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Original Communications.

THE THERAPEUTIC USES OF EXERCISE.\*

By R. TAIT MCKENZIE, B.A., M.D.,  
Instructor in Gymnastics, McGill University.

In a recent lecture Dr. Wm. Osler told a popular audience that a desire to take medicine is the great feature that distinguishes man from the other animals, and he went on to say that instead of relying on "a tablespoonful three times a day," he should pay more attention to the principles of hygiene and their application.

Investigation has brought to light new facts from which laws have been formulated. The vital processes are becoming better understood, and diet, heat, cold, rest and exercise, have supplanted to a great extent the exclusive treatment by drugs of most forms of disease. The prescription of drugs is becoming largely supplementary to these other and more important agents. "As a physician advances in age," said the late Sir Andrew Clarke, "he generally places less confidence in the ordinary medicinal treatment than he did, not only during his early but even during his middle period of life." The modern doctor does not as often attempt to perform what Voltaire wittily defined as the miracle of reconciling health with intemperance.

The marvellous progress of the comparatively new science of

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\* Read before the Montreal Clinical Society, November, 1893.

Bacteriology has directed the attention of the medical world to the importance of preventing the dissemination of disease germs by the agency of earth, air or water. Experiments have shown the tenacity to life of the tubercle bacillus, its life, history and most favorite soil. May we not, in our eagerness to destroy these insinuating sources of disease, by methods which are too apt to include the patient in a common fate, be apt to neglect the best preventative we have, best because the most under our control; I refer to the rearing of a strong and healthy army of phagocytes begotten of good food, sufficient rest, and plenty of exercise.

The most fertile soil for the insidious microbe, is a puny and debilitated organism in which the life processes are slow and feeble; on the other hand if there be strength and activity, disease will not obtain its first foothold or even if it has already entered the body, will be attacked and speedily ejected from a system ready and able to combat such a danger to its well-being. "The physician is only the servant of nature; not its master." He can give the most favourable conditions but the healing power of nature does the rest. Fixity to a broken limb while repair goes on. Rest to the stomach while the ulcer heals. Extra nourishment or stimulants till the system again takes up its accustomed work.

It is along these lines that progress has been made in the past, and will be made in the future, rather than by the discovery of the Elixer of Life, the search for which has occupied so many great minds even to the present day. This search however, may be productive of as great good to humanity as was that for the philosopher's stone whose magic touch was to turn everything to gold. From that vain dream the science of Chemistry received its greatest impulse and may not the equally fantastic search for this life-giving compound incidentally reveal the great physiological laws that govern the life processes? So with increased knowledge we may determine the proportions of water, food and exercise, the three ingredients of the true *elixer vitae*.

"He who eats without taking exercise cannot be well," said

Hippocrates nearly four hundred years before Christ, and his statement of the case has not been improved upon or refuted since. Galen merely restated the same truth when he said: "The greatest danger to health results from complete inactivity, in the same manner the greatest benefit results from moderate exercise." It is this one Therapeutic agent in its various applications that I would take up for discussion.

The body has been looked upon by many, in fact by most of the medical profession as a chemical compound, and disease has been treated by the administration of chemical substances to restore the stability of the compound. This view of the body has been held almost to the exclusion of its other aspects and the natural reaction has swung the pendulum of thought into the mazes of Psychological research. Schools have sprung up in which disease is looked upon as a mental state. Healing is to be accomplished by faith, accompanied by the laying on of hands, bottled electricity or infinitesimal globules. The body is the expression of the soul, which controls its workings absolutely, so that disease is merely the imperfect expression of the spiritual element in man.

Another view of the body sees it as a complex machine, tolerating a good deal of interference and abuse with comparative impunity, with this advantage over the ordinary machine that it always tends to repair injuries to itself. It has within it the capacity of self-renewal as well as that of dissolution and unlike any other mechanism, the more it is used within physiological limits the better will it work, and the longer will it last.

Bodily movements are among the most potent measures that keep the human machinery in working order. The active use of the various muscle masses affects more than their own tissues. There is pressure on the abdominal contents, stretching of contracted chest walls, and removal of excess of blood from the head and torso out to the periphery where it circulates in the extremities.

A brief resume of the principal effects of exercise would perhaps express the idea I have in mind with greater clearness.

The two-fold function of muscular tissue is to be noted.

Each muscle acts as a reservoir for blood, and also as a means for producing heat and motion. Exercise acts as a stimulant to the heart, and "every active muscle," says Weir Mitchell in his book on Fat and Blood, "is practically a throbbing heart squeezing its vessels empty when in motion and relaxing to allow them to fill anew. Thus both for itself and in its relation to the rest of the body its activity is functionally of service." "The vessels unaided by change of posture and by motion lose tone, . . . so that defects of nutrition occur and with these defects of temperature."

There is a physiological law, known as the Law of Treveranus its discoverer, which may be briefly stated thus:—Each organ is to every other as an excreting organ." In other words to ensure perfect health, every tissue, bone, nerve, tendon or muscle should take from the blood certain materials and return to it certain others. To do this every organ must have its period of activity and of rest so as to keep the vital fluid in a proper state to nourish every other part. This process in perfect health is a system of mutual assurance and is probably essential to a condition of entire vigour of both mind and body. The excretory organ that we most persistently neglect is the skin, extra work is thus put on the intestinal and renal systems with the consequence that they are overworked and become diseased.

The skin is stimulated to increased excretion, most fully and naturally by the various forms of physical exercise. By the term physical exercise, I would include passive as well as active movements; from massage in which the will power of the patient plays no part whatever to the most complicated and delicate voluntary movements in which the training is more for the nerve centres than for the muscles.

In massage the tissues of the body are exercised by the operator for a therapeutic purpose by stroking or rubbing, kneading, pinching, rolling and beating the muscle masses and through them the underlying organs. "By these means are the muscles exercised without the use of volition or the aid of the nervous centres, while increasing mechanically the flow of blood to the tissues which they feed."

In duplicate movements, the will power of the patient is used in resisting or performing under resistance, movements of flexion, extension, circumduction, etc. These movements also require an operator, but Dr. A. Zander has invented a series of machines by which flexions, rotations, vibrations, etc., can be administered without the necessity of an operator. An institution in which these machines form the exclusive treatment has been founded in New York.

Simple active movements are made without either assistance or resistance. The simple and duplicate movements together with the various positions have been grouped and classified and named in the Swedish medical gymnastics.

The word "exercise," as usually employed would include only light and heavy gymnastics, walking and athletics.

In light gymnastics, movements are arranged in series with perhaps light dumbbells or clubs. Muscular developement is quickly produced by these movements. Archibald MacLaren, of Oxford, found while training a squad of officers as instructors to the British Army, that "the muscular additions to the arms and shoulders, and the expansion of the chest, were so great as to have been absolutely ridiculous and embarrassing, for before the fourth month several of the men could not get into their uniforms, jackets and tunics without assistance. In a month more they could not get into them at all. One gained five inches in chest girth." In this connection it may be well to state the fact that in most leg movements the body acts as a heavy weight, and the exercise is as severe as if a hundred pound dumbbell were attached to the foot the patient being on his back.

The use of fixed apparatus for suspension and support, horizontal and parallel bars, introduces another principle into gymnastics. The extremities are made the fixed points and the origin of the muscle is thus made its insertion. An application of the principle is well shown in the system of pulley weight developing machines, worked out so fully by Dr. Sargent, of Harvard. By them, isolated groups of muscles can be exercised in such a way that by varying the weights used, the dose can

be accurately measured and governed. The machines can be adapted to the strength of the strong, or the weakness of the weak, that the greatest benefit may be obtained without the danger of overstraining.

The value of athletic sports as a therapeutic agent is questionable or a least very limited. The competitive element and the danger of strain and over-exertion would make them rather too drastic to be much used in this way by the physician. But there is an exercise that might be classed as athletic, the one nearly always prescribed by physicians, I refer to walking.

As usually taken, a walk does not exercise the muscles vigorously enough to produce very much effect. The skin is not stimulated sufficiently to act as an excretory organ, and the man comes in dull, heavy and tired out, instead of having the bright warm sensation of strength that is felt after a half hour of brisk hard work, followed by a rub down. The great advantage claimed for walking, is the open air; that is good, but a shorter time given to more vigorous and more evenly distributed work will give better results.

There are three effects of exercise that would commend it as a therapeutic agent.

1st. It relieves congestions by equalizing the circulation.

2nd. It acts as a sedative to the nervous system probably through its action on the circulation.

3rd. It strengthens and enlarges muscles, bones, and ligaments, and would thus apply to all conditions caused by weakness or inequality of development.

If the education of a child could be begun as suggested by Oliver Wendell Holmes, 100 years before its birth, there would probably be no necessity for the application of exercise in therapeutics and even now its necessity will be greatly lessened by incorporating exercise in our educational systems. By the gymnastic games of the Kindergarten, children are made strong and healthy from an early age and troubles arising from weakness or malnutrition are prevented.

In schools where systematic physical training has gone hand in hand with mental throughout all grades, the marked improv-

ment in the physique of the children is sufficient to commend such training to all who have the welfare of the race at heart. This improvement will not be universal however until there is as much attention paid to the proper breeding and rearing of children, as there is to that of horses and dogs.

The good effect of a course of exercise on even confirmed criminals has been studied by Dr. Wey, of the Elmira Reformatory. He says:—"The stimulation of the physical powers a year ago in the case of three impressed their mental organization to a degree that enabled them to earn their release upon parole, whereas if left to themselves their minds would never have been quickened as a reflex of an improved physical state."

The late Dr. Seguin, by the systematic training of the hand and eye gave understanding to an idiot brain and Dr. Luther Gulick reports three cases in which feeble minded children have been made bright, intelligent and active by a course of special exercises calling into active use the will and attention.

Organic disease of the heart has long been treated by the Swedish movement cure, and Oertel of Munich has established an institution in which diet and exercise are the chief agents used. "The heart being a muscle, should be developed in the usual way;" if it be weak he advises walking on the level and then hill-climbing. The patient should walk till violent palpitation is brought on. He then is required to stand still till that has abated and until the shortness of breath is satisfied by voluntary long deep inspirations.

Oertel treats in this way even those who have not sufficient compensation, and repeats the treatment at intervals, according to his judgment. This he couples with baths and a diet rich in albumen, preceding it by a course of Swedish gymnastics and baths. Frantz claims that the ventricles can be more completely and efficiently emptied by exercise than by digitalis, and that the benefit is more lasting.

In cases of infantile paralysis, exercise in conjunction with electricity has given satisfactory results in both increased size and usefulness of the groups of muscles affected.

The importance of movements in the treatment of sprains is

sometimes overlooked. In speaking of this in his book on that subject, Mansell Moullin says: "The sooner movement is begun the better. As a rule passive movement may be commenced from the second day with the certainty of preventing adhesions. I have repeatedly seen the most severe cases treated in this way recover so completely in the course of a few days that unless there is an exceptional amount of walking to be done the patient could follow his ordinary occupation without danger and without pain."

Constipation is most amenable to treatment by movements and exercise. Negative evidence on this point is seen in every hospital ward where the daily notes show complete inactivity of the bowels in nearly every case following rest in bed. May not its frequency in women and those of a sedentary occupation be due to this cause? In no other condition is the power of massage so quickly or so surely seen. Swaying movements and flexions of the trunk are natural forms of massage for the abdominal contents; even in deep breathing the intermittent pressure of the diaphragm and abdominal muscles is a physiological massage.

In chronic dyspepsia exercise is one of the best means of treatment. In one case that came under my notice lately, half an hour, three times a week was quite sufficient to relieve the most distressing symptoms. The patient like many another is accustomed to eat more than he uses and without this work the unused nourishment acts as a burden on the system, and even as a direct poison. The following experiment shows the effect of certain movements on the stomach. With feet fixed, body lying supine raise the trunk upright by contracting the abdominal muscles and the flexors of the thigh. If repeated very often a sensation of nausea will be produced in most people, even to the extent of causing vomiting. If such a powerful effect can be produced by a simple movement repeated often, surely less violent or less prolonged action could be used to obtain a therapeutic effect.

In speaking of obesity and its cure Blaikie remarks, "While the spare man may be benefited by a course of moderate gym-

nastics the corpulent man must," and he cites the case of a man who in five months reduced his weight 90 lbs., from 305 to 215 by exercise alone.

The accumulation of fat in the muscles of the abdominal wall makes them weak, and the tendency to use them as little as possible becomes confirmed.

The burning out of this superabundant fat is best accomplished by the voluntary use of these muscles in movements often repeated and graduated in violence to suit the special case. The loss of weight during muscular exercise is much more considerable than one is apt to realize.

In a two mile race I have known of a man losing nearly two pounds; quite a difference for ten minutes; and in a recent prize fight the difference in weight before and after, in one of the contestants, was seven pounds.

To be most efficient, a dry diet, rich in albumen, should be combined with gymnastic exercise and walking.

From a series of measurements made by Dr. Geo. H. Taylor, it was found that the average expansion in consumptives was about an inch in place of the normal two or three. He claims that the tendency to pulmonary affections is in the inverse ratio to the amount of respiratory power.

In a recent case of my own, an increase of  $3\frac{3}{4}$  inches in a man 21 years of age was found after five month's work, and this is by no means exceptional or even above the ordinary. In another case, after special movements, practiced for a month, the increase in expansive power or chest mobility was  $1\frac{1}{2}$  inches, while the method of breathing was much improved, and this with an expenditure of half an hour three times a week. Suppose that at each respiration one cubic inch of air were added by proper breathing, the result would be an increase of 15 cubic feet of air used to oxygenate the blood every twenty-four hours. That is well within the mark.

May it not be that in the search for a specific we are overlooking the natural method of controlling pulmonary tuberculosis and that we are unable to understand the language of nature because it is so simple.

In children who have poorly developed chests with hereditary tendencies toward tuberculosis, a course of special exercises would be valuable, conducted somewhat as follows. Take careful measurements of the chest and extremities, strength tests, lung capacity, heart and respiration. With this data in mind, give a course designed to act more particularly on the respiratory system, deep breathing with special exercise for the external respiratory muscles, correct positions in standing, walking and sitting. Repeat the tests every month or two, and at the end of a course, the patient can go back to the physician with the progress shown in black figures, which are worth a dozen opinions.

By carrying on work in this way, facts would accumulate, general rules would shape themselves, and the whole question would be put on a firm scientific basis very different from the disjointed results and inaccurate observations it has had so often in the past.

Wm. A. Edwards advises massage and movement in chorea. He says : If the child be violent it should be held supine upon a mattress for 10 or 15 minutes, while a masseur applies gentle stroking with the palms over the entire body, gradually increasing the time to an hour, repeated every three days. In a short time passive movements, added to overcome tension of antagonistic muscles, and in from eight to ten days voluntary movements, next week gymnastic exercises should be introduced, simple in form, combined with simple voluntary movements of the limbs and trunk. The patient should imitate the movements of the masseur, so as to exercise the will power ; rhythmic movements, timed by music, are of inestimable value for the exercise of the child's will and brain. . . . The case requires much kindness, persuasion and encouragement. Blache states that of 108 cases of chorea in childhood treated as above, not one relapsed.

Almost every surgeon who has investigated the subject of lateral curvature of the spine, has endeavoured by a theory, differing from that of his predecessors to account for three almost constant facts :—1. Rotation of the vertebræ. 2. Con-

vexity of the dorsal curve to the right, and the lumbar to the left. 3. 90 per cent. of cases are in girls.

Lonsdale, beside mentioning debility and faulty habits of dress, lays great stress on the greater expansion of the right lung and the solid resistance of the underlying liver as being a cause of rotation of the ribs.

Barwell put the blame on the exaggerated use of the right serratus magnus, as well as faulty position and the carrying of weights by the right arm and shoulder. Brodhurst attaches great importance to stays and corsets as a cause. Other causes mentioned are spastic contraction, paralysis of muscles, weight of the heart on the left side, debility etc. All unite however in believing that one of the main causes, apart from those purely mechanical, such as shortening of one leg, old empyema or pleurisy; is muscular debility, inducing faulty positions of sitting and standing. The causes given are many, but the number of methods of treatment is what Dr. Osler would term "suspiciously large." Division of the erectores spinal muscles, has been practised with disastrous results. Mechanical appliances of all degrees of complexity and rigidity have been designed, forcible extension, recumbancy, the prone position, slings and sloping seats, have had their innings, elastic jackets have been worn, while massage, calisthenics and gymnastics have been used with varying degrees of success.

Before any treatment can be accurately tested certain measurements and tests should be made to give a starting point and enable the surgeon to check off his results. Lateral deviation of the spinous processes at various levels, rotation of the ribs and lumbar vertebrae; flexibility in rotation should be ascertained.

The difficulties in the way of getting accurate measurements are great, but graphic tracings first described by Dr. Seaver, by means of an adaptation of the pantograph may be obtained which are perhaps more accurate than any means that I have as yet seen designed. By this means cross sections of the body at different levels can be obtained showing the rotation at these levels. Lateral deviation is shown in such a way that a glance will show its amount at any level.

Flexibility in rotation from side to side can be measured by a graduated half circle placed on the sternum registering the amount of lateral twisting to right and left.

By taking these with other set data, and repeating from time to time, progress under any system of treatment could be determined with comparative accuracy.

The treatment would vary with the case, but certain broad lines have been laid down by Bernard Roth, who published in 1885, (*British Medical Journal*), his results in a series of 200 consecutive cases. The main feature of his treatment is the discarding of all mechanical supports and the strengthening of the spinal muscles by special exercises. He corrects faulty positions in sitting and standing, uses manipulation and duplicate movements in the corrected position with free gymnastics daily, all directed to equalize the development of the spinal muscles and improve the general muscular system. Under this treatment the general health is found to improve, pain ceases, and the maximum of improvement possible is attained in from three to six months of daily treatment, lasting about three quarters of an hour, followed by rest supine of ten minutes.

This course of treatment is followed by a home prescription to be taken for a year to ensure permanence of the improvement. He says:—"The conscientious carrying out of this treatment for about one hour daily will enable surgeons to cure or improve the vast majority of cases of lateral curvature of the spine on an average in three months from the commencement of the treatment."

The object of this paper is merely to indicate in outline as briefly as possible the place that exercise should occupy in medicine. In doing so, many things, important perhaps, have had to be left out or barely noticed. In a paper of this length which has to cover such an enormous field, one can but touch upon, without dipping into, a few of the most important principles.

These notes are like a skeleton which the hearer must clothe for himself, with its sinews, muscles, nerves, and vessels, and skin, before he can appreciate the fulness of its outlines. If I have succeeded in stimulating an interest in this department of medicine, too often left to the ignorant empiricist, the quack and professional rubber, I shall feel that I have my reward.

## SALINE ENEMATA IN HÆMORRHAGE.\*

By JOHN A. HUTCHINSON, M.D., Cote St. Antoine, P.Q.

I wish here to refer to a case of severe post-partum hæmorrhage occurring in practice a short time ago, which illustrates the beneficial effects of saline enemata.

I was called late one night to see Mrs. S., who had an abortion at the second month, and had bled profusely for several hours. On examination she was found to be much collapsed, and presented the appearance of one near death from loss of blood. She was very blanched and anæmic, with a pulse of 140, weak and thready, sighing respiration and partially unconscious. The bleeding had stopped, but there was danger of death unless something was done to aid the circulation.

It seemed a favourable case for transfusion, and I spoke to Dr. Roddick with a view to having this done. He advised, before doing this, to try saline enemata. This I did and used the same solution as is now used for transfusion into a vein or artery, that is,

Sodium chloride grs. xcii.

Liquor soda  $\overline{m \ x \ x}$

Aqua O ii

Half of this solution was injected and well retained, and in two hours after the other pint was given and retained.

The temperature of the solution was 98°F.

The hips were raised to allow the fluid to gravitate up the bowels.

A marked improvement resulted, both in pulse and respiration. A slight rigor ensued, followed by rise of temperature. Since that time the patient has made a good recovery.

The advantage of this treatment over transfusion is very apparent in the fact that it can be done at once, as the solution is easily obtained, and also easily administered, while there is some danger in transfusion, particularly as air may get into the vein or artery. Again it requires some training in manipulation that the every day practitioner may not have, and the necessary instruments are not always at hand when wanted.

\* Read before the Montreal Medico-Chirurgical Society, November 3rd, 1893.

Since this case occurred, I find in the British Med. Journal of the 14th of October, that Warman reports the treating of 28 cases of post-partum hæmorrhage in this way. In his cases he only uses a teaspoonful of salt to a quart of water, and at the temperature of the room, which he thinks causes it to have a more rapid effect than at a higher temperature.

He also states that the saline solution has marked hæmostatic properties, and recommends its use in all hæmorrhages except those from intestines.

I have reported this case because I think that in emergencies of this kind, this treatment has not received the attention its importance demands. Most cases are treated by stimulants and nourishment, if transfusion is not done, but by the absorption of this saline in the bowel, the blood vessels are quickly supplied with a solution that certainly takes the place of the lost blood at a critical time for the patient.

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### NOTES ON BAZIN'S DISEASE.

By RANKINE DAWSON, M.D.

Many years ago (1861) Mr. Bazin described, under the name of *Erythème induré des Scrofuleux*, an affection resembling in its early stages erythema nodosum, from which, however, it differs in several essential particulars. Mr. Bazin says:—"Erythema induratum of a scrofulous nature is not a rare affection; it is characterized by red, indurated patches, the redness disappearing momentarily under pressure. There is no itching, and pressure causes little or no pain. This affection is observed usually upon the legs, more often in girls than in boys." Bazin does not, however, appear to have followed up the cases from which his description is taken, nor does he seem to have recognized the ulcers which frequently result from these indolent, deep-seated nodules, as being a characteristic phase of this malady. During recent years this affection has attracted a good deal of attention amongst dermatologists, both in Paris and London; numerous cases have been reported, and a more definite and accurate conception of the affection obtained.

In the past, the indurated nodules, as well as the resulting ulcers, have almost always been taken for syphilitic lesions, which they very closely resemble, false and injurious inferences as to past history or inheritance have been drawn, and prolonged courses of treatment undertaken quite unnecessarily. It is evidently important, then, that the existence of this affection should be widely known, and that it should be borne in mind when cases of multiple ulceration of the legs, especially in young people, having the clinical appearances of syphilis, present themselves for diagnosis and treatment.

Referring to this point, Dr. Calcott Fox, in a paper read before the British Medical Association at its recent meeting, said:—"The distinction from syphilitic gummata is certainly very difficult, and it is only by observation of the case, and consideration of all the circumstances, that a correct opinion can be formed. The persistence of individual lesions, the prolonged course of the affection as a whole, the number of the lesions, the frequency in young girls, and the bilateral localization on the legs, are the chief points against syphilis."

As already mentioned, the disease resembles erythema nodosum, but may be diagnosed from it by keeping in view the following points of difference:—(1) The tendency the lesions have to ulcerate. This is not the case in erythema nodosum. (2) The position of the lesions, which are generally on the posterior aspect of the leg, over the gastrocnemius muscle. (3) The lesions themselves are more circumscribed, firmer, and of a somewhat different colour. (4) There are no constitutional symptoms and no local tenderness.

To what extent it is necessary to differentiate this affection from scrofulo-tuberculous gummata is at present uncertain. As Bazin's name implies, it is no doubt closely allied to tubercular troubles of other kinds, and will probably come to be classed as one more clinical form of the great group of affections for which the tubercle bacillus is directly or indirectly responsible.

As regards treatment, Mr. Hutchinson says:—"In my early cases I tried many different methods of treatment, and laid par-

ticular stress on confinement to a recumbent position. I have found, however, that the latter measure is by no means always needful, and I have recently cured several cases while allowing the patient to walk about. An ointment containing four or five grains of bisulphuret of mercury to the ounce is, according to my experience, almost a specific, and exceeds in value all other measures." Others who have had this disease to treat recommend rest, pressure by means of firm bandaging, combined with tonics and cod liver oil. As a rule, the affection is a very indolent one, and may continue for months without apparent improvement, in spite of any treatment adopted.

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## ONE HUNDRED CASES IN THE CORONER'S COURT OF MONTREAL, 1893.

BY WYATT JOHNSTON, M.D., MONTREAL.

(Continued.)

### III.—DEATH FROM INJURIES (40 CASES).

Death was due to homicide in 1 case, to suicide in 3 cases, and to accidents in 36 cases.

The injuries were caused as follows:—

Homicide by blow, 1; railway accidents, 10; street railway accidents, 2; runaway horse, 2; toboggan, 1; other vehicles, 1; elevator accidents, 3; machinery accident, 1; falling bodies, 5; falls from a height, 2; firearms, 3; explosion, 1; burns, 4; asphyxia by food, 1; hæmorrhage from umbilical cord, 1; surgical operation, 1; hanging, 1. Total, 40.

The causes of death were:—

Fracture of skull (alone, or associated with multiple injuries) 14; penetrating wound of brain, 1; dislocation of neck, 3; gunshot wound of head, 2; gunshot wound of neck, 1; crush of chest, 2; rupture of abdominal organs, 2; peritonitis, 1; umbilical hæmorrhage, 1; asphyxia, 2; burns, 4; concussion, shock and doubtful causes, 5.

### FRACTURE OF SKULL (14 CASES).

CASE 7.—C. S., aged 22, brakeman, was missing after train had passed through Victoria Bridge, Feb. 6, 1893. The body was found just at the entrance to the bridge.

*External Examination.*—Both legs lacerated and crushed, being nearly detached from body. Body and arms uninjured. Thin, reddish, bloody fluid oozing from right ear. Laceration of scalp in right posterior region, beneath beneath which mobility and crepitus of the parietal bone can be felt. Tissues about left orbit ecchymosed.

*Verdict*—*Accidental death.*

Apparently the blow on the left side of the face caused him to lose his balance and fall between the cars, the skull being fractured in striking the floor of the bridge, and the wheels passing over the legs.

CASE 12.—*Tobogganing Accident—Fracture of the Base.*—J. C., a girl aged 16, thrown violently against a telegraph pole on Côte des Neiges Hill, Feb. 11, 1893.

*External Examination.*—Bloody fluid oozing from nose and right ear. Marked cutis anserina. No crepitation can be felt in cranial bones. Slight prominence of second curvical vertebrae, with increased mobility of neck. No dislocation made out. Diffuse ecchymosis over right mastoid region.

*Verdict*—*Accidental death.*

In this case death was stated to have been instantaneous, which is rare in fractures of the base of the skull.

CASE 15.—*Elevator Accident.*—J. C. B., male, aged 59. Head caught between elevator and wall of shaft, March 1st, 1893. Fell downwards into lower compartment of elevator, where the body was found.

*External Examination.*—Blood stains about head and hands; clothing blood-stained. In right temporal region extensive ecchymosis; an extensive depressed fracture felt at junction of right frontal and temporal bones. In the occipital region a large (4" diameter) triangular flap of the scalp is torn nearly off, being attached by its apex only. Left thumb nearly torn from the hand.

*Verdict*—*Accidental death.*

Being asked in what precise phases of the accident the various injuries were received, I had to decline to make any positive statement from external examination only.

CASE 70.—*Fracture of Skull—Dural Hæmorrhage—Electric Shock (?)*.—A. B., aged 40. Motor-man on Montreal Street Railway. While climbing to the roof of a standing trolley car to make some repairs, was seen to let go his hold and fall backwards, striking his head on the ground. Went home and told his wife that he had received an electric shock, which caused him to let go. Soon afterwards became comatose, and died within 24 hours of the accident.

*Autopsy* 40 hours after death, July 3, 1893. Body a good deal decomposed. Veins of skin form distinct blue-black lines, especially in the upper part of body. Tissues about neck, crepitant. In right occipital

region two parchmented areas of skin, each  $\frac{3}{4}$  in. diameter, with hæmorrhages on the surface. No other external marks of violence. No appearance resembling a burn.

Head—Extensive ecchymosis beneath the scalp in occipital region, extending down towards the neck. The extravasated blood is completely coagulated.

Extending directly downwards from a point one inch below the left half of the lambdoidal suture to the *foramen magnum* is a fracture involving both tables of the occipital bone. Near the lower end of the fracture, a branch fracture, confined to the inner table, but splintering it in places, extends to the petrous bone on the right side. The broken edges of the bone are covered with blood.

Between the dura and the occipital bone, on the left side, is a solid dark blood clot as large as a hen's egg, the origin of which is seen to be a laceration in the posterior wall of the left lateral sinus. A blood clot the size of a walnut lies external to the pia on the inferior surface of the left lobe of the cerebellum. A little soft clot and fluid blood is seen over the base of the brain, extending anteriorly to the optic chiasm. There is superficial laceration of the under surface of both orbital lobes, with numerous hæmorrhagic points. Brain substance elsewhere normal. Ventricles of brain free from blood. No blood in 4th ventricle. Vessels not atheromatous.

Blood in heart chiefly fluid *but coagulated upon exposure*. Organs appear healthy and free from ecchymosis.

*Verdict—Accidental death.*

In this case the medico-legal question to be determined was whether the fall was caused by an electric shock. I stated that there was no evidence of a burn such as would result from contact with a "live" wire of high voltage, and that if a slight shock received from some part of the car had caused the fall, there was no post-mortem evidence of it.

CASE 50.—*Homicide from Effects of a Blow—Fracture of Bone—Meningitis.*—J. H., a boy aged 16, was stated to be struck on the head by another boy, with a lacrosse stick; fell over and became unconscious, with oozing of serum from the right ear. Symptoms of meningitis set in on the seventh day, and death occurred ten days after the injury.

*Autopsy*, made jointly with Dr. George Villeneuve, 32 hours after death, on June 19th, 1893.

Incision made by undertakers for injecting the body; in the right brachial artery and in peritoneum.

No external evidences of contusion or other injury about the head. A yellowish dried crust in right auditory meatus. A few small ecchymoses of the skin over right thigh, left knee and right iliac crest.

On removing scalp, a narrow line of ecchymosis extends for 4 inches horizontally along the lower border of the right parietal bone, averaging  $\frac{1}{2}$  inch in width, and situated in the subcutaneous tissue, immediately

beneath the skin. No evidences of decolorization of the extravasated blood. A line of fracture extends downwards from the upper edge of the right squamo-temporal bone into the glenoid fossa.

Beneath the subcutaneous ecchymosis is a reddish area  $\frac{1}{2}$  inch in diameter lying in the bone near the coronal suture. On removing the skull cap and brain this is seen to correspond to a straight linear fracture  $\frac{3}{4}$  in. long, near which is a curved fracture 1 inch long, both confined to the inner table of the right parietal bone. At this point there is a circumscribed spot of ecchymosis outside the dura. The thickness of the fractured bone averages from 3 to 5 mm. The fracture of the temporal bone is seen to extend across the petrous bone into the basi-sphenoid.

The pia is opaque and yellowish, with abundant sticky lymph over the base and convolutions. This exudation is most abundant on the left side, especially near the left Casserian ganglion, where it is distinctly purulent. The subjacent bone and nasal cavities are normal.

No suppuration in either tympanic cavity. Microscopic examination of the arteries of the pia shows an intense cellular arteritis. No appearance of tubercles.

Beyond the styptic effects of the chloride of zinc embalming fluid, the other organs were normal.

*Conclusions.*—From the condition found at the autopsy, in spite of some peculiarities in the lesions found, there seems to be no reasonable doubt that death has been due to a meningitis which has resulted from a blow upon the right side of the head, fracturing the skull.

The case was presented before the grand jury, who found a No Bill.

An interesting point was the fact that the meningitis was most severe on the side opposite the fracture, and that it arose without any intervening suppuration of the middle ear.

Upon being questioned as to whether the injury was the result directly of the blow or of the fall which followed it, we were inclined to consider the linear ecchymosis beneath the scalp, with a distinct fracture and ecchymosis of the dura lying directly beneath it, sufficient evidence that the fracture showed the effects of a blow from a narrow, smooth instrument. There are probably few more difficult points arising in coroners' cases than are involved in deciding whether fractures are due to the effects of a blow or a fall when both are shown to have taken place, as almost any form of fracture of the skull may result from a fall.

The absence of any signs of decolorization in the ecchymoses, presumably produced ten days previously, was also confusing.

Finally, the injection of the body, officiously made by the undertaker, further tended to complicate matters.

The clinical history of the case was kindly furnished by Dr. J. M. Elder.

CASE 48.—*Fracture of the Skull and Body of 11th Dorsal Vertebra, without external signs.*—D. M., sailor, aged 23, fell 18 feet into the hold of a ship, striking the head upon some iron rails. Was removed immediately, but was found to be breathing his last.

*External Examination.*—Whitish foam about nostrils. Skin of nose lacerated and left nasal bone broken; a lacerated and contused wound in R. parietal region.

*Internal Examination.*—In right parietal region the subcutaneous tissue of the scalp and the pericranium are extensively ecchymosed, the extravasated blood extending behind the right ear down the sheath of the right sterno-mastoid.

A line of fracture extends downwards along the posterior border of the right parietal bone, and through the occipital bone to the *foramen magnum*, and a branch fracture extends through the mastoid and petrous bone into the sphenoidal fissure.

Beneath the pia an extensive diffused hæmorrhage fills the sulci over the right parietal region, the inner surface of the right hemisphere, the lower surface of the left temporal lobe, and the upper surface of the cerebellum. Punctate hæmorrhages are seen in the ganglia at the base.

Heart normal. Lungs crepitant; intensely congested, with small hæmorrhagic foci scattered through their substances. Numerous small emphysematous bubbles beneath the pleuræ. Bronchi filled with fine reddish froth. A large area of hæmorrhage behind the aorta just above the diaphragm on the right side, extending behind the pleura. The body of the 11th vertebra is seen to be fractured, and at this point there is hæmorrhage into the spinal canal, but the cord is apparently neither lacerated nor compressed.

Spleen large and soft; weighs 300 grammes. Other organs normal.

An interesting point in this case was that the only injuries detected, on external examination, were the injury to the nose and the laceration of the scalp. No signs of the fracture of the vertebra or skull could be made out externally.

The condition of the spleen possibly explained the fact that the man walked in a remarkably stupid manner into the hatchway, although there was a plank across it, by suggesting that he may have been in the early stage of some acute febrile disorder.

*Fracture of Skull with Multiple Crushing Injuries.*

J. T. and L. L., workmen employed in tearing down the walls of a building destroyed by fire, were killed by a wall falling upon them.

*External Examination* Feb. 7, 1893, 4 hours after death, which was nearly instantaneous.

CASE 8.—J. T.—A little clotted blood about nostrils. The skull felt to be extensively shattered, so that the head can be moulded into any desired shape. The superior maxilla felt to be fractured on both sides. Chest flattened on left side and crepitus felt over 7th, 8th and 9th ribs in left axillary region.

Comminuted fracture of left humerus in upper third; dislocation of left shoulder, with separation of coracoid process. Extensive laceration of left thigh on anterior surface from Poupert's ligament nearly to knee. Compound fracture of left femur, tibia and fibula. Luxation of right knee.

*Verdict*—Accidental death.

CASE 9.—L. L.—Blood oozing from ears. A depressed comminuted fracture of the left parietal bone near the vertex, with laceration of the scalp. Fracture of right superior maxilla and nasal bones. Fracture of right radius in middle third.

*Verdict*—Accidental death.

An interesting point in connection with cases 9 and 48 was that the nasal bones were fractured, an injury often absent in the ordinary "broken nose."

CASE 20.—M. O., aged 25, killed by falling of a derrick at the Wellington Street bridge, March 25th, 1893.

*External Examination*.—Extensive comminuted fracture of skull, extending over the vertex from the level of coronal suture to occipital prominence, and laterally to lower border of parietal bones. Blood oozing from nose and R. ear. Fracture of R. tibia in lower third, and of R. fibula in upper third.

*Verdict*—Accidental death.

CASE 21.—P. G., aged 37, killed by same accident. Numerous subcutaneous ecchymoses on side of trunk, right arm and right leg. Serous bloody fluid about nose and both ears. Right side of chest flattened, and crepitus is felt in right axillary region from the level of third rib downwards. Fracture of right thigh in lower third, and compound fracture of left tibia and fibula in upper third.

*Verdict*—Accidental death.

CASE 75.—*Crush of Head and Chest*.—A. B., employé of Royal Electric Co. Body was found extensively lacerated, having apparently been entangled in the machinery. No witness to accident.

*External Examination*, July 12th, 1893. Scratches about hands, from which hæmorrhage has taken place. Comminuted fracture felt in occipital region. Blood oozing from both ears.

A jagged, lacerated wound extends from mid sternum over left shoulder down to the left infra scapular region, severing the four upper left costal cartilages and the clavicle from the sternum. The left subclavian artery and veins are divided, and the left pleura and pericardium

torn open, leaving the breast exposed. Cavities of heart moderately full.

*Verdict—Accidental death.*

As bleeding had occurred from the scratches on the hands, it seemed as if those injuries had possibly been produced before the others. The nature of the force which cut open the thorax from above suggested a rapidly revolving belt, but no positive statement can be made on that point.

CASE 78.—*Fracture of Skull and Multiple Crushing Injuries.*—J. W. pedlar, killed while crossing the railway track, by a passing express train.

*External Examination, July 14, 1893.* Lacerated scalp wound about 3 inches in length, extending upward and backward from above left ear. Comminuted fracture of skull felt in occipital region. Fracture of ribs in left lower axillary region, and fracture of left side of pelvis. Fracture of left upper arm and right ankle.

*Verdict—Accidental death.*

CASE 33.—Margaret M., killed by descent of an elevator while she was gazing into the shaft, May 9, 1893.

*External Examination.*—Head almost decapitated, being attached merely by a strip of skin at occiput. Dislocation and crushing of cervical vertebrae. Cervical vessels severed. Bruising and excoriation of skin about upper part of sternum.

*Verdict—Accidental death.*

CASE 23.—F. S., aged 63, female. Knocked down and trampled on by a runaway horse.

*External Examination.*—Bleeding from ears, nose, and mouth. Bones of face crushed. Upper part of skull freely movable on the base.

*Verdict—Accidental death.*

CASE 45.—*Railway Injuries giving rise to suspicion of Homicide by Blows—Autopsy.*—P. L., aged 30, a lineman employed by the Bell Telephone Company, left his home to string some wires in the country. Two days later his dead body was sent to his relations with injunctions "not to open the coffin, as the corpse was so horribly mangled by a railway accident as to be scarcely recognizable as that of a human being." The friends learning that the watch had been found on the railway track, ten miles from the spot where the body was found, suspected foul play, and upon opening the coffin found no signs of injury to the body except a severe wound at the back of the head. An inquest was accordingly demanded.

*Autopsy* made jointly by Dr. George Villeneuve and myself on June 1st, 1893.

*External Examination.*—The body was considerably decomposed. The clothing was smeared with blood, but not much torn or disarranged. The right external ear filled with clotted blood. A lacerated scalp

wound extended from the right frontal eminence to behind the right ear. The bones of the skull were exposed, and showed a small smear of black grease. A vertical scalp wound 1 inch long was found in the left parietal region. The bones of the skull could be felt to be crushed in, and were movable on palpation.

Abrasions were found on the right forehead, chin, right cheek, right upper arm and fore arm, left thigh, left patella, left popliteal region and left shin. These were free from ecchymosis.

Several contused areas of ecchymosis were found about the fingers of the left hand.

*Internal Examination.*—A very extensive fracture of the skull was found in the right temporo-parietal region, the bones being shattered into fragments not larger than 2" in diameter for an area of over a hand's breadth. The sagittal, coronal and lambdoidal sutures were separated. A line of fracture extended downwards to the left jugular fossa from the left extremity of the lambdoid suture. From the right mastoid region a fracture extended downwards across the right petrous bone and basi-sphenoid to the left sphenoidal fissure. A third line of fracture extended down from the junction of the right coronal and sagittal sutures across the right orbital plate to the sella turcica.

The brain cortex was much lacerated in the right parietal region and about the posterior limb of the sylvian fissure, the right supra-marginal and upper temporal convolutions being most injured. Corresponding to this region, the dura was torn. No appearance of severe hæmorrhage at this point. The rest of the brain appeared normal.

In pericardium several ounces of dark fluid blood. Near the tip of the auricular appendix was a ragged laceration  $\frac{1}{2}$  an inch long. The heart was otherwise normal. Lungs normal. Larynx and organs of neck normal.

Spleen normal. Half a pint of fluid blood in peritoneum. About the right kidney an extensive extravasation of blood behind the peritoneum. Substance of kidney lacerated near the hilus. (This condition was apparently due to a fracture of the lumbar vertebrae.) Left kidney intact.

Liver presents five lacerations running parallel along the upper surface of the right lobe.

Stomach and intestines showed no signs of injury.

*Conclusions.*—The appearance of the lesions correspond with a railway injury, but not with homicide by blows.

Subsequently evidence was obtained that the deceased had been seen to be struck by a passing train. The extent of the internal abdominal injuries was very striking, and accounted for the absence of severe hæmorrhage from the wound of the head. The presence of ecchymosis about the contusions of the left hand showed that they must have been produced prior to the other injuries, but no evidence was forthcoming as to how this had happened.

## FRACTURE OF SKULL—PENETRATING WOUND OF THE BRAIN.

CASE 10.—J. H., aged 35, stoker in gas works, killed from effects of the explosion of a receiver.

*External Examination.* Feb. 8th, 1893. Clothing dusty, not torn or burnt. Skull felt to be fractured near the posterior extremity of the sagittal suture. Fragments movable and give crepitus. In right temporal region,  $1\frac{1}{2}$  inch above and 1 inch anterior to external auditory meatus, is a deep lacerated wound 1 inch in length, leading directly to a jagged opening in the temporal bone large enough to admit the little finger. No foreign body near the orifice of the wound. The brain substance is seen to be lacerated. A little clotted blood in the nostrils.

*Conclusions.*—The injuries appear sufficient to explain the death. Their exact nature cannot be made out without an autopsy.

*Verdict*—*Accidental death.*

## OTHER INJURIES FROM CRUSHING (4 CASES).

CASE 22.—*Rupture of Liver.—Peritonitis.*—J. B. V., aged 30, when riding on top of a load of compressed hay, was squeezed between the load and the roof of an archway in the Shedden stables. Died in Notre Dame hospital 4 days later with symptoms of septic peritonitis.

*Autopsy* on March 27th, 1893, 30 hours after death. Abdomen swollen and dark-coloured. No external signs of injury.

In peritoneal cavity three pints of dark, slightly fetid, bloody fluid. In places slight roughening of the peritoneum from recent lymph. In hypochondria greenish brown staining, apparently from bile pigment. *Liver*—An irregular, wedge-shaped line of rupture extends 3 inches backward from the anterior edge of the right lobe, just to the left of the gall bladder. The edges of the wound are rounded and retracted, and covered with fibrinous exudation. On making sections across the line of rupture a wedge-shaped area of hæmorrhage is seen to penetrate the liver substance almost to the posterior border. In the centre of this, posterior to the rupture is a pale anæmic, wedge-shaped area corresponding to which is a grayish thrombus occluding a large branch of the portal vein, and loosely attached to the intima. Liver substance looks normal.

Gall bladder contains a tablespoonful of clear grayish mucus. Common gall and cystic ducts intact and pervious. Intestines contain grayish fæces apparently free from bile.

Kidneys show slight parenchymatous swelling, affecting chiefly the columns of Bertini. Other organs normal.

Unfortunately this specimen could not be obtained for further study, but evidently the presence of bile in the peritoneum, and its absence from the intestine without any injury to the common or cystic ducts, pointed to a laceration of one of the larger hepatic ducts. The complete absence of external bruises is not at all uncommon in injuries of abdominal viscera. The verdict was "*accidental death.*"

CASE 98.—*Extensive General Crushing and Laceration.*—A. B., aged 20, brakeman, fell between cars and was run over by two trains.

*External Examination* made August 17, 1893. The head and right arm have been completely severed from the trunk. The left upper arm is broken in several places. A large area of parchmentation occupies the right side of the chest and abdomen. A transverse lacerated wound penetrating skin and cellular tissue above each knee. The lungs and heart are exposed by the laceration in upper part of thorax.

*Verdict*—*Accidental death.*

CASE 89.—*Extensive Crush of Chest and Abdomen.*—M. D., aged 25, was run over by a train near St. Henri, while walking on the track. Death was instantaneous.

*External Examination* made August 3rd, 1893, 20 hours after death. Body in state of marked and advanced decomposition, attracting swarms of flies. Rigor mortis in smaller joints. Chest and abdomen greenish. Chest completely crushed in: all the ribs apparently being fractured. Multiple fractures of both legs and arms. A few cuts and scratches about face and head.

*Verdict*—*Accidental death.*

In this case the unusually early and rapid decomposition was doubtless due to rupture of the intestines and escape of their contents.

CASE 36.—*Crush of Chest.*—H. T. A., aged 35, struck by an engine near Montreal Junction. Apparently paid no attention to repeated whistles blown.

*External Examination*, May 22, 1893. Right side of thorax depressed in the axillary and infra-scapular regions. The tissues in this region felt to be emphysematous. The ribs from the 5th to 8th are felt to be fractured just anterior to their angles. An area of ecchymosis, 3" in diameter, in the right flank. Several deep scratches on forehead and nose.

*Verdict*—*Accidental death.*

Owing to the question being raised of the man being deaf, I examined the tympanum by means of a speculum and mirror, while making the external examination. There was no perforation, but the drum looked dull, livid, and had very much the appearance met with in chronic catarrhal otitis media. On examining, for the purpose of control, the drums of two other bodies lying at the same time in the mortuary (both patients had been treated in hospital and were stated not to be deaf) the same dull and sunken appearance of the drum was noted, so that it appeared to be merely a post-mortem change.

## DISLOCATION OF NECK AND FRACTURE OF CERVICAL VERTEBRÆ (3 CASES).

CASE 5.—J. V., while driving in a sleigh across a railway track, was struck by the tender of an engine running backwards at the rate of 35 miles an hour. The body was thrown a distance of about 30 feet. Death occurred in a few moments.

*External Examination*, Feb. 1st, 1893. On moving the head, undue mobility and crepitation felt in upper cervical region, about level of 3rd cervical vertebra. Fracture of left thigh. No other injuries.

*Verdict*—*Accidental death*.

CASE 6.—A. B., female, killed in same accident, body being thrown a distance of 25 feet. Blood oozing from nostrils. A scalp wound 3" long in left parietal region. On moving and rotating head, great mobility with crepitus made out at the level of the 4th cervical vertebra.

Compound comminuted fracture of right leg.

*Verdict*—*Accidental death*.

CASE 71.—H. M., male, aged 84. Fell off a load of hay and was picked up dead. No external marks of violence.

Great lateral mobility with distinct crepitus felt in upper part of the neck.

*Verdict*—*Accidental death*.

In localities where the crowning glory of an inquest lies in the avoidance of an autopsy, the unfortunate medical witness is so often at a loss to account satisfactorily for the death, that it becomes a source of great comfort when he meets with an injury demonstrable by external examination and necessarily fatal. The three cases of this nature occurring in this series of one hundred were, on this account, highly appreciated, though of little general interest.

It would add to the accuracy of coroners' verdicts, and conduce to the economical working of coroners' courts, if this easily recognized and painless mode of death were more generally utilized by the subjects of coroners' inquests.

## INJURIES BY FIREARMS (3 CASES).

CASE 92.—*Revolver Wound of Left Side of Head.—Suicide.—Sclerotic Changes in Brain.*—J. A., aged 60, was involved in some business troubles; also complained of pains at the back of the head for some months past. Was noticed by his family to be altered in character, and to have lost his memory. Latterly he kept on repeating the same thing over and over. He was found dead in his office on the morning of August 9th, 1893, with a 38-calibre revolver lying close beside him.

*Autopsy*, made about 12 hours after death.—Body of a well-nourished, elderly man. Fully dressed. Nothing about body or clothing to indicate a struggle.

On the left side of the head, 1 inch above the external auditory meatus, is a ragged, lacerated wound, 1 inch in diameter. The deeper parts of the wound are blackened, but there is no powder tattooing, blackening, or burning of the hair or skin near the wound.

On the right side of the head, 2 inches above the meatus, is a ragged, lacerated wound,  $1\frac{1}{2}$  inches in diameter, free from blackening or powder grains.

Both the wounds communicate directly with the brain. A quantity of clotted blood is seen about the clothing near the neck. The hair is matted with dried blood.

The vault of the cranium can be felt on palpation to be extensively shattered. Extensive ecchymosis about the left orbit. Conjunctivæ clear.

On removing scalp, extensive ecchymosis is seen beneath. The skull-cap can be almost entirely removed without the aid of a saw, as a complete line of fracture crosses the frontal bone and runs back across the temporal bone as far as the occiput on the left side and the mastoid on the right, leaving only a narrow bridge of bone to be sawn through.

Besides this circular line of fracture is a line extending up from it in front and passing along parallel to the sagittal suture. A fracture also branches downwards on each side into the temporal fossa. There is much comminution of the bones near the wounds in the front-parietal region. A fracture extends across the base of the skull through the left orbital plate and right petrous bone. Dura mater extensively lacerated in both parietal regions. The falx perforated in lower part.

Brain substance shattered and lacerated throughout the central portion of both hemispheres, and shows extensive hæmorrhage, the origin of which cannot be traced to any one point. The lacerated brain substance contains powder grains. No trace of the bullet found.

Corpus callosum and floor of the lateral ventricles extensively lacerated. Fourth ventricle filled with blood clot. Patches of sclerosis detected in the more intact portions of the white substance of the hemispheres. Anterior part of brain not specially involved in this sclerotic change. Pia not excessively thickened, and strips with ease from convolutions. White matter of upper cervical cord shows translucent gray appearance; under microscope shows areas of sclerosis in posterior and lateral columns.

Spinal dura intact. Heart and lungs normal. Spleen and kidneys normal. Bladder contains 8 oz. of clear, pale urine. Intestines normal. Stomach contains a cupful of half-digested food. Mucosa normal. Liver normal. Mouth contains a little clotted blood. Some bloody froth in larynx.

The capsule of right shoulder joint thickened, and the synovial fluid in excess. Cartilage of head of right humerus softened and slightly eroded and rough near the margin. Right elbow and wrist joints normal. Left shoulder joint normal.

The condition of the right shoulder joint is of interest in accounting for a wound evidently made from the left side, although the deceased was a right-handed man. It was shown by the evidence that he had sprained his right arm some months before, and since then had not been able to use it freely.

The sclerotic changes in the brain and spinal cord were of interest as evidence of actual nervous disorder, though not those commonly found in cases of suicidal mania.

The verdict rendered was "*Suicide while insane.*"

CASE 58.—I. P., aged 30, was stated to have committed suicide by discharging a shotgun into the right side of his head, on June 17th, 1893.

*External Examination.*—Clotted blood mixed with disintegrated brain matter over the right shoulder and right side of head. A large lacerated wound  $1\frac{1}{2}$  inches in diameter involves the anterior half of the right ear and the adjacent skin of the cheek, and from it brain tissue protrudes. The edges of the wound are blackened, and a sooty-looking zone extends for 2 inches about the periphery. Hair about right ear singed. The whole region of the petrous bone appears shattered. The floor of the auditory meatus is intact. No wad or shot found. The bones of the skull can be felt to be fractured in many places, and the head can be moulded in any desired shape. On opening the mouth, superior maxilla and hard palate felt to be fractured on the right side. On the right forearm a sooty mark extends across the radial side, 3 inches above the wrist, the skin being scorched and the hairs singed.

The medical point of chief interest in this case was the line of powder smut across the radial surface of the right wrist, at a point where the skin would have been directly over the vent of the breech-loading shotgun used, had the deceased reached along the barrel to pull the trigger, after placing the muzzle against his head, as he was stated to have done by the chief witness at the inquest, who was present at the time of the suicide.

Verdict, "*Suicide while insane.*"

CASE 90.—J. P., aged 20, accidentally shot in the neck by an intoxicated friend with a shotgun, at 10 feet. Died almost instantly.

*External Examination,* August 5th, 1893.—Clothing about neck smeared with blood. In anterior region of neck, at level of larynx, is a large, deep, lacerated wound. The edges of the wound are inverted, and show powder tattooing and blackening for a distance of 1 inch from the wound. The wound is  $1\frac{1}{2}$  inches in diameter, and the larynx and trachea are torn open and seen to be filled with bloody froth. No isolated shot holes.

Situated  $3\frac{3}{4}$  inches distant from this wound, in a straight line, is a smaller ragged wound in the posterior part of the neck, in the right side, at the same level as the anterior wound. A fragment of muscle tissue protrudes posteriorly, and 3 grains of No. 4 shot were extracted.

The cervical vertebrae cannot be ascertained by palpation to be injured.

No other marks of violence.

*Conclusions.*—The body shows a severe shotgun wound, fired at a distance not exceeding a few feet from a point in front and slightly to the left. The exact nature and extent of the injuries cannot be determined without an autopsy.

*Verdict.*—“*Excusable homicide.*”

### PERITONITIS FOLLOWING SURGICAL OPERATIONS.

D. P., aged 30, consented to have exploratory laparotomy for gall stone performed, after being warned of a possibly fatal result, which followed a few days after the operation. The body showed no signs of jaundice. The abdomen much distended and tympanitic.

The suspicions of the friends had been aroused by certain incidents in the case, which, on inquiry, appeared to be innocent enough. There was no accusation of negligence and therefore, as the performance of the operation in the presence of four legally qualified practitioners showed it not to be of the nature of an unlawful act, the friends withdrew their demand for an inquest.

This case shows the advantage of preliminary medical inquiry in averting a groundless charge of malpractice.

In the event of any case of this kind requiring inquest, it might be well to employ a special jury, half being composed of medical men, to investigate the case. This practice has been followed in New York with excellent results.

### UMBILICAL HÆMORRHAGE. (?)

CASE 25.—*Autopsy* upon the body of a new-born infant found at St. Louis de Mile End, April 9th, 1893. Body of a female.

Length, 13 inches. No signs of violence. A little vernix present in the armpits and groins. The umbilical cord has been encircled with a piece of knitting wool, tied in a loose knot, but too loosely to compress it. The ligature can be readily slipped off without untying it. The cord appears to have been cut. The umbilical vein and arteries contain a little soft clot. Large intestines filled with meconium. Stomach contains air, but no traces of food. Small intestines empty, and sink in water. The lungs light pink; are fully distended; float as a whole, and also when cut in pieces, except at the base. Portions compressed between boards still float. They are anæmic. The heart is flabby and collapsed, and its cavities practically empty of blood. Fœtal orifices persist. Spleen, kidneys, liver and brain are all intensely anæmic and almost bloodless. Ossification in sternum and astragalus; none in lower epiphysis of femur.

*Conclusions.*—The body is that of a fœtus at about the seventh month. Death has apparently been due to hæmorrhage from the umbilical cord. There are no signs of violence. The child has breathed.

*Verdict*—*Accidental death.*

The conclusion as to the cause of death seemed justified by the intensely anæmic condition of all the organs.

### DEATH BY ASPHYXIA (2 CASES).

*Suicide by Hanging.*—M. S., aged 40, male. Had made several attempts to commit suicide. Was sent for an ocean voyage in charge of an attendant. Exhibited symptoms of mania and was very despondent. Was constantly picking at and scratching himself. While entering the port of Montreal escaped from his attendant and entered a water-closet, where he succeeded in hanging himself upon a hook by means of a line made by his braces, a necktie and a piece of marline. Upon breaking open the door a few minutes later, he was found to be dead.

*External Examination, June 27, 1893.* Body of a heavy, muscular man. On the head, left hand, left shin, sacrum and left hip are dried blood crusts, some of which have been detached, leaving a slight scar. Conjunctivæ pale; not ecchymosed. Passing under the chin, just over the thyroid cartilage, and terminating in the hair over the occiput, is a narrow livid groove 3 mm. in diameter bordered by an ecchymotic zone. Viscid greyish fluid exudes from meatus urethrae on pressure.

*Verdict*—*Suicide by hanging, while insane.*

*Asphyxia by Food.*—G. M., aged 25. Found dead in bed. Supposed to have committed suicide, being out of work. The body was stated to have been found lying half out of bed, with the arms thrown out.

*Autopsy, May 29th, 1892, about 20 hours after death.*—Bloody froth about nose and mouth. Numerous ecchymotic spots in skin of back. Intense lividity. Stomach half full of partly digested food. Some food in œsophagus and pharynx. All the organs normal, with the exception of the lungs, which were almost coal-black in colour and had a fetid, sour, disagreeable smell. On section, they seem to be intensely engorged and to present numerous large and small areas of extravasation of blood. The mucosa of bronchi and trachea intensely congested, dark red in colour, and contain bloody froth. Numerous food particles corresponding with the contents of the stomach found in the larynx, trachea, bronchi, and in the most minute bronchioles. The larynx does not appear to be obstructed.

*Conclusion.*—Death has been caused by the accidental entrance of food into the air passages.

*Verdict*—*Accidental death.*

Penetration of food particles into the air passages forms a common post mortem change, but the intense hæmorrhagic engorgement of the lungs showed that the condition had arisen during life.

A noticeable feature was the presence of post mortem digestion of the lung parenchyma in places.

It is difficult to imagine how this condition could have arisen except in consequence of an accident, probably of the nature of regurgitation of food while partially asleep.

#### DEATH FROM EFFECTS OF BURNS (4 CASES).

CASE 26.—P. H., aged 50. While watching beside the dead body of his wife, the drapery of the bier took fire. The body was found near the door after the fire was extinguished.

*External Examination.* 18 hours p. m.—Clothing much burnt. Face scorched, and hair and eyebrows singed. No blistering. Over back of hands and arms the skin is raised in great flakes, beneath which the cutis is much reddened. Rigor mortis marked. Cutis anserina present.

It was supposed that the deceased had lost his life while trying to extinguish the fire. Some of the curtains with which the room was hung had been pulled down, and the burns of the hands were possibly obtained in doing this.

##### *Verdict—Accidental death.*

The dead body of the wife was charred and scorched in places, and the cracked condition of the skin, without true vesication, gave an excellent demonstration of the distinctive appearance of burns on a dead body.

In connection with this case it may be noted that a signed certificate of death from "Tumour" was made out by a Montreal physician *two months* (!) before the wife's death, the date being left blank. This is death certification with a vengeance.

CASE 38.—H. B., girl, aged 9.

CASE 39.—A. B., boy, aged 7.

CASE 40.—H. B., boy, aged 2.

These three children were fatally burned by a straw mattress taking fire and partly burning the house.

*External Examination.* May 25th, 1893.—The bodies were all scorched and the clothing burned. In all cases the heads, hands and backs of the arms and legs showed severe burning of the skin. Signs of inflammatory vesication were present in all the bodies except that of the baby.

##### *Verdict—Accidental death.*

The youngest child had apparently been suffocated before the burning was severe.

## DEATH FROM CONCUSSION, SHOCK, AND DOUBTFUL CAUSES (6 CASES).

CASE 35.—J. O., aged 25, fireman, seen to be killed by a coping stone which fell from a roof and crushed in his helmet. Death instantaneous.

*External Examination*, May 11, 1893, 20 hours after death. Ecchymosis of both conjunctivæ. No fracture of skull can be felt. Increased mobility in lower part of neck without positive signs or fracture or dislocation. Laceration and contusion of scalp over left temple and in occipital region.

*Conclusions*.—There are evidences of severe contusions about the head. The cause of death cannot be stated from external examination.

*Verdict*—*Accidental death*.

CASE 51.—P. F., aged 50, seen to fall down the shaft of an elevator for a distance of over 20 feet. Picked up unconscious, and died before reaching the hospital.

*External Examination*, June 7th, 1893. A large scalp wound over the vertex. Cartilage of nose lacerated and nearly detached. Fracture of left tibia and fibula above the ankle. Abrasions on arms, legs and trunk.

*Conclusions*.—The examination shows signs of severe external injuries. The cause of death cannot be stated without making an autopsy.

*Verdict*—*Accidental death*.

CASE 16.—C. W., aged 24, switchman. Supposed to have fallen on the rails. Was picked up after a car wheel had passed over his legs. Brought to hospital in profound condition of shock. No evidence of severe hæmorrhage. Died within a few hours.

*External Examination*, March 15th, 1893. In upper lumbar region a feeling of fulness on palpation, of which the cause cannot be made out.

Both feet and ankles, together with the adjacent parts of tibia and fibula, greatly crushed and lacerated, being almost severed from the body. Skin not greatly blanched.

*Conclusions*.—There are severe marks of violence from crushing of the feet and ankles, with possibly an injury to the vertebræ. The external examination does not show the cause of death.

*Verdict*—*Accidental death*.

CASE 1.—A. B., aged 40., street-car driver. His car collided with a railway train at a grade crossing and was completely wrecked. Died half an hour after reaching the Notre Dame hospital on Jan. 8th, 1893.

*External Examination*, 48 hours after death. Greenish tinge about neck and abdomen. Large lacerated wound extending from right gluteal region downwards along outer surface of thigh and upwards over iliac crest into abdominal wall. A probe can be passed through this wound into the ischio-rectal fossa, and the right ischium is felt to be fractured. A distinct fæcal odour noticed about the wound.

*Verdict*—*Accidental death*.

There had apparently been internal hæmorrhage from the vessels of the pelvis, with rupture of the bowel.

CASE 91.—A. M., aged 55. Was struck by an engine moving very slowly, and knocked into a cattle guard at the side of a crossing. Was able to walk home. Complained of pain in the right leg and right side. Refused to see a physician, but was treated by a quack. Stayed in bed off and on for 8 days, and afterwards went about. Four days later became unconscious, on Aug. 5th, 1893, and died during the night. Before death a physician was summoned, but was unable to make a diagnosis.

*External Examination*, Aug. 8, 1893.—Marbling of superficial veins. Emphysema about neck and right side. The lower ribs on right side feel less resistant than normal, and give indistinct crepitation. Beyond a slight abrasion of left hip, which has nearly healed, no external signs of injury.

*Conclusions*.—The cause of death cannot be determined without an autopsy. (No autopsy ordered.)

*Verdict*—*Death from the results of his own imprudence.*

CASE 28.—I. H., a boy, aged 13. While out riding, horse took fright. The boy fell from saddle and was dragged along by the stirrup. Death occurred 36 hours later.

*Verdict*—*Accidental death.*

*Private Autopsy*, made after the inquest.—At the back of the head is a large lacerated wound, exposing the occipital bone for a distance of 3 inches. The edges look foul and dirty, and there is dirt in the deep tissues exposed. There is ecchymosis about the lower jaw on the right side.

Severe contusions and lacerations of the skin over the shoulders and lower abdomen. Fracture of the right thigh in middle third. Deep lacerated wound of left thigh in region of Hunter's canal. Femoral vessels not injured. Laceration of ulnar side of left wrist.

On removal of scalp, extensive subcutaneous œdema on right side in occipital and temporal regions. Cranial bones intact. Dura and pia normal. Brain tissue œdematous throughout, but free from hæmorrhage.

Lungs much congested. In left lower lobe puckering with several gritty, cheesy, encapsulated masses the size of beans, situated near the base. A similar mass near the root of the left lung. Pulmonary vessels free. Microscopically, no evidences of fat emboli.

Heart, spleen, kidneys, liver, stomach and intestines normal.

No thrombi or signs of injury in deep femoral vessels.

The time which had elapsed since the accident, while not excluding death from shock, makes it less probable.

In many of the above cases the manner of death was fairly evident from the testimony of non-medical eye-witnesses. It is just in the most obvious and simple cases, however, that neglect of the precaution of a careful medical examination leads to serious and expensive blunders, as was shown in a case of gunshot fracture of the skull, which I reported in a previous paper. An official medical examination, even in apparently simple cases, does not seem to be an unnecessary precaution, or one which can safely be neglected in any case.

## Retrospect Department.

### QUARTERLY RETROSPECT OF GYNÆCOLOGY.

PREPARED BY T. JOHNSON-ALLOWAY, M.D., MONTREAL.

*Ventrofixation of the Uterus, or Hysteropexy.*—Dr. LEITH NAPIER and Dr. SCHACHT have written a paper (*B. M. Jour.*, Oct. 14th, 1893) upon this subject. They describe the *lateral* and *median* methods. The lateral is justly regarded by them with disfavour. The median is the method recommended and adopted. They recommend, however, the passing of three sutures, and including the peritoneum, fascia and muscle, and passing these sutures with a Hagedorn needle. In regard to the three sutures, two of them are quite unnecessary; one, if properly placed, is quite sufficient. The Hagedorn needle should not be used, as it is dangerous from its property of making an incised wound in the uterus and causing hæmorrhage. One death has been reported from hæmorrhage on this account after the abdominal wound had been closed. A strong, round, fully curved needle, with abrupt trocar point, is the proper needle. It does not cut, but merely pushes the tissues aside. The sutures should not penetrate the muscle of the abdominal wall. The peritoneum only should be attached to the fundus. In the normal condition, the recti do not offer any assistance to the uterine supports, and if they are included in the suture, every movement of the body, involving movement of the recti, will pull upon the fundus of the uterus and cause pain. It also produces a rigid fixity of the uterus in suspension, which should be carefully avoided. Pregnancy following such an operation will cause great suffering from the same cause (traction on the recti), and probably abortion. When attached to the peritoneum alone, there is ample freedom, and not sufficient to allow the uterus to assume any but an anteverted position. The reviewer has been in the habit of operating in the following way: Drive the needle from below upwards through the peritoneum, close to the line of incision and close to the lower angle of incision, on the right side; then drive it through the fundus on the posterior face of the uterus,

from right to left; then pass needle through the peritoneum on the left side, in a similar manner as on the right side, and at a corresponding place. It will now be seen that when this suture is tied the cut edges of the peritoneum and the punctured surfaces of the uterus are brought together, and therefore plastic union must be very good and strong. Silkworm gut forms the best material. The mortality recorded by Dr. Napier is very high (2 deaths in 20 cases), but further experience will undoubtedly reduce this. It will, however, tend to impress operators with the necessity for caution. It will never, to our mind, take the place of Alexander's operation, as they are not applicable to the same class of cases. Where the uterus is mobile, non-adherent, the pulling up and shortening of the "guy ropes" of the broad ligaments will always give better results than hysteropexy, for very obvious reasons. But the many difficulties encountered in performing Alexander's operation will ever be a drawback to it and render it unpopular. In the reviewer's experience, however, (now over 100 cases), there has been no method of procedure which has given him more gratifying results. Dr. Napier's paper is an admirable one, and well worth studying.

*Pelvic Neuralgia from Calcified Ovary.*—POLAILLORD (*Annales de Gynéc.*) reports a case of a patient 26 years of age who suffered from neuralgic pains in the right iliac fossa, and radiating to the right flank. They increased at the periods, which were regular. Ultimately they became constant. A hard mass was felt at the base of the right broad ligament. When touched, severe pain ensued. Abdominal section was performed. The mass was found fixed to the anterior wall of the pelvis, and was detached and removed, with the tube of that side fixed to the mass. The hard body weighed 75 grains. After removal the neuralgic pains disappeared and the patient recovered.

*Old Tubal Abortion.*—(*Am. Jour. Obst.*)—H. T. HANKS, on removing a fibroid from a patient aged 45, discovered unexpectedly the bones of a foetus at the bottom of the pelvis. On inquiry it was found that the patient had suffered from all the symptoms of tubal abortion four years before.

*Pelvic Abscess Tracking to Nates.*—Dr. WM. HARDMAN speaks of a case of his own, and also of one which was published by Launay in the *Gazette des Hôpitaux*. In this case the parametric phlegmon followed the gluteal artery through the sciatic notch and formed a large abscess under the gluteus maximus. Dr. Hardman states that this condition cannot be a very rare one, and cites a case of his own similar to the one published by Launay. The relationship of the sciatic nerve to the advancing phlegmon accounts for the severe radiating pains, and the great liability of such a condition being mistaken for neuralgia— notwithstanding the presence of persistent pyrexia,—and the patient half poisoned with quinine, is quite evident. In Dr. Hardman's case the patient had suffered many weeks of pain and pyrexia following confinement. There was gradual swelling and hardening of the right buttock, which eventually became a solid mass. The skin was œdematous and red, but no sign of pointing after persevering poulticing, and no sign of fluctuation could be made out. At last a bistoury was passed down, and pus evacuated and the cavity drained. The cavity communicated through the sciatic opening with the interior of the pelvis.—(*B. M. Jour.*, Oct. 28th, 1893).

*Plugging the Uterus in P. P. Hæmorrhage.*—SIEPEN delivered a woman of her twelfth child, using forceps. Severe flooding followed, which did not abate after removal of the placenta. He therefore plugged the uterine cavity with iodoform gauze. The vagina was tamponed with wool. The flooding ceased. Both tampons were removed in 24 hours. The patient made a good recovery.—(*Deut. Med. Woch.*, No. 21, 1893.)

*Symphysiotomy Four and One-Fourth Years after a Cæsarean Section.*—From Chrobak's clinic comes the report of this operation by REGNIER, the patient being one upon whom Breisky performed Cæsarean section over four years previously. The patient was rachitic, and was pregnant at term. Presentation transverse. Pelvis flat, rachitic. Ant. post diam.,  $7\frac{1}{2}$  c.m. Symphysiotomy performed. Child extracted manually. Two silver sutures were used to unite parts. Patient recovered.—(*Centralblatt für Gynäkologie*, 1893, No. 6).

*One Hundred and Twenty-Four Symphysiotomies.*—VARNIER (*Annales de Gynécologie et Obst.*) sums up the present status of symphysiotomy by tabulating 124 cases as follows:—Mothers—112 recovered, 12 died. Children—92 lived, 32 died. Of the mothers, 1 died from septicæmia, 1 of sphacelus of the vagina and vulva, 1 of cellulitis and peritonitis due to use of a saw and to forcible introduction of hand and arm, 1 of hæmorrhage and shock following operation.

*Conclusions*—1. The operation, properly performed, does not entail disorder of the sacro-iliac synchondroses.

2. In pelves not *extremely* contracted, the enlargement resulting from the operation is sufficient for a living child at term to pass through.

3. The dividing of the symphysis presents no great difficulties.

4. No dangerous venous hæmorrhage is likely to occur.

5. The anterior rents of the soft parts may be avoided if it is remembered that after section the inferior strait is oval transversely, and not of normal shape.

*Uretero-Ureteral Anastomosis.*—*Uretero-Ureterostomy.*—This is the title of a paper which our esteemed friend Dr. H. A. KELLY, of Baltimore, gives us in the *Johns Hopkins Bulletin* for October, 1893. To the ordinary reader it means that Dr. Kelly divided the ureter, passed one end into the other and secured it there by sutures, and the patient recovered without a bad symptom. The history of Dr. Kelly's case is as follows: A mulatto girl about 25 years of age. The diagnosis of a large myoma uteri was made. The tumour filled the pelvis and lower abdomen. Dr. Kelly first ligated the round ligaments and both ovarian arteries and veins, and then opened the broad ligament and pushed its layers aside, exposing the uterine vessels on the floor of the pelvis. At this juncture, a large, flat vessel, 1 cm. in diameter, was exposed for about 7 cm. of its length on the anterior surface of the lower pelvic mass. It closely resembled an enlarged vein. It was doubly ligated and cut. The error was apparent at once, as its patulous lumen and thick walls showed it to be the ureter. This enlargement was due to pressure of the tumour. After completing the removal of the

tumour, Dr. Kelly followed Van Hook's method of anastomosing the severed ureter, as follows: He tied the lower end of the divided ureter, and then made a slit in the ureter below the ligature, into which he invaginated the upper end by means of traction sutures. This is certainly the best of all other methods of dealing with this accident. It has been successfully tried on dogs. And after Dr. Kelly's successful case, Dr. Bloodgood carried out the same operation on a large dog, with success also.

*Ovariectomy in Japan.*—OMORI and SKEDA, of Fu Kuo Ka, Japan, report one hundred ovariectomies, with five deaths, two of which were from complications not due to the operation. Among the tumours, 36 were dermoid cysts—an unusual proportion, since Spencer Wells found only 22 in 1,000 ovariectomies. The authors can only explain their unique experience on the theory that Japanese women are unusually prone to develop dermoids.

*Employment of Iodoform in Abdominal Operations.*—TREVES (*Lancet*, June 10, 1893) publishes a valuable paper with the above title, of which the following is a brief extract:

Sir Joseph Lister, in his admirable address on the "Antiseptic Management of Wounds," published in the *Lancet* a few months ago, drew attention to the very peculiar antiseptic properties of iodoform. He showed that the drug had little, if any, influence over the growth of bacteria outside of the body, and that if it be dusted over sterilized cultivating jelly in a test tube, growth will take place from the organisms which are contained in the iodoform itself. He then proceeds to consider the question in the following words: "But, though such is the case, it is nevertheless unquestionably true that iodoform exercises a powerful antiseptic influence upon wounds. The most probable explanation of this apparent anomaly is that suggested by Behring, namely, that iodoform produces its beneficial effects not by acting directly upon the bacteria, but by inducing chemical changes in their toxic products. Behring has ascertained, as a matter of fact, that some of these toxins are altered chemically by iodoform, and at the same time rendered

harmless. Two of his experiments, performed in conjunction with DeRuyter, may be quoted in illustration. A ptomaine obtained from a culture of pyogenic micrococci killed a mouse in twelve hours when injected pure into the peritoneal cavity, but proved quite harmless under similar circumstances when mixed with a little iodoform. Again, a sample of decomposing pus, which had fatal effects when introduced unmixed into the peritoneal cavity of a mouse, had no influence whatever upon the health of the animal if treated with iodoform, which meanwhile left intact the pyogenic microbes."

*Ovariectomy with Pregnancy.*—FANCOURT BARNES, of London, reports the removal of a multilocular ovarian cyst in which there were adhesions of intestine to almost the whole surface of the cyst, and the intestine in a state of acute congestion. The tumour was found to spring from the left side of the uterus, which was enlarged about the size of a four months' pregnancy. The abdomen was washed out with clean, warm water, and the wound closed with silver sutures. The patient recovered without interruption of the pregnancy.

*Gynæcology in Breslau.*—(*Medical Press*, Sept. 20, 1893.)—Professor FRITSCH, of Breslau, has recently published a small volume on his gynæcological experience in the University Klinik of Breslau during 1891–2, and containing his matured views on various subjects. Of 66 ovariectomies performed during this period, 3 died from uncontrollable vomiting, 1 from pulmonary embolism, and 1 from narcosis. Of 37 laparomyotomies, 4 died, 2 from cardiac failure, 1 from secondary hæmorrhage, and 1 from ileus. Of 30 operations on the so-called adnexa, 6 died, 2 from cardiac failure, 1 from contracted kidney, 1 from septic peritonitis. All the laparotomies for extra-uterine gestation recovered, so that he has now a total of 23 such operations without a death. Fifteen ventro-fixations all recovered, and also 7 Cæsarean sections or Porro operations, and 1 case of abdominal hysterectomy for ruptured uterus.

Vaginal extirpation of the uterus for cancer was performed 27 times with 2 deaths, high cervical amputation 5 times with 5 recoveries, and the uterus was removed *per vaginam* 8 times

for hæmorrhagic metritis, with a successful result in all cases. Some of our readers will probably be surprised to find that German surgeons are obliged to resort to such a radical and mutilating operation for a disease that a little time and a little patience will almost invariably carry the patient safely through. But Professor Fritsch has long been known as an enterprising operator. Gynæcologists generally will be more likely to agree with him when he says that all ovarian tumours should be removed as soon as discovered, for the reasons that they are peculiarly liable to malignant degeneration and exposed to dangerous accidents. Malignant ovarian tumours should always be removed when practicable. He has succeeded in actually curing cases of solid carcinoma and sarcoma of the ovary. He would go even farther than this, however; in cases where the disease cannot be wholly removed he recommends the removal of as much of the tumour as possible, and this on the ground of his own experience. The patients are very much benefited by such partial operations, for not only does the ascites disappear, but the disease is more or less impeded in its progress. Peritonitis is not for Professor Fritsch a contra-indication for operation in ovarian tumour, but rather the contrary.

The indications for myomotomy are size of the tumour and hæmorrhage that render patients permanent invalids. In the case of suppurating myomata that cannot pass *per via naturales* he recommends abdominal hysterectomy. He has now abandoned the external pedicle treatment, but by preparatory ligaturing the pedicles diminished in size and left in the abdominal cavity. He enucleates only in the case of small tumours lying immediately beneath the surface, and removes the ovaries only in cases where the hæmorrhage has been such as to render a more radical operation advisable. As his familiarity with hysterectomy increases, he performs castration with proportionate diminishing frequency.

In the chapter on rupture of the uterus, Professor Fritsch, contrary to what might have been expected, does not advocate active measures, but, on the contrary, warns his readers against them—against even drainage. The patient must be kept per-

fectly still, and have opium in the first twenty-four hours every two hours, and afterward as required. The urine is drawn off with the catheter, and the patient has a heavy application over the abdomen, keeping perfectly still. An occlusive disinfecting pad is placed over the external genitals. The vagina itself remains without treatment. As every laparotomy has a weakening influence upon intestinal movement, toward which the author thinks it possible that the strong purgatives usually given before operation contribute, he feeds patients up even to the day of operation. If symptoms of paresis of the intestine then occur, he gives purgatives and enemata along with wine, even on the first and second days.

*The Development of Intra-Pelvic Treatment of the Stump After Hysterectomy for Fibroid Tumours.*—(Dr. J. RIDDLE GOFFE.) In this paper the author dwells upon the value of the operation described by him, which has the following features : (1) The large, distinct peritoneal flaps with which the stump and all traumatic tissue involved in the operation are buried beneath the peritoneal cavity ; 2) the transfixion of the stump inside these flaps ; and (3) the utilizing, when necessary, of the cervix as a draining tube. He tells that in 1891, Zweifel, of Leipzig, reported a series of fifty-one cases with two deaths, by a method that corresponds in all essential particulars with Dr. Goffe's method, thus giving a mortality of only four per cent. This is the best record made by any operator with any method, and puts the operation on a par with the success of ovariectomy. Competition for supremacy lies between this method of leaving the pedicle and total extirpation. The disadvantage of total extirpation is the technical difficulty of removing the cervix. By leaving the cervix as a stump the traumatic tissue is disposed of with all the nicety of a plastic operation, the parts are restored to their normal relations in the pelvis, and no raw surface is left to contract adhesions or produce obstruction. Statistics are strongly in favor of retention of the cervix. Fifty-one operations with only two deaths, a mortality of four per cent., and the last twenty-seven an unbroken series of successful cases, is the standard that is set for the total-extirpationists.

*The Significance of Vaginal Discharges.*—A leucorrhœa, inodorous or of mild odour, persisting during the climacteric, accompanied by increasing hæmorrhage, is suspicious, and demands investigation. A leucorrhœa, profuse, of peculiarly fetid odour, grumous, excoriating, appearing early or late during the climacteric, with profuse hæmorrhage, is reasonable evidence of cancer of the cervix. A leucorrhœa, moderate in amount, ill smelling (the peculiarly fetid odour of cancer of the cervix being absent), accompanied by hæmorrhage, suggests cancer of the corpus uteri. A leucorrhœal discharge, with hæmorrhage containing material like the washings of meat, is said to indicate sarcoma. A watery discharge, as a rule occurring during menstruation, odourless, or of little odour, persisting, accompanied by profuse hæmorrhage, indicates fibroids; with little or no hæmorrhage, polypi. Profuse bloody discharges coming on gradually with declining menstruation, ceasing usually with the menstrual flow, point to fibroids. Persistent profuse discharges of blood occurring spontaneously, arising from sudden exercise or coition, occurring as a rule after the menopause, indicate cancer. A gradually increasing amount of menstrual flow is suspicious, and needs investigation. Postclimacteric hæmorrhage in a fibroma of the uterus of long standing forms one of the principal grounds for the suspicion of sarcoma (Borner). The early recognition of malignant disease is demanded, and possible prevention of the fatal exhaustion which accompanies it by the administration of drugs, and the application of those methods which in a measure may be supposed to offset the terrific drain on the nervous system. Inasmuch as present experience shows that every removal of diseased tissue prolongs life, the importance of early diagnosis and treatment can hardly be over-estimated.

*Vaginal Hysterectomy and High Amputation in Carcinoma Uteri.*—TIPJAKOFF'S statistics are very good. (*Centralblatt für Gynäkol.*, 1892, No. 43.) In 50 cases of malignant disease of the uterus treated during the years 1891 and 1892, he performed simple amputation of the cervix 5 times, high amputation 25 times, and vaginal hysterectomy 20 times with-

out a death. He prefers complete extirpation for cervical disease, but regards it as indispensable that the uterus should be movable, and no evidence of infiltration in the parametria. He employs silk ligatures entirely, and nearly always uses gauze drainage, changing it on the fourth day.

*Cyst of the Pancreas Simulating Ovarian Cyst.*—HERSCHE, (*Weiner. Klin. Wochenschrift*, 1892, No. 15) reports the following case:—Multipara, aged 32, noticed for 5 years a tumour, size of an apple, to the left of the umbilicus, unaccompanied by pains or history of previous injury. It could be felt through the anterior vaginal fornix to the left of the uterus, and a distinct fluctuation could be obtained. The diagnosis of ovarian cyst was made and laparotomy performed. The pelvic organs were found to be normal. The tumour was a cyst, which sprung from the tail of the pancreas, and was so adherent to the vertebral column that it could not be enucleated. Nearly 2 quarts of chocolate-coloured fluid were withdrawn, and the edges of the cyst were stitched to those of the wound. The patient made a good recovery.

*Acute Peritonitis Following Rupture of a Dermoid Cyst in a Puerperal Patient.*—TISON. (*Revue Obstét. et Gynécolog.*, May, 1892,) reports the case of a primipara who had been delivered by forceps. On the following morning symptoms of peritonitis presented. The condition became worse, and the woman died 5½ days post-partum. The autopsy showed as cause, ruptured dermoid of left ovary.

*How is Tubercular Peritonitis Cured by Cœliotomy.*—BUMM, (*Centralblatt für Gynäkolog.*, No. 22, 1893,) analysed a case of tubercular peritonitis where, after opening the abdomen and draining off the ascitic fluid, the patient did well.

He believes that the operation sets up changes in which the tuberculous deposits undergo a round-cell infiltration and cicatricial change. The giant cells and epithelial elements disappear. The serous fluid greatly promotes the growth of the tubercle bacillus, and its removal is, therefore, also beneficial.

*Pelvic Disease in the Insane.*—ALICE BENNETT, M.D. (*Report to Board of Trustees State Hospital for the Insane*,

*Pennsylvania.*) The summary which is attached to this report is interesting, as it covers the debate which is at present going on, on this subject. The care of the insane certainly involves the same attention to their bodily ailments as is given to those in full mental vigour, and if, in any special case, any reasonable hope is offered that the insanity is caused by any removable condition, the operation, which may be in that way partially experimental, is just as much a matter of necessity as the trial of a new drug, or any other therapeutic or hygienic measure. The summary is as follows:—"Of six cases operated upon, three, or half the number, have perfectly recovered in body and mind; one is much improved; one is improved in some respects and not in others; one died. It is of interest to note that five of the six cases were of puerperal origin. I wish to emphasise the following facts:—(1.) That cases were selected for operation only after careful, searching examinations often repeated.

(2.) That each case selected was the subject of serious bodily disease, such as may properly be, and frequently is, treated by surgical interference, quite apart from the insanity, which is only an incident, or symptom, of the disease.

(3.) That in every case of operation performed, the consent of the nearest relative, or guardian, of the patient was obtained.

Finally, I believe that many cases now under our care and others to come, might be saved from years of physical suffering, from hopeless dementia by appropriate surgical treatment.

In other and similar cases in the future, I cannot reconcile it to my conscience to be merely a passive observer and recorder of their decline. If, in Pennsylvania, insanity is to be a barrier to the treatment of bodily diseases, it will be my duty to urge upon the guardians of these helpless ones, incapacitated from speaking on their own behalf, the necessity of taking their suffering charges outside the State limits, if need be, where they will be free to receive the treatment adapted to their needs."

## Pathological Reports.

### CANCEROUS TUMOUR ARISING FROM THE SUDORIPAROUS GLANDS.\*

By C. F. MARTIN, M.D.

The patient from whom the above growth was removed was a contractor, 45 years of age, having a history of previous good health, with the exception of occasional attacks of dyspepsia. No history of syphilis, nor was there any family history of cancer or other tumour.

Early in 1890, the patient observed, for the first time, a small lump in the left groin, in size equal to a bean, perfectly painless, which he attributed to a blow received in this region some months previously.

The growth was regarded as some affection of the sebaceous glands, and no treatment other than the application of iodine was adopted for over a year, there being no appreciable alteration in the character of the tumour during that time.

Towards the end of 1892 it gradually increased in size, and was now for the first time painful, the patient at times suffering intensely. The skin too showed signs of irritation and became adherent to the growth. This condition became progressively worse and removal was recommended and performed November, 1893, by Dr. Roddick, who forthwith sent the tumour to the McGill Pathological Laboratory.

On examination the growth was found irregularly spherical in shape,  $1\frac{1}{2}$  inches in diameter. On section it offered considerable resistance to the knife, while on the cut surface were seen numerous small points from which a greyish turbid fluid escaped. This fluid examined under the microscope presented masses of irregularly rounded or oval cells, slightly larger than pus cells, and many undergoing fatty and granular degeneration.

Stained sections of the tumour cut so as to include the adherent skin, showed the epidermis to be only slightly affected, there being but a slight proliferation of the epithelium, while beneath

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\* Shown before the Montreal Medico-Chirurgical Society, Nov. 17th, 1893.

it was increased fibrous tissue, a condition of chronic inflammation. Beneath this, in the subcutaneous tissue, was seen the tumour proper, presenting the usual appearance of a simple carcinoma, masses of large irregular cells amid extensive areas of fibrous tissue, in an alveolar arrangement.

On closer inspection of the parts, it was found that the growth took its origin from the epithelial lining of the sudoriparous glands, in whose ducts could be seen the various stages of proliferation of cells, while in the neighboring regions were the appearances of an alveolar cancer. The sebaceous glands presented no abnormal appearance, nor was there any evidence to point to the origin of the tumour, other than that suggested.

Although many cases of adenoma of the sweat glands are said to have been falsely regarded as carcinomatous, there is, however, in the present instance so typical an appearance of an alveolar carcinoma that such an error is quite impossible and the tumour cannot be regarded other than as a cancer arising from the sudoriparous glands.

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### Reviews and Notices of Books.

#### Syllabus of Lectures on the Practice of Surgery.

Arranged in conformity with the American Text-Book of Surgery. By N. SENN, M.D., PH. D., LL.D., Chicago. Professor of the Practice of Surgery and Clinical Surgery in Rush Medical College; Professor of Surgery in the Chicago Polyclinic; Attending Surgeon to Presbyterian Hospital; Surgeon-in-Chief St. Joseph's Hospital; President Association of Military Surgeons of the United States; Ex-President American Surgical Association; Honorary member of the Academy of Medicine of Mexico; Honorary Fellow College of Physicians in Philadelphia; Corresponding Member Harveian Society, London; Honorary Member Medical Society of Edinburgh; Life Member Congress of German Surgeons; Member of the American Medical Association, etc., 221 pages, price \$2.00.

W. B. Saunders, 925 Walnut Street, Philadelphia, 1894.

This is intended by the author as a short guide to teachers of surgery, a sort of skeleton to be clothed by them according

to their personal bias; and as a help to the student by presenting the main facts in so many words, thus indicating the important points. As the heading declares, it is arranged in conformity with the "American Text-Book of Surgery," so that the student has a ready aid in getting up his work. By using the "Syllabus" as a guide and reading the matter up more fully in his text-book, he is prevented from wasting his time over non-essential details. It is a matter to be regretted that the proof reading has not been more thoroughly done, the mistakes quite altering the sense of certain parts. For instance on page 81, we notice the word "marked" instead of "masked," and on the following page we see "abduction" twice instead of "adduction." With such mistakes remedied, it will prove a useful book, both for teachers and students, especially as it comes from the pen of so accomplished and experienced a teacher as Dr. Senn.

**A Guide to the Public Medical Services**, containing information of appointments in the Home, Naval, Army, West Coast of Africa, Indian and Colonial Medical Services, compiled from official sources by Alexander S. Faulkner, Surgeon-Major, Indian Medical Service, London, H. K. Lewis, 1893, pp. 72, price 2s.

The scope of this work is indicated by the title. In it information regarding the wording of applications is given and to whom they should be addressed. Also the rate of pay, pensions, rank, etc. The information is reliable, being gathered from official sources, and with the permission of the Comptroller of Her Majesty's Stationery Office. The book is specially to be recommended to all who wish to enter the medical services of the British Government.

E. B. Treat, New York, announces the following for early publication:—

**A System of Legal Medicine**, A Complete Work of Reference for Medical and Legal Practitioners by Allan McLane Hamilton, M.D., of New York, and Lawrence Godkin, Esq., of the New York Bar, assisted by Thirty Collaborators of recognised ability. In two royal octavo volumes of about 700 pages each. Fully illustrated.

The great need of a Standard American Work on Medical Jurisprudence has long been felt; and this work gives abun-

dant promise of being just what the Medical and Legal profession have so long wanted. Every department will be thoroughly and reliably treated.

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### Bibliography.

- The Successful Management of Inebriety Without Secrecy in Therapeutics.** By C. H. HUGHES, M.D., St. Louis. Reprint from *The Alienist and Neurologist*, St. Louis, Jan., 1894.
- The Relations of Urinary Conditions to Gynæcological Surgery.** By CHARLES P. NOBLE, M.D. Reprint from *American Medico-Surgical Bulletin*, Oct., 1893.
- Report of the Kensington Hospital for Women.** From October 10th, 1892, to October 9th, 1893. Philadelphia.
- The Causation of the Diseases of Women.** By CHARLES P. NOBLE, M.D., Philadelphia. Reprinted from *The Journal of the American Medical Association*, Sept. 16th, 1893. Read in the Section of Obstetrics and Diseases of Women, at the Forty-fourth Annual Meeting of the American Medical Association.
- Report of a Year's Work in Minor Gynæcological Surgery in the Kensington Hospital for Women, Philadelphia.** By CHARLES P. NOBLE, M.D., Surgeon-in-Chief. Reprint from the Transactions of *The Philadelphia County Medical Society*. Read Oct., 25th, 1893.
- Report of Two Years Work in Abdominal Surgery at the Kensington Hospital for Women, Philadelphia.** By CHARLES P. NOBLE, M.D., Surgeon-in-Chief. Reprinted from *The International Medical Magazine* for Dec., 1893.

**Society Proceedings.****THE MONTREAL MEDICO-CHIRURGICAL SOCIETY.**

*Stated Meeting, Oct. 20th, 1893.*

**JAMES BELL, M.D., PRESIDENT, IN THE CHAIR.**

Drs. H. B. Carmichael, C. F. Martin, P. J. Hayes, and T. P. Shaw were elected as ordinary members.

*Enucleation of Tumour of the Thyroid Gland.*—DR. SHEPHERD related two cases of this operation.

The first was performed on July 5th, 1893, by cutting through the capsule after ligating the thyroid arteries. The tumour was readily shelled out and the hæmorrhage was trifling. The growth had been rapid and had caused increasing difficulty of breathing. In the second case, operated on September 29th, 1893, the growth was larger and extended below the clavicle, but was easily shelled out. Attached to it were a number of vessels spreading out like the branches of a tree, but none of them required tying. In the dissecting room he had recently seen a similar tumour which he had been able, easily to shell out. After this operation there was no danger of any œdema, and enucleation was likely to be the operation of the future.

The PRESIDENT remarked that in both Dr. Shepherd's cases the growths were cystic. He had seen Kraské enucleate an adenoid goitre extending below the clavicle. It had shelled out quite easily.

*Fibroid Tumour of the Uterus* Dr. LAPHORN SMITH showed a specimen which he had removed from an unmarried lady aged 34 years. The bowels had always been regular—an exceptional circumstance in such cases. A few weeks ago her legs became swollen. On examination, a diffuse fibroid tumour was found occupying the posterior wall of the uterus. The transverse diameter of uterine cavity was increased. Patient was anæmic. Abdominal hysterectomy was performed on October 2nd, 1893, the uterus being transfixed at the level of the internal os. No complications. Highest temperature was  $100\frac{1}{2}^{\circ}$  in mouth. The stump was dressed with boracic acid and was free from all unpleasant odour. Peritoneum, linea alba and skin were sutured separately. Convalescence was good.

*Small fibroid tumours of the uterus and broad ligaments*, Dr. Wm. GARDNER exhibited this specimen removed from Mrs. L., aged 42, married 13 years, sent to him by Dr. W. Grant Stewart. The operation was exceptionally difficult owing to adhesion of the entire omentum to the anterior abdominal wall. Two nodular myomata were enucleated from the right broad ligament, the ovaries and tubes removed, and the uterus amputated by the flap method after ligating the uterine arteries. There was considerable oozing. A glass drain was introduced. Four hours later hæmorrhage commenced, but was checked by pouring a sterile solution of perchloride of iron into the tube. The tube was removed in 48 hours and recovery was steady. The growths in the broad ligament appeared to be distinct from the uterus.

*Grape Tuberculosis of the Peritoneum*, Dr. ADAMI exhibited a specimen received from Dr. Gardner.

Dr. Gardner had recently performed an exploratory laparotomy upon a young woman, where upon opening the abdomen, the intestines omentum and the parietal peritoneum were found to be studded with nodules varying in size from a small pea to that of a grape. There must have been more than a thousand of these new growths, which were white, firm and globular. No large conglomerate growth could be found in connection with the ovaries, uterus, intestines or other organs. In removing a few of the growths from the mesentery they were easily separated from the surrounding tissue, and upon microscopic examination exhibited the characteristics of tubercles. The masses were subserous, and were composed of tubercles of a peculiarly chronic type, many showing central necrosis, although the caseating masses did not coalesce, while all were surrounded with well formed layers of fibrous tissues. There were numerous giant cells, and further study demonstrated the presence of numerous tubercle bacilli. Dr. Adami described this as "grape tuberculosis" from its similarity to the "grape disease" or tuberculosis of cattle. This is a chronic form of tuberculosis. He exhibited the liver of a calf just received by him which upon its surface showed similar grape like masses of tubercles.

Dr. GARDNER stated that the patient had been sent to him by Dr. Ewing, of Hawkesbury. The nodular masses and thick-

oned omentum could be made out by palpation. After watching the case for three weeks tuberculosis was suspected, there being physical signs in the lungs and a rise of one degree or more in the evening temperature. Operation was performed, as experience had taught that peritoneal tuberculosis was a remediable condition.

Dr. SHEPHERD referred to a man under his care three or four years ago, where the temperature reached  $104^{\circ}$  daily for several weeks and hardness could be felt through the abdominal walls. On operation he had found a condition almost identical with the specimen shown. Some of the masses were examined microscopically and pronounced tuberculous. From the day of operation, he commenced to improve. The temperature soon fell, and a year later he had gained twenty pounds in weight.

Dr. MILLS thought the benefit was explainable through the effect of the operation upon the nervous system thus indirectly changing the metabolism of the whole organism.

Dr. SMITH thought the improvement might be due to the irritation caused by the entrance of air.

Dr. LAFLEUR was surprised to find this subject regarded as new. Dr. Osler in his monograph on tuberculous peritonitis states that through miliary tuberculosis does not get well, chronic forms always improve. Ordinary puncture does not have the same effect as incision. He considered that spontaneous healing of peritoneal tuberculosis also took place.

Dr. ADAM considered that the "shock" which follows upon abdominal incision sufficed to explain the retrogression of the tubercles. It is well known that exposure of the peritoneum leads to an inflammatory condition of the same, to dilatation of the vessels and increased blood supply. As Professor Roy had recently shown in "shock" produced by various means, the specific gravity of the blood rises rapidly and is accompanied by increased exudation into the peritoneal cavity and dilatation of the mesentery and intestinal vessels. He held that with this inflammatory or sub-inflammatory condition there was increased nutrition of the tubercular areas, improved state of the cells and thereby arrested advance of the tubercular process, and cicatricial tissue developed so as to encapsule the tubercles. In the chronic cases such as that exhibited by

him there was already a tendency to this, so that slightly increased vascularity and improved nutrition would turn the scale in favour of the organism and against the micro-organism.

Dr. F. W. CAMPBELL thought that the system could be permanently influenced by shock and gave illustrations in support of this view.

*Ovarian Dermoid.*—Dr. ADAMI exhibited a large dermoid which had been sent to him by Dr. W. Gardner. The tumour measured six inches in diameter; the walls outside showed membranous adhesions. Upon opening the cyst was found to be filled with thick fluid with fatty particles floating in it, and when this had escaped the cavity was seen to contain a large amount of fatty material and debris, and a relatively very large quantity of loose hair tending to be arranged in balls. The walls were irregularly thickened and in them was a large bone of irregular shape, consisting of a main portion  $2\frac{1}{4}$  in. in length and  $\frac{1}{2}$  in. in thickness. From this at one extremity projected two wings, of which the larger was 3 in. long, while the smaller bore a clump of three well developed teeth projecting into the cyst. At the other extremity was given off a line of three small flattened bony plates united together by fibrous tissue, in all  $2\frac{1}{2}$  in. long. The main mass of bone was hollow, containing towards its outer surface a subsidiary cyst also bearing hair. Into it projected from the bony floor a cystic glandular mass. This large bony mass could easily be felt upon abdominal palpation before the operation. While small bony developments in ovarian dermoids are not uncommon, it is extremely rare to obtain so large a mass as the one here described.

Dr. WM. GARDNER stated that clinically the only point of interest was that the torsion of the pedicle was not extreme enough to interfere with the circulation.

*Fibroid tumour from the sheath of the Femoral artery, with secondary growth within the femur*—Dr. ADAMI This tumour had been removed by Dr. Roddick, who finding upon his first attempt at simple removal that it was intimately connected with the sheath of the lower end of the femoral artery, determined to amputate the leg of the patient, an elderly lady, and cut across the femur at the junction of the upper and middle thirds of the bone. The tumour reached

Dr. Adami in bad condition, having accidentally been laid aside. Its structure was that of a slow growing spindle celled sarcoma, which in parts was more truly fibromatous, and which throughout showed a tendency to a fasciate arrangement of the constituent cells. No secondary growth had been made out anywhere, but upon making a longitudinal section of the removed femur there was discovered a white mass, the size of a Barcelona nut, lying somewhat loosely in the medulla of what corresponded to the lower part of the middle third of the bone, and this upon microscopic examination was seen to be of sarcomatous nature, being formed of spindle cells, of typical form towards the periphery, but more internally possessing nuclei which might at first sight be mistaken for those of a myoma, their length being remarkable.

*Perforation of the Femoral artery and vein in Hunter's canal by a bullet wound.*—Dr. BELL. On Sept. 16th, 1893, the patient, a boy, was shot in the thigh by a 16 calibre ball. On bandaging the bleeding ceased, but the pain in the thigh prevented walking. A few days later he entered hospital, when a fusiform swelling in the region of Hunter's canal was observed. There was no diffuse pulsation, but a very loud bruit on auscultation. One and a half inches of both vessels were removed. On the fifth day pulsation could be felt in the posterior tibial artery.

*Appendicitis.*—Dr. JAMES BELL exhibited specimens from the following seven cases:

1. Recurrent case. Operation three weeks after the second attack. Perforation with local abscess.

2. Operation 18 hours after the onset. Appendix greatly dilated and quite gangrenous.

3. Operation 48 hours after onset. Widespread abdominal pain. The appendix looked normal externally, but was full of grumous bloody fluid.

The adjoining lymph glands were enlarged and soft and the peritoneum oedematous. It appeared to be a case of early catharrhal appendicitis with severe lymphangitis.

4. Operation 50 hours after onset. Appendix gangrenous.

5. Operation 41 hours after onset. Appendix perforated and gangrenous.

6. Operation one week after onset. Appendix perforated. The patient was in a septic condition and subsequently died.

7. Operation two weeks after onset. Appendix perforated with local abscess. The patient died apparently from toxæmia rather than septicæmia.

Of the gangrenous cases none had died, and of the catarrhal cases, two died; so that the milder forms appeared to be by no means so far from danger as is generally thought. The marked symptoms in gangrenous cases lead to early operation while the milder forms are neglected.

Dr. SHEPHERD referred to a case where the appendix was apparently only a little thickened. Dr. Johnston had found it filled with pus and blood. He had been unfortunate with his gangrenous cases, three having died unrelieved by the operation. Operation may be performed too early, before there is a line of demarcation formed.

*Enlarged glands pressing upon the trachea from a case of Hodgkin's disease.*—Dr. FINLEY exhibited the specimens obtained at an autopsy upon a man aged 27, and gave an account of the case. (The patient had been previously brought before the society in Oct. 1890, by the late Dr. R. L. MacDonnell, and the case had been published in the *International Clinics for Oct. 1891.*)

The disease had lasted 7 years. The earliest symptom was the occurrence of urgent attacks of dyspnoea. After an interval of two years these attacks recurred and enlargement of the cervical lymph glands was noted. The spleen was then enlarged. The removal of some glands from behind the sternum by Dr. Shepherd, gave relief. In 1891 there was stridor and dyspnoea, with enlargement of the cervical and axillary lymph glands the size of which varied considerably from time to time. In Dec. '92, the inguinal glands enlarged. Six months before death the man became very weak and anæmic, though temporary improvement followed the administration of Fowler's solution. In June '92, the blood count gave 3,317,000 red cells, with white cells 1:50, mostly polynuclear. In Dec. '92, the red cells were 2,571,000, no leucocytosis. In June '93, there was effusion into left pleura, and the patient died in orthopnoea. At the autopsy body was emaciated, and showed (arsenical?) pigmentation of skin. The trachea surrounded by a cluster of enlarged glands as big as a fetal head. Lumen of trachea compressed to a mere chink and mucosa eroded.

Some of the glands presented softened centres. Retro-peritoneal and pelvic glands enlarged to masses of considerable size. Spleen three times normal size. Growth infiltrated lower lobe of left lung. Six secondary nodules in right lung. Bone marrow of ribs and sternum grayish red. The seven years' duration of the case was remarkable. In 50 cases tabulated by Gowers only one exceeded 5 years. Osler gives the duration as from 3 to 4 months to as many years. Possibly the continued use of arsenic had lengthened life.

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*Stated Meeting, Nov. 3rd, 1893.*

JAMES BELL, M.D., PRESIDENT, IN THE CHAIR.

Drs. G. A. Berwick and J. T. Reid were elected members of the Society.

*Removal of Gasserian Ganglion for facial neuralgia*—Dr. JAMES BELL exhibited a woman upon whom he had performed this operation for intractable facial neuralgia. Krause's operation was performed, an incision being made from the external angular process to point in front of the tragus of the ear. The zygoma was removed with bone forceps. In trephining the skull the middle meningeal artery was seized. It ran in a foramen, and therefore some bone had to be chipped away. The dura was separated from the bone down to the petrous region, the brain being held away with the finger. The second and third branches of the fifth nerve were divided at the foramina, and reflected backward with the Gasserian ganglion till the trunk of the uerve could be cut and the ganglion and attached nerves dragged away with the forceps. To familiarize himself with the operation he had practised it on the cadaver. The risks of operation were (1) wounding the adjacent vessels and (2) trophic changes in the eye-ball. To avoid the latter the eyelids were sutured for a few days. Except for loss of power of the temporal muscle, paralysis of one side of the face, and slight giddiness lasting a few weeks there were no bad symptoms, and she had been free of pain since the operation. Previously the nerve had been stretched without any relief being obtained. In the operation known as "Rose's" the foramen ovale is approached from the base of the skull by an incision over the parotid region. This operation

is more difficult. Five cases are reported by Mr. Rose and six are reported of Krause's operation—which should really be called Hartley's operation, Hartley, of New York, being the first to perform it. It was too early to judge fully of the results, but cases were reported free of pain after 22 months where stretching and external neurotomy had failed.

*Discussion*—Dr. STEWART had seen the patient and regarded medical treatment as useless. The pain was intense and had been worse since the stretching. It was hard to say whether the cure would be permanent.

Dr. MILLS thought that from the important nerves involved the dizziness noted might be owing to the operation.

Dr. LAPHORN SMITH had found benefit result from constitutional treatment by iron and tonics in cases of tic.

Dr. BELL, in reply to Dr. Mills, said that dizziness is common in persons confined to bed after any operation.

*Sub-diaphragmatic abscess*—Dr. ADAMI related a case of this nature due to suppuration around a cancer of the lower part of the œsophagus (To be published in March number.)

*Papillomatous Cyst of the Ovary—Ovario-Hysterectomy*—Dr. LAPHORN SMITH showed this specimen which he had removed from Mrs. E., aged 30. Enlargement of the abdomen was first noticed by her husband on their wedding day, and wrongly attributed to pregnancy. Examination showed that the uterus was not enlarged, but that the whole of the pelvis was occupied by a large cystic tumour. After a few weeks preparatory treatment, laparotomy was performed in Oct. 4th, 1893. The lower part of the cyst was adherent to the Douglas fossa. The uterus was removed with the tumour at the level of the internal os. The abdomen was flushed with water at 100° F., and drainage tube inserted. The patient made an excellent recovery. The tumour is a multilocular cyst of the left ovary, the inner surface covered with warty growths. Both ovaries and uterus closely adherent and line of separation is difficult to determine. Fallopian tubes were free.

Dr. WYATT JONSTON showed the inferior maxilla of a drowned woman pronounced by coroner's jury to be a girl of 18, missing for some months, and was claimed as identified by an article of jewelry. The wisdom teeth in this case were fully developed and corresponded with those of persons thirty years

of age. A malformation of the bicuspidæ described in the missing girl was also present in the specimen, but it was in all probability a case of mistaken identity in spite of the coincidence of the jewelry and malformation of the teeth.

*Saline enemata in post-partum hæmorrhage*—Dr. JOHN A. HUTCHINSON related the case, which appears on page 573 of this number of this JOURNAL.

*Hibernation and allied states in Animals and Man*—Dr. MILLS read a paper on the subject, published in the Transactions of the Royal Society of Canada, 1892, Section IV, page 49.

Besides studying cold-blooded animals and bats, Dr. Mills had made observations extending over a period of five years on woodchucks, one of which presented a drowsy or torpid condition from November to April, independently of conditions of food and warmth. Another woodchuck did not hibernate at all even when kept in the cold. Three remarkable instances of profound lethargy in the human subject were also studied under the direction of Dr. Mills. One of these, known as Sleepy Joe, aged 60, would sleep for weeks at a time, waking only to take food and void his excretions. Another case, that of John T., of a neurotic family, had been the subject of melancholia. For the past 20 years he remained in a somnolent condition from September to June in each year. His temperature was observed to be 96° on one occasion. Once he was aroused by application of an electric battery, but subsequently this failed to disturb him. The third case was studied with Dr. Clark, of Kingston Asylum. The patient, a woman of over 60, was lethargic for nearly 20 years. Appetite was usually good. The urine contained one-third the normal amount of phosphates. An autopsy was obtained, the brain being found healthy. The lungs contained tubercles.

The discussion upon this paper was postponed till the next meeting.

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*Stated Meeting, Nov. 17th, 1893.*

JAMES BELL, M.D., PRESIDENT, IN THE CHAIR.

Dr. George Villeneuve and Dr. R. Tait Mackenzie were elected members.

*Pyloroplasty*—Dr. SHEPHERD exhibited a patient from the Montreal General Hospital, upon whom he had performed

pyloroplasty in July last. A diagnosis of dilatation of the stomach with stenosis of the pylorus had been made by Dr. Wilkins. There was a history of stomach trouble for 15 years, consisting in recurrent attacks of gastritis lasting from two weeks to two months, with occasional vomiting of blood; between these attacks he enjoyed fair health. Three months before entering hospital he had an attack of gastritis which was not recovered from as usual, the stomach having apparently lost the power of passing solid food on to the duodenum, so that liquid food only could be employed; after a time this was also rejected, vomiting occurring in enormous quantities at intervals of two to three days. On entering hospital he weighed only 119 pounds. Dr. Shepherd performed the Heinicke-Mikulicz operation of resecting the scar tissue about the duodenum and bringing together the healthy tissues of the duodenum and stomach, rather than the Italian or Loretta operation of forcibly dilating the pyloric orifice. At the operation the pylorus was involved in a huge fibrous mass, looking like scirrhus, the orifice being too much constricted to admit the point of the little finger. For six days after the operation the man was fed by the bowel; afterwards fluid nourishment was allowed by the mouth and a few days later he was allowed ordinary diet, but cautioned against excess. His weight was now 179 lbs., or a gain of 60 lbs. from the time of entering hospital. The pylorus appeared to be acting normally. No vomiting had occurred since the operation. The highest temperature observed was  $99\frac{3}{4}$ . Before operation the stomach was repeatedly washed out with boracic lotion, as salicylic lotion was considered dangerous.

*Discussion*—Dr. WILKINS said that while under his care the patient had not improved on a peptonized diet. He had satisfied himself that the disease was non-malignant and was due simply to the cicatrization of an ulcer. This diagnosis has been confirmed by the increase in weight since the operation. He congratulated Dr. Shepherd on the result.

Dr. WESLEY MILLS said the persistence of vomiting showed that anti-peristalsis of the stomach took place. The history did not clearly show whether the increase in weight was due to increased ingestion of food or improved powers of absorption.

*Carcinoma of the sudoriparous glands*—Dr. C. F. MARTIN showed this specimen (see page 605 of the Journal.)

Dr. ADAMI stated that the tumour had at first been regarded by Dr. Roddick as an enlarged sebaceous gland. Subsequently a diagnosis of epithelioma was made. He had recently shown an analogous case, when what looked like an epithelioma of the tongue proved to be a scirrhus arising from some of the muciparous glands of that organ.

*Chronic abscess of bone*—Dr. ADAMI showed a knee joint resected by Dr. Armstrong at the Montreal General Hospital during the past summer. The patient apparently recovered, but sinuses formed and kept on discharging in increasing quantities. The man became emaciated. Amputation was performed by Dr. Sutherland two weeks ago. Union was pretty well advanced, but was entirely fibrous in nature. There was still a slight movement between the bones. On making a section a number of small abscesses connecting with one another were found situated in the lower extremity of the femur and connected with the region between the two bones from whence they discharged. No tubercle bacilli were found. The condition appeared to be one of chronic suppuration. The question was whether these abscesses were the result of old foci of disease not detected at the time of operation.

Dr. ARMSTRONG stated that the patient, a lumberman about 35 years of age, had sustained some slight injury of the joint, but was able to continue work for about six months. The joint was then found swollen and painful and evidently extensively diseased. Immobilization of the limb was tried without benefit, and so Dr. Fenwick's excision operation was performed. Some sinuses which persisted were scraped under ether two or three times, without benefit. He was surprised to learn that no tubercle was found, as at the time of excision the joint had all the naked eye appearances of tuberculous disease.

Dr. BELL suggested the possibility of the condition being originally tuberculous, the bacilli having subsequently become destroyed. He was of opinion that the abscesses were there at the time of operation, but did not communicate with the joint. All surgeons know that when a thin slice is sawn off the end of a bone little foci of disease are noticed in the new surface exposed. Had always thought it strange that more of

these little pockets did not lie higher up in the bone; in this case it looked as if they had.

Dr. SHEPHERD thought that the abscesses were present at the time of operation. The pain, at the time, was much more severe than seemed called for by the extent of the joint disease.

*Tuberculosis of the Liver and Oviduct of a pigeon*—Dr. WESLEY MILLS exhibited the specimen, showing what extensive disease could exist in domestic animals in apparent good health. The bird seemed quite well till a few days before its death.

The discussion was postponed pending a report from the pathologist.

*Pyosalpinx and Gonorrhœal Arthritis*—Dr. LAPHORN SMITH exhibited a specimen of double pyosalpinx in a woman aged 42, suffering from gonorrhœal rheumatism of the right knee joint. The patient had been ill ever since her marriage, 10 years before. Examination showed the uterine appendages filling Douglas pouch and forming a tender fluctuating mass the size of an orange. While in hospital preparatory to operation in June, 1893, she suddenly developed high fever, swelling of the first joint of the right fore-finger and scalding in micturition. Next day the right knee became swollen and painful. There was a yellow purulent discharge from the urethra and vulva vaginal glands. Exploratory puncture of the knee joint yielded an opalescent serum. This was not examined for gonococci. After seven weeks the joint was still stiff and painful. Temperature then normal. In October, 1893, oeliotomy was done and the appendages removed. The tubes were found distended with pus and closely adherent. Recovery was good. The operation seemed to improve the condition of the knee joint. The husband admitted having recurrent attacks of gonorrhœa, the last occurring shortly before the wife developed the above mentioned arthritic attack. The gonorrhœal infection probably affected the parametrium of the uterus which should really have been extirpated. The pathology and treatment of gonorrhœal rheumatism was then discussed by Dr. Smith.

Dr. ALLOWAY said he differed from Dr. Smith as regards the interpretation of the metastasis. He thought the disease of the knee joint not gonorrhœal, but pyæmic, and that the sub-

sequent occurrence of inflammation in the finger joints confirmed this view. He had seen several times, metastasis of this nature following pelvic disease. In one case seen with Dr. Shepherd, where there was suppuration of both knee joints, the remains of a necrotic placenta were found in the uterus. On scraping the uterus the patient recovered. He did not think the joint disease in Dr. Smith's case was due to the gonococcus.

Dr. SMITH in reply stated that if his case had been pyæmic, pus would have been found in the joint, instead of only an opalescent fluid. He had himself thought of pyæmia, but the fact of the pus tubes having been there for ten years without any metastasis, and the knee affection appearing after an attack of gonorrhœa made him change his opinion.

*Discussion on Dr. Mills' paper on Hibernation*—Dr. F. W. CAMPBELL mentioned a case of duodenal ulcer where the subjective symptoms had disappeared under the mental condition induced by a favourable (though wrong) diagnosis being given and had returned again only when the correctness of the diagnosis was insisted upon. The diagnosis was confirmed by autopsy. The mental condition seemed to determine whether pain, etc., was felt or not.

Dr. GIRDWOOD told of the doings of two woodchucks formerly in his possession. These animals did not hibernate.

Dr. ADAMI asked if Dr. Mills had tried the experiment of feeding the animals abundantly.

Dr. MILLS, in reply, stated that he had not been able to prevent hibernation by good feeding. He referred to some interesting work by Carrier on the histology of the hedge-hog, showing that the tissues during hibernation differed from these in the normal state in the following particulars:—(1) They were less readily acted on by nuclear stains. (2) The cells were smaller. (3) The leucocytes of the blood were diminished in number. This latter point would, theoretically, make the animal more susceptible to infection than when not hibernating. His object in making these studies was to see if a general law of relation could be established between hibernation and sleep. It was possible that primæval animals lived in a state analogous to hibernation.

*Statistics of Homicide in American cities*—Dr. WYATT JOHN-

STON who read a paper on this subject, had found the annual number of homicides (including manslaughter and infanticide) per 10,000 living to be approximately as follows: Central District of London, .15; Vienna, .18; Paris, .13; Philadelphia and Liverpool, .22; Montreal, .24; Buffalo, .33; New York, .35; Boston, .43; Toronto, .50; Pittsburg, .51; Chicago, .65; Cleveland, .66; Birmingham, .89; St. Louis, 1.38; Louisville, 1.58; Charleston, 2.00. These estimates were based on the findings of inquests, not of trials. The greater proportion of homicides occurred in the Southern States, where a large and lawless negro element existed and where concealed weapons were habitually carried. The apparent low homicide rate in great European cities was a matter of surprise. The low rate in Montreal might be due to the peaceable character of the people and the absence of concealed weapons rather than to cases being overlooked, as in other cities the majority of homicides were from such easily recognized causes as cuts, blows and stabs. Abortion and poisoning were forms likely to be overlooked, and a proper system of death certification would be a great check upon homicides of this kind. In Boston a system of investigation of all deaths from peritonitis in all women of the child bearing age had led to the detection of many cases of abortion previously unnoticed.

Mr. QUINN, Q.C., Crown Prosecutor, who was present, said he thought the composition of coroners' juries in various places would tend to affect the statistics. A low status of jury would lessen the number of homicide verdicts. Montreal juries rarely gave a verdict in accordance with the evidence. In the case of large cities like London, many homicides probably occurred when the bodies were never found, and this might partly explain the apparently low proportion. The means of concealing crime increased with the population. He had reason to believe that abortion is more common in Montreal than was supposed. The criminal death rate reported in Montreal was not the true one. All deaths should be reported to the health office, and, unless properly accounted for, the matter should be placed in the hands of a medical office thorough medico-legal investigation.

Dr. GIRDWOOD agreed with Mr. Quinn, as to death certification. In the Hooper case, a certificate was obtained from a

physician who knew nothing about the woman or the death. No medical man should give a certificate unless he had seen the person during life and had made some diagnosis.

Dr. SHEPHERD believed that many cases reported as still-birth were really cases of infanticide.

*Death Certification*—The Secretary read a communication from Dr. LABERGE, city health officer, asking for the co-operation of the Society in securing an amendment to the city charter in the matter of certification.

Dr. LABERGE's letter pointed out that a death certificate could be given by any relative or friend of the deceased, practically by any one at all. It was essential that these certificates should only be signed by properly qualified medical men, and that the matter of deciding whether the qualifications of the signer were satisfactory and the certificate properly made out as regards nosology, should be left to competent persons, instead of as at present, to superintendents of cemeteries, whose education hardly fitted them for these important duties.

Upon motion of Dr. F. W. CAMPBELL, it was resolved to refer the matter to the council of the Society, and such other persons as the council might select with power to give Dr. Laberge such advice and assistance as seemed necessary.

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*Stated Meeting, December 1st, 1893.*

JAMES BELL, M.D., PRESIDENT, IN THE CHAIR.

*Insular Sclerosis*—Dr. JAMES STEWART exhibited a boy and a girl, the subjects of insular sclerosis. (The cases will be published in a future number of the Journal.)

*Discussion*—Dr. SMITH asked if there was any family history of syphilis, which might explain both the sclerosis and optic atrophy.

Dr. BELL asked if the disease usually occurred in families.

Dr. STEWART, in reply, said there was no history of syphilis obtainable. Syphilis, as far as we know, has no connection with insular sclerosis. White atrophy of the optic nerve is simply a wasting of the axis cylinder and not like atrophy

following inflammation. Only two instances are recorded where two brothers were affected with insular sclerosis.

*Ureter vs. Appendix*—Dr. SMITH exhibited the patient from whom he had removed last spring what was thought at the time to be the ureter, but which proved to be the appendix vermiformis. The patient was in perfect health, whatever had or had not been removed.

*Reform in Coroner Law*—Dr. GIRDWOOD presented the report of the special committee appointed to consider this subject. The committee considered that the present moment was not an opportune one for bringing the matter before the notice of the Provincial Government.

After some discussion it was decided that the committee be requested to prepare a report and present it at the following meeting of the Society.

*Fibro-Cystic Tumour of the Uterus*—Dr. SMITH exhibited the specimen. In October, 1893, amputation had been done at the level of the internal os. There had been a local peritonitis some months ago. The operation presented no difficulties. The abdomen was not flushed out after operation, contrary to his usual practice. Two days after the operation acute septicæmia developed and the patient died the following day. An autopsy showed great distention of the stomach and intestines and Dr. Smith himself subsequently had a severe septic inflammation beginning in the hair follicles of the back of the hand, although no abrasion could be seen. The lesson of the case was always to flush out the abdomen after operation.

Dr. SHEPHERD said that few surgeons flush out the abdomen now-a-days, and he did not himself consider it necessary.

*Rupture of the Kidney*—Dr. WYATT JOHNSTON showed two specimens of ruptured kidney. One was in a case where an old woman was found dead. There were a few bruises about the head and arms, but no serious external signs of violence. A verdict of manslaughter had been rendered, but the grand jury found a No Bill. It was supposed that the injury was due to the deceased having been maltreated by her son. In the second case the rupture was caused by a beam falling across the loins of the deceased. A diagnosis of ruptured kidney was made during life by Dr. Sutherland, as an area of dulness extended to the umbilicus from the right flank

and the urine contained blood. In this case the injured organ was very large, the other kidney being so small that it was not discovered at the autopsy, although the ureter could be traced for some inches from the bladder.

*Operation for Gall Stones*—Dr. SHEPHERD showed a phial containing over 500 gall stones, which he had removed three days before from a woman aged 50. She had suffered for many years and recently had shown signs of peritonitis. An exploratory incision showed a tense gall bladder, which on puncture contained sour pus and was packed with gall stones, which were removed with a dinner spoon, after protecting the surrounding tissues by packing them with sponges. As the gall bladder could not be brought to the opening, the omentum was stitched to it so as to form a channel for the bile, of which much was passed.

*Case of Epilepsy*—Dr. E. P. WILLIAMS read a report of this case which occurred in a young man 21 years of age. Father and mother gouty, brothers and sisters healthy. When 2 years old had a convulsive seizure followed by transient left hemiplegia. Following this, slight convulsive seizures occurred about once a week preceded and followed by mental dulness. At 8 years was for a number of days unable to eat or swallow. At 10 years the attacks were preceded by an aura like epigastric fulness and he would fall down. At 18 years the frequency of the fits increased to one or two every third or fourth day. Grasping his wrists would sometimes stop an attack. Nitrite of amyl or ammonia inhalations sometimes had the same result. Bromide treatment was continued from the 10th to the 21st year. In Feb. 1893, he had a moderately severe attack of typhoid, during which and until March 15, one week after the fever subsided no fits occurred. (No bromide was taken during the fever.) During convalescence he had mild fits at first frequent, afterwards at long intervals, until August, when the fits reappeared at first severe and infrequent, afterwards milder and at the rate of 20 per month. The general health and mental condition remain good.

*Discussion*—Dr. MILLS said that the so-called motor area would soon be regarded as a reflex or sensori-motor area. The fact that the fits could be arrested by seizing the wrist was in favour of this view.

Dr. F. W. CAMPBELL said opinions varied as to what constituted large doses of bromide. He knew a man who had been taking drachm doses three times daily for 25 years with benefit. He thought nitro-glycerine might be of service.

Dr. WILLIAMS, in reply, said that nitro-glycerine had been tried for some years in this case, but had no apparent effect.

*College of Physicians and Surgeons, Quebec*—Dr. J. H. B. ALLAN complained that it was impossible to get a statement of account or a receipt from the college, and that about a year ago the accounts had been sent out in an offensive manner upon post cards.

Dr. F. W. CAMPBELL thought that the irregularities were due to the action of the former secretary.

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*Stated Meeting, December 15th, 1893.*

JAMES BELL, M.D., PRESIDENT, IN THE CHAIR.

Dr. A. G. A. Ricard, was elected an ordinary member of the society.

*Tabes without absence of Knee-jerk.*—Dr. Finley exhibited a man who had suffered for some years from attacks of vomiting, with extreme pain in epigastrium. He also had severe pains in lower extremities usually alternating from one side to the other, and pains over forehead and trunk, described as "just like lightning." There was diminution of sexual power. No ataxia, but slight muscular weakness. The knee reflexes were exaggerated on both sides. The pupils are slightly uneven and showed Argyle Robertson reaction. There was no mental disturbance.

Dr. JAS. BELL thought that the cord area involved could not be that usually affected. Was it right to speak of the disease as ataxia where none existed. A patient who came to him recently, under the impression that he was suffering from stone in the bladder, presented all the symptoms of tabes.

Dr. FINLEY in reply said the disease was probably in the pre-ataxic stage. The Argyle Robertson pupils and lightning

pains made it difficult to arrive at any other diagnosis. There was no history of syphilis obtainable.

*Congenital Polypoid growth of Conjunctiva.*—DRS. BULLER AND ADAMI. The specimen was taken from the ocular conjunctiva of the left eyeball in a child 3 months old, and had existed since birth. These growths occur either as low white circular swellings invading the corneal margin or as an irregular mass, springing from the sclerotic between the cornea and the outer canthus. The present growth apparently was of the latter, or scleral, variety. Its attachment to the eyeball was by means of a thick expansion extending slightly into the cornea. The growth was removed with as little disturbance as possible of the surrounding tissue. When the patient was removed a few days later the eye had a satisfactory appearance. The specimen showed under the microscope a well formed epithelium, with corium and subcutaneous tissue. This tissue was loose in the centre and showed a cystic space. The epithelium showed spiral and coiled glands, resembling sweat glands rather than those of conjunctiva. The subcutaneous tissue showed well formed vessels, with fibrous tissue and what appeared to be degenerated muscle fibres. It corresponded therefore rather with the tissues of the outer surface of the eyelid than the conjunctiva, but was of too simple a nature to be classed as a true dermoid.

*Discussion.*—DR. PROUDFOOT said tumours of this kind were commonly attached to the margin of the cornea. Recently in a case treated for some time by the family physician for conjunctivitis he had found a polypus lying beneath the eyelid. Polypi sometimes followed injury in operation of the conjunctiva.

*Small pedunculated polyp from the left tonsil.*—DRS. BIRKETT AND ADAMI. The tumour was taken from a child 4 months old, and was exhibited owing to the rarity of tonsillar tumours. It was about the size of a pea, and consisted microscopically of a superficial layer of flattened epithelium with subepithelial connective tissue, beneath which were a series of glandular alveoli, separated by fibrous septa. The gland tissue is that of typical mucous glands and shows no adenomatous over-growth. No excretory ducts were made out. This class of tumour had been frequently described in the soft palate. Growths of the

tousil of any kind were rare, lymphoid fibrous, myomatous, myxomatous or fatty being the usual forms. Epithelioma was more frequent than sarcoma. The present growth was benign.

*Mixed Carcinoma and Sarcoma of the Peritoneum.*—DR. ADAMI showed the specimen from a man who died of peritonitis. At the autopsy an enormously enlarged omentum was found. The mesentery was also involved, but the intestinal tube seemed unaffected except that the coils were matted from inflammation. The diaphragm was thickened and infiltrated with new growth, which had extended to the pleural surface and set up a severe pleurisy. The pleural cavities contained 9 pints of yellow fluid. Pericardium and lungs free. Death was apparently due to pressure on the heart. Microscopical examination showed the growth to be sarcomatous for the most part, but in places there were definite fibrous alveoli, containing solid masses of epithelial cells, in other words typical scirrhus cancer. There was therefore a combination of cancer and sarcoma. The man was not emaciated, and had almost no disturbance of health up to the time of the acute peritonitis and pleurisy, which caused his death.

DR. JAS. BELL, gave the following history:—On Oct. 12th, 1893, the man was suddenly taken at night with severe abdominal pain. One week later he was admitted to the General Hospital and a diagnosis of acute peritonitis made. Some evidence of an abdominal growth caused his transfer to the surgical ward, where an explanatory abdominal incision was made, but, as the case was unsuitable for operation, the wound was closed. The patient died next day. Dr. Bell thought the sarcomatous looking tissue referred to might possibly be an early embryonic stage of the fibrous tissue of the cancer's stroma.

DR. ADAMI, in reply said, that conditions of carcinoma sarcomatodes were described by pathologists, when the stroma was sarcomatous and the alveolar contents epithelial. In the present case there was no primary growth in any organ where epithelium would normally exist.

DR. FINLEY, said there was a history of a small growth having been thrice removed from the inside of the nose in the present case.

DR. JAS. BELL. That point had been investigated in hospital, but it appeared that the nose was only touched with caustic.

*Double Hydronephrosis.*—DR. C. F. MARTIN, exhibited the kidneys and bladder of a man who entered hospital with symptoms of chronic renal disease, and died two months later with uraemic coma. There was moderate double hydronephrosis and dilatation of the ureters. The cause of the hydronephrosis appeared to be a mass of inflammatory fibrous tissue external to the bladder, in the region of the trigone, near the point of entrance of the ureters. This was most marked on the left side. There were also numerous constrictions in the course of the ureters. The left testicle had been removed and there was a large sinus in the left ischio-rectal fossa.

DR. JOHNSTON thought the ingenious explanation offered by Dr. Martin to be correct.

DR. ADAMI said that the statistics of hydronephrosis, showed that many cases were recorded when the cause was not explained. Had the dissection made by Dr. Martin in this case been more frequently practised perhaps there would not be so many mysterious cases on record.

*Oxalate of Lime Calculi from the Kidneys.*—DR. JAS. BELL, showed some large stellate prickly crystals, apparently oxalate of lime, removed from a cyst in the kidney of a patient who had no renal symptoms whatever.

*Semi lunar Cartilage.*—DR. JAS. BELL also exhibited a portion of an inner semi lunar cartilage removed from the knee of a man, who had sprained his knee when jumping from a carriage. The joint was locked for a time, but afterwards became normal, until a severe exertion once more displaced the cartilage, and the joint was replaced with difficulty. A few days later, while demonstrating how the accident occurred, the joint again became fixed and could not be reduced. The cartilage was therefore removed. It was evident at the operation that it would be impossible to keep the joint in place. Cases have been recorded where the joints have been permanently and satisfactorily reduced after being out for some years.

*Enucleation of Thyroid Tumour.*—DR. JAS. BELL showed a small fibo-cystic tumour removed from the thyroid and empha-

sized the advantages of enucleation as contrasted with extirpation of the thyroid.

*Reform of the Coroner Law.*—DR. ADAMI read the report of the committee upon this subject, (published at page 508, of the Journal).

DR. BELL thought the committee had acted wisely in not undertaking to pronounce upon the legal side of the question. Upon motion of Dr. Girdwood it was unanimously resolved that the report be adopted and that copies be sent to the Attorney General, and the medical members of the Legislative Assembly and Council at Quebec.

*Blood supply of vermiform appendix.*—DR. BELL showed for Dr. Shepherd a preparation showing that the arterial supply of the appendix was due to a single artery which did not anastomose with any neighbouring vessel, hence the readiness with which sloughing is produced in the appendix.

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THE LESSON OF THE HOOPER TRIAL.

If the trial of Hooper on the charge of murdering his wife by the administration of prussic acid has failed to establish his guilt, it has at least taught one great lesson, namely, that the present method of dealing with cases of suspicious death is radically wrong, so far as the calling in of medical aid by the Crown is concerned. Every one must freely agree that in this case there was established by the prosecution a wonderful chain of evidence, each link of that chain going to prove that the prisoner had deliberately arranged to remove his insane wife, and thus leave himself free to marry another woman, and all the circumstantial evidence seemed of such a kind that it was difficult to see what defence could have been brought in rebuttal of a charge of attempted murder. Nay more, the established movements of Hooper, the purchase of prussic acid, the carefully arranged transport in the baggage car, the whole circumstances surrounding the actual death of his wife, are difficult to explain otherwise than on the assumption that he was planning a further attempt on her life. Yet despite all this circumstantial evidence the jury brought in a verdict of "not guilty," and in our opinion they did rightly; they had no option, and if it be asked why no other course was open to them, the answer must be that however ably the crown proved the intent to murder, however clearly they established the moral guilt of the man, legally they failed notoriously to establish their charge; the evidence brought forward could not prove that prussic acid had been

administered, it could not be shown that the death of Mrs. Hooper was due to this cause, and this alone, and so long as what may be termed a working possibility of death from natural causes could not be excluded, so long was it impossible to obtain a death sentence.

It is evident, therefore, that the fate of Hooper depended upon the medical evidence that could be brought forward ; that this evidence made the case. If the Crown could not establish the act of administration of the poison, the culpability of the accused could only be determined absolutely by a study of the symptoms presented by the dying woman, by the conditions revealed at the autopsy and by the results of chemical analysis. And here comes in the most remarkable state of affairs. For three months the crown had been in possession of all the facts bearing upon the medical side of the case. Since the beginning of October, it had possession of the depositions of those who saw the death of the woman ; it had the report of the physicians who made the autopsy, and the report of the able chemist to whom was given the analysis of the stomach and other organs. It had, in fact, been in full possession of all the material upon which medical judgment could be given, and having all this, it determined to indict Hooper on the charge of murder. Yet when the case came into court, it was the evidence of the crown experts that showed conclusively that the charge could not be sustained ; proved it so conclusively that the defence did not bring forward a single expert to testify concerning either the interpretation of the symptoms, or of the post-mortem appearances. The solitary piece of professional evidence adduced by the defence was the fact, proved by experiment, that small but fatal doses of prussic acid are capable of being detected in the stomach and other organs of large dogs after an interval of a fortnight.

If Dr. Stewart could state freely in the witness box that other forms of death might be accompanied by similar symptoms ; if Dr. Douglass, who performed the autopsy, could admit that the examination of certain organs had not been complete and did not exclude the possibility of lesions, capable of leading to

sudden death, being present in those organs ; if Professor Ellis could only conclude from his failure to discover any trace of the poison, that its absence made death from this cause possible but improbable, surely the law officers of the Crown charged with conducting the case ought to have known these opinions of their experts long ago, they ought to have recognized that evidence of such a nature completely destroyed their case. And the question is, why did they persist in their charge ?

Two answers may be given to this question. Either they disregarded the fact that conviction depended upon the strength of the medical evidence that they could adduce,—that the gist of the case lay in the statements of their experts,—or they had neglected to consult those experts properly as to their opinion and the admissions they would necessarily have to make upon cross-examination. Probably both of these answers contain a large amount of truth. It is but natural that lawyers should fail to appreciate the value of medical testimony, and should be specially prone to overlook it when they are in possession of a rich supply of circumstantial evidence. This, however, is scarcely an excuse. And with regard to the experts, we believe that we state the matter correctly, when we say that there was no consultation with them until after the indictment had been drawn out, and then, doubtless, the endeavours of the crown officers were not to discover so much what their experts had to say against the charge, as what they could adduce in favour of the prosecution.

Herein, it seems to us, lies the terrible weakness of the present method of procedure ; a weakness that has cost the province not thousands, but tens of thousands of dollars. Without consultation with any leading members of the medical profession, the law officers of the case determined to continue with a charge, in which the medical aspects were all important, a charge which any impartial physician, given the depositions at the coroner's court and acquainted with the facts of the case, must have reported as being incapable of being sustained.

It is a matter of urgent necessity, therefore, that some change should take place in the method of procedure in this respect.

We would not at this moment go so far as to say that there should be established an official board of experts, who should advise as to the strength or weakness of the medical and scientific evidence in connection with any suggested criminal charge brought against an individual, but we would urge that in future the Crown should nominate or seek the advice of two or three responsible professional men who should report upon the value of the evidence and its interpretation. Experts so nominated would be in a thoroughly impartial position, their duties would not be to lean either to the one side or the other, but to seek out the truth, to get to the bottom of the case, and to report their conclusions to the Crown, leaving it to the Crown to act upon their report. In short, to illustrate what we mean, the admirable and impartial evidence given by the crown experts, by Dr. Stewart, Dr. Douglass and Professor Ellis in examination and cross-examination ought to have been in the hands of the crown officials before ever there was a thought of drawing out an indictment against Hooper, and we may add that the Crown, with plenty of time before it, rather than the defence, should have initiated experiments to determine the conditions under which a poison, such as prussic acid, is discoverable or tends to disappear in the decomposing animal body.

If we feel bound to urge these matters, there is a further point in connection with medico-legal enquiries which this trial brings prominently forward and which we must insist upon even more strongly, and that is the inadequacy of the present coroner's system of this and the neighbouring province to deal with cases of sudden and suspicious death. Every case of sudden death ought to be the subject of immediate investigation, we will not say necessarily by the coroner and his jury, but by a medical man of good standing, who should advise as to the necessity of holding an inquest. Here it is not impossible that the contention of the prosecuting counsel was true, and that the eleven days which elapsed before anything was done were sufficient to destroy all traces of the poison. This very contention is an admission on the part of the crown that the

autopsy and analysis should have been made at an earlier date. Under no conditions ought Hooper to have been allowed to remove the body of the deceased from Terrebonne into the next province, without there being an official enquiry made as to the cause of death.

And when at last, at Hooper's instigation, be it said, an inquest was held, the proceedings thereat reveal another weak point that must be removed. We refer to the conduct of the autopsy. According to the present law the coroner can call upon any physician to perform this. In this case he called upon a practitioner of conspicuous ability, as was shown during the long examination to which he was subjected, but one who had not been accustomed to perform autopsies in cases of moment, who consequently neglected to make a detailed examination of those very tissues whose study is most important in cases of sudden death from unknown causes. Lesions of the vascular system, and especially of the heart, are the most common cause of sudden deaths. But the coronary vessels were not examined thoroughly, the heart muscle was not minutely studied, the vessels of the lungs and brains were not cut up and examined to exclude the possibility of recent emboli. And this is all the more annoying, inasmuch as the vascular system is the one which least of any is affected by post-mortem change. Lesions in the vessels can be recognized long after parenchymatous changes in the organs are completely blurred by putrefaction.

Surely the facts brought out by this trial point to the necessity for the appointment, not of private practitioners, but of official pathological experts to perform medico-legal autopsies.

One good effect of the Hooper trial will be to impress the public with the fact that after all, the popular opinion that prussic acid employed as a poison is most volatile, is not grounded upon fact. Had Hooper been found guilty, had the defence, and the crown experts, not brought forward prominently that prussic acid may be detected in the putrifying body weeks, and it may be months, after death, it is not improbable that prussic acid

would have been installed throughout North America as a most useful instrument in the hands of would-be homicides. There might have been an epidemic of cases of poisoning by this substance. We firmly believe that the evidence and verdict will have the useful effect of preventing anything of the kind. We mention this with relief, as not unfrequently after celebrated murder cases where some little known poison has been brought prominently into public notice, such epidemics have occurred.

### CANADIAN MEDICAL ASSOCIATION.

A good many years ago it occurred to some of the members of the profession in the Dominion, that there should be a way of forming a closer bond of union among the doctors in all the provinces. With that object in view a medical conference was called, with delegates from each of the provinces, to consider the matter. They met in the hall of Laval University, Quebec, on Wednesday, Oct. 9th. Dr. James Arthur Sewell, President of the Quebec Medical Society, was in the chair. Dr. Alfred Belleau, acted as secretary.

After some preliminary business had been transacted, Dr. Wm. S. Harding, of St. John, N.B., moved, seconded by Dr. Wm. Marsden, of Quebec, Q., "That it is expedient for the medical profession of the Dominion of Canada to form a medical association, to be named the Canadian Medical Association."—Carried.

A nominating committee was appointed; they brought in a report which, after some discussion, and one or two amendments, was adopted, the first officers of the association being:—

President—Hon. Charles Tupper, C.B., Halifax, N.S.

Vice-President for Quebec—Dr. Hector Peltier, Montreal, Q.

Vice-President for Nova Scotia—Dr. R. S. Black, Halifax.

Vice-President for New Brunswick—Dr. LeBaron Botsford,  
St. Johns.

Vice-President for Ontario—Dr. E. M. Hadder, Toronto.

General Secretary—Dr. Alfred G. Belleau, Quebec.

Local Secretary for Quebec—Dr. W. H. Hingston, Montreal.

Local Secretary for Nova Scotia—Dr. Jas. R. DeWolf, Halifax.

Local Secretary for New Brunswick—Dr. W. S. Harding, St. John.

Local Secretary for Ontario—Dr. Wm. Cunniff, Belleville.

Treasurer—Dr. Robert Henry Russell, Quebec.

Thus commenced an organization, the value of which cannot be now estimated by the profession of the Dominion.

Since then large and successful provincial societies have sprung up, and it has been thought that the work of the Canadian Medical Association had been completed.

Fortunately for the profession generally, this opinion has been held by but a limited number, and up to the present all attempts to curtail its usefulness have failed. During the last few years there has been much enthusiasm over the meetings, and the attendance has been large. Next year the meeting will be held in St. John, N.B., some time in September, and if united effort can do anything, the members of the profession in the Maritime Provinces intend to make this one of the most successful meetings the association has ever known.

## ELEVENTH INTERNATIONAL MEDICAL CONGRESS.

A letter directed to the undersigned by the Secretary-General of the Eleventh International Medical Congress and dated December 19th, 1893, contains the following communications :

“ American members will pay on the English, French and Italian railways single fares for double journeys, and will obtain a reduction of twenty per cent. on fares for Italian round-trip tickets.

“ The documents required for their identification will be sent to you in January, and Americans intending to visit the Congress will have to apply to you for them.

“ Full particulars concerning the journeys will accompany the documents.

“ Messrs. Thos. Cook and Son, London, Paris, Rome and Naples, should be applied to for accommodation and for tickets

for the excursions at Rome, Naples and to Sicily. Such excursions will be arranged at Rome under the guidance of Mr. Forbes, member of several scientific societies and correspondent of the *Times*—for Naples, three days, including Vesuvius, Pompey, Capri, Sorrento, Castellamare, Bajae, etc.—for Sicily, ten days from Naples, including Messina, Taormina, Catania, Girgenti, Siracusa, Palermo, and return to Naples.

“ The fares for members of the Congress will be considerably reduced and comprise hotel accommodations, carriages, guides, boats, etc.—about 70 francs. each, for the three days, and 285 francs. for the ten days.

“ Full particulars concerning these excursions will be contained in a leaflet to be added to the instructions and documents for the journey.”

From former communications the following are herewith quoted: The members' fee is five dollars, that of their wives or adult relations two dollars each. Checks or money orders may be sent to Prof. L. Pagliani, Rome, Italy. Credentials have been promised in the near future. When they arrive (none were received last year), they may be too late for many who have started or are about to start. The undersigned, who is not informed of the cause of delay, proposes to supply in as official a form as he thinks he is justified in doing, credentials which are expected to be of some practical value. The North German Lloyd has promised to recognize them. It is suggested, besides, that a passport may increase the traveller's facilities.

Only the North German Lloyd (22 Bowling Green) and the Compagnie Generale Transatlantique (3 Bowling Green) have thought fit to grant any reductions to Congressists.

The reductions on Italian railways are available from March 1st to April 30th.

A. JACOBI, M.D.,  
110 W. 34th Street, New York.

January 11th, 1894.

The following letter has been issued by the Provincial Board of Health, and as it is of considerable public importance, we reprint it :—

9TH JANUARY, 1894.

MY DEAR SIR,—Small-pox is actually prevalent in ten States of the American Union, and even in great centres like New York, Chicago and Boston ; it has appeared also, a few days ago, in the Province of Ontario.

Under the circumstances and taking into consideration our direct and frequent intercourse with the infected localities, the introduction of the disease in this province is to be feared and all possible measures must be taken to prevent this calamity, especially such measures that would make it impossible for the disease to become epidemic.

For these reasons, the Board, knowing that it may depend on the most valuable help of the physicians throughout the province, ask each of them :

1st. To urge the immediate vaccination of all children and other persons in their practice, who have not already been vaccinated ;

2nd. To immediately notify the sanitary authorities should any case of small-pox come under their notice.

In complying with our request, you will help us to prevent the introduction of small-pox in your locality, and, what is most important, its becoming epidemic, should it eventually make its appearance.

I have the honor to be, Sir,

Your obedient servant,

ELZEAR PELLETTIER,

Secretary.

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### Obituary.

#### MR. PETER REDPATH.

McGill University has lost a good friend in the death of Mr. Peter Redpath. Mr. Redpath was born and educated in Montreal, and received his business training in Manchester. With his father he founded the firm of John Redpath & Son,

which has since developed into the Canada Sugar Refining Co. Of late years Mr. Redpath has lived in England, at Chiselhurst, where he died on February 1st, after a short illness. Although not resident in Montreal he never forgot his native city, and was still actively connected with many of its institutions, commercial, educational and benevolent. He was President of the Montreal General Hospital from 1875 to 1881, and for many years was a governor of the University, and his liberality has left a monument behind him in the Peter Redpath Museum and the Peter Redpath Library. He was also a director of the Bank of Montreal and a member of its London (Eng.) Committee, and he has, on occasion, represented the Montreal Board of Trade in England. He married a daughter of the late William Wood, of Bowdon, Lancashire, a noted philanthropist. To Mrs. Redpath we extend our deepest sympathy in her great loss.

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### Medical Items.

—The Rush Medical College, Chicago, has adopted a four years course.

—San Francisco has received a bequest of \$6,500,000 to be used in founding and endowing a hospital.

—The truly great physician is one who never speaks ill of his medical brother. He is dead!—*Medical Record*.

—The Cæsarean operation was performed a short time ago, but as there was no baby, the jury assessed the operators \$2,000 damages.—*Recorder*.

—At a meeting of the Faculty of Jefferson Medical College, Philadelphia, held on January 8th, 1894, it was unanimously resolved to institute a compulsory four years course, commencing with the session of 1895-96.

—The good effects of a compulsory law regarding vaccination are seen in the statistics of Prussia, in which country for six years prior to the enforcement of vaccination the deaths from small-pox averaged 85 per 100,000 of the inhabitants, while from 1875 to 1886, after the law came in force, the yearly average was but 2 per 100,000.