. If, therefore, the internal electrode presents ten square millimetres of surface, two hundred and fifty milliamperes of current must be used in order to get full cauterization.

If a bare copper or zinc electrode be used with the positive pole the metal will become oxidized to a greater or less extent, thus adding to the effect. If too strong a current be used, or the application be too much prolonged, an eschar will be formed which may prove to be troublesome. Unless under exceptional circumstances a platinum or carbon instrument should be used in making positive applications to mucous membranes. With such an instrument a current strength of one hundred to two hundred and fifty milliamperes may be given in the uterine cavity with safety, if properly timed.

Amenorrhœa.—Many cases of amenorrhœa, being dependent upon anæmia, direct stimulation of the uterus will be contra-indicated. In such cases tonic treatment is to be given and galvanization by the lumbo-abdominal method and voltaic alternatives without shock, using from fifteen to fifty milliamperes for five to ten minutes daily or every other day according to indications. Later on voltaic alternatives with shock may be given if deemed advisable. In some cases I have given fifty milliamperes by the shock method with good results. Gradually accustom the patient to the latter method before attempting its full effects. Of course, in all cases of suppressed menstruation, pregnancy is carefully excluded before treatment is begun.

If direct stimulation of the uterus be deemed advisable, it may be carried out with either pole, but the cathode is the most stimulating. Commence with twenty-five milliamperes, carrying it up to one hundred if necessary; five minutes with the former and two minutes with the latter. Sittings may take place once or possibly twice per week. In some cases the flow will become re-established after two such applications. Intra-uterine faradization has also been effective in this condition; as has the static spark, alternated with faradization. A bipolar electrode may be used with the faradic current with good effect. Any intra-uterine

* American Obstet. and Gyn. Journal.

treatment should not be given within two or three days of the monthly period, either before or after.

Dysmenorrhœa.—In some cases the static spark is very beneficial and sometimes general faradization or lumbo-abdominal galvanization will suffice to prevent pain at the monthly period; but generally some form of intra-uterine electrical treatment will be found to be necessary. If there be a stenosis or a membranous dysmenorrhœa to deal with, strong negative galvanization is indicated. It will be better for a beginner to use mild electrolysis in a stenosis before attempting strong currents. If the stenosis be in the form of a cicatricial stricture mild galvanization is always indicated. An illustrative case may be cited: Miss B. had the cervix dilated for some purpose or other until the os presented the appearance of having passed through several labors. The canal was patulous to the inner os, which was only a "pin hole." The smallest instrument would not pass and a special electrode had to be made. With this, an application of only five milliamperes, negative, was made and the stricture easily passed. Larger and larger instruments were then used from time to time until the desired size was reached and her "dysmenorrhœa" cured.

If the whole canal be very small it will be better to use an instrument that can be passed, act upon the tract throughout its entire length and at the next sitting use a larger sound and so on. The canal is enlarged by negative and lessened by positive galvanization. A current strength of five to twenty milliamperes may be used, the former for five or more minutes, the latter for one or two minutes, keeping the electrode gently moving so as to reach every part of the canal. If, for any purpose, the positive pole be used in the neck of the womb or in the urethra, it must be kept in motion to prevent adhering to the surface of the tissues.

After all intra-uterine applications the patient should be allowed to lie down for awhile and a warm, antiseptic douche may be ordered every day, or even twice a day. Such applications should not be made oftener than once per week or ten days. Time must be allowed for the parts to heal before another treatment is given.

Ovarian Neuralgia.—Where there is no inflammatory condition to combat, but simple neuralgia is the prominent symptom, the faradic current is indicated either with or without a bipolar electrode. In using the monopolar instrument place a pad on the abdomen and pass the vaginal electrode well up against the painful ovary. Use the fine, secondary coil and begin with a mild current, gradually increasing the intensity up to the point of extreme tolerance and continue such application until the pain has subsided. This may take half an hour or more, but do not increase the intensity after once having attained the maximum. The sensation will gradually lessen, even to a total disappearance, but under no circumstances should it be increased except as at first stated. The pain may return in one, two, or three days, or even on the same day, when the same treatment should be repeated, even if it be necessary to give the current twice in a single day. Some of these cases are very obstinate and will require treatment for several months in order to get

the system in the proper tone. Of course, suitable internal medication is to be administered in connection with the electrical treatment; but as this paper is dealing with the latter only, drug medication will not be considered.

Delayed Menstruation.—We frequently find that central or general electrization will overcome the tardy appearance of the menses, so great are the reflex and remote effects of electrical treatments.

As to sexual excitement from the use of the current, I may say that I never saw any exhibition of such excitement in any case. In the *Medical World* for March, 1890, the writer published a symposium upon this question which gave the experiences of a number of prominent gentlemen of large experience and all agreed that no such excitement ever followed electrical applications or occurred at the time of administration.

The faradic current may be used in the following conditions: Insufficient development of the uterus and ovaries, amenorrhœa, subinvolution, superinvolution, displacements, menorrhagia and interstitial fibroids. The galvanic current may be used in hyperplasia of the uterus, chronic ovaritis, peritonitis, pelvic neuralgia, local and reflex neuralgia, mechanical dysmenorrhœa, erosions of the neck, or os, subperitonæal fibroids, endometritis, bleeding fibroids, etc.

Erosions.—Use a zinc or copper electrode and act upon the lesion with a current intensity of five to fifteen milliamperes for one to two minutes. The electrode should be well insulated up to within say half an inch of the distal end and the application be made through a speculum. Apply the cathode as a rule, but the anode may be necessary at times. The current has no effect upon the metal when used with the cathode; but if the anode be applied it is acted upon, the metal being oxidized and carried into the tissues by cataphoresis. This becomes very important in treating various conditions and the effects of each pole under the galvanic current, when metal electrodes are used, should be thoroughly studied before attempting such applications.

In treating erosions, etc., generally one application will suffice. If not, repeat in from three to five days. As in all such cauterizations time must be allowed for the parts to heal before a second application is given.

Metritis and Endometritis. Keith says that "There is nothing to compare with galvanism in the treatment of those very troublesome conditions, many cases of which have lasted for years, having resisted every kind of treatment previously used" This strong testimony has been corroborated in thousands of instances under the skilful care of other electro-gynæcologists, both in this country and abroad.

In the treatment of these conditions a platinum or carbon instrument should be used. Introduce the electrode well into the uterus, place a large pad upon the abdomen and use the current according to the following rules (after Apostoli): The positive pole is acid, anti-congestive and hæmostatic and is most useful in hæmorrhagic, congestive or ulcerative forms of metritis. It antagonizes and prevents the tendency to excessive vascularization and for the same reason becomes the choice remedy for a rebellious leucorrhœa.

The negative pole is basic, diffuent and but slightly hæmostatic and is used to excite languid or obstructed circulation or the indurations of chronic metritis, accompanied with amenorrhœa or dysmenorrhœa, and will adapt itself with similar success to other inflammatory processes where hæmorrhage does not predominate.

In making applications of the galvanic current to the endometrium a current intensity of from ten to one hundred milliamperes will be about the range, to be governed by the necessities of the case and the susceptibilities of the patient. Begin with a low power and increase as circumstances may require. Sittings should be from five to ten minutes, and be given once or twice daily per week according to circumstances or conditions and the intensity used.

It is well known that in many cases where a small sound cannot be introduced that a large one may be readily passed. In such case, if the sound be too small, melt shellac upon the tip until the desired size be obtained. It can be made perfectly smooth and has the advantage of affording protection to the fundus if the instrument be used in the uterine cavity.

In many cases there will be found a marked hyperæsthesia of the uterine tract, especially in the cervical portion, but this should rapidly subside under anodal applications. I sometimes use cocaine with the anode. In such case use a carbon electrode, cover it with absorbent cotton, wet it in a four per cent solution of cocaine and apply with a current of five to ten milliamperes for five to ten minutes. This may be given two or three times per week. The same application may be made in sensitive vaginas, using a larger electrode and a stronger current, if bearable.

In treating the cervical canal with the anode, the electrode being bare, the latter must be kept in gentle to and fro movement in order to prevent its adhering to the parts. This precaution must be observed in all anodal treatments of mucous surfaces.

It must be borne in mind that a weak current applied for a long time is not equivalent to a strong current applied for a short time. In the first instance the cells of the tissues can adjust themselves to the new conditions to a certain extent, having a certain amount of innate resistance, while the present and remote effects are entirely different from that produced from a strong current where, the onset being sudden and severe the cells cannot resist and disintegration results.

Pyosalpinx.—Pus in the tubes may be diagnosed in the following manner: If, after an intra-uterine administration of a strong galvanic current, say for endometritis, pain be induced and continue after the current has been withdrawn, immediately apply the positive secondary faradic current in the vagina, carrying the intensity as high as possible and let it run for some time. If the pain be allayed, there is no pus in the tubes; but if it be not allayed by such applications pus is undoubtedly present and must be treated by swelling faradic currents in order to evacuate the tube if possible, or by galvano-puncture.

Subinvolution with Hæmorrhage.—In this condition the faradic current only is indicated. Use any electrode available, attached to the

negative pole, place the anodal pad on the abdomen (the cathode being in the vagina) include the whole coil in the circuit by means of the controller or the cylinder controlling the coil, preferably the former, give what is called swelling currents, *i.e.*, quickly turn on the current to the point of tolerance and as quickly reduce it. If the cylinder be used, as quickly withdraw and return it, thus giving sharp contractions without shock. They may be gradually increased in severity for a few times if deemed advisable. The object is to stimulate the uterus to a firm contraction which is generally promptly done. The first sitting need not last over three to five minutes with the intervals between contractions of from five to thirty seconds according to circumstances.

In cases of doubt as to the condition, the treatment will determine, as if it be due to a relaxation of the fibers, as in subinvolution, the swelling faradic current will soon relieve it; but if due to a fibromatous condition or to cancer, it will have no effect and the intra-uterine positive current from a galvanic series must be used. In the latter condition Apostoli uses carbon electrodes of sufficient size to entirely cauterize the whole inner surface, thus completely controlling the hæmorrhages.

It may be well to add that swelling faradic currents are of great advantage in all relaxed conditions of any part of the body; but one should always be careful not to unduly tire the muscles by too long an application. Treatments may be given every day, in some cases even twice in the day for a time, as indications might require.

Fibroid Tumors.—Where hæmorrhage is a prominent symptom only intra-uterine positive galvanization will avail. Place a large pad on the abdomen, introduce a platinum or carbon electrode into the cavity of the uterus and apply from thirty to one hundred milliamperes of current for five to ten minutes, once every seven to ten days. As far as possible, every portion of the endometrium should be acted upon. The more thoroughly this is done the better will be the result. At the close of the sitting, and before attempting to withdraw the sound, the current should be reversed for one-half to one minute, or until the electrode can be easily removed.

Ordinary hard fibroids, the non-hæmorrhagic variety, are not very amenable to treatment, *i.e.*, they cannot be removed by electrical applications; but in most cases some reduction in size may be brought about with a greatly increased comfort to the patient. Place a large pad on the abdomen, connected with the positive galvanic, and a similar pad on the back connected with the negative and pass a current of twenty-five to fifty milliamperes for ten to fifteen or even twenty minutes, two or three times per week. In some of these cases the writer has had most excellent results from this method of treatment, producing what may be termed symptomatic cure. The growths have not only been checked but the size of the tumors have been materially lessened, the patients made comfortable and serious operations rendered unnecessary.

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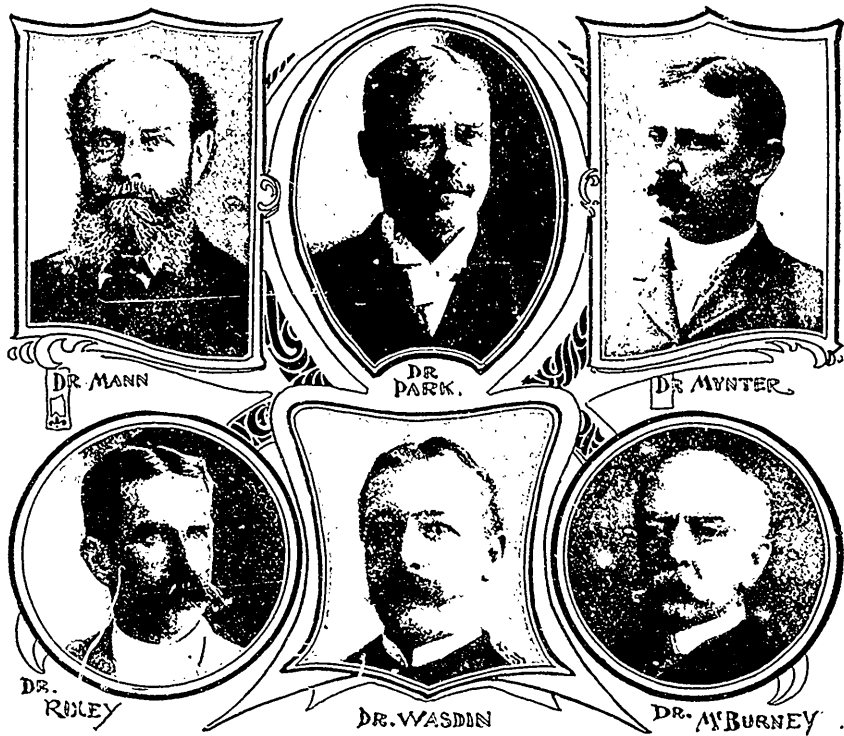
OCTOBER, 1901.

No. 2.

EDITORIAL.

PRESIDENT MCKINLEY'S DEATH.

IN no country in the world, outside the United States itself, was President McKinley's assassination viewed with greater horror, his hopeless struggle for life followed with more sympathetic interest nor his death more deeply deplored than throughout the Dominion of Canada. The bulletins issued from the sick room on the days following the assault were of such a hopeful character that people generally had begun to think his ultimate recovery was assured. The prompt and courageous measures undertaken by the surgeons who were first called to see him and their apparently brilliant results, were made the text for many laudatory comments in the public press on present day surgery. Unfortunately some of those connected with the case, if newspaper reports are to be credited, indulged too early in rather fulsome self-congratulation. It is therefore scarcely a matter for surprise that the news of the unfavorable turn the case had taken should have come as a shock to the public, who were quite unprepared for it, and that the keenest, almost angry disappointment should have been shown at the unfavorable termination. Immediately the medical attendants were subjected to the most caustic criticism and medical science incidentally, was made to share in the odium. Looked at in its most favorable light and in the knowledge subsequently gained from the autopsy, it must be candidly admitted that the whole case has not tended to raise the medical profession in the public esteem. The fatal termination was at first attributed to the too early administration of solid food, a hasty and wholly unwarranted conclusion which any thoughtful practitioner appreciated at the time and which the autopsy afterwards conclusively demonstrated. The post mortem examination revealed the fact that the case was absolutely hopeless from the first and nothing known to the therapist could have warded off the fatal result. All within the power of modern surgery and medicine was done. At the President's age



DOCTORS IN ATTENDANCE ON THE LATE PRESIDENT MCKINLEY.

and in his physical condition, the resisting and restorative power of nature were unequal to the task laid upon them. The tissues along the course of the wound through the abdominal walls, stomach, pancreas and kidney became gangrenous—a failure of the *vis medicatrix naturae* which no human power could obviate. It seems to us that much useless discussion has taken place as to the cause of the gangrene, some attributing it to a poisoning of the bullet, others to the digestive action of the pancreatic juice. Sloughing along the course of a bullet-wound, from direct injury to the tissues and the opportunity for microbial infection, especially in an elderly patient with lowered vitality, is certainly neither a rare nor unexpected result. Why attribute the gangrenous condition in the pancreas to the action of the digestive fluid, when the same reason does not explain the condition in the walls of the stomach and elsewhere :

While the autopsy has absolved the doctors from blame from a therapeutic point of view, it does not equally satisfy for the failure in diagnosis and prognosis. To the medical profession, with bulletins recording an unexplained increase in temperature and a rapid pulse, in

such a necessarily serious case of injury to the peritoneum and abdominal viscera, the absolutely roseate reports from the sick room were quite inexplicable. Only the excellent reputations of the specialists in attendance and the thorough confidence in their ability to do all that medical art allowed, and to appreciate as nearly as might be the gravity of the condition with which they had to deal, caused the profession more readily to accept their opinions, though at variance with general experience. For the failure in exact diagnosis only those ignorant of the difficulties in the way, would attempt to blame the doctors in attendance. In the face of the facts before them, however, the general verdict of the profession will accord with that of the public, that the surgeons were over-sanguine in their prognosis. No doubt, as often happens, the eagerness for the recovery of their illustrious patient and a desire to give as much hope and comfort as possible to anxious friends and to the people at large, caused them to unduly magnify favorable symptoms. Personal feelings for the patient obscured their judgment. The apparent failure to fully grasp the seriousness of the condition, appears to us to be the only thing for which the medical attendants can be justly criticised.

There are those, speaking in the light of the experience of Senn during the campaign in Cuba, and of Sir William McCormack, Sir Frederick Treves and Watson Cheyne, in South Africa, who will question the advisability of an operation having been undertaken at all, but this is still an unsettled point in surgery, and certain it is, public criticism would have been absolutely unrelenting, had death occurred without any operative attempt to give relief. The *New York Sun* from a lay standpoint we believe, sums the matter up fairly in concluding that "the necropsy shows that the most skilful medical diagnostician or therapist could not, by his advice, have changed the progress or the result of the conditions following the injury."

The failure of the pathologist to locate the bullet at the autopsy is another matter which, with the information at present at hand, is difficult to understand.

The following extract from the official report of the post mortem examination will assist in a clearer understanding of the whole case :

"The bullet which struck over the breast-bone did not pass through the skin and did little harm. The other bullet passed through both walls of the stomach near its lower border. Both holes were found to be perfectly closed by the stitches, but the tissue around each hole had become gangrenous. After passing through the stomach the bullet passed into the back walls of the abdomen, hitting and tearing the upper end of the kidney. This portion of the bullet track was also

gangrenous, the gangrene involving the pancreas. The bullet has not yet been found. There was no sign of peritonitis or disease of other organs. The heart walls were very thin. There was no evidence of any attempt at repair on the part of nature, and death resulted from the gangrene, which affected the stomach around the bullet wounds, as well as the tissues around the further course of the bullet. Death was unavoidable by any surgical or medical treatment, and was the direct result of the bullet wound."

THE PRESIDENT'S 'ALIEN' NURSE.

IN an editorial reference to the lamented death of President McKinley *The Detroit Medical Journal*, a publication issued by the J. F. Hurtz Co. in criticising the management of the case, mentions especially that "not only was Mrs. McKinley very carefully excluded from the sick room but her spouse was left to the 'rule of thumb' care of an alien 'trained' nurse." Of the many criticisms of the case which we have noticed, this appears to us to be the most unhappy, unjust and uncalled for. In the profession of medicine, so cosmopolitan, so wide in its sympathies, so little influenced by the jealousies, narrowness and bigotry that divide people politically or religiously, it is fortunately rare that such an example of petty prejudice and intolerance appears as is displayed by the writer in question. It is not necessary, nor do we pretend to offer any defence for either the Canadian nurse who attended the President nor for the doctors who recommended her services. They no doubt, had no other object to serve than their patient's welfare, and they were in the best position to judge of the fitness of the nurse in whose charge they left him.

That the Canadian Training Schools maintain as high an educational standard and graduate nurses who are as thoroughly qualified for their professional duties, as any country in the world, is a fact that should be well known among our American friends, since a considerable proportion of the highest appointments in their best hospitals are held by Canadian graduates. During the President's illness it was no alien sympathy and interest which Canadians felt, and we doubt if his death was more deeply deplored or caused more sincere sorrow in the great republic itself than throughout the Dominion of Canada. The general sympathy displayed seemed to draw closer the two great branches of the English speaking

people on this continent and its effect will not be lessened by any such exhibitions of puerile bigotry as we have referred to. It may possibly interest the writer of the editorial to learn that Miss Maud Mohan, of Brockville, the nurse in question, was alien only in birth, not in training, as she was trained in the Buffalo General Hospital, graduating from that institution in 1898, after which time she continued her professional services under Dr. Roswell Park.

EXPERT MEDICAL TESTIMONY.

THE large number of medical experts retained by the Crown and Defence respectively in the Sifton murder case, and the divergent opinions expressed by them on examination, resulted, as it usually does under such circumstances, in the confusing of the Court and jury rather than in clearing up the difficulty, so that the presiding justice in his charge to the jury, instructed them in arriving at a verdict to practically disregard the medical evidence altogether, allowing the opinions on the two sides to balance each other. This is certainly not a satisfactory state of affairs, and reflects no credit either on medical science, or on the individuals connected with the case. The fact that the doctors differed is heralded abroad and forms the text from which our lay contemporaries read sermons to us on the uselessness of medical evidence in general, and the characteristic tendency of doctors to disagree. It is only proper, therefore, that we should ask ourselves wherein the fault lies, and what is the remedy for such a condition of things? There is probably no duty falling to the lot of the medical practitioner which is more disagreeable, and none wherein he appears to less advantage than in offering expert testimony. That the present system of calling medical witnesses by the opposing side is unsatisfactory, ineffective in its purpose, and often derogatory to the profession itself, has been repeatedly pointed out by medical societies, medical journals, as well as by interested individuals. That the medical expert should be calm, deliberate, nonpartisan, unprejudiced, uninfluenced by personal feelings, and judicial in the highest degree, is generally recognized and insisted upon, but surely retaining him by the opposing sides, placing him in the witness box as an advocate, proposing the most difficult and abstruse problems for him to unravel on a moment's reflection, badgering him by opposing counsel, getting his opinion on statements of the case distorted to best suit the theories

which each side is attempting to establish, this is surely not conducive to a frame of mind fitted to express an accurate, well-thought view of the case, nor to best assist in bringing out the truth. Different propositions of the case, eliciting or suppressing just so much of the whole truth as the counsel thinks desirable, are placed before the medical witnesses, and the opinions expressed must differ insofar as the propositions to which they are an answer are different. Hypothetical propositions and distorted statements of the case are set up, and from the disjointed and often wholly unconnected answers received, mostun warranted conclusions are drawn. How opinions obtained in such a way can be of real value it is difficult to conceive, but surely it is the medical expert's misfortune rather than his fault that he should be placed in so unenviable a position.

To overcome the difficulties mentioned various remedies have been proposed. The appointment of a sworn commission of competent medical experts, as unbiased and judicial as our judges themselves, to whom would be referred the various questions requiring elucidation from a medical standpoint, and who would submit a complete report on the case, stated in the plainest language, with the conclusions arrived at, and the reasons on which such conclusions were based would, we are satisfied, be more in keeping with the dignity and purpose of the duty required of the expert, and more fruitful and satisfactory in its results in the interests of law and justice. The matter is one urgently demanding the attention of those having power to deal with it, and we trust that a weakness in our judicial system that has long been recognized may receive early rectification.

SCIATICA AND ITS TREATMENT.

TH**ERE** is probably no common disease that comes under the management of the medical practitioner that is more tedious and trying to both the patient and his attendant than sciatica. Various measures are set forth by different authorities, based on their experience, usually limited, as certain cures for the condition. These at times yield results so brilliant as to lead the practitioner to believe he has at last found a specific remedy, and again as signally fail to give any relief. These apparently contradictory results are largely due to the failure to recognize the fact that clinically, sciatica is not a disease, *perse*, but a symptom of various conditions differing in their course and requiring entirely different treatment.

Three principal forms may be mentioned. One is a functional neuralgia involving the sciatic nerve, often dependent on some lowered constitutional condition. This form often yields rapidly to appropriate treatment directed towards building up the general health, to the coal-tar antineuralgics as phenalgin, etc., or to anodyne injections into the nerve itself. Another form is due to pressure on the nerve by a tumor, an overloaded bowel or inflammatory collections, and here of course, the only rational treatment is to remove the cause. The importance of pressure from faecal accumulations in the rectum is suggested by the much greater frequency of sciatica in the left side.

The most frequent and intractable form of the disease, however, and the condition to which many would strictly limit the term sciatica, is an interstitial neuritis or perineuritis. This may be of all grades of intensity from the mildest forms associated with slight pain and tenderness, elicited only by certain movements, to the most severe cases accompanied by excruciating pain and tenderness and wholly incapacitating the sufferer. To expect to cure such a case as this by means of the remedies successful in the neuralgic form, is to doom ourselves to disappointment. Severe inflammations in any organ or tissue do not admit of instantaneous or even rapid cures. The treatment must be adapted to the severity and stage of the inflammation, always remembering, however, that some indiscretion may transform a mild into a severe case. In the acute stage absolute rest in bed, the limb fixed on a splint and kept warm, is certainly the rational method of treatment. Counterirritation over the course of the nerve, especially in the region of the sciatic notch by means of the cautery, fly blisters, iodine liniment or mustard are all useful adjuvants. Acupuncture by means of needles or injections of sterilized water, normal salt solution, cocaine, morphine may all assist. When the acute symptoms have subsided, careful massage over the nerve, pressure at the notch to break down adhesions, stretching the nerve by extending the leg and flexing the thigh on the abdomen, or the use of galvanic current may all be tried in intractable cases. Any rheumatic, gouty, syphilitic, malarial or other constitutional taint must be carefully sought for and the remedies appropriate for each exhibited, and in severe cases, prolonged, patient treatment must be followed out to effect a cure. Cold, wet or exposure are often the exciting causes in these cases and too much care cannot be exercised in guarding against them.

It must be rare indeed that surgical interference in cutting down upon and stretching the nerve will be indicated, as such procedure except in breaking down adhesions, has rationally little to commend it that

cannot be obtained by simpler methods. The possible co-existence of two or more of the factors capable of producing sciatica should always be borne in mind in particular cases.

The use of superheated dry air as in the Tallerman method, of Turkish baths, or mineral baths, in conjunction with massage, will prove of use in certain instances.

THE PREVENTION OF VENEREAL DISEASE.

A SUBJECT of perennial importance to the State in all civilized communities should command public attention. The exclusion by quarantine of foreign pests, plague, leprosy, smallpox, the compulsory reporting of contagious disorder, ever latterly of tuberculosis, the isolation at enormous expense, both to the State and the individual, of sufferers from various contagious or infectious disorders, all go to show that scientific research and its lessons have more or less correctly and thoroughly influenced the lay mind and produced with the consent of the public, measures which seriously interfere with the liberty of the individual and cause in semi civilized communities violent outbreaks of ignorant prejudice and opposition. It is not likely that many of the profession would be found to gainsay the statement that civilized communities suffer more both in actual disease and its organic results to both parent and children, and in the restriction of the procreation of the race as the result, from venereal diseases than they do from any of the plagues most dreaded, shown by such measures as above mentioned, so well controlled. In semi civilized or savage communities the ravages of syphilis and gonorrhoea are less severe, partly no doubt because wedlock or its substitute, concubinage, can be more lightly undertaken because of the less responsibility it brings with it in such a community, while the sophistication and social restrictions of a more highly organized community make it less possible for the male to support the female in the style and circumstance which they desire. In consequence of our knowledge of the prevalence and disastrous results of disease of this kind, we of the medical profession have, with few exceptions and they negligible, come to hold the same views as to the duty of the State towards these as towards other contagious disorders. Have we succeeded as well with the public, in educating them to sensible views on the subject, in which neither prudent nor false modesty, nor mistaken and ignorant views of

duty in the premises, shall prevent proper legislation? The answer can be only that we have failed. The public in all Anglo-Saxon communities, still hides its head in the sand, or holds up its hands in holy horror, if the existence even of such a menace to the State be spoken of, or the evil be made respectable (save the mark!) by being put under legal control as countless other evils are and made none the less evil in the process.

The evil to which we refer is not prostitution but venereal disease, and if to check the one, the other be made the subject of legal enactment and control, being its chief procuress, why object? The profession has much to do to bring up the public mind to the point of broad, intelligent tolerance to which we have attained by dint of our daily routine contact with life in those phases of which we see so much more than the public does. One is reminded of the beautiful sweet reasonableness of that type of "medical mind," Sir Thomas Browne, who lived in Stuart times and saw the furies of the Revolution and the wild unreasoning hate of the public parties of his day, yet contemplated it all with such kindness of soul. In one of his works—the title stamps it for a physician's work, "*Religio Medici*, or the Christian Religion, as Professed by a Physician Freed from Priest-Craft and the Jargon of Schools,"—he has the following passage bearing, not singularly perhaps, on this very subject:—"It moves not my spleen to behold the multitude in their proper Humours, that is, in their Fits of Folly and Madness, as well understanding that Wisdom is not profaned into the World, and it is the Privilege of a few to be virtuous. They that endeavour to destroy vice, destroy also virtue, for Contraries, though they destroy one another, are yet in Life, Friends to one another. Thus Virtue (abolish Vice) is an Idea: you must have both in the World, or neither one nor the other. The Clergy addressed Prince Maurice, when he was in the Country, desiring that he would banish all Whores out of the Army. The Prince answered them, That he would do with all his Heart if you will teach me how I may keep my Soldiers together afterwards."

If the temper which informs these sentiments were to be found in the people at large, prostitution and its attendant diseases would be soon as effectually controlled as smallpox or plague. For one must once again point out that the wise and sensible view to take of an evil is that half a loaf is better than no bread, that one must be content with the best at present attainable, even if that be far short of the theoretical best, and allow evolution to work by her usual means, remembering that whether in the constructive or the destructive sense "the mills of God grind slowly."

Prophylaxis by treatment alone is not enough. It may indeed be fairly held that it is a gross prostitution of Science to deliberately inform the public of measures which will tend to make illicit and doubtful intercourse safe. For those to whom have been assigned, or who have assumed, control of the morals and religion of the human animal, though sometimes wrong in their views as to the methods to be employed, are doubtless right as to the end to be attained, which is the universal prevalence of the sanctions and prohibitions of the seventh commandment. The interference of society with the views and practices of the individual in this matter may and should take two directions, private or corporate charity and effort at Social Reform, and legal enactment.

Morrow, in *Phila. Med. Journal*, April 6, '01, writes with eminent good judgment:—"Violent measures must always defeat the object in view, because they are of necessity intermittent and spasmodic. Violence is incompatible with the sustained and continuous effort required to combat this evil.

"I. The social reformer can accomplish more by measures for the amelioration of the social condition of women; by throwing stronger safeguards around minors, especially the orphans and unprotected; by establishing homes for the reception and reclaiming of fallen women; and by furnishing means and opportunities for the rehabilitation of those wishing to reform.

"II. The arm of the law may be effectively invoked in preventing scandalous public provocation; in suppressing the affluents of vice—the wine shops, low concert- and dance-halls, and other disreputable resorts; in making the punishment for the seduction of minors more sweeping by raising the age of consent to 21 years; and by meting out the severest punishment against the purveyors of vice—men and women who make a trade of dealing in human flesh by enticing and selling into the slavery of prostitution innocent and unprotected young women."

The profession can secure the good end only by the education of the public mind and conscience to the point of securing legislation on these questions. The public conscience should be left perhaps to its proper guardians, as no system of legal enactments can ever take the place of proper individual views and practice in a matter with which the future of the race is so indissolubly bound up.

J. T. F.

EDITORIAL NOTES.

WE observe that a large American concern, with a medical man at its head, has broken ground in this Province, and opened a branch in London, Ont. While the schemes and products of this concern have been largely advertised and used in this country in the past, and pushed with a vigor that is purely commercial, we are struck by the barefacedness of a "reader adv't" that appeared recently in the Toronto daily press, in which, after a half-column of more or less scientific disquisition upon digestion, particularly of the starches, the company ends up as follows: "The Canadian company is pledged to devote all its earnings over a very small percentage of profit on the money invested to non-sectarian medical missionary work in Canada." We, as professional men, are not called on to protest against dishonest commercial methods *quâ* commercial, but it is very much our business to protect the fraud-loving public from such loathsome cant, and to protest when our professional prerogatives are intruded upon, in so barefaced and utterly dishonest a style. The appeal to the religious feeling, too, adds to the detestable character of the thing. The profession should refuse to allow the use of such a company's preparations by their patients, as they are thus practically made the agents of the company. Carelessness in matters such as this is largely what has made possible the general disposition, seen in publications such as *The New York Life*, to belittle the character and standing of the profession in the United States.

One of the patent medicines which is in vogue at present, the result of a free and unscrupulous use of printers' ink, recently had in the Toronto daily press a photograph of a "Toronto lady," who, according to the advertisement and her appended testimonial, "was taken very sick about three years ago with gall stones in the bladder." She had one of the best doctors in the city, but her case "baffled his skill." He has our sympathy. This nostrum is also the property of a Chicago company, with a Toronto company to push its sale in Canada. There can never be much real sympathy or confidence between the medical profession and the chemists while the latter lend their countenance to this sort of thing.

A Michigan subscriber writes to ask for a reliable work setting forth what Osteopathy is and what osteopaths practice. Fortunately this new school of exploiters of the ignorance and credulity of the public have not found Canada a very fruitful field for their labors. We have

very few of them here, and consequently we know little about them, their teaching or practice. A good authority defines Osteopathy as "a system of medicine which regards all disease as due to defects in the bones or joints and remediable by manipulation of these parts." Their treatment consists largely in massage and movements of the bones and joints. Like all systems teaching an exclusive dogma, there is a grain of truth and merit mingled with, or underlying it, which makes the error more dangerous. They have a college in Chicago, granting a diploma "Doctor of Osteopathy," where no doubt our correspondent would have the tenets of the system set forth in their most alluring light. He wisely disclaims any intention, however, of following their practice but quite as wisely, we believe, wishes to know all about them.

THE BRITISH COLUMBIA MEDICAL ASSOCIATION.

The second annual meeting of the British Columbia Medical Association was held in the Legislative Buildings, Victoria, B.C., on September 5th and 6th.

There was a good attendance, and the President, Dr. J. C. Davie, of Victoria, occupied the chair. Dr. Eagleson, of Seattle, was present as a representative of the Washington State Medical Association.

Among the papers read may be mentioned those by Dr. McKechnie, of Nanaimo, entitled "Notes on Midwifery," and that by Dr. Fagan, Secretary to the Provincial Board of Health, on "Tuberculosis," who also presented for the Society's consideration a draft of the regulations which it has been proposed to put in force for the prevention of this "white plague."

A number of new members were elected and a large amount of general business was transacted.

The Dominion Government steamer "Earl" was placed at the disposal of the members, who visited the Quarantine Station at William's Head, where they were much pleased with the completeness of the arrangements for disinfecting vessels and their cargoes. The leper colony at D'Arcy Island was also inspected, and the four cases at present there excited much interest. The thanks of the Association are due to Dr. Watt, the Government officer, for his courtesy on those occasions.

The officers elected for the ensuing year are :

President, Dr. R. E. Walker, New Westminster.

Vice-President, Dr. W. J. McGuigan, Vancouver.

Secretary, Dr. J. M. Pearson, Vancouver.

The meeting next year will take place in Vancouver.

CORRESPONDENCE.

ST. CATHARINES, October 1st, 1901.

To the Editor of THE CANADA LANCET.

I observe that Prof. A. McPhedran, M.D., Toronto University, admits his presence at the International Congress on Tuberculosis in London but makes no mention of any part taken by him in its proceedings. The full reports of those proceedings in the weekly medical journals are evidence of his silence. The Professor expresses regret that the Gravenhurst Sanatorium was not represented at the meeting. Others entertain a like sentiment.

Greater regret, however, is justifiable at the neglect of the Medical Faculty of Toronto University to take part by any representatives in the important deliberations of that large and important assembly. Representative authorities in Medicine from all the European nations, many States of the American Union, the Province of Quebec, even from Egypt and antipodean Tasmania, read papers, delivered addresses, and offered opinions and advice bearing on the great White Plague and possible measures for its extermination.

No voice was heard from the Provincial University of Ontario. Professors Adami and McEachern of the McGill College, Montreal, well upheld the standing and authority of that centre of medical science.

Another Provincial body, the Provincial Board of Health, also failed to be heard at the Congress. Had the Board sent Dr. Bryce, the able Provincial Medical Inspector, to the Congress as it ought, Ontario would have taken a prominent, creditable and useful part in its deliberations.

Please insert the foregoing and oblige

LUCIUS S. OILLE.

PERSONAL.

Dr. Mac. Crawford, formerly resident physician at St. Michael's Hospital, Toronto, has opened an office in Toronto.

Dr. J. F. Uren, Church St., Toronto, and Dr. Chas. P. Lusk, of College St., have been appointed demonstrators of anatomy in Trinity Medical College.

Dr. Perry G. Goldsmith, of Belleville, has returned from England where he spent six months as house surgeon in the Central London Throat and Nose Hospital.

Dr. Adam Chalmers (Trinity '92) and Mrs. Chalmers, of Oil Springs, have returned from Europe where the doctor has been spending the summer doing hospital work. Dr. Chalmers is opening an office in Sarnia.

Dr. E. S. Ryerson and Dr. D. M. Anderson, of the resident medical staff the Toronto General Hospital, have returned from their holidays and tell remarkable tales of their success in slaying all kinds of game which the law allows to be preyed upon at this season.

Dr. H. A. McCallum, of London, gave a dinner to some sixteen of the expert medical witnesses from Toronto and London at the London Club during the progress of the Sifton Trial. The fact that the Crown and Defence sides of the case were about equally represented did not in the least interfere with a most pleasant evening.

Dr. F. H. Brennan, formerly of Peterboro and afterwards of Johannesburg, is spending a while in Toronto at Trinity Medical College, preparatory to going to England, where he will spend a year in special work. Dr. Brennan was forced to give up a lucrative practice in Johannesburg at the outbreak of the war and offered his services to the Royal Canadian Regiment. He purposes returning to South Africa when peace is restored.

BOOK REVIEWS.

TEXT BOOK OF PATHOLOGY.

By Alfred Stengel, M. D., Professor of Clinical Medicine in the University of Pennsylvania; Physician to Philadelphia Hospital, etc. With 372 illustrations. Third Edition. Philadelphia and London: W. B. Saunders & Co. Toronto: J. A. Carveth & Co. Price, Cloth \$5.00, Sheep or half Morocco, \$6.00.

Dr. Alfred Stengel's work on pathology is well known. It has reached a third edition in a very short time for such works. This is readily accounted for on several grounds: the work is not too large, and yet not too condensed; it is written in a clear style, it is well illustrated; but most important the work is well up to date and trustworthy in its statements in the matters under discussion.

The first section of the work deals with general pathology. Under this division we have the etiology of disease, disorders of nutrition and metabolism, disturbances of the circulation of the blood, retrogressive changes, inflammation and regeneration, progressive tissue-changes, bacteria and diseases due to bacteria, and animal parasites and the diseases caused by them. The second section takes up the special pathology of the blood, the tissues, and the various organs.

Pathology is the science that deals with disease in all its aspects. Etiology, or the study of causes; morbid, or pathologic anatomy, the study of structural changes; and morbid, or pathologic physiology, the study of disturbances of function are the sub-divisions from which the author approaches his subject. Disease is defined as abnormality in structure, in function, or in both combined. It is stated that it is doubtful whether alteration of function can occur without some alteration in structure, though none may be found by the most precise methods. The

symptoms of disease are the expressions of abnormal functional activity and come under the head of pathologic physiology.

The etiology of disease is discussed under the headings, predisposing causes, such as heredity, the lack of immunity against certain diseases, acquired characteristics. Determining causes are grouped under traumatism, heat, cold, atmospheric pressure, poisons, living organisms, parasites, intoxication from within the body.

In discussing tumors the author speaks of lymphadenoma as most likely due to some form of organism. Tubercle bacilli, micrococci and various bacilli have been found. Sarcoma yield the best evidence of the of the Cohnheim theory of embryonic rests. There is a close resemblance to tubercle in some respects. It is not improbable that lymphosarcoma is due to bacteria. On the etiology of carcinoma, the author states that Cohnheim's theory on the origin of tumors is less applicable to this form than to certain others. Much importance is attached to the influence of repeated injury as in smoking on the lip, but a single injury has probably little effect. The parasitic theory has not yet been proven. No bacterium has yet been isolated. The search for some protozoon has also failed so far. Nor does implantation prove its biologic origin. Where such experiments have succeeded, it may be only the reproduction of the cancer in the new host. The theory of a special dyscrasia is dismissed as having no foundation in experience as the cause of carcinoma.

Immunity is handled ably and with much interest. It may exist as natural immunity. Thus the dog is refractive to anthrax, or in the case of lower animals against syphilis. Immunity may be acquired from a previous infection, the natural acquired form. It may also be gained by artificial means. In some cases there seems to be a permanent adaptation of the organism. This is active immunity. In other cases it is temporary, and is called passive. The various theories of immunity are examined. The bactericidal power of the blood serum, or its power to modify the properties of the bacteria. The weak points in the phagocyte theory are mentioned. The theory, deduced from the clumping of bacilli as in typhoid fever, is also shown to be inadequate as an explanation of immunity. It is of two kinds, namely, against the germ and against the toxin. The side chain theory of Ehrlich explains the phenomena of immunity better than any other. By this theory, the toxin has a two-fold nature and composition, one the poisonous action, the other the combining power.

Rabies, many cases of purpura, and acute articular rheumatism are regarded as due to germs, though they have not been discovered, unless Achalmé's bacillus be that of rheumatism.

The diseases of the blood are well written. Leukocytosis is stated to be due to inflammation, infections, cachectic conditions, malignant tumors, hemorrhage, mechanical and thermal causes, the use of certain medicines. Progressive pernicious anaemia is caused mainly by depressing emotions, fright, exposure, unsanitary surroundings. But more especially by pregnancy, lactation, intestinal diseases and parasites.

In dealing with arteriosclerosis the author cites as causes syphilis, gout, chronic alcoholism, chronic nephritis and generally chronic intoxications. Long continued excessive muscular exertion is a cause. He discards the view that the thickening of the intima is due to the direct act-

ion of the toxic agencies on it. The loss of elasticity and the degenerative changes in the vessel walls are the result of the primitive causes, and the hyperplastic process in the intima and other parts of the vessels is the result of such loss of elasticity.

General progressive paralysis is regarded as most likely caused by some infectious state. The progress and symptoms of the disease point to this. The great majority of the cases have been preceded by an attack of syphilis. There are some cases, however, that give no such history.

It would be impossible to review the work in further detail. It is well written and the subject matter brought well up to date. The publishers are entitled to commendation for having gotten up the work in such excellent form.

JOHN FERGUSON.

PATHOGENIC BACTERIA.

A Text Book upon the Pathogenic Bacteria for Students of Medicine and Physicians by Joseph McFarlane, M.D., Professor of Pathology in the Medico-Chirurgical College, Philadelphia; Pathologist to the Medico-Chirurgical Hospital, Philadelphia; Fellow of the College of Physicians of Philadelphia, etc. Contains one hundred and forty-two Illustrations. Publishers, W. B. Saunders & Co., Philadelphia. Canadian Agents, J. A. Carveth & Co., Toronto, Ont.; in Cloth, \$3.25.

The subject of bacteriology is, to-day, of growing importance, not alone to the student and laboratory professor, but to the practitioner as well.

The subject is too vast in its entirety to be grasped by the every-day, busy physician and surgeon, thus the need of such a work as the above on Pathogenic Bacteria. The book will be found of very great help in ordinary clinical laboratory work.

The work is in two parts. Part I contains a short and very complete history of bacteria, methods of cultivating the technique of staining and microscoping, etc

Also chapters on infection and immunity, both of which are particularly instructive and pregnant with facts readily adaptable in the treatment of the acute specific diseases met with daily.

In Part II the specific diseases and their bacteria are treated at greater length, the chapters on Tuberculosis and Diphtheria being specially worthy of ones time and study.

J. T. F.

THE AMERICAN ILLUSTRATED MEDICAL DICTIONARY.

By W. A. Newman Dorland, A.M., M.D., Assistant Obstetrician to the University of Pennsylvania Hospital.

It is not surprising that a second edition of this valuable volume is so readily called for. The aim of the author to place before the profession a dictionary of convenient size, not too profuse, and thoroughly up-to-date, has surely been realized.

The revised edition is most complete, and it appears that nothing has been overlooked in its compilation.

Certain portions are elaborately worked out. The arteries and nerves, for instance, are tabulated alphabetically with origin, distribution and branches; the muscles are similarly arranged, giving origin, insertion, nerve supply and action. Veins are also tabulated.

Staining methods are fully given with direction for making the solutions required. Under Spinal Cord is a useful table giving the localization and functions of the Spinal Segments.

Bacteria, Bacilli, Unicocci under their several headings are enumerated in an elaborate manner.

The colored plates are well produced. They appear under the sections on blood, emulogy, karyokinesis, arteries, veins, nerves, spinal cord, etc.

Pronunciation, derivation and definition are everywhere clearly set forth. At the close of the volume are tables of the different weights and measures, with comparative values.

The author is to be congratulated upon the production of a work thoroughly up-to-date, sufficiently full for all practical purposes, yet not cumbersome.

H. C. S.

DIET LISTS AND SICK ROOM DIETARY.

Compiled by Jerome B. Thomas, Jr., A. B., M. D., Instructor in Materia Medica, Long Island College Hospital; Assistant Bacteriologist to Hoagland Laboratory. Second Edition, Revised. Price, \$1.25 net. W. B. Saunders, Philadelphia. J. A. Carveth & Co., Toronto, Canadian Agents.

This book of detachable diet lists contains a list of the foods allowable or indicated in the management of albuminuria, anaemia, and debility, constipation, diabetes, diarrhoea, dyspepsia, fevers, gout, obesity and tuberculosis with an appendix dealing with the technique of rechal alimentation and the special preparation of foods for such use. Any one who appreciates the difficulties in the way of carrying out the proper dieting of their patients will find the most valuable aid from these lists. They are carefully prepared, and spaces are left for any special instructions the doctor may wish to give in any particular case. They will prove an invaluable aid to the practitioner.

A. G. F.

THE READY REFERENCE HAND BOOK OF DISEASES OF THE SKIN.

By George Thomas Jackson, M.D. (bol.), Chief of Clinic and Instructor in Dermatology, College of Physicians and Surgeons, New York; consulting Dermatologist to the Presbyterian Hospital, New York, etc., etc. 642 pages with 80 illustrations and 3 plates. Fourth edition, thoroughly revised. Lea, Bros & Co., New York and Philadelphia. Canadian Agent: D. T. McAinsh, Toronto.

In Part I. the author reviews briefly the anatomy and physiology of the skin. A section is devoted to general remarks on diagnosis and another to treatment, with a brief description of the various remedies employed in skin affections. Now follows a classification of skin diseases which, for so difficult a subject, is very good. Various "don'ts," in reference to the treatment of skin diseases, conclude the first part.

In Part II. the various diseases are clearly and concisely dealt with. The synonyms are complete and the descriptions good. One cannot do them justice in so brief a review as this. The sections on Dermatitis Medicamentosa is very good.

The appendix gives directions for various baths, and also a number of formulæ, the value of which, the author claims, has been proven.

The illustrations and press work are above the average.

Altogether this volume will be of distinct value to students and the general practitioner.

D. M. G.

DISEASES OF WOMEN.

A text book on the Diseases of Women, by Henry J. Garrigues, A.M., M.D., Gynecologist to St. Mark's Hospital and the German Dispensary of New York City, consulting Obstetric Surgeon to the New York Mothers' Home and Maternity Hospital, etc., etc. Philadelphia: W. B. Saunders & Co. Third edition. Canadian Agents: J. A. Carveth & Co., Toronto. Net price: cloth, \$4.50; sheep or half morocco, \$5.50.

A text book for students and practitioners: a very complete book for the former, and a very useful book for the latter.

In many medical works, one may as well commence at the last chapter as the first. Not so with this volume. For the student, it leads him on by easy stages through the development of the female organs of generation to the anatomy and physiology of the same parts, and from this to "Etiology in General," which is followed by "Examinations in General" and by "Treatment in General." This part of the work takes up about two hundred and seventy pages, when the "Special Division" is reached.

The chapter on anatomy is very complete, and well worth the perusal even of an anatomist. Anatomy is not usually entertaining, but the reader will find it so in this work. The chapter on physiology is short, but well put, and will be found useful to the general practitioner—particularly the symptoms of the menopause, which are given fully. The young general practitioner will read this portion with pleasure, as it will relieve his mind of the cause of many symptoms, which are of every day complaint at that period and so difficult to relieve.

The chapter on "Examinations in General" covers the principal points which are necessary for a correct diagnosis—illustrating the method of getting verbal information from the patient; postural position, with illustrations; and illustrations of the instruments used for the purposes of diagnosis, and the method of using them.

The chapter on "Treatment in General" covers considerable space, and prepares the readers for the parts following, namely: "Special Division," in which diseases of the different parts of the female organs are taken up in the following order: Diseases of the Vulva, Vagina, Uterus, Fallopian Tubes, Ovaries and Pelvis.

There is also an appendix on sterility, lack of orgasm and intestinal surgery.

The book is fully up-to-date. The illustrations are numerous, but not of the picture book style, which is to the book's credit.

l. B.