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SPINAL ANÆSTHESIA.

A REPORT OF THE DEMONSTRATION GIVEN BY PROFESSOR THOMAS
JONNESCO OF BUCHAREST AT THE MOUNT SINAI HOSPITAL,
NEW YORK.

BY

W. W. CHIPMAN, M.D.

Since the Congress of the International Society of Surgery, held in Brussels, in September, 1908, the medical world has become more or less familiar with the name of Professor Thomas Jonnesco of Bucharest—with his name and with his work on spinal anæsthesia. For it was at this Congress that Jonnesco first submitted, in extenso, his report of 617 cases of spinal anæsthesia and at the same time instituted a claim to pioneer achievement both in the method of his procedure and in the choice and combination of his drugs. During this past intervening year Jonnesco has been certainly industrious: the 617 operative cases have now risen to 1015, his speech has been frequent and free, and he has travelled far. With Bier of Berlin he is now joined in controversial issue, while Vienna, Berlin, Paris, and London have all submitted to a demonstration of his method. Last week he was in New York, and the story of his spinal anæsthesia in his own words reads as follows:—

“ 1015 administrations, including operations upon all parts of the body, without a death or even serious misadventure. Among these are 14 on the skull and 68 on the neck and face. General spinal anæsthesia is absolutely safe: the fear of pricking the cord is unfounded; even if this happens it is not harmful, and I am firmly convinced that, being infinitely superior to inhalation anæsthesia, it will shortly become the universal practice.”

With the reading of such a text can we wonder that William Mayo journeyed down from Rochester to New York, or marvel that there rises for the medical profession the question of a new star risen again in the East?

I was fortunate enough to be present at a demonstration given by Jonnesco at the Mount Sinai Hospital, New York, on Thursday.

a week ago, and I have thought that an eye-witness account of the proceedings of that afternoon might prove of interest to this society. Accordingly I have thought it best simply to describe the proceedings of this demonstration exactly as they occurred, in the hope that there may be reproduced for each one of you a picture both definite and impartial, from which your own individual inferences may be drawn. Afterward I shall deal very shortly with several impressions and give a few general conclusions.

The large operating theatre at the Mount Sinai was crowded by the New York profession to an ideal degree of suffocation: the seating capacity is small, for it is not a teaching Hospital. Gerster, the senior surgeon of the first service, was in charge, flanked by a large array in white duck, his assistants and the house-staff. Professor Jonnesco, accompanied by his own special assistant, was introduced, the language spoken being French. This assistant carried the armamentarium--an ordinary Pravaz exploring syringe, the needle of medium calibre, about 4 inches long and with a short, widely-bevelled point; two bottles, carefully sealed, of strychnine solution of different strengths, a tube of stovaine crystals, and a small glass mixing tube. And first this small paraphernalia was carefully sterilized, save the drugs, which are themselves sufficiently antiseptic.

Case I. A young man of 25 years, well-developed, a basket-ball player, with a chronic mastitis of the right breast; and this breast was to be removed. Accordingly this was a case for Jonnesco's "Upper Dorsal Puncture." While the skin of this upper dorsal region was being sterilised, Jonnesco and his assistant mixed the injection fluid. One c. cm. of the weaker strychnine solution was drawn into the barrel of the syringe. This contains $\frac{1}{2}$ mg. of strychnine sulphate, the smaller dosage always employed at the higher level. Three cg. of stovaine were placed in the glass mixing tube and the 1 c. cm. of the strychnine solution discharged from the syringe upon the crystals. This tube was now corked and shaken vigorously until the stovaine crystals were completely dissolved, when the solution was carefully withdrawn again into the same syringe. The injection was now ready and its fluid bulk was 1 c. cm. The needle was now detached from the syringe and with no trocar or stilette was grasped with the fingers exactly as a pipette is grasped, the fore-finger being placed over the proximal aperture. The patient was in the sitting posture, with neck acutely flexed, chin down on sternum, and the trunk arched strongly forward. Jonnesco with the left index finger identified the vertebra prominens and thence the interval between the 1st and 2nd dorsal vertebrae, the site of the puncture. The needle was plunged through the

skin directly in the middle line and passed down to the ligaments in a plane perpendicular to the surface. Then the proximal end of the needle was depressed to allow for the "shingling" of the vertebrallaminae and the needle pushed slowly inward and upward to the depth of three inches from the surface. No cerebro-spinal fluid appeared. An aspiration syringe gave no result save a drop or two of blood. The needle was then forced in more deeply still, and a free hæmorrhage through it at once became manifest. Repeated aspiration simply filled and refilled the syringe with pure blood. The needle was slightly withdrawn and its point directed from side to side, and still a negative result. Finally the needle was altogether removed. A second time the spinal landmarks were verified and the needle plunged in and more deeply than before. Aspiration here gave no result. The needle being a short distance withdrawn, free bleeding again occurred. Aspiration showed at first pure blood but afterward a few drops of clear fluid showed in the barrel of the syringe. Jonnesco was satisfied with this, and the cubic centimetre of the drugs was slowly injected. A gauze pad was placed over the punctures and held in position by simple strapping. The patient sat upright for one minute and then was placed in a semi-recumbent position, the head and shoulders being slightly elevated. The field of operation was sterilised, and ten minutes from the time of the injection, the patient was blindfolded, an assistant designated to watch respiration and pulse, and the operation began. Gerster operated. A racquet-shaped incision through the skin with extirpation of the whole gland and accidental button-holing of the external flap developed in rapid succession. The man struggled and complained bitterly from the first—kept iterating "I can't stand it, Doctor, I can't stand it. Give me ether; for God's sake. give me ether." Encouraged by the surgeon to bear it and be a good boy, the ejaculations were suppressed only to break forth anew as the sutures were being passed, and so the operation concluded. The patient was at once propped up in a semi-erect position his pulse and respiration were pronounced unaltered, but the face bore all the evidence of suffering and shock. Jonnesco, when asked pronounced the case a fair success, to which remark from an upper seat came the sharp rejoinder: "Well, I don't," and pointing to the patient, "Ask him." Gerster asked and got as answer, "I felt every cut you made, Doctor, but one," and a second onlooker observed, "I wonder which one."

Case II. A youth of 18, less robust and of a more nervous type than Case I. Right inguinal hernia. This was a case for the lower dorso-lumbar puncture. The injection fluid was made as before,

only a larger dose was given. One c. cm. of the stronger strychnine solution which contains 1 mg. of strychnine sulphate was used to dissolve 10 cg. of stovaine, but the fluid bulk of the injection was, as before, 1 c. cm. The patient sat upright with his body strongly arched forward, and the needle was plunged straight inward between the spine of the last dorsal and first lumbar vertebrae. The needle hesitated at the ligaments but passed at once into the subarachnoid space. Cerebro-spinal fluid promptly appeared and was checked, and the injection was immediately administered. The patient was placed in a semi-recumbent position, the operation-field sterilised, and in ten minutes he was blindfolded and the operation begun. He complained scarcely at all. A retractor in the upper angle of the incision caused discomfort, and when the peritoneal sac was pulled down he spoke of epigastric pain. Forcible traction on the spermatic cord occasioned no suffering whatever. At the conclusion of the operation, however, the face was pale and there was some sweating.

Case III. A girl of 23. Tuberculous glands in the neck. A case this for the upper dorsal puncture and the smaller dosage, as in Case I.

The needle was introduced as before to the depth of three inches, aspirated frequently, moved inward and outward and from side to side, all with negative result. Presently the needle was completely withdrawn and re-inserted. Free hæmorrhage now occurred and repeated aspiration yielded only one syringeful of blood after another. Again the needle was withdrawn and a third time inserted—this time almost up to the very hilt. Bleeding again was troublesome and repeated aspiration only aggravated this. Inward and outward the needle moved in its search. The excursion of the movement within the spinal canal appeared to be at least an inch. Finally the needle was altogether withdrawn and the attempt at spinal anæsthesia abandoned.

Case IV. A man of 40. Interval appendix. Here the dorso-lumbar puncture was made and the larger dose given as in Case II. This time the desired space was reached at the first attempt and the resulting anæsthesia was quite satisfactory, though the patient began almost at once to complain of slight headache.

These four cases concluded the demonstration. I leave it to each one of you to draw his own conclusions. In my opinion the two cases of low puncture were sufficiently successful, while the two cases of upper dorsal puncture were distinctly painful failures. The cases were of course too few to warrant any generalisation, and yet they seemed to me to stand for an ordinary day's work, for even though in

one case there was absolute failure to identify the subarachnoid space, and in another there was produced no apparent analgesia whatever, there certainly was no paralysis; to Jonnesco nothing unusual seemed to have occurred, and no apology or even explanation was vouchsafed. Moreover even as regards the successful cases we all have seen equally satisfactory results achieved by means of local, stage, anæsthesia, and this without the pain and difficulty of administration and without the subsequent paralysis and shock.

My own impression of the method was accordingly unfavourable, and a visit to the three patients in the ward an hour later served but to accentuate this hostile impression. Case I, the young man from whom the breast had been removed, showed no general anæsthesia and no paralysis whatever. His house-surgeon maintained, and I think rightly, that he had never showed any, even during the operation, save a small area of persisting anæsthesia over the left scapula. The inference was warranted and plain that in this case the subarachnoid space had not received the injection but that it had been made somewhere alongside this and had possibly involved one of the left-sided nerve roots. This case illustrates forcibly the difficulty of entering the subarachnoid space at a high level, for the execution of this measure was for the time in the hands of a recognised expert. I think I may safely state that in neither of the two candidates for the upper dorsal puncture was the subarachnoid space definitely reached. In Case III, the girl with the tuberculous cervical glands, the operator himself frankly admitted failure, and Case I, with which he had pronounced himself satisfied, showed no evidence whatever of subarachnoid medication. Cases II and IV of the low dorso-lumbar puncture lay semi-upright in bed and seemed fairly comfortable: this maintenance of the semi-upright position is advocated by Jonnesco for from three to six hours in all post-operative cases. In both patients the paraplegia was complete and to both this was a matter of considerable concern. There was no control of either bowel or bladder, and in Case IV, the man of 40, there was marked hyperæmia of the soles of both feet. This motor paralysis, it is stated, passes off in from 12 to 24 hours. In both these patients it did so. But for me, I confess this picture of absolute paraplegia was, to say the least, disconcerting and by no means devoid of apprehension. Moreover the level of the puncture made directly upon the lumbar enlargement bulked largely in the conception, and this sinister impression was further accentuated by K— of New York, who volunteered the recital of an experience in his own practice where some six months ago stovaine was injected altogether below the

level of the cord itself, between the 2nd and 3rd lumbar vertebræ, to enable him to perform a simple perinæorrhaphy upon a stout female. Persistent incontinence of both urine and fæces had been the outstanding result, and the surgeon, in his own words, had on various occasions carefully dodged the irate husband at the street corner. "And you needn't tell me that the addition of one mg. of strychnine would have made any difference", concluded the dismal recital.

So from the demonstration as a whole the general impression was distinctly unfavourable. As a whole it illustrated again the great difference that obtains in different points of view. On the one hand Jonnesco pronounced himself as fairly well satisfied with the results, while from our own point of view, in the four selected cases, nothing whatever transpired to recommend the procedure. And moreover such a demonstration provides a trustworthy light in which to read the enthusiastic conclusions derived from the 1015 cases. Jonnesco himself must consider his method successful, else he would not hazard the actual ordeal. We must conclude that with possibly a more Spartan *materiel* a different point of view prevails in Bucharest.

Spinal anæsthesia is twenty-five years old, for it was in 1885 that Corning of New York made the first injection. Though it has gradually come to be somewhat extensively employed by different observers, it has never won anything like a general recognition from the profession. Its history has been one rather of many vicissitudes, and even the advantages claimed for it have in the experience of many been extremely dubious or problematical. Hitherto it has found small favour in America. In Europe, where it has been much more largely used, it has undergone many modifications in the matter of details of technique and drugs exhibited, and chiefly from the hands of Bier, Donitz, and Tuffier. Jonnesco is at present its most enthusiastic advocate. His claim to originality lies in two things—the general use of the high-dorsal puncture and the addition of strychnine to the analgesic. He is, I believe, the first to advocate the universal employment of spinal anæsthesia and to proclaim that thereby the days of inhalation anæsthesia are numbered. To most observers this proclamation will appear unwarranted and premature. Our present-day knowledge of spinal anæsthesia justifies, I think, the following conclusions:—

Subarachnoid injection in any region higher than the lumbar is difficult to perform and ought never to be performed, for when employed at this higher level it is uncertain in its action, difficult to control, and sometimes dangerous. It is seldom, if ever, satis-

factory for any operative work above the waist-line, even in the hands of the most accomplished expert.

The safest and most reliable drugs are two—stovaine and tropococaine. To these strychnine or adrenalin may be added. It must, however, never be forgotten that these drugs are protoplasmic poisons and that they have a marked affinity for the tissue of the central nervous system, rapidly forming with their tissue-protoplasm, compounds more or less stable. The contention is that within the subarachnoid space the drugs act directly upon the naked nerve roots and not upon the conduction tracts of the cord itself, so that a simple nerve-block is all that is produced. But unfortunately there is no guarantee of this, and even the optimism of Jonnesco admits a certain proportion of untoward after-effects—of headache in 6.25 per cent., retention of urine (described as transitory) in 4.5 per cent., fæcal incontinence in some cachectic feeble individuals, 4 per cent., and a slight rise of temperature in 50 per cent. Be it remembered moreover that even a transitory headache means a rise in intracranial pressure, due to an increase in the cerebro-spinal fluid and accompanied by all the phenomena of a reactive inflammation. In a word a headache is an early meningitis. And the roof of the fourth ventricle is only pia mater, and fenestrated at that, and within is the Holy of Holies. Cocaine in the subarachnoid space is a deadly drug. With the use of stovaine and tropococaine there have been few recorded deaths—some 4 in 5000 cases, though Professor Rehn of Frankfort has shown that in animals the high injection even of these drugs is accompanied by considerable danger.

The prudent and only justifiable method of inducing spinal anæsthesia at the present day seems to be this: Use only stovaine or tropococaine, alone or combined with strychnine or adrenalin. Make the solution small in bulk, 1 c.cm., and nearly isotonic with the cerebro-spinal fluid; warm it to the body temperature, and inject it slowly and always at the seat of election, namely, between the 3rd and 4th lumbar vertebra. So administered it is safe, and there is a definite though limited field for its employment. It is sufficiently satisfactory only for operative work below the waist-line and is specially adapted for cases where an inhalation anæsthesia is contra-indicated, and other local anæsthesia is difficult or impossible. Such cases are prostatectomies, operations upon the rectum, anus or perinæum, and all radical work upon the lower extremities. It is claimed for it that it will prove a useful adjunct in military surgery, and though *a priori* it promises well in difficult parturition, its employment in such conditions has been hitherto extremely limited.

Such then is, I think, the sound position in regard to spinal anæsthesia, far as this position is from that of Professor Jonnesco. It is idle to prophesy of the future, but for us of to-day in the matter of general anæsthesia there is as yet no new star risen.

AN APPARATUS FOR RECTAL ANÆSTHESIA.

BY

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I have assembled for your inspection an apparatus for the administration of ether per rectum which in its simplicity and general construction follows closely that devised by Cunningham of Boston.

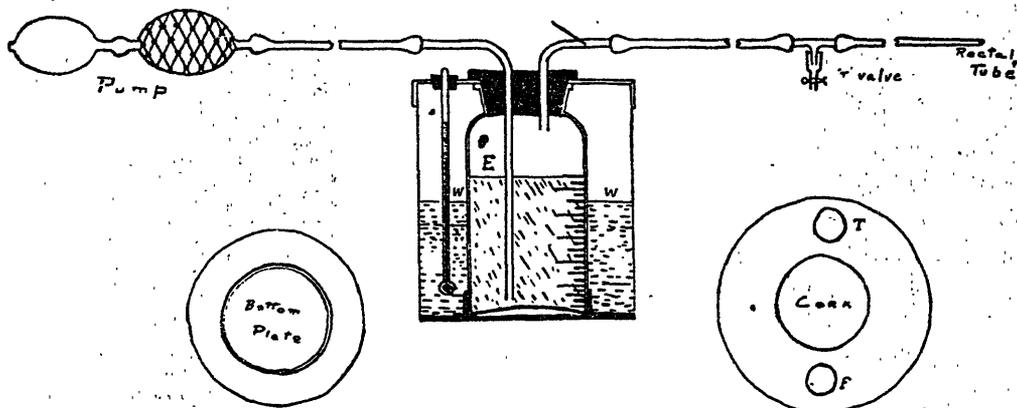
Chiefly through the investigations of Cunningham, Leggett and Dumont, the administration of a general anæsthetic per rectum has reached a degree of safety which compares favourably with the inhalation method. With improvement in apparatus and technique the unsatisfactory results and occasional fatalities encountered by earlier investigators have been largely eliminated. These favourable results depend mainly upon two factors: first, the relief of ileo-cæcal spasm through the induction of primary anæsthesia by inhalation, and secondly, the regulation of the temperature of the ether vapour so that condensation does not occur within the bowel.

Primary anæsthesia may be induced by the administration of ether, chloroform, or ethyl chloride. A further important factor is the preparation of the patient. A purgative should be given twenty-four hours before operation, and shortly before anæsthesia the large bowel thoroughly emptied by soap enemata. The rectal tube should be introduced as far as possible and a gloved finger retained within the rectum. As a preliminary, in order to get rid of other gases in the bowel, the colon should be several times inflated and emptied, the expulsion of the gas being aided either by manipulation of the finger beside the tube or the release of the lateral valve. Kneading of the descending colon and sigmoid is a further aid.

Cunningham has not found the administration of oxygen generally necessary, although the lateral valve provides for the attachment of an oxygen supply. Dumont has recently employed a glass bulb interposed between the ether jar and the rectal tube. The ether is conveyed into the bulb through a smaller tube which curves downward, facilitating the collection in the bottom of the bulb of any droplets of condensation.

The value of rectal anæsthesia in selected cases is now, I think, generally accepted. It is especially suitable in operations upon the mouth, neck and thorax. Even in thoracotomies for the relief of empyema prolonged narcosis by inhalation is always strongly contra-indicated.

It is with the view of employing rectal anæsthesia in conjunction with positive pressure in intrathoracic manipulations that I have assembled the apparatus exhibited. If primary anæsthesia can be induced with ethyl chloride and narcosis maintained by the rectal method of administration, the danger of vomiting during the application of a positive pressure mask will be largely eliminated, and the form of apparatus suitable for intrathoracic work reduced to a degree



Sketch of Apparatus
(after Cunningham)

of simplicity, cheapness and portability hitherto unthought of in pressure difference equipments. I hope to have an opportunity of reporting later upon the results obtained in the use of rectal anæsthesia in experimental intrathoracic surgery.

As you will see, the apparatus consists of an outer jar (in this case a galvanic cell) containing an ether bottle, the space between the cell and the bottle being filled with water at a temperature of 90 degrees. Through the rubber cork in the bottle is passed a long glass tube connecting with an ordinary cautery bulb, while the second perforation in the cork is occupied by a short tube which provides for the exit of ether vapour. Between the bottle and the rectal tube is introduced a T-tube for the rapid relief of tension within the bowel or the attachment of an oxygen supply. Should the ether tend to rise in the bulb tube through back pressure, a pair of hemo-

static forceps should be applied between the bulb and the bottle. The metal ring placed in the bottom of the jar I have devised not only to hold the ether bottle in position but to diminish the chances of breakage when hot water is poured into the jacket. The metal cap provides passage on one side for the thermometer and on the other for a funnel when the addition of hot water is found necessary. I have no doubt that many minor improvements in the apparatus will suggest themselves with experience in its use.

THE TUBERCULOSIS DISPENSARY AS AN ECONOMIC FACTOR.

BY

JEFFREY H. BURLAND, B.Sc.

The zeal with which science and philanthropy are attacking this, perhaps greatest, problem of our age—the cure and prevention of tuberculosis—is throwing a strong light on a great many aspects of the situation of hitherto unsuspected importance and danger to other interests than the public health. Among these, the yearly losses in revenue to insurance from the excessive mortality due to consumption, as well as from the increasing incidence of the disease, stand out prominently as an arresting factor in the normal development of a business which would otherwise naturally grow, in a certain positive ratio, with the increase of population.

From the calculations, observations, and statistics compiled by experts in this comparatively new field of research, there is startling, though incomplete, evidence at hand of a heavy drain on insurance profits, and a vast amount of business lost, through the prevalence of tuberculosis. The value of these discoveries can hardly fail to be appreciated at a first glance. The necessity for taking immediate action in the shape of prudential and preventive measures, by co-operation with the existing remedial agencies, is also apparent. I hope to show conclusively that the insurance companies will be among the first to feel the benefits of such co-operation, and that the resulting improvement will be both permanent and progressive. The truth of Emerson's axiom that "the first wealth is health" will, I trust, be abundantly demonstrated in the course of my remarks.

The first and most important fact to be realised in this connection is the high and uniform rate of mortality from tubercular diseases recorded in every country in the world. According to the mortality statistics of the Mutual Life Insurance Company of New York, Canada gives the

highest rate in America and Europe, the lowest being in Mexico. These mortality statistics of the Mutual Life, covering a period of fifty-five years, namely from 1843 to 1898, show that consumption heads the list of the causes of death, and shows larger numbers than any other single disease. The total number of deaths from consumption during this period was 5,585. In the words of the above-mentioned report, "the disease is of supreme importance to life insurance companies on account of the exceedingly great number of its victims at all ages, and especially among those below middle life. In the age period under fifty-five years, it has been the cause of nearly one-quarter, and in the period—forty-five to sixty years—of more than one-tenth of the deaths from all causes combined. Its influence seems to persist even to extreme old age, for eleven deaths from consumption have been reported in persons over eighty years."

The report continues: "Though consumption is one of the diseases which we might expect to see eliminated from the statistics of insurance by the influence of medical selection—because the suspected organs are susceptible of examination, also because the approach of the disease is so frequently indicated by the general physical appearance,—yet experience proves that though the rate of mortality from tuberculosis is diminished during the first year after insurance by medical selection, the rate in the second year is more than doubled, and it increases still more in the succeeding years.

"The largest number of deaths is found in the period of thirty-five to forty years of age, and the highest rate is between twenty-five and thirty years. The apparent exception in the first or youngest period is explained by the fact that this must represent a larger proportion of newly-selected, healthy lives in whom there has been a shorter opportunity for the development of the disease, subsequent to the entrance examination."

It would seem, however, that the influence exerted by medical examination is exhausted by the elimination of those already afflicted with the disease; after insurance, the disease is as likely to begin immediately as at any subsequent period. The highly infective character of consumption and the universal exposure to infection of all classes of society are, therefore, a constant menace to the safety of even the most assured risks.

On the basis of 150,000 deaths yearly from tuberculosis in the United States, the National Association for the Study and Prevention of Tuberculosis computes that there are 684,934 persons constantly ill with the disease. Of these, about one-third are assumed to be wage-earners. Allowing only \$500 as the average earnings of the workingman who

dies, the annual loss to the country from the ranks of labour alone is thus over \$114,000,000 each year.

I am informed by a well-known actuary, that a community pays, in life insurance premiums, a sum equivalent to 5 per cent of its wage-earning capacity; accepting this as a basis, and applying it to the above figures, we find that the annual loss of insurance premiums in the United States amounts to \$5,700,000.

Since the census of 1901, we have no vital statistics for the whole Dominion from which to compute the present rate of mortality in Canada from tuberculosis. Taking the provinces of Quebec and Ontario separately, however, we find that in Quebec, with a population of 1,648,998, and a mortality of 30,000 for the year ending July 1906, the number of deaths due to tuberculosis was 2,935, or over 9 per cent of the total mortality.

In Ontario, during the same year, in a total population of 2,182,947, the total mortality was 26,414, and the number of deaths from consumption was 1,996, or nearly $7\frac{1}{2}$ per cent of the total mortality. For the two provinces, the total mortality was 56,414; the total of deaths from consumption was 4,931 or over $8\frac{1}{2}$ per cent. If we take the percentage of mortality as above shown, and apply it to our present population—7,350,000—as given by the census of last March, we find that the total number of deaths for the year 1909 will be, approximately, 125,000. The percentage of deaths herein included caused by tuberculosis would, as above found, give a mortality of 10,625.

According to Dr. R. W. Philip, of Edinburgh, we may safely multiply the number of deaths from the disease by 10 in order to obtain the number of persons actually suffering from it. If we apply this rule, we find no less than 106,250 persons in Canada who, on account of some tuberculous affection, are ineligible for acceptance by the Insurance companies. If we now apply the rule of the American National Association for the Prevention of Tuberculosis, we find that the cash loss in insurance premiums amounts to no less a sum than \$885,500 per annum. This loss is altogether apart from the losses suffered by companies owing to the mortality amongst accepted risks, from tuberculosis.

The insurance companies in Canada have not thus far tabulated all the figures which would be necessary to give an accurate idea of the situation as it affects their interests, so I can but roughly estimate their losses from the statistics at hand. From one well-known Canadian Company, I have received the following general statement: The total deaths in Canada of those insured in the Company for 10 years ending 1907, numbered 1,859. Of this number, 287 died of consumption, and 161 from lung disease not specified as tubercular, though probably of

that nature. The average policy being estimated at \$1,500, this Company, it is roughly calculated, has paid out \$430,000 in claims through consumption, and \$240,000 in claims from lung disease, that is \$670,000 or nearly one-quarter of \$2,800,000, the total amount paid for all claims in the same period.

Another Canadian Company gives me the following figures: The number of applications declined on account of history of tuberculosis within the last four years was 151. Of policies issued by the Company since November 1st, 1905, seventeen, for \$24,500, have become claims by death from this cause, and during the same period, the total number of deaths amounted to 120, for an aggregate insurance of \$192,342. Thus nearly one-eighth of the whole amount was paid in claims through tuberculosis.

According to Dr. Philip, "the usually accepted statement that from one-seventh to one-tenth of the race die from tuberculosis—grave as it is—does not exhaust the truth. The records of post-mortem examinations show that at least one-third, and probably one-half, of all persons dying bear traces of tuberculosis in one shape or another. The experience of our hospitals and dispensaries emphasises the view that the statistics of mortality from tuberculosis insufficiently suggest the great frequency of its incidence." Dr. Philip further remarks that he has had occasion, through the system of domiciliary visitation instituted by him in connexion with the Royal Victoria Dispensary, Edinburgh, to realise the appalling frequency with which several members of the same household in the contracted dwellings of the poor are simultaneously affected by tuberculosis. He finds abundant reason for the statement that there are, in every great centre, crowds of infected dwellings, veritable nests of tuberculosis—entrance into which, or at least residence for any time in which, is necessarily accompanied with the greatest risk. Systematic visitation in Edinburgh under the direction of Dr. Philip has brought to light the great frequency with which the tuberculous patient, for one reason or another—often from pecuniary considerations—changes his residence. Thus in the clientèle of the Victoria Dispensary, it was found that no fewer than 41 per cent of the patients had changed residence within two years, thus multiplying the infected areas.

If according to the rule already mentioned we multiply by 10 the mortality in Montreal from tuberculosis—for the year 1908—given in the vital statistics as 711, we get the startling figure of 7,110, representing the incidence of the disease in our midst, and if, as Dr. Philip says, the number may be doubled without exaggeration, we have 14,220 tuberculous persons in the city, or about 4 per cent of the entire population. This contraction of the area in which insurance can be developed, taken

in conjunction with the losses from accepted risks, which eventually become claims through tuberculosis, represents a source of weakness and waste, which none but a suicidal policy would surely dare to ignore.

The incidence among children is also found to be of startling extent. According to tests made recently on 728 children from the tenement house section of New York City, 28 per cent showed signs of tuberculosis either of the joints, glands or lungs.

If the percentage of tuberculous children recently ascertained by an investigation in Stockholm, Sweden (1.61 per cent), were applied to the schools of the United States, there would be 273,700 children between the ages of 8 and 15 who are positively affected with tuberculosis.

While we have not full statistical information as to the number of children affected by tuberculosis in the public schools of Montreal, recent investigations in various other cities point to a numerically large class in need of special provision. An investigation by Dr. Theodore B. Sachs, of Chicago, based on seventy-seven families, representing 266 children, in which one or both of the parents were infected, showed 29 per cent of the children with a pronounced tubercular infection. Examination of 728 boys and girls, under ten years of age, taken from among the recipients of a one-day fresh air excursion during the past summer at the Sea Breeze Fresh Air Home of the New York Association for Improving the Condition of the Poor at Coney Island, indicates that from 25 to 30 per cent are infected with tuberculosis. Other studies in Boston, Cleveland, New York or elsewhere show even more startling results. The latest observations from Vienna indicate that from 50 to 75 per cent—or even over—of school children under 14 already suffer from tuberculosis. The dispensary records of the Chicago Tuberculosis Institute, involving several thousand families, and the records of the Visiting Nurse and the United Charities involving many more thousand cases, bear out the same general proposition.

Dr. Philip says: "Every day I am more impressed with the frequency of tuberculous lesions in infants and young children. While statistics of mortality in childhood emphasise the frequency of disease at this age, there is reason to believe that infection is far more common than the death rate would indicate. The disease lies latent—it may be sealed in glands, or limited elsewhere by cicatricial tissue—for long periods, until a fresh disturbing cause re-excites to activity." Among the school children of Edinburgh, personally examined by Dr. Philip, and submitted to three definite tests, no fewer than 30 per cent were found to present stigmata of tuberculosis.

This is an aspect of the situation which the large industrial insurance companies will feel obliged to watch carefully. In one of these com-

panies, 8,000 children under 10 years are insured. Allowing that 30 per cent of these are infected or liable to become infected with tuberculosis, the imminent loss can be readily computed.

In addition to all the recorded and suspected cases of tuberculosis, we must take into account the mortality indirectly due to that disease, but ascribed to other causes. According to Dr. Philip's observations, 70 per cent of the mortality among children is either directly or indirectly due to tuberculosis.

From the medical reports all over the world we also glean the fact that a very large proportion of autopsies of cases ascribed to various other diseases reveal tubercular lesions. The records of post-mortem examinations, according to Dr. Philip, show that at least one-third and probably one-half of all persons dying, bear traces of tuberculosis in one shape or another.

Our domestic statistics have not been carried as far in this direction as might be wished, but we can without fear of exaggeration take the statistics of the older countries as a safe basis for our calculations, the probability being, however, that by this method we may be led to underestimate, rather than exaggerate, the vastness of the problem which confronts us.

The situation is undoubtedly a gloomy one, but it is not by any means hopeless. Indeed Dr. Philip says: "The consumptive patient nowadays occupies a platform of hopefulness previously but little dreamt of. His horizon to-day is brighter with promise than ever it has been." The world-wide awakening to the universal danger, and to the necessity for preventive measures, has within the past two decades resulted in an encouraging diminution of the ravages wrought by the great White Plague. In Germany, which has led the way in the Anti-tuberculosis Campaign, statistics published by the Imperial Gazette show that in recent years there has been a steady decrease in the number of deaths from tuberculosis, and especially from tuberculosis of the lungs. In urban centres the death rate per 100,000 fell from 226.6 in 1903 to 192.15 in 1908. In England, as a result of efficacious legislation, mortality from tuberculous diseases has steadily lessened until now, when the mother country yields the lowest death rate from tuberculosis.

Dr. Philip has pronounced the great reduction in mortality from tuberculosis in England and America during the past fifteen years one of the most remarkable facts in the history of medicine. The gratifying result has been attained, in part, by the general advance of sanitary science, and the adoption of well-devised measures directed against overcrowding and dirt, which tend to breed tuberculosis as they do other infectious conditions.

Special interest attaches to the remarkable decline in tuberculosis in the city of Liverpool, from the circumstances that the city was one of exceptionally rapid development at a period when little or no attention was given to sanitation.

As long ago as 1843, a Royal Commission was appointed to inquire into the health of the great cities of England, and the reports of the Commission show, that whilst as a rapidly growing seaport, Liverpool was exceptionally liable to the importation of disease of all kinds, the insanitary condition of the city was such as to most favour the spread of disease. It was at this period that deaths from tubercular diseases were at their maximum.

The condition of the dwellings was very bad, something like 140,000 people living under conditions which constituted, so far as tuberculosis was concerned, a gigantic experiment upon man.

In the process of years, a growing knowledge, and increasing Parliamentary powers, enabled measures to be directed against these conditions. Very considerable housing operations were taken in hand, insanitary dwellings were removed, and upwards of 2,000 houses erected by the Corporation for the poorer classes, an exceptionally abundant water supply provided for the city, large additions made to the sanitary staff, greater supervision of food supplies, widening of streets, improvement of drainage and scavenging, stricter measures in regard to the prevention of overcrowding, and the provision of hospital accommodation.

Of more recent years, several specific measures have been brought into vogue, namely, the distribution of cards containing sample instructions to consumptives and those who live with them. This was commenced in 1899, and a voluntary system of notification followed in 1901. A compulsory notification is now applicable in the case of pauper consumptives, careful attention is paid to the disinfection of houses, and periodical visits are made to the homes of all the poorer patients.

Cards relating to the danger of spitting, etc., have been distributed amongst employers of labor, and in other suitable places. The examination of sputum is carried on at the University Laboratories. The medical inspection of school children has recently opened up new avenues of action. The staff of the Consumption Hospital and Sanatorium, and of the Dispensaries, work in close harmony with the Health Department, and finally a very special attention is given to the question of tuberculosis in milk, and to the health of the cattle supplying the city with milk.

In regard to the improvement effected by these various sanitary measures, it may be stated that, in 1885, the rate of the mortality

amongst the male population from phthisis stood at 2.7 per 1,000, whilst in 1907 it stood at 1.9. The rate amongst the female population, giving the figures for the same periods, were 2.2 and 1.1, a diminution in this latter case of one-half.

May we not hope for equally good results when the plan of campaign now being carried out in Montreal will have had time to bear fruit?

The city of Edinburgh also affords significant evidence of the influence exercised on tuberculosis by the institution of organized and co-ordinated effort. In addition to less definite agencies, there has occurred in Edinburgh, from 1887 onwards, the gradual evolution of an anti-tuberculosis scheme, including the dispensary, with its system of domiciliary visitation, the sanatorium, the hospital for advanced cases, the working colony, and finally compulsory notification.

Charts prepared by Dr. Philip show, that from 1887 onwards, the mortality from tuberculosis in Edinburgh has fallen progressively. It was remarkably rapid in the decade from 1887 to 1906, showing a fall per 10,000 of 8 or 42.1 per cent. "It seems fair," says Dr. Philip, "to associate this to some degree with the development of the completer organization. Since the tremendous mortality from tuberculosis has been realised, the work of treatment and prevention has become more and more active and universal. The movement has been greatly advanced by recurring international congresses and conferences in which the opinions of representatives from all nations have been focussed and crystallised, but the lack of efficient organization and co-ordination of measures militates against the complete success of the general movement. The ineffectiveness of individual efforts in suppressing the disease has been clearly shown in the history of the anti-tuberculosis work for the past few decades. Many agencies are called for, to do active service in this work. But from the first we should bear in mind the necessity of co-ordinating the activities of all the fighting elements in this great modern alliance, so that duplication and waste of energy shall be avoided, while each is aided to work in the field where its efforts can be most effectively and immediately applied." That commercial gain is an acknowledged motive on the part of insurance workers does not interdict their co-operation. Dr. C. A. Baer, secretary of the Wisconsin Anti-Tuberculosis Association, states frankly that the greatest hope of the future will be in the commercial enterprises which will be well paid for instituting reforms.

"Exterminate the tubercle bacillus, and tuberculosis will survive only as an historical monument," says Dr. Philip; and again, "If communities, as communities, are to benefit practically by the discovery of the tubercle bacillus, to the extent which the discovery warrants, there

is clamant need for a vastly wider organization and co-ordination of measures than has yet been realised."

"If tuberculosis is preventable, why not prevent it?" exclaimed King Edward, on hearing the dictum of the scientists. Why not?

"The campaign against tuberculosis is a warfare on uncleanness and wrong habits of living. To win the fight, the foul air of the dark tenement must give way to clean air and health-giving light, building laws must forbid the erection of houses that do not provide a reasonable minimum of air space, light and ventilation; work-rooms must be clean, well-lighted and well-ventilated; spitting on floors and sidewalks must be stopped; and in a hundred other ways healthful habits must be acquired and a higher standard of living secured." (Alex. W. Wilson, Chicago, Tuberculosis Institute, 2nd Annual Report.)

Dr. E. S. Bullock, a cured patient and active worker in Silver City, New Mexico, says: "We are coming to recognize clearly that the root of the evil must be attacked by prevention, not cure, and that it would have been better for civilization, if all the money expended in attempts at cure had been directed to the accomplishment of prevention, instead. It is, however, our business to care for the sick as well as to prevent sickness, and after infection has occurred, it becomes our plain duty to do all we can for the unfortunate person on whom the parasite has fastened. This is where the Tuberculosis Dispensary finds its specific task."

Dr. Livingston Farrand, Executive Secretary of the National Association for the study and prevention of Tuberculosis, New York, writes: "That one means of prevention is the destruction of the cause, is obvious; that an equally important adjunct in accomplishing the same end, is the ability of individuals to resist the attack, is a matter of observation and experience. Our efforts, therefore, must be directed along either or both of these two lines, to eliminate centres of infection and to increase the resisting power of individuals. It is the more definite attack upon centres of infection and the immediate procedure necessary to reduce the dangers of the situation that present specific opportunity and permit of a relatively definite programme."

Dr. Edwin A. Locke writing of the municipal anti-tuberculosis work in Boston says: "All members of the family of a tuberculous individual are systematically sent or brought to the clinic for examination. This work is principally done by the visiting nurses. A surprising number of children have been found to be infected. Experience has shown that where patients are left to come voluntarily, only a small percentage of cases are ever discovered. A considerable portion of the nurses' time is spent in following up delinquents and bringing individuals to the clinic

for examination. The routine work of history taking, etc., is done by the nurses. Each of the nurses is assigned a definite section of the city, under the direction of a superintendent of nurses. Nothing has been so gratifying and encouraging to us as the success which these nurses have attained in their work and we regard them more and more as the all-important agents in the crusade."

In the "Transactions of the 4th Annual Meeting of the National Association for the Prevention of Tuberculosis," Dr. Locke testifies as follows: "The most important and far-reaching educational work has obviously been done in the course of the daily visitation of consumptives in their homes by the dispensary nurses. One single investigation gives evidence of the effectiveness of this type of educational work. Seven hundred and sixty-four cases who were instructed by the nurses at the clinic were subsequently visited in their homes and observations were made as to the accuracy with which instructions about the disposal of sputum were being carried out. Two hundred and twenty-eight did not expectorate, 338 burned the sputum, 51 used cuspidors and 149 were careless in the disposal of the sputum."

Of the results achieved in the anti-tuberculosis field by the Red Cross Sisters in Germany, Dr. Pannwitz writes: "To them is due not only the most happy results of the work, but gratitude, love and respect. Daughters of the people, trained for their work, they know the people, they understand the people, they feel with the people! They have their allotted districts in town and country, and in these districts they go their daily rounds from morning to night, in summer heat and winter cold, in rain and storm, in sorrow and joy, looking for sickness, want and hunger. They are under strict injunctions to call the doctor's attention to even the slightest suspicion of tubercular symptoms, and having detected what they know to be a *bona fide* case, to make the authorities acquainted with it, and see that the patient is brought to one of the large sanatoria for the cure of consumption. In this way the spread and the infection of the disease is checked, and we may bless these good 'sisters' whose unselfishness, love of humanity, pity for the suffering, common sense, strength, tact, and womanly tenderness, enable them to do what no man could do, and few other women would care to do. Under no religious rule, but at liberty to come and go as they please, they feel themselves called to work, solely by the example of Him who went about doing good."

Writing on "Public Aspects of the Prevention of Consumption" Dr. Philip says: "The tuberculosis dispensary should be for every city and district the uniting point of all other agencies. It should be an isolated institution, but form an integral part, indeed the centre of a

great network of operations. To the dispensary, tuberculosis patients of the poorer classes, and patients with chronic colds and persistent ill-health should be invited. Tuberculous patients presenting themselves at infirmaries, hospitals and other charitable institutions, should be directed to the tuberculosis dispensary. Employers of labour and heads of public works should be apprised of the existence of the dispensary so that invalid employees may be directed thither. The public should be made aware that the dispensary is prepared to answer all inquiries regarding tuberculosis and to advise in a given case what is best to be done. The dispensary should constitute a centre for the dissemination, in the widest fashion, of information regarding prevention and treatment. Every step in the gradual development of the Edinburgh scheme has strengthened my belief in the efficacy of the tuberculosis dispensary as a base for further operations. In this belief, I recommend to every considerable community the establishment of such an institution, which will serve at once as a developmental centre and uniting-point of other agencies."

From the above outline of the field of work covered by the Tuberculosis Dispensary it will be seen that the value of such an institution as an instrument of preventive medicine can scarcely be over-estimated. We were fortunate in having such an excellent and successful model as the Royal Victoria Dispensary, Edinburgh, to keep before us in planning the Royal Edward Institute of Montreal. But I am pleased to be able to tell you that in addition to all the valuable features of the Edinburgh Dispensary, we have introduced a number of new ones, which add to the attractiveness, the efficiency and the popularity of our institution and make it, in a sense, unique.

You will perhaps allow me briefly to show you in what respect it differs from, and even leads all other dispensaries. As you are all aware, at the ordinary hospital dispensary, a patient is merely examined and advised as to the treatment he is to follow. In certain cases, he is given the necessary medicines, but the influence of the dispensary goes no further. The Tuberculosis Dispensary has a much larger programme. At the Royal Edward Institute, a patient who presents himself for inspection is welcomed as a guest of the institution, which has a sun-parlor and a roof-garden, in either of which he may recline in a comfortable chair, propped up with pillows and wrapped in warm rugs. A bowl of nourishing soup is served to each patient every day. An open fire is an inviting feature in cold weather. To a nurse in charge, the social history of the patients is given, after which the medical history is taken up by the medical officer. Examination follows in one of the well-equipped examining-rooms. In addition to a regular physician,

there is a staff of consulting physicians, who, on special days of the week, devote a certain number of hours to the examination of patients and to work in the bacteriological laboratory. The patient is advised how to care for his health, to regulate his diet, live in the open air and rest as much as possible. He is also instructed in all the steps necessary to prevent infection, especially as regards the disposal of sputum. Special cups for this purpose are given to the patients with printed instructions how to use them and why. The patient's home is visited by the Inspector and also by a Dispensary nurse, who both examine the conditions there, point out how they can be improved, make a report to the Institute covering the case on certain scheduled lines and see that disinfection is carried out when necessary. In addition to inspecting the house, one of the doctor's duties is to hold a "march past" of the household so that other cases of infection may be detected as early as possible. In cases of extreme poverty, financial aid is given. The Ladies' Relief Committee of the Hospital look faithfully after all the indigent and helpless families of tuberculous patients reported. Bed-ridden patients are regularly visited and cared for.

Necessary medicines, disinfectants, and proper nourishment are dispensed when the patient's condition seems to call for such aid. A selection is made of likely patients for hospital treatment and, in the case of a patient discharged from a hospital, he is kept under supervision for a time in order to insure the best results. The Dispensary nurse is expected and trained to be a guide to tuberculous patients and their friends, in all matters concerning conditions of living and methods of fighting the White Plague. She is also prepared to answer inquiries from any source, on questions concerning the nature, prevention, and cure of tuberculosis. A tabulated list of houses visited is being made, with details of sanitary and other conditions.

I have been given to understand that the Insurance Companies, realizing the economic necessity of preventive measures in fighting tuberculosis among their policy-holders, are making the experiment of sending nurses to the homes of those affected. The idea is highly commendable, and I hope it is only the first step in a systematic campaign against the deadly White Plague. But if I might be permitted to make a suggestion, I would say that much better results can be obtained for the Cause in general, at no greater expense to the Companies, by utilizing the services of our Institute in dealing with cases of tuberculosis, and offering to the Institute such support as is possible to aid it in the solution of the problems of prevention and cure of the dread disease.

Not only must the death-rate from tuberculosis and the incidence of the disease steadily dwindle as a result of the Dispensary service, but

the general improvement in living conditions following its labours and influence must inevitably lower the death rate and incidence of all other diseases of a social character.

The persistent crusade against dirt, foul air, overcrowding, and dangers of infection, if it gains any victories at all, must win all along the line. Thus, for every patient won back from the White Plague, or insured against infection, it is safe to calculate that two, three, or more shall have learned how to live, and how to protect themselves against other forms of disease.

I should like briefly to mention some of the things that have been accomplished by the nurses of the Royal Edward Institute, since the opening of the Dispensary by His Majesty the King, on October 21st, 1909.

During the months of November and December 645 consultations were held. Of this number of patients, 90 were examined for the first time with the result that 39 were discovered to be tuberculous.

The highest number of patients examined in any one day was 28. Seventy-two new cases were reported to the Dispensary, some by doctors, others by institutions, private citizens, etc. The nurses paid 519 visits to patients in the two months.

Of provisions dispensed at the Institute, over 1,500 quarts of milk and large quantities of fresh eggs have been given to the patients, besides the daily bowl of soup to each, already mentioned.*

As the Institute is becoming better known, the attendance is growing rapidly, many new patients presenting themselves each week for examination.

Some very important observations have been made as a result of the nurses domiciliary visitation. For instance, the number of infected houses in various streets has been carefully tabulated. It is a significant fact that in 72 of the houses visited, more than one case of sickness has been discovered in each, and sometimes three, four, even five patients have been found successively under one roof.

Veritable nests of tuberculosis have been revealed in certain sections of the city. In one East End street between St. Catherine and Craig streets, cases have been located in Nos. 88, 90, 90a, 92, and 98—that is, in five out of ten adjoining houses.

In one street, in a period covering four years, 54 cases of tuberculosis were found, in another, 46 cases, in another 39 cases, and so on. Thirty-six patients among those recorded have changed their residence two, three, even four times, since the disease declared itself, thus grievously

* During the month of January, 433 consultations were held, 67 new patients were registered, 33 cases were reported and 330 visits were made by the nurses.

multiplying the infected areas. The total number of infected houses visited by our nurses is 344.

The Inspector's report shows that 713 visits were made by him, 6,600 cuspidors were given away, and 1,160 pamphlets were distributed.

These figures, as well as a few taken from the Sanitary Inspector's report for 1908—which shows that 264 dirty houses and 3,544 dark rooms were visited—give a sufficient glimpse of the wide field to be covered by the Dispensary Nurses.

To close these remarks, may I quote an inspiring passage from Dr. Philip's address delivered at the opening of the Royal Edward Institute. He said:—"As the movement grows, the Royal Edward Institute will continue to be the centre of development and the connecting link between the various agencies which may come to concern themselves with tuberculosis in your city. By the evidence which your accumulating facts will afford, you will be able to influence the municipality and local authorities regarding sanitary improvements. In this way they will be compelled to exercise the far-reaching powers they already possess. Where these are insufficient you will be able to hasten legislation so that large powers may be granted. From the facts which accumulate regarding school children, you will be in a position to approach the education authorities and so obtain the correction of faulty conditions of school life, and, it may be, the establishment of open air schools. . . . In the great humanitarian warfare against Tuberculosis, Canada has a chance to lead the world aright. She has come in at a fortunate moment. In the past there has been a good deal of stumbling in the dark and advance has been uncertain. Progress has been prevented by prejudice, misconception, and even self-interest. Canada, happily less disturbed by tradition and old institutions, can take the direct course towards the goal you have in view."

THE ORGANIZATION OF THE BOARD OF HEALTH OF MONTREAL IN REGARD TO CONTAGIOUS DISEASES.

BY

J. E. LABERGE, M.D.

Gentlemen: The Department of Infectious and Contagious Diseases, which I have the honour to represent and direct, does not, in my opinion, receive from the medical profession generally in this city, the assistance to which it is entitled. I may even go so far as to say that sometimes—more especially in connexion with the declaration of infectious diseases—a few physicians are actually hostile in the attitude which they assume towards the Department.

This being so, I have considered it desirable, in order to promote the better administration of the Department, to appear before the Medico-Chirurgical Society for the purpose of explaining our methods of procedure, and to call the attention of my esteemed confreres to the bye-law which governs the city. The bye-law to which I particularly refer is No. 105, Section 37, which reads as follows: "Every physician who has under his care within the limits of the City of Montreal, a case of illness such as small-pox, typhoid fever, diphtheria, or any other contagious or infectious disease, is bound, within twenty-four hours, to report it to the Health Department with the name of the patient, number of the street, and the house wherein the patient resides."

In addition to this I may also quote bye-law No. 51, of the Board of Health of the Province of Quebec, which you will perceive renders it obligatory for every physician to notify the Department of any case of infectious or contagious disease which he may be called upon to treat. Bye-law 51 reads as follows:—"When a physician decides that the person whom he has been called upon to visit is affected by one of the maladies named in article 50, he shall, within 24 hours, notify the Health Authorities of the locality wherein the infected person resides."

These regulations, therefore, inasmuch as they have not been repealed, render it the duty of every practitioner to announce any case of infectious or contagious disease which may present itself in the exercise of his profession. Moreover, it is a duty which we owe to society, and it is unworthy of the noble profession to which we belong to ignore this obligation under the pretext that, because the city does not recompense us for these certificates, we are consequently not compelled to conform to the provisions of the bye-law. Again, we are failing in our duty as good citizens, and, I may even say, lacking in courage, if we do not make these municipal and provincial declarations owing to a desire to gratify our patients.

More than half of the infectious and contagious diseases occurring in this city are not reported to the Department of Health. We may possibly explain this by saying that the medical attendant forgets to do so. Why does he forget? Because, he will tell you, he has not the opportunity afforded at the house of the patient where he makes his diagnosis of the disease to conform with the bye-law. However, the Board of Health has endeavoured to overcome this difficulty by issuing certain forms, specimens of which I will hand round. These booklets are distributed gratuitously by the Department, and you can obtain them at any time by application to the office. All you have to do is to tear out a blank form from one of these books, state the nature of the malady, sign and

seal it, drop it into the nearest letter-box and it will be transmitted without postage.

We are all active workers in a great country, and our ambition is to see it prosperous and flourishing. Now, imagine a workman in a factory, who witnesses some daily loss suffered by his employer. Would it be right for this workman to make no effort to avert the trouble either because he was not paid to do so, or because he was afraid to look after his master's interests lest he should give somebody offence. Contagious diseases are a prolific source of loss of life. And this applies equally to a nation as it does to a municipality. It is, therefore, the obvious duty of every good citizen to make the declaration to which I have referred. The Board of Health would then be in a position to adopt the necessary measures for limiting or blotting out the disease. I would even go further and state that, in my opinion, it would injure the medical profession to take away from it the privilege of notifying cases of infectious or contagious diseases. We must not forget that our profession carries with it responsibilities which it is our bounden duty to preserve intact.

I will now pass on to the personnel comprising the staff of the contagious diseases department. There are three clerks, one typewriter, four disinfectors, two drain inspectors, two nurses, seventeen district medical inspectors, one diagnostician, and one chief to direct the Department.

When a medical man has notified the office of a case of contagious disease, whether by telephone or by letter, a clerk—always the same one—incribes the declaration upon a special form. This form contains the following particulars:—

(1) The name of the street; (2) the nature of the malady; (3) the name of the patient; (4) the name of the attending physician; (5) the name of the official who carries out the disinfection of the infected dwelling.

All this information is necessary for the purpose of combating contagious and infectious diseases. Every morning a selection is made of the different addresses which we receive. Four different lists are prepared for the disinfectors, and the different addresses are so arranged that each disinfector has a limited circuit to work in. These inspectors report at the office at 8.30 every morning and are given the lists which have been prepared for them for their day's work.

If the patient remains in the house, the disinfector must placard the house indicating that it is infected by some contagious disease. In the case of a house which the patient has left, or has been removed to a hospital, or—in case of death—after burial, the official immediately proceeds to disinfect it; and, in accordance with the wish of the family

physician, he will disinfect either one or two rooms, or the entire house. In all such cases this official should note, upon the occasion of his visit, the following points which are necessary for the statistician:

(1) Nature of illness; (2) name of patient; (3) age; (4) name of father, his profession or employment; (5) date when the illness commenced; (6) date when the diagnosis was established; (7) date when the Health Department was notified; (8) date when the placard was affixed; (9) date of recovery or death of patient; (10) date of removal of placard, and at the request of what physician; (11) number of persons in the house; (12) length of residence in Montreal; (13) length of residence in the house; (14) if patient has been absent from the city—how long? (15) address of milkman; (16) name of school attended by children in the house; (17) where treated—at hospital or home? (18) probable source of the disease; (19) condition of the subsoil, and of the ground floor; (20) whether first or second storey; (21) condition of the house. How lighted? How ventilated? (22) where patient was employed, with how many other employes? (23) how many privies there are in the vicinity, and whether there is any connexion between these closets and street drainage.

Every morning the disinfector reports to the Department of Contagious Diseases. He announces the work which he has performed, and again continues his daily work in the manner which I have described.

Every case of contagious or infectious disease which may be reported to us is recorded and filed. Each record is numbered, and contains all the particulars of the illness so that, from this card, should inquiries be made, all the details are at hand. There is an indexed volume in the Office of the Department in which we inscribe the name of the street, and the number of the house infected. Under this address is the number of the card upon which is recorded all the information concerning the illness which was reported to us. This record informs us by whom it was reported, date of commencement of illness, number of residents in, and condition of the house; the social condition of the occupier, number of rooms; how these rooms are lighted and ventilated, whether the patient was sent to a hospital, who disinfected the place, condition of drains, if these drains have been tested, and the general nature of the surroundings.

In order to facilitate our work we have a different colour for each contagious disease: for example, blue indicates typhoid fever; red, scarlet fever; yellow, small-pox; green, measles, and so forth. This work is carried out by a clerk in the office. The cards are placed on file, and if, for some reason or other, anyone is anxious to learn whether such and such a house which he wishes to rent or to purchase is in a sanitary condition, or whether it has been infected by some contagious disease, we

are in a position to afford the necessary information. We can advise him upon this point from the 1st of January, 1906, up to the present day. Every year additional information is added to the records of preceding years. Consequently, in years to come, the office of contagious disease will form a valuable sanitary record of dwelling-places in the city of Montreal.

We have also two employés who, when a case of contagious disease has occurred and the case is finished, visit the infected houses. It is the duty of these men to examine the condition of the drains. Should any defect be discovered notice is sent to the proprietor to remedy the trouble immediately. Moreover, these two officials report upon the work performed by those employed to disinfect houses, and whether they have rendered satisfactory services. All their remarks are carefully annotated.

A medical consultant is at the disposal of the public in order to assist any member of the profession, who may wish to have his diagnosis confirmed by the City Hall expert; he is also at their disposal to see whether effective measures have been adopted in order to prevent the dissemination of contagious disease; he will also visit the families of poor people who are not in a position to call in a medical man, and are afflicted with some form of contagious disease.

Two nurses are employed by the Department to attend to sick children, they explain to the parents how to carry out the treatment prescribed by the doctors. These nurses have special instructions never to treat cases on their own responsibility, or to recommend a family to consult any particular physician. If the school authorities are agreeable they may treat at the schools children suffering from slight affections; for example, ringworm, pediculosis, or some other minor complaints. This does not prevent children suffering from these affections, from attending school. But when permission is not given the nurse to apply treatment at the school—no pupil suffering from ringworm or pediculosis is allowed to continue attendance owing to the danger of spreading the disease. The nurses take with them from the schools a list containing the addresses of these children who have been sent away on account of some trouble; they make a note of the diagnosis, visit these children at their homes to make sure that the children are being treated, or to urge the parents to consult, without delay, their family doctor. They also go, upon the order of the Health Department, and visit poor families where there may be a case of sickness.

Finally, seventeen district medical inspectors complete the list of employees of the Department of Contagious Diseases. The City of Montreal has been divided for the purpose of inspection into seventeen districts—a district for each physician. It is the duty of these medical

inspectors to overlook, from a sanitary point of view, the condition of their districts, to inspect schools, manufactories and dwelling places. They devote their whole time to the City from 9 a.m. to 5 p.m. They are not permitted to invite children to consult them at their office, and I have not yet received any complaint in regard to this matter. These gentlemen visit the schools, as far as possible, once a day. Moreover, they are expected to make a general inspection of all the children at least twice a year. At their usual morning visits to the school, they only see those pupils who have been absent, or others whom the Principal may suspect to be suffering from some form of contagious disease; they may then proceed in accordance with the wishes of the Principal although they will examine one class daily in schools under their supervision. When they have completed a school, they will commence again, and continue this portion of their duties up to the end of the year.

Medical Inspectors are also obliged to make a complete inspection of the school building twice a year, in order to assure themselves of the sanitary arrangements of the school. If they discover sick or unclean children they recommend the Principal to send them home, accompanied by a closed card, indicating to the parents the nature of the affection from which they are suffering, and advising them to consult their family physician.

During the summer vacation these officials visit different public establishments, situated in their particular districts, and examine the hygienic conditions existing, and in how far the municipal and provincial laws are observed. The establishments visited are groceries, meat-markets, manufactories, bakeries, barber-shops, laundries, night-refuges. The knowledge which the Board of Health has derived through the medium of these district medical inspectors has been of the highest importance for promoting the good administration of the office. Moreover, the moral influence which has been obtained by this system of inspection is enormous—especially in schools, work-shops, and other public places. It is an excellent method of making known and enforcing the law. Indeed it has been ascertained, in some factories that the employés have only had impure water to drink, that the closets were uncleanly—everything was unsanitary, that nearly all grocers keep the milk in improper places for good preservation, that they leave their foodstuffs exposed to pollution by the dust of the roads, and by animals which stray about the streets in search of something eatable, that in many barber-shops no attempt is made at cleanliness or hygienic surroundings, that many of these establishments propagate infectious diseases. These places have received notice to remedy this state of affairs; some have done so,

others have done nothing. Upon the occasion of a second visit we shall have more satisfaction, and shall accomplish a good deal in the end.

I believe that by repeating to people over and over again, that such and such a practice is to be utterly condemned they will eventually conform to the regulations prescribed by the law, and I am of opinion that this method of procedure is preferable to more drastic measures.

In the schools we now find much less pediculosis and very rarely scabies; the pupils are much cleaner, and in all educational establishments the chairs and tables are adapted in such a fashion that the light falls from the left. The classes are less crowded. Many schools, it is true, are insufficiently ventilated, but, later on, considerable improvement will be effected.

With this organization, which we have now maintained for nearly two years, we have been enabled to trace mischief to its source. If the focus of infection—I will take scabies, for example—is found in a factory, the workpeople carry the pest into their homes and their children carry it into the schools. Even if some suitable treatment be afforded a pupil attending a school, he will nevertheless be liable to return with scabies if his parents, or member of the family are not treated as well. The trouble will always afflict the family, if the origin of the disease is in a manufactory and no steps are taken to eradicate the mischief. As soon as we have information that children frequenting such and such a school live in houses infected by contagious diseases, we immediately warn the inspector of the district of the fact; he, in his turn, warns the principal of the school not to receive those children exposed to contamination.

Lastly, district medical inspectors have made inquiries in their respective districts relative to the number of cases, and the cause of the outbreak of typhoid fever which has severely afflicted Montreal. They have gone to the houses of their confreres, and have inquired how many cases of typhoid they have attended since the 15th of October last, and whether they know of any cases which have been improperly designated as typhoid. They have inquired in regard to the probable source of the disease and whether the Board of Health was notified of its existence.

Well, gentlemen, it has been proved that we have in our midst a strange state of affairs. We know that typhoid has reigned as an epidemic in certain quarters of the City of Montreal. In one of the districts from the 15th of October up to the 1st of January we found 625 cases of typhoid fever and only 25 were reported. The origin of the infection we have been told is possibly due to the water supply of those particular districts.

It is only by the medical inspection of districts that we are in a position to learn the actual state of affairs, and to put people on their guard against dangers which may threaten them; also to take the necessary measures to protect themselves—for example, to boil the water, and to isolate cases of illness.

Again, there is another card besides the one which I have mentioned above, and which we call "The card of Illness." The object of this new card is to register the work accomplished by the Department in its efforts to prevent the dissemination of disease from house to house. This record gives the name, and date of the visits of the attending physician; the date when quarantine was imposed; the date of disinfection; the name of the official who was called upon to utilize preventive measures in accordance with the instructions of the Health Department; the sanitary condition of the building; who has examined it; the school or manufactory frequented by members of the family. The card to which I refer is entered up by the third official employed by the Health Department. This card registers the work of those employed by the Department of Contagious Diseases. Consequently, if somebody has neglected to adopt certain preventive measures prescribed by this Department in order to check the infection we are in a position to trace, from this card, who has neglected his duty.

I hope, gentlemen, that knowing our organization—knowing the working of this organization, the medical profession will kindly afford all the assistance which we have a right to expect. I beg of you earnestly to send us regularly a list of your contagious cases. This is the starting point of our work in stopping the dissemination of contagious diseases. If from November we had known of the invasion of typhoid in St. Henry, St. Cunegonde, St. Denis, Delorimier, we could have accomplished then what we have accomplished since—the arrest of the epidemic; for I am happy to say, the outbreak is diminishing every day. These declarations are for the Health Department and nothing is known outside, and if occasionally a clerk is guilty of some indiscretion which might injure you with your clientèle it is contrary to regulations and instructions of the Department. I beg you to report it to us, and we will remedy it at once.

In conclusion, Gentlemen, I have to thank you very much for your kind attention. Any additional information which you may desire, I shall be happy to afford you as far as it lies in my power.

PECULIAR COURSE OF A STAB WOUND OF THE LIVER.

BY

JAMES C. FYSHE, B.A., M.D., Bangkok, Siam.

On the morning of December 12, 1909, about ten hours after death, the body of an adult male Siamese was sent to the Bangkok Police Hospital for examination.

The following conditions presented themselves:—Well nourished, extremely muscular male, 5 feet 4 inches tall, rigor mortis present, post-mortem lividity slight. Two parallel stab wounds just internal to the right nipple. They are 2 inches long and extend from the lower margin of the 4th rib down and inward in the direction of the external intercostal muscle. On reflecting the pectorals, the 5th rib is found cut through twice, just internal to the costo-chondral junction. One cut is $\frac{1}{4}$ inch internal to the other and a small wedge of cartilage lies clean cut out in situ. In the right pleura is a small amount of fluid blood. The right lung is healthy, slightly collapsed and shows no injury of any kind. The other thoracic viscera are normal. The diaphragm on the right side shows about the middle and corresponding in direction with the external wounds, an incision 2 inches long, the lower angle of which is $3\frac{1}{2}$ inches away from the costo-phrenic junction in a straight line. In the abdomen is fluid and clotted blood. The right lobe of the liver is found to be stabbed right through from the diaphragmatic to the inferior aspect. The wound on the inferior surface is $1\frac{1}{2}$ inches long and is situated just to the right of the foramen of Winslow. The cystic duct has been nicked at the inner end of the wound. There is no damage to any part of the abdomen.

The points that would appear to be of special interest are:—

1. That the knife should have completely missed the right lung. According to Cunningham, Text-Book of Anatomy, page 935, "after expiration, it (the basal margin of the lung) reaches in the mammillary line the lower margin of the 6th rib." Here the wound in the diaphragm, almost an antero-posterior wound, was two inches long, and its lower margin was $3\frac{1}{2}$ inches away from the costo-phrenic junction.

2. That a knife which made a wound $1\frac{1}{2}$ inches long on the inferior surface of the right lobe of the liver in the position above detailed, should have done no harm to the duodenum or the upper pole of the kidney.

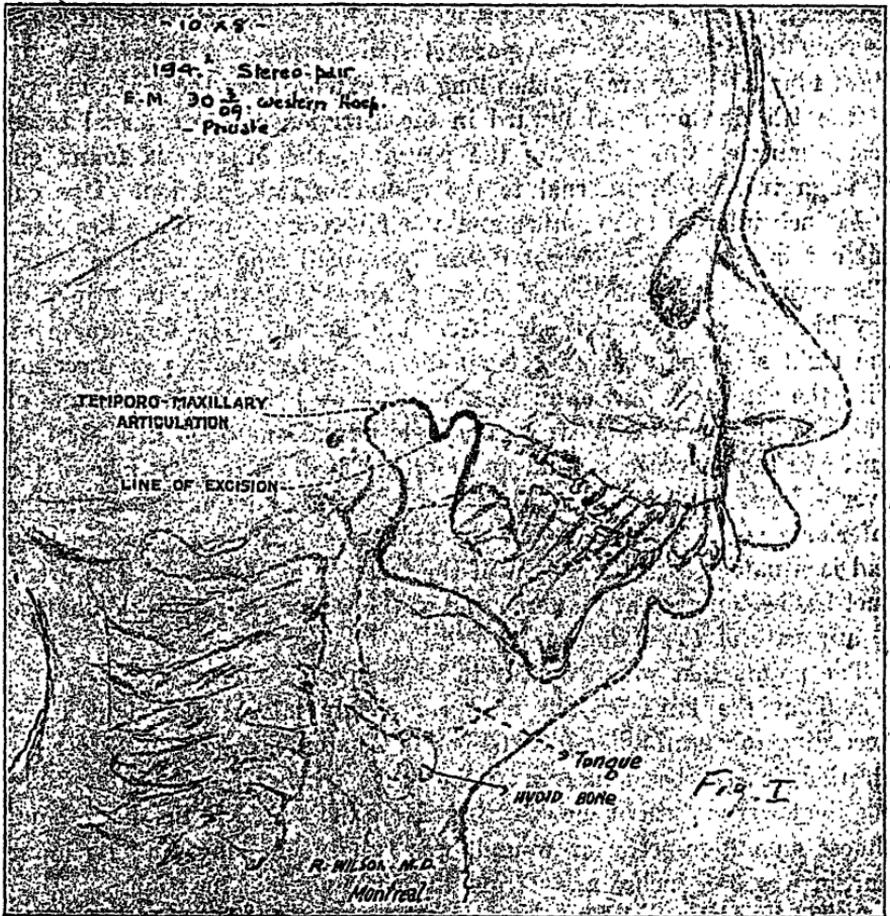
REPORT OF A CASE OF EXTREME MAL-OCCLUSION WITH
DESCRIPTION OF THE MEASURES TAKEN
FOR ITS RELIEF.

BY

J. S. IBBOTSON, D.D.S.

Dental Surgeon to the Montreal General Hospital, Montreal.

While in adults cases of bony or fibrous ankylosis in the temporo-maxillary articulations are usually seen and treated by the general surgeon, in early life this affection with its attendant deformity and mal-



Tracing of Skiagram.

occlusion calls for the co-operation of the dental surgeon, and in severe cases taxes to the utmost his mechanical skill and resource.

During the last twenty years I have seen, and have been called upon

to treat, several cases of mal-occlusion of varying degrees resulting from articular injury or dislocation at birth, extraction of deciduous teeth, naso-pharyngeal obstruction associated with mouth breathing, and so forth. None of these cases have seemed to me especially worthy of record, but the case here reported is in many respects so unique that I feel that it well deserves publication.



FIG. II.—Front view of Interdental Splint.

Case Report.—E., a girl aged six years, was first seen by me in consultation with Dr. E. M. von Eberts, in March, 1909. The case had been under observation since June, 1904, at which time there was marked fixation and lack of development of the mandible. In June, 1905 (more radical treatment having been declined), under a general anæsthetic forcible extension of the lower jaw was attempted, with, however, but slight improvement in the range of movement. At this time the mandible showed marked angulation at the junction of the ramus and body, that is, the inner angle approximated to a right angle instead of being obtuse. The use of wooden wedges was subsequently advised but the treatment was never seriously carried out. The range of movement gradually decreased, and the deformity due to the backward displacement

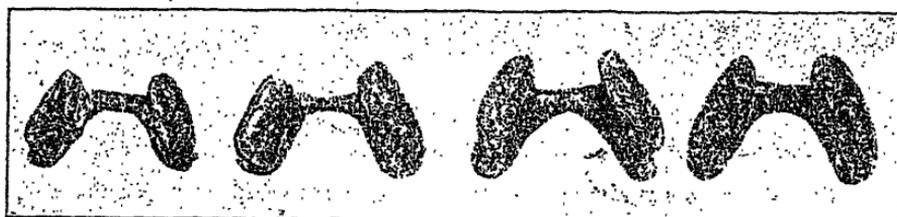


FIG. III.—Interdental Splint, showing position of bridge, posterior extension of lateral mass and upper articular surface.

and angulation of the mandible was further exaggerated by the practice of pressing food upwards between the lower incisors and the hard palate, which resulted in the flattening of the arch.

When seen in March of the present year, the following local conditions were noted:

In profile the deformity described by the Germans as "bird-face" was most pronounced. Viewed from in front, the muco-cutaneous margin

of the lower lip was invisible and lay behind the upper incisors. The latter were visible and prominent, and could be covered only by a special effort in drawing the upper lip down. The arch of the mandible was flattened and the lower incisors were fan-shaped in arrangement with a distinct convexity upwards,—the middle incisors being in contact with the mucous membrane of the hard palate one centimetre behind the al-

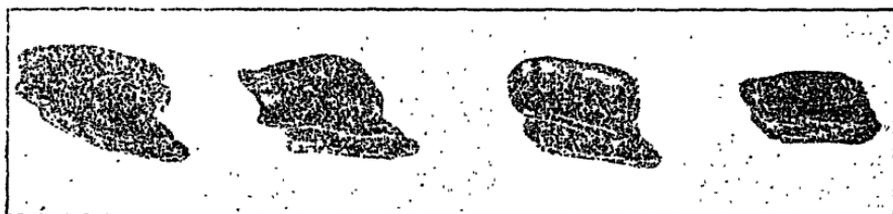


FIG. IV.—Lateral view of Interdental Splint.

veolar process carrying the upper incisors. Although no ulceration of the hard palate was present, an appreciable separation of the incisors from the surface of the palatal mucous membrane could not be effected. There was apparently complete ankylosis in the temporo-maxillary articulations. On palpation the posterior margin of the ramus could be felt to take a downward and backward direction towards the mastoid process of the temporal bone.

These observations were confirmed by skiagrams which, in addition, showed the secondary nuclei to be very greatly crowded, the posterior molars being directed forward instead of upward owing to the obliteration

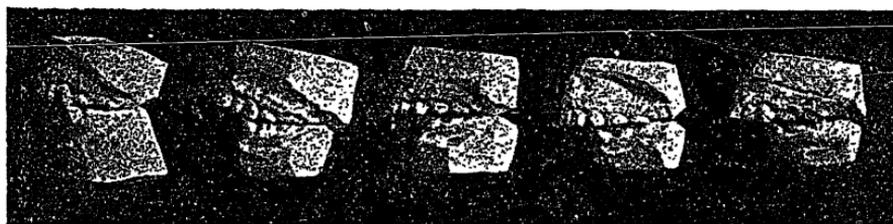


FIG. V.—Shows gradual reduction of posterior displacement of mandible (reading from right to left).

of the broad inner angle between the body and the ramus. The skiagrams further showed the condyles to be in the normal position, but very greatly broadened, the antero-posterior diameter of the neck of the condyle being as broad as the normal ramus at this age. (Figure I.) As a consequence of this deformity and fixation of the jaw, the lingual and sublingual muscles were crowded towards the spine, causing diminished respiratory space.

On April 2nd, under a general anæsthetic, the following operation was performed by Dr. von Eberts:

A vertical incision, two centimetres in length, was made about one centimetre in front of either external auditory meatus, the posterior portion of the zygomatic arch removed on both sides, and the condyles excised. No trace of the normal articulations could be found. About one centimetre was removed on each side, which permitted the separation of the incisors of the mandible from the palate to the extent of two centimetres, together with a slight forward movement. With impression compound casts were taken of both the upper and lower jaws, and a temporary wedge inserted between the teeth on one side pending the preparation of permanent interdental splints. Forty-eight hours later a permanent splint was placed in position. This consisted of two lateral masses for insertion between the upper and lower dental articulations connected by a narrow body to permit of the passage of food. (Figures II and IV.) Within two weeks the first splint became quite loose and could be readily removed and reinserted by the patient. Solid food could be masticated without difficulty, and an improvement in the general con-



FIG. VI.—Shows gradual broadening of upper dental arch (reading from right to left).

dition of the child was noted. Subsequently the range of movement was gradually increased by inserting larger splints,—the series so far employed being shown in the accompanying illustrations. It should be mentioned that the last splint had been so constructed as to produce a moderate grade of pressure on the inner surface of the lower alveolar process in front, with a view to promoting a gradual reduction of the posterior displacement of the mandible. The pressure of the body of the splint is also designed to reduce the angulation above referred to. The child has been taught to remove the interdental splint at frequent intervals and to employ forward traction on the lower jaw by hooking the forefinger behind the arch. This practice has already aided in the reduction of the posterior displacement and of the flattening of the arch. (Figures V and VI.)

With the eruption of the second teeth (which will provide secure anchorage for a metal interdental splint), together with the development of the jaw which may be looked for at puberty, it is anticipated that a normal profile may eventually be obtained.

THE

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No. 2

PROFESSOR JONNESCO'S DEMONSTRATION.

We need make no explanation or excuse for publishing this month in our columns of original matter, a description by one of our colleagues of a demonstration given in New York by Professor Jonnesco of Bucharest, of the use of spinal anæsthesia for operations on the head and upper trunk. Dr. W. W. Chipman gives a plain statement of what he saw and heard, and it is exactly the kind of statement our readers require, because all are interested, and few have the opportunity of seeing for themselves. This modification of spinal anæsthesia has been so much exploited in the daily papers, and has been so incorrectly reported, that we feel sure our readers will be grateful to Dr. Chipman for information they can trust.

MEDICAL INFORMATION FOR THE PUBLIC.

Many tendencies in human nature run in curves of increase and decrease; lately it seems as if we were high on the up-wave of a laudable desire to make known to the public many things connected with the healing art. There is no reason why this should not be, except that every wise man knows that it is scarcely worth while to explain things to people whose habit of mind and whose training do not fit them for understanding the things explained. There is no secrecy nor need for secrecy about the science of medicine itself, but the appreciation of even simple physiological facts needs a mental

preparation which is not given outside of scientific schools. Since many things cannot be well explained, it seems better not to attempt any half-explanations.

A case in point is the exploitation of local anæsthesia in the hands of Professor Jonnesco. The advantages of the strychnine-stovaine combination injected into the spinal canal are said to be that it is absolutely safe; this is not yet proven; the use of the method itself is already old, as age goes in this rapid century, although the public, accepting what the newspapers say, do not know this. The man on the street thinks that Professor Jonnesco invented the use of anæsthesia in the spinal canal (this statement is made by a London illustrated weekly), that he is the first to operate upon the conscious patient, that it is very good of him to tell us all about it, and a fair number think that he is the first to demonstrate local anæsthesia at all. The result, looked at from any standpoint, is to put Professor Jonnesco in a false position. We are perfectly aware that Professor Jonnesco may not be in the slightest degree responsible for all these quarter-truths which the newspapers state. The more is this likely, because a similar publicity has lately been given to a prominent surgeon in an American city with regard to two operations for the removal of foreign body from the œsophagus. Knowing the surgeon concerned, we know he had nothing to do with this publicity, nay, that he has felt hurt by it; yet the papers have described these signs and wonders, and lo! they are operations that have been performed for years past in all parts of the world. To any one who understands, the details of the operation sound as uninteresting and as crude as would a discourse on the electric telegraph given by a motorman to the electrical section of the Royal Society. One would feel tempted to lead the misguided motorman aside and say gently to him: "If I were you I would'nt talk on that subject to these men: although you have only lately learned of the electric telegraph, these men have known about it for some time."

We know too well that in the medical profession there are men who seek to advertise themselves; the profession at large deprecates only a little less than it despises such tendencies, and properly refuses to be represented by such men. If medical facts are to be publicly presented, and if anyone has the requisite time to do it, well, there is no reason why it should not be done; let the first requirement be that they must be *facts*; let medical items for a paper be edited and overseen by some one qualified to judge, before they appear: it is hardly likely that any reputable newspaper would allow its financial page to be printed without the supervision of some one who under-

stood finance. To come from important to unimportant things, let there be some editing of medical information for the public, or else let the information be withheld, lest, to the man who knows, the paper put itself in the light of something at which to laugh.

TYPHOID FEVER.

The citizen stands between two voices. The first, that of the press, shouts that typhoid fever is at the moment a serious menace to our lives; and the second, that of the Health Authorities of the City cries aloud that things are not at all serious. The citizen knows that there are some hundred of cases of a preventable disease in the city, and that there are serious defects in our water supply, in the inspection of our milk supply, and in our methods of sewage disposal. He is, therefore, inclined to side with the press, and call for a rectification of these evils; and we agree with him. This is the more true when an official of the city states:—"Last year there were 60 deaths, and this year there are only 101. Another official states that many of the so-called cases of typhoid are "intermittent fever" (whatever that may be); and the official voice says, "Be calm! Do not alarm yourselves!" As if a death, let alone one hundred and one deaths, from a preventable disease were a matter of no importance. As if one hundred and one deaths were not sufficient to worry about.

And yet one cannot refrain from doubting the knowledge and capacity of the newspapers for administering the Health Department. The one which displays the greatest manifestation of activity issued a "Commission" of enquiry into the nature of the water-supply. Apparently the investigation lasted less than a week and the report was contained on half a sheet of paper. The finding was that the Montreal water was contaminated with "intestinal bacteria." To be entirely comprehensive the report should have added that there is no supply in the world drawn from the surface of the earth, which does not contain "intestinal bacteria," if by that is meant the colon bacilli, and its allied forms. A report of this nature merely inflames the public mind, without adding to existing knowledge.

The report of the first Conference upon City Problems held last December under the auspices of the City Improvement League, has just been published, and is well worthy of study by all Montreal citizens. The discussion upon the water problem is of most timely interest. What is striking is the unanimity with which every speaker, French and English, from Dr. Armstrong, who opened the debate,

to Alderman Ward, who closed it, pointed out the need for filtration. The only weak note sounded in this connexion was by Mr. Janin, but even he acknowledged that it must eventually be established, although he held that his scheme would be sufficient for some years to come.

Here it deserves note that the Montreal Water and Power Company have removed their intake from its previous reprehensible position below the outfall of the Verdun sewer. They have removed it, if we mistake not, to 1000 feet from the shore. Nevertheless there continue to be more cases of typhoid in the outlying parts of the city and suburban municipalities supplied with this water than in Montreal proper with its separate supply. In his speech at the Conference, Mr. John Kennedy, the late Harbour Master, showing the weakness of Mr. Janin's argument, seems to have given the explanation both why this should be so and why Montreal is unique in having her epidemic of typhoid not in the summer but in the early winter months. Mr. Janin had admitted that the sewage from the villages and houses along the north shore of Lake St. Louis (above both intakes) is a source of danger, but had laid down that the upper funnel-like opening of the Lachine Canal, 1500 feet wide, diverted all the shore water, so that it poured into Montreal Harbour. But, pointed out Mr. Kennedy, at the close of navigation in November the Lachine Canal is also closed, so that during the winter months the north shore water is no longer diverted, but finds its way over the intake of the Corporation, and, we may add, must also affect the Water and Power Company's intake below the rapids. He pointed out that the additional epidemic of typhoid fever last spring coincided significantly with the temporary closure of the canal for repairs—an admirable example of proof by "concomitant variation."

A NEW DENTAL CLINIC.

The Montreal General Hospital has recently added one more to the many channels in which it has served the public of Montreal so long and so successfully, by the opening of a new Dental Dispensary.

Last Spring the Dental Dispensary, which had up till then been maintained in the city by the Dental College, and in which all dental students, both French and English-speaking, received clinical instruction, was abandoned. Provision was made for the French-speaking students by the University of Laval. This left the English-speaking students out in the cold, and unless clinical facilities could be provided for them, it became evident that within a very few years there would cease to be any English-speaking dentists practising in the city of Montreal. In

explanation of this statement, it may be remarked that the matriculation or registration requirements for the study of dentistry in this province are of such a character as practically to prohibit the settlement in the city of dentists who have been trained outside of this province.

This condition of affairs was brought to the notice of Mr. James Crathern, the president, and Mr. Harry Stikeman, a member of the Hospital Board. They at once undertook, in a spirit of enlightened public interest, to bring the matter before the General Board of the Hospital. It was felt that apart from preserving the continuity of English-speaking dentists in the city, provision for the alleviation of suffering and disease through the teeth was as needful as the like provision for any other organ of the body, and ought to be included among the activities of a General Hospital. This view was adopted by the Hospital Board, and steps were at once taken to provide the required facilities. Dr. Geo. E. Armstrong, Dr. J. S. Ibbotson, the surgeon-dentist to the Hospital, and Dr. D. J. Berwick, the head of the Dental School of McGill University, took up the matter energetically, and the hospital authorities having at considerable cost converted a part of their building formerly used as a chapel into suitable administration and laboratory rooms, a fully equipped and modern dental dispensary of six chairs is now in full operation and filling a long felt want.

The new dental clinic is open to the public between the hours of 9 a.m. and 1 p.m. daily, and the number of applicants for treatment already foreshadows the necessity for greatly increased accommodation in the near future.

The department is equipped with all the most modern dental appliances, and students attending the dental courses at McGill University have the privilege of attending all the daily clinics under the following list of surgeon-dentists, who supervise and demonstrate all the branches in dentistry.

9 a.m. to 11 a.m.

Monday, Dr. G. S. Armitage.

Tuesday, Dr. J. S. Dohan.

Wednesday, Dr. F. G. Henry.

Thursday, Dr. E. J. Stuart.

Friday, Dr. J. T. McCrae.

Saturday.

11 a.m. to 1 p.m.

Dr. J. S. Ibbotson.

Dr. D. J. Berwick.

Dr. R. W. Watson.

Dr. H. T. Throsby.

Dr. J. B. Morrison.

Dr. T. J. McGregor.

Dr. R. S. Woollatt, a graduate of the Royal Dental School of Toronto University, is in charge of the Department as Superintendent.

ARTHUR A. BROWNE.

On January 26th, 1910, there passed from among us after a long illness a man who was beloved by everybody who ever knew him. He might well be called the "Beloved Physician," for he brought comfort and relief to many a bedside. His quiet, gentle ways, his sympathetic manners, and his careful attention to details and everything that would benefit his patients made him esteemed and respected wherever he went. Dr. Browne was not a fashionable practitioner though he had many fashionable patients, and he gave as much, and perhaps more, attention to the poor than to the rich. Nothing was too much trouble, and money considerations were nothing to him, for he only looked to the welfare of his patient and not to the fees which would come from his assiduous attentions. The writer on one occasion looked at his visiting list and asked him from how many on that list he expected adequate remuneration; and he answered, about one-third. He was truly a magnetic physician, for his mere presence in the sick room brought relief and comfort. He was very humble as to his abilities, though they were great, and he never hesitated to obtain the advice of specialists if he thought they could throw any light on the case. He did not attempt to do things which he thought others would do better, and so his patients had the utmost confidence in his opinion and advice.

Arthur Browne was born in the Eastern Townships in 1848, of Irish parents, and although he had no war-like tastes, came of a military family. He graduated in 1866 as B.A. of McGill, and after a year or two in business (which was not congenial to him) entered the Faculty of Medicine and graduated M.D., C.M., in 1872, the same year as his old and close friend, Dr. Wm. Osler. After spending a year abroad he started practice in this city, and for some years had an uphill fight, for he had no private means. However, his abilities and good qualities became known, and soon he had one of the largest practices in the city. He devoted himself especially to obstetrics, a department of medicine in which he established for himself an honorable reputation.

In 1883 he was appointed Professor of Obstetrics in McGill University, succeeding the late Prof. Duncan MacCallum, at the same time taking charge of the University Maternity Hospital. But, at the end of three years, owing to his increasing practice and his distaste for the drudgery of teaching, he resigned his professorship, much to the regret of his colleagues. Although he did not remain a member of the Medical Faculty of McGill his friendship with the professors of that Faculty continued to his death. His interests were always those of McGill, and no medical function was thought to be complete without the presence

of Arthur Browne. Dr. Browne had a fine literary taste and was one of the best read men in general literature in the profession. He was a good classic, and the writer who was with him in Rome in 1894 benefited much by his classical knowledge. He had also the eye of an artist, knew a good picture, and loved it. He had a fine collection of pictures, well chosen and delightful to the connoisseur. We shall rarely again see such a man, for his class is passing away—one who was a family physician and at the same time the family friend and adviser. Arthur Browne was essentially a noble-minded gentleman. His sterling character, his high sense of honour, his consideration for others, his quaint, dry humour and his professional abilities will be hard to equal and no one will have other than pleasant memories of him. An old medical friend thus writes of him: "I have met and known many men of the medical world, but no one among them drew me to him as did Arthur Browne, and for the rest of life's journey I shall ever miss his wholesome companionship." He leaves a wife, three sons, and one daughter to mourn their loss.

PATENT MEDICINES.

The folly of the people who put their trust in nostrums and cure-alls is a matter of continual wonder. The annual sale of these compounds in Canada amounts to eight million dollars a year. The returns for the United Kingdom for the year ending March 31st, 1909, indicate that 550 million packages of patent medicines were sold at a cost of 28 million pounds. More than half the business of every retail drug store consists in the sale of advertised preparations, the ingredients and formulæ of which are unknown. This is in spite of the fact that under the law in every province in Canada, no one is allowed to prescribe medicines except members of the medical profession, and no one is allowed to dispense a prescription save a physician or a licensed graduate of a recognized college of pharmacy.

It is a counsel of perfection that the people should not continue to poison themselves with the morphia, cocaine, and bad alcohol which these preparations contain, or squander their money in return for drugs which, even if harmless, are sold at an exorbitant profit. It then becomes a question if they could not be supplied with pure drugs at a reasonable price, to take the place of the concoctions which at present they are bound to consume.

Within the last year or two nearly all the Canadian firms dealing in drugs and chemicals wholesale have united in one organization, which

is probably the largest of its kind in the world, with a paid up capital of five million dollars, carrying a stock worth two million dollars, employing 900 work-people, and 70 travellers.

This company is about to make an experiment in supplying drugs direct to the people which is well worth watching in the interests of the medical profession, which ultimately is the public interest. The Company assures the purchaser that their preparations are not cure-alls, that they are not intended to replace the physician's prescription, but are merely household remedies to be used in emergency, of which the formulæ will be furnished to any physician or druggist on request. Nothing could be worse than the old system. There is this, however, to be said for it, that the preparations supplied are for the most part harmless, even if expensive. This new venture by a powerful Company in supplying direct to the public preparations of known compositions will, let us hope, do something to remove old evils. Let us also hope that it will not engender new ones.

Reviews and Notices of Books.

TEXT-BOOK OF GYNAECOLOGICAL DIAGNOSIS. By DR. GEORGE WINTER, Professor and Director of the Royal University, Frauen Klinik, Königsberg, Prussia, with the collaboration of DR. CARL RUGE, Berlin. Edited by DR. JOHN G. CLARK, Professor of Gynæcology in the University of Pennsylvania.

This admirable book is a translation by Dr. R. Max Goepp of the third German edition and its usefulness for readers of English has been much enhanced by the work of the distinguished American editor. Professor Winter has been a teacher of gynæcology for many years; at first for eight years in Berlin and since in Königsberg. His collaborator, Dr. Carl Ruge, has long been known as a creator and high authority on the microscopical diagnosis of gynæcological disease. Professor Clark has supplemented the translation from the German by annotations, which he says "have appeared essential to the wider adaptation of the book to this country." The book is divided into two sections: viz., General and Special Diagnosis. In the section on General Diagnosis the various methods of examination, manual and instrumental, microscopical and bacteriological, are fully described. In the special section the normal anatomy is thoroughly treated, as being the first thing essential to be known before morbid findings can be recognised and their significance estimated. In this section each tissue and organ in all its parts is thoroughly considered

macroscopically and microscopically. The microscopical part is the work of the distinguished Carl Ruge. Abnormalities of development also get their due share of attention. The urinary system is dealt with as fully as are the organs of the sexual system proper. Analytical Diagnosis is the title of the last chapter, and we regard this as one of the most valuable in the book. It includes sections on the causes of hæmorrhage, of amenorrhœa, of dysmenorrhœa, of sterility, and the analytical diagnosis of abdominal tumours. The diagnosis of abdominal tumours is often very difficult, and the experienced if honest practitioner will have to admit many mistakes. A careful study of this last chapter will help to avoid them. The book is splendidly illustrated. No less than 346 pictures of various kinds, plain and coloured, many of them original, are distributed throughout the book. The reproductions of microscopic sections are admirably clear. Though a translation from the German by a German the English of the book is excellent throughout. All careful teachers and students must be grateful to the distinguished authors and the no less distinguished editor for this most excellent work.

W. G.

A TEXT-BOOK OF PHYSIOLOGY: FOR MEDICAL STUDENTS AND PHYSICIANS. By WILLIAM H. HOWELL, Ph.D., M.D., LL.D., Professor of Physiology, Johns Hopkins University, Baltimore. Third edition, thoroughly revised. Octavo of 998 pages, fully illustrated. Philadelphia and London: W. B. Saunders Company, 1909. Cloth, \$4.00 net; half morocco, \$5.50 net. Canadian agents, The J. F. Hartz Co., Ltd., Toronto.

In reviewing former editions of this work we characterised it as the best text-book of physiology ever produced in America, and referred especially to the excellent and readable style in which it was written. The present edition is sure to maintain its position in the very front rank of physiological text-books. The increase of size to the extent of about sixty pages has been effected by the extension of existing sections rather than by the addition of new ones. Practically every section shows signs of careful revision. Under muscle and nerve an account of Einthoven's string galvanometer is included for the first time. The list of enzymes found in the body is increased from 17 to 18 by the addition of nuclease. The paragraph on the pituitary body is extended by the addition of some new work, and among the recent workers in this field we are pleased to find the name of Reford. We do not know of any book that represents more faithfully the present state of physiological knowledge, and we unhesitatingly recommend it to all who are interested in the science.

W. S. M.

SURGICAL DIAGNOSIS. By DANIEL N. EISENDRATH, A.B., M.D., Professor of Surgery in the Medical Department of the University of Illinois; attending surgeon to the Michael Reese and Cook County Hospitals, Chicago. Second Edition, Philadelphia and London. W. B. Saunders Company, 1909. Cloth \$6.50 net; Half Morocco \$8.00 net. Canadian agents the J. F. Hartz Co., Ltd., Toronto.

The success of this book is indicated by a call for a second edition within two years after the appearance of the first. ~~The book in general~~ is very comprehensive and includes the diagnosis of nerve conditions, the more recent views regarding the localization of the motor centres in the cortex of the brain and of the infective as well as the intra-cranial infections.

The chapter on abdominal conditions is particularly full and has been prepared with great care. It deals with the acute abdominal affections including acute cholecystitis, infections of the liver, kidney, peritonitis, appendicitis, the perforative conditions of the stomach, duodenum and intestines.

Particularly valuable are the clearly brought out points of differential diagnosis. While the diagnosis in typical conditions are for the most part, fairly conclusive, the difficulties in atypical conditions can hardly be exaggerated and it is here that a work of this kind, by bringing up the different alternatives, symptoms, etc., is of value to the student in teaching him to think and in giving him a perspective, and to the practitioner in placing before him quickly and in convenient form the information that he desires. The same may be said about tumours.

The book is well illustrated. The chapter on fractures and dislocations is very well illustrated indeed, and of considerable value are the photographs and skiagrams of the same lesions placed side by side a method of illustration used so successfully by Helferich and by other authors since. The author has included a chapter on skin diseases, cystoscopy and methods of diagnosis in renal lesions. Altogether the book is to be highly commended.

G. E. A.

VISITING NURSING IN THE UNITED STATES: YSSABELLA WATERS. The Charities Publication Committee, 105 East 22nd street, New York, 1909. \$1.25, post paid.

In the United States there are now 566 visiting nurse associations with a total staff of 1,413 nurses. In the past year 112 new organizations were formed. A description of visiting nursing, with a history, a chapter on principles, and a directory of all visiting nursing organizations in

the United States, is contained in this book, published by the Charities Publication Committee of New York, under the title "Visiting Nursing in the United States." The author, Miss Waters, is an associate of Miss Lillian D. Wald in the Henry Street (Nurses') Settlement on the East Side of New York. The book is a succinct record of this excellent charity.

Soured Milk and Pure Cultures of Lactic Acid Bacilli in the Treatment of Disease. By GEORGE HERSCHELL, M.D., London. Second Edition. H. J. Glaisher, 57 Wigmore St., Cavendish Sq., London. 2s. 6d. net.

Eight thousand copies of the first edition of this little book were sold in less than a year. It was, as we said upon its appearance, a concise and trustworthy guide to the use of lactic acid ferments in disease. The book is the outcome of a scientific spirit, and is a nice example of the application of laboratory methods to the cure of disease. The limitations within which the use of fermented milk may be employed are carefully set forth, and its value is certainly not over-estimated. We are glad to note that the exploitation of the practice for commercial purposes has ended in failure. There yet remain the rather limited number of cases in which it is of great value.

BURGHARD'S OPERATIVE SURGERY. By 26 British Authors, edited by F. F. BURGHARD, M.S., F.R.C.S., Teacher of Operative Surgery in King's College, London, Surgeon to King's College Hospital, Senior Surgeon to the Children's Hospital, Paddington Green. London: Oxford Medical Publications; Toronto: D. T. McAinsh & Co. Four Vols., illustrated, price \$36.00.

This comprehensive work on operative surgery in four large volumes is the outcome of the rapid advance of modern surgery. At the present day no one man is a complete master of all the details of operative surgery. As a surgeon gets older and more experienced he naturally has a predilection for those operations in the performance of which he is most proficient and which he has had greater opportunities in dealing with—consequently it is now a rare thing to see a system of surgery written by one man. In the production of this work no less than twenty-six surgeons take part and they fairly represent modern British surgery. To give our readers an idea of the standing of this work and its value to operating surgeons it is only necessary to mention that Moynihan writes on the stomach and spleen, Mayo Robson on the bile passages and pancreas, Butlin on the tongue, tonsils and pharynx, Bland Sutton on gynaecological abdominal operations, Stiles on the breast and tuberculous affections of the bones and joints, Barker on hernia, Thurburn

on the spinal canal and cord, Owen on hare-lip and cleft-palate, and so on. Space does not permit of a more full enumeration of the men and the subjects on which they write. All are chosen for their special knowledge of the subjects treated and the result is a most comprehensive, full, and successful work of reference. It is essential that every operating surgeon should possess it and to the beginner it will be invaluable. The books are printed in large type and profusely illustrated with most excellent pictures giving a very graphic representation of the different operations in their various stages. Operations on the eye and ear are fully described and there is a chapter by Capt. Hongton, R.A.M.C. on local and spinal anaesthesia which is a notable addition to a work on operative surgery. There is also a well illustrated chapter on plastic surgery by T. P. Legg. It is impossible to treat each section in detail, some being necessarily better than others, but as a whole we can heartily recommend this work to all surgeons young and old. It is not only a text-book but a reference hand-book of operative surgery.

PRACTICAL MEDICINE SERIES: Vol. IX. SKIN AND VENEREAL DISEASES: MISCELLANEOUS. By WILLIAM L. BAUM, M.D., and HAROLD N. MOYER, M.D. The Yearbook Publishers, 40 Dearborn St., Chicago, Ill., 1909.

The section on skin and venereal diseases is well and clearly written and the treatment is up-to-date. Under "Miscellaneous" many subjects of general interest are touched upon; such as heredity, the autoprotective mechanism of the animal body, alcoholism, the physician and the press, and some medico-ethical problems, workingmen's compensation, criminal abortion, the centenary of ovariectomy.

MINOR AND OPERATIVE SURGERY, INCLUDING BANDAGING. By HENRY R. WHARTON, M.D. Lea & Febiger, Philadelphia, 1909.

The seventh edition of this work has recently been issued to the profession. It especially appeals to the student, as chapters on bandaging are most complete, including the application of Plaster of Paris bandages. In the paragraph on skin-grafting no reference is made to the method of Reverdin, which is not without value in selected cases. In the paragraph on bone wax, it might have been well to mention the method introduced by Mosetig-Noorhoff rendering the cavity sterile by the use of an electric burr and the introduction of a blast of sterilized hot air before the introduction of the wax.

In the article on the use of Roentgen rays, more prominence might have been given to the modern method of rapid exposure, and also to the distortion produced when the tube is not properly placed in relation to the patient. One would like to have seen more reference to the neces-

sity for two exposures in every case of fracture, an antero-posterior, and a lateral, and some reference to the difficulty on the part of even experienced surgeons in reading a particular plate.

Under anæsthetics, it might be desirable to give more detail in the methods of using the various local anæsthetics. The articles on sutures, hemorrhage, and wounds, are all well written. Reference is made to the opsonic treatment. Wright's name might reasonably have been quoted. The reference to actinomycosis is very brief, and might, in view of the increasing frequency in the recognition of the disease have been entitled to more space. A word on the spirocheta in view of the importance of recent research, might have been introduced with advantage.

The article on fractures, is, as the author claims, brief. A reference to the importance of carrying out only provisional dressings rather than an attempt at elaborate reduction of the fracture where patients are to be removed, would help to dispel the popular idea that a fracture must be reduced and elaborately bandaged without regard to transportation or change in medical responsibility. Almost as much space is given to fracture of the coccyx as to that of the ribs. One wishes that some prominence had been given to the great rarity of this accident, and thus correct the belief too commonly held that it is a common injury.

In the treatment of fractures no credit is offered to Mr. Arbuthnot Lane for his remarkable work in improving the technique of the treatment of certain fractures, although there is an illustration showing his plate in position, vide page 432. Several of the important operations are so briefly explained that it would be difficult for an inexperienced surgeon to carry out the method as described. The articles on minor operations, amputation and ligations are little changed. On the whole the work commends itself to the profession. The illustrations are good, the print clear, and the index complete.

J. A. H.

CATECHISM SERIES. Edinburgh, E. & S. Livingstone, Public Health, Part I; Water, Part II; Air and Ventilation, Part III; Sewage and its Treatment, Part IV; Vital Statistics, Dwellings, Meteorology, Part V; Epidemiology, Food, Burial, Disinfectants, Hospitals.

This series covers about 250 pages with 50 pages bound separately in each part. They are all in the second edition, and are done by W. Robertson, M.D., D.P.H., Medical Officer of Health, Leith. In so far as we have been able to test the answers the information contained in them is quite accurate and sufficiently complete for the purpose for which it is intended.

BIOGRAPHIC CLINICS. Vol. VI. Essays concerning the influence of visual function, pathologic and physiologic, upon the health of patients. By GEORGE M. GOULD, M.D. Philadelphia, P. Blakiston's Son and Company, 1909. Price, \$1.00 net.

Dr. Gould by persistent reiteration has gained a hearing in the world of medicine, and has influenced practice for the better. One need not subscribe to his claims in their entirety; but one must agree that many patients have profited by his propaganda for greater accuracy in adjusting lenses to the needs of the eye.

THE COLLECTED PAPERS OF LORD LISTER, Member of the Order of Merit and sometime President for the Royal Society, Knight Grand Cross of the Danish Order of the Daneborg. In two volumes, illustrated, price \$12.75. London: The Oxford Medical Publications; Toronto: D. T. McAinsh & Co.

These two splendid volumes come to us from The Clarendon Press with all the dignity and beauty which Mr. Frowde knows so well how to impress upon his books.

These volumes were prepared for the press by a Committee consisting of Sir Hector C. Cameron, Sir W. Watson Cheyne, Bt., C.B., F.R.S., Rickman J. Godlee, M.S., C. J. Martin, M.D., F.R.S., Dawson Williams, M.D., F.R.C.P. The work is a memorial to Lord Lister, who, on April 5th, 1907, attained his eightieth birthday. The volumes contain all the papers and addresses which Lord Lister considers of permanent interest and importance. In them are recorded the progress of the great evolution in surgery which has occurred within our own time. The text of the papers is preceded by a brief introduction giving some account of the state of surgery at the time when Lord Lister began his work. One who reads these volumes cannot fail to appreciate the difficulty and complexity of the problem which presented itself to Lord Lister, and the brilliancy of his reasoning and experiment which lead to a solution of it.

In the first volume are contained the preface and the introduction referred to, which extends to 44 pages. Then follows the text of 26 papers upon physiology, pathology, and bacteriology. The second volume is divided into three parts. The first is made up of a series of 27 papers upon the Antiseptic System, beginning with that memorable announcement which appeared in the "Lancet" in 1867. The second part is devoted to surgery, and contains the text of six papers. The volume concludes with four important addresses delivered between 1869 and 1907. As frontispiece there are two portraits which immediately recall the memorable face of Lord Lister to those who have had the privilege of

seeing him. These two volumes are likely to remain for all time as a record of the highest achievement of the nineteenth century.

PROGRESSIVE MEDICINE, Vol. IV, December, 1909. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Octavo, 334 pages, with 35 engravings and a colored plate. Per annum, in four paper-bound volumes containing over 1,200 pages, \$6.00, *net*; in cloth, \$9.00, *net*. Lea & Febiger, Publishers, Philadelphia and New York.

The contributors to this volume are N. T. Belfield, Joseph Bloodgood, John Rose Bradford, David L. Edsall, H. R. M. Landis. The subjects dealt with are: Diseases of the Digestive Tract; Diseases of the Kidneys; Surgery of the Extremities, Tumours, Anæsthesia, and Infection; Genito-Urinary Diseases, Therapeutics. We note a full consideration of Auld's summary of the experience in Montreal in the use of the X-rays for diagnosis of renal calculus. This number maintains the high reputation which "Progressive Medicine" has established for itself.

QUAIN'S ANATOMY. Volume III, Part II. The Peripheral Nerves and Sense Organs. By E. A. SCHAFER and J. SYMINGTON. Eleventh Edition. Longmans, Green and Co., 1909. Renouf Publishing Co., Montreal, Canadian Agents. Price, \$4.50. 384 pages.

The book here presented is the equivalent of two thin volumes of the tenth edition, published some fifteen years ago. The peripheral nerves and sense-organs are described in a single volume of very convenient size.

An extended criticism of so authoritative a work of reference as Quain's Anatomy is by no means necessary. The part devoted to the cerebral and spinal nerves shows numerous textual amplifications, without, however, departing from the terseness for which Quain has always been noted. A few new illustrations have been added to advantage, and more coloured plates are seen.

The description of the special senses shows, as is natural, the greatest changes. There are some 40 more pages than in the corresponding part of the tenth edition. Many new illustrations are to be found, and among these the microphotographs of eye and ear structures are worthy of special note. In addition the text is enriched with numerous half-tones and a beautiful coloured plate of the fundus oculi.

The descriptive matter throughout is lucid and authoritative without being verbose. A paragraph as found in Quain is often the equivalent

of a page in another text-book. The subject matter is brought abreast of the latest researches, and the work as a whole is to be highly commended. It will continue to maintain the position it so long has held in the forefront of anatomical text-books.

J. A. M.

THE HARVEIAN ORATION ON EXPERIMENTAL PSYCHOLOGY AND HYPNOTISM. Delivered before the Royal College of Physicians of London, October 18, 1909. By GEORGE H. SAVAGE, M.D., F.R.C.P., Consulting Physician and late Lecturer on Mental Diseases, Guy's Hospital. London: Henry Frowde, Oxford University Press, Amen Corner, E.C., 1909.

Dr. Savage deprecates unduly the intelligence of his readers when he declares about his Oration that: "No one can be more conscious of its shortcomings than myself." It is not an oration. It is a little book of 44 pages. If it was given as an oration it would have occupied three hours in the delivery, and must have been uncommonly tedious to his hearers. A passage like the following must have extracted a groan of agony: "So that we shall not be pouring drugs of which we know little into bodies of which we know less." It is only at the twentieth page that the orator arrives at "what I may call the real matter of my address"; and yet it is difficult to see what it has to do with Harvey. The pamphlet contains a mass of unrelated statements drawn at second hand from the most common-place sources and has little more bearing upon the subject of the discourse than it has upon the object of the Foundation. A good oration may make bad reading. What is so hard to read must have been intolerable to listen to.

THE MEDICAL COMPLICATIONS, ACCIDENTS AND SEQUELS OF TYPHOID FEVER AND THE OTHER EXANTHEMATA. By H. A. HARE, M.D., B.Sc., Professor of Therapeutics in the Jefferson Medical College and Physician to the Jefferson College Hospital, Philadelphia, and E. J. G. BEARDSLEY, M.D., L.R.C.P., Philadelphia. With a special chapter on the Mental Disturbances Following Typhoid Fever, by F. X. DERGUM, M.D., Professor of Nervous Diseases in the Jefferson Medical College. Second edition, thoroughly revised and much enlarged. Octavo, 398 pages, with 26 engravings and 2 plates. Cloth, \$3.25, *net*. Lea and Febiger, Philadelphia and New York, 1909.

The first edition of this work appeared ten years ago; the present edition has added a great deal that is of interest from the literature published since that time. The book is an excellent compendium of facts relating to fevers, given concisely, clearly and in good arrangement.

Typhoid fever occupies 300 pages, and this subject is properly subdivided into chapters, which again are well subdivided. The second part, of 100 pages, deals similarly with Variola, Scarlet Fever, Measles, Varicella and Rubella. The whole is well indexed, and the references which are very numerous are stated at the foot of each page.

The work entailed by the preparation of such a book is necessarily great, and its usefulness is corresponding: the authors' personal experiences are given wherever advisable, but only as addenda to the material provided by the literature of the subject. While the reviewer has a light task to perform, it would be unfair not to say that the book is really invaluable to anyone writing upon these subjects, because in one minute he can lay his hand upon an orderly statement of any complication and upon a good bibliography of the same; and this applies equally to the practitioner who seeks for no other purpose than to learn. The style of publication and printing is worthy of the contents.

Medical News.

Dr. Colin C. Sewell died of pneumonia on Wednesday, December 1st, 1909, at Quebec. Dr. Sewell was born in Quebec in 1841, educated at the Quebec High School and then at Edinburgh University where he graduated M.D. He successfully passed the examinations of the Royal College of Surgeons. Dr. Sewell then entered the Royal Infirmary under Professor Symes. After practising in Montreal for a time he then moved to Australia, returning to Quebec a few years later. As a physician he was a man of the highest ideals and the greatest integrity, whose loss his friends and the whole community deplore. As a man he was known far and wide for his love of horses and all outdoor sports; but above all for his manly personality. For many years he was surgeon to the Royal Canadian Artillery in Quebec.

WESTERN HOSPITAL.

The annual meeting of the Western Hospital was held in January. The overdraft for the year was \$10,883; and there was also the Credit Foncier mortgage of \$40,000. The total liabilities were \$53,779. The total assets were \$210,739, and the expenditure for the year was \$50,386.

Dr. F. J. Hackett, the medical secretary, stated in his report that the total number of consultations for outdoor patients was 10,330 for the year, an increase of 2,845. The number of patients admitted during the year was 1,288. Of these 1,184 were from the city, and 104 from other parts. There were 596 males and 568 females. The deaths were

73, of which 16 took place in 48 hours. The percentage of deaths was 5.67, which, allowing for reduction for those in 48 hours after admission, gave a percentage of 4.43.

The wards of the hospital had been taxed to the uttermost and admission had had to be refused to patients. This want of accommodation applied to private as well as public wards and was especially felt in November and December.

The general secretary, Dr. Geo. T. Ross, stated in his report that the past year had shown every department of the hospital to be inadequate in point of accommodation. The outbreak of typhoid had aggravated the situation, but the growth of the city had had to be taken into account. These conditions had caused their thoughts to revert to the question of enlarging the building, it being evident that the city's growth demanded it, irrespective of extraordinary demands caused by epidemics. However, the committee had felt that the extension scheme must be postponed until existing financial encumbrances were cancelled. Meanwhile the munificence of philanthropists was awaited.

Following officers were elected:—President, Mr. Peter Lyall; first vice-president, Mr. Robert Bickerdike; second vice-president, Mr. J. C. Holden; treasurer, Mr. J. A. Mathewson; general secretary, Dr. Geo. T. Ross.

ROYAL VICTORIA HOSPITAL.

At the annual meeting of the Royal Victoria Hospital Mr. R. B. Angus resigned the office of president, and Sir Edward Clouston, Bart., was elected his successor.

Officials appointed for the year were as follows, their choice being unanimous:—Dr. H. B. Cushing, assistant physician; Dr. F. M. Fry, assistant physician in charge of diseases of children; Dr. C. K. Russell, neurologist; Dr. P. Burnett, dermatologist; Drs. W. F. Francis, D. W. McKechnie, J. C. Meakins and C. F. Moffatt, clinical assistants in medicine; Dr. J. K. Goodall, assistant gynaecologist; Drs. F. McKenty, J. W. Hutchinson and W. J. Patterson, clinical assistants in surgery; Dr. A. G. McAuley, clinical assistant in ophthalmology; Drs. H. Muckleston and H. White, clinical assistants in oto-laryngology; Dr. H. B. Cushing, registrar; Dr. A. G. McAuley, assistant registrar.

The report of the superintendent, Mr. H. E. Webster, stated that the number of patients admitted during the year had been 4,200, or an increase of 494 on the previous like period. They comprised 2,424 Protestants, 1,345 Roman Catholics, 344 Hebrews and 87 of other faiths. Of these, 2,142 were free patients, 1,101 were public ward patients (paying fifty cents and one dollar per day) and 957 were private ward pa-

tients. Residents of Montreal numbered 3,104, and 1,096 came from districts outside the city. The total days of hospital treatment aggregated 88,317, as against 84,204 during the previous year, or an increase of 4,113 days. The average number of days in hospital per patient was 21.04, as compared with 22.9 in the corresponding period of 1908.

On January 1, 1909, 237 patients remained in the hospital from 1908, and during the year 4,155 were discharged, of whom 2,420 were well, 1,153 improved, 183 not improved, 163 not treated, and 236 died. There remained in hospital on December 31, 1909, a total of 282 patients. Of the 236 deaths, 82 took place within forty-eight hours of admission. The death rate for the year was 6.02 per cent., or, deducting those dying within forty-eight hours of admission, 3.09 per cent.

In the outdoor department the total number of patients treated was 4,763, and the number of visits of these patients aggregated 32,338—medical, 10,754; surgical, 7,962; eye, 4,508; nose, throat and ear, 5,952; diseases of women, 2,199; nervous diseases, 1,763.

The income for the year was \$183,357, while the ordinary expenditure amounted to \$171,337, and the extraordinary disbursements involved in renewing the power house and electrical plant, etc., totalled \$28,324. Towards this the surplus for the year, \$12,019, had been applied and it was hoped that the operations of the coming year would be sufficient to liquidate the balance without encroaching upon capital resources.

Legacies had been received from the estate late S. Carsley of \$1,000, and estate late A. T. Paterson of \$500.

The gift of a thoroughly equipped motor ambulance from Mr. H. V. Meredith was acknowledged, and it was stated that this gift rendered the ambulance service in summer very efficient and secured to the patient requiring such conveyance the minimum of suffering and delay.

The addition of new medical and surgical departments, while doubtless adding to the efficiency and reputation of the hospital, involved a very great tax upon the accommodation at its disposal and a strain on the ever-increasing staff. The unfortunate visitation of typhoid fever which prevailed during the latter part of the year aggravated this state of things, but with a desire to assist in coping with the emergency thrown upon the medical and nursing resources of the city, the governors resolved to open certain wards that had hitherto been kept in reserve as a safeguard against unforeseen demands, and they resolved also to face the extra expenditure, although aware that the hospital would for a time be exceeding its ordinary income. The apprehensions of the House Committee in reference to finances were relieved by the assurance that several of their number would be happy to contribute to the extra expense, and \$9,750 has already been deposited for that purpose.

Those in attendance at the meeting were: Mr. R. B. Angus, president; Sir Edward Clouston, Messrs. H. V. Meredith, Farquhar Robertson, Robert Meighen, Dr. Shepherd, F. L. Wanklyn, Principal Peterson and F. R. Redpath.

OTTAWA MEDICO-CHIRURGICAL SOCIETY.

A regular meeting of the Ottawa Medico-Chirurgical Society was held on January 7th, 1910. The programme was as follows:

1. Biliary Lithiasis—Dr. Prevost.
2. The tenement house problem in Ottawa in its relation to tuberculosis—Dr. Bryce.

Retrospect of Current Literature.

GYNÆCOLOGY.

UNDER THE CHARGE OF DRs. GARDNER, CHIPMAN, AND LOCKHART.

H. N. VINEBERG: "Ligation of Pelvic Veins for Puerperal Pyemia."
Amer. Jour. Obstet. March 1909.

Patient aged 36. V para. Was delivered by forceps August 12, 1908. Temperature developed five days later. She was admitted to hospital with chills and fever on September 9th. On admission the temperature was 104.4; pulse 110 to 130. Uterus well involuted and not tender. Nothing particularly abnormal was noticed in the pelvis.

The temperature varied between 98 and 105 for several days. Ten days after admission laparotomy was performed. The right ovarian vein was found thickened to the size of one's thumb along its entire length to the vena cava. The intervening structures including the tube and ovary were excised by means of the cautery. The abdomen was then closed.

The day following the operation the temperature ranged between 99 and 101. There were some chills and temperature which rose as high as 105 four days after the operation. After this the temperature seldom ranged higher than 102, but the patient gradually sank and died nineteen days after operation.

At the autopsy a thrombus was found in the vena cava at the entrance of the right spermatic vein. The course of the thrombotic process was from the uterine site of the placenta up along the right

spermatic vein to the inferior vena cava; down this vessel to the bifurcation of the common iliac; down the internal and external iliacs on both sides to both femoral veins and to the pelvic veins which take their origin in the lower segment of the uterus.

The author then makes a study of reports of cases of this kind in literature and states that the results thus far obtained by ligation of the veins and thus lessening the mortality are not marked.

There are records of 19 recoveries in 44 cases operated upon by the extra and trans-peritoneal routes, the latter method presenting a somewhat more favourable result. The results of the operation can be said to be encouraging but that is all, and the future will have to determine whether improvement will follow closer study and earlier operation.

The operation performed with ordinary skill does not diminish the patient's chances of recovery.

The trans-peritoneal route is stated as being the best in the author's opinion. The technique of operation is then discussed in some detail. The advice is given that anyone undertaking this work should first familiarize himself with the reproductions of the anatomical sections made by Kownatzki.

R. H. PARAMORE: "A Critical Inquiry into the Causes of the Internal Rotation of the Fœtal Head." *Jour. of Obstet. and Gyn. of the B.E.*, October 1909.

In a very careful study of the mechanism of internal rotation the author advances what he considers to be an original view as to the causation of the much discussed phenomenon, internal rotation of the fœtal head.

He reviews in the early part of his paper, very fully, the views that have been advanced as to the causation of internal rotation from the earliest times. He points out that this movement of the head is an accident and results because the fit between the head and the pelvis is a close one and that the musculature of the pelvic floor resists delivery.

The author points out that the inward projection of the ischial spines is an evolutionary incident, being brought about by the change in the direction of the pull of the muscles of the pelvic floor, determined by the erect posture. In the lower animals no such projection of the ischial spine is to be found. This projection inward of the ischial spines has for many years been thought to play an important role in causing internal rotation, but Veit and Varnier have both proved that the bony pelvis has nothing to do with giving rise to this mechanism.

The views that internal rotation results from resistance of the pelvic floor, and also that it arises from the primary rotation of the foetal trunk, are then discussed.

The more recent view advanced by Sellheim that rotation results from the adjustment of the foetus as a whole to the pelvic canal is then criticized, the author pointing out that the conditions of the experiments of Sellheim are not analagous to those existing within the living foetus in the course of labour. He points out that in the living subject the displacement of the pelvic floor is gradual, and that in the living foetus the increased tension of the extensor muscles of the head cannot be maintained for any length of time as Sellheim seems to indicate.

Olshausen is quoted as stating that rotation of the foetal trunk anteriorly occurs in many cases before that of the head. He raises the question as to how this rotation of the trunk can be explained on Sellheim's hypothesis as it is impossible to suppose that the trunk, already closely invested by the soft parts, is caused to rotate by the head. If it does not do so it must rotate independently and then this will influence the rotation of the head and either favour it or first institute it.

Olshausen's view is then criticized, and the author states that it is difficult to believe that the position of the foetal body can cause the occiput to rotate forwards under the pubic arch, Olshausen strongly asserting that the foetal back almost always turns to the front and forces the head to rotate in this direction.

That flexion of the head is a very important factor in bringing about internal rotation, the author agrees. The usual explanation that when there is a considerable loss of flexion the sinciput occupies a lower level in the pelvis than the occiput and thus meets the pelvic floor first, is open to question.

The author then gives fully his view as to the mechanism of internal rotation. At the end of pregnancy, the muscular fibres in the floor of the pelvis are remarkably well developed, being indeed hypertrophied. "Palpation reveals them as forming veritable fleshy bellies, strangely tender when vigourously pressed against, hardening on coughing and evincing complete proof of their contractile nature." This portion of the pelvic floor is the first called upon to resist the downward thrust of the advancing vertex when the head is well flexed. The coccyx with the muscles attached gives way and an inclined plane is formed down which the vertex is pressed.

When the forehead is posterior, it falls into line behind the advancing vertex and comes to occupy the middle line posteriorly;

the transverse diameters of the pelvis become diminished, whilst the anteroposterior become increased, as the outlet is reached. Then the forehead is forced towards the hollow of the sacrum by the increasing pressure between it and the postero-lateral pelvic wall, a pressure which increases progressively as descent continues.

The persistent occipito-posterior positions are then discussed. In these cases the vertex is forced to occupy a more anterior position nearer the symphysis. The shunt forward of the coccygeal muscles is resisted by the chin which is in contact with the foetal chest, thus the forehead is compressed somewhat obliquely upwards against the upper part of the antero-lateral pelvic wall. Further descent of the forehead is prevented by the vertex being projected forward in its descent along the inclined plane of the pelvic floor. As a result of these forces and because the transverse diameter of the pelvis is greater than the antero-posterior at the level which the forehead occupies at this time, the latter is compelled to rotate posteriorly by the resultant of these forces. These movements are well illustrated by the means of diagrammatic drawings.

Eventually the forehead rotates into the hollow of the sacrum while simultaneously the occiput turns to the front.

Considerable space is devoted by the author to prove that the forehead does come into relation with the antero-lateral wall as is mentioned above.

In conclusion he states that the factors concerned in causing rotation are:—

(1) the expulsive force from above; (2) the obstructing, central fixing force from below; (3) the shape of the pelvis; (4) the shape, size, consistence and position (flexion) of the foetal head.

B. KRONIG: "Zur Behandlung der Placenta Prævia." *Zent. f. Gyn.*
No. 46, 1908.

Hitherto version or the use of hydrostatic bags have been the usual treatment of placenta prævia and these have given on the whole remarkably poor results, a maternal mortality of 6 to 10 per cent. with a foetal mortality of from 60 to 80 per cent.

Most of these fatal cases died of hæmorrhage, only a relatively small percentage having become septic. Cases have suffered a blood loss in spite of the use of the tampons, of 100 to 1200 c.c.

If the mortality of placenta prævia is to be reduced in our clinics we must learn some method of controlling the hæmorrhage which would be an improvement over those at present in vogue. The hæmorrhage in placenta prævia, especially that occurring in the

post-partum period, arises chiefly from the maternal vessels in the isthmus and upper portion of the cervix.

The implantation of the ovum in cases of placenta prævia is quite analagous to its implantation in tubal pregnancy. The foetal villi and cells penetrate the mucous membrane and also the uterine wall of the isthmus. As a result of the tearing of the specially richly developed vessels in this area during birth, the hæmorrhage arises. The more the isthmus becomes thinned out in the expulsion of the ovum the greater the increase of the chance against the spontaneous checking of the hæmorrhage from the vessels. It seems natural that in order to check hæmorrhage from this area one must do all that is possible to prevent stretching of the isthmus in the course of birth.

The author believes that abdominal cæsarean section in the earliest stages of dilatation, with uterine incision as high as possible towards the fundus, should be the operation of choice and would meet the above indications.

He then compares the method he outlines with vaginal and cervical cæsarean section performed by Sellheim's method. Both these operations call for interference with the lower uterine segment and in the course of delivery of the child the uterine wall may be torn, as the situation of the placenta leads to its softening. If the placenta is situated on the posterior wall of the uterus, these operations may give a satisfactory result, but as we never can be sure, the author considers vaginal cæsarean section of doubtful value in the treatment of placenta prævia.

In the six cases of placenta prævia in which he has performed classical cæsarean section the blood loss was so slight that in none of them was tamponade necessary. In four of the cases the blood loss was less than 300 grammes. Should the bleeding from the isthmus, nevertheless, be severe he agrees with Sellheim one has the advantage in cæsarean section that one is enabled to obtain a clear view of the site of the field, and is enabled thus better to check it by means of tampons. Should the tampons fail, supra-vaginal amputation is to be recommended.

He then discusses the treatment of cases in which the os is completely or almost completely dilated when coming under observation; and secondly, when the asepsis of the birth canal is doubtful. In the first instance as the isthmus has already been stretched to its widest extent, if bleeding does not cease, version is indicated, followed by manual delivery of the placenta. Should hæmorrhage

then persist massage of the uterus and hot douches should be tried. Should these fail, supra vaginal amputation of the uterus should be performed. This seems to be a radical procedure, but these cases usually bleed considerably afterwards so that the operation enables the hæmorrhage to be checked better than by any other means.

In cases that have been tamponed outside, he recommends when the placenta is situated on the posterior wall, vaginal cæsarean section; when on the anterior wall version by Hick's method. Posterior hysterotomy is out of the question as the infection of Douglas pouch is always ready to follow. If the bleeding is not controlled supra-vaginal amputation should be undertaken.

The children in all his six cases were delivered alive and left the clinic in good condition.

A. DODERLEIN: "Ueber den Extraperitonealen Kaiserschnitt."
Zent. fur Gyn. No. 4, 1909.

The author briefly considers the various forms of supra symphyseal Cæsarean section. He then gives in detail the operation he himself is in the habit of performing. Transverse opening of the abdomen, separation of the recti, the bladder is filled so that its contour can be distinctly seen, then the right hand is pushed in between the front and side walls of the pelvis through the loose cellular tissue. The hæmorrhage is very slight. By this means the genital canal is laid open for incision.

The lateral fold of the peritoneum between the uterus and bladder can be seen running on the right side towards the pelvic wall as a white firm band. This is pushed upwards which leaves quite sufficient room for a longitudinal cut in the lower uterine segment sufficiently large to permit the extraction of the child. On account of the great thinness of the uterine wall great care must be taken not to injure the child.

The ureter has never come to sight in this operation. The wound in the uterus bleeds scarcely at all. There is sometimes some difficulty in extracting the child and the forceps may have to be resorted to.

The placenta may be delivered by the Crede method or manually.

The suturing of the wound is not attended with much difficulty. The author sewed the uterine wall with continuous catgut, and then the fibrous tissue over it; he united it by means of a running suture so as to leave no space, and then the abdominal wound was closed without drainage. He prefers, if drainage is necessary, to

carry the drain out through the vagina in order to avoid any danger of subsequent hernia.

He gives brief history of two cases operated upon by this method with fortunate results for both mother and child.

He considers the extra peritoneal Cæsarean section indicated in those cases of contracted pelves, in which hebotomy is impossible on account of marked high grade contraction or on account of rigid narrow soft parts. With these circumstances excepted, he prefers hebotomy.

In eclampsia, placenta prævia, and indications belonging to this category in which Kronig and Sellheim suggest abdominal Cæsarean section, the author prefers delivery by means of vaginal hysterotomy.

He then discusses the nomenclature of the obstetric operations. Cæsarean section should be confined to those methods of delivery involving the parts above the pelvis. He objects to the term "vaginal Cæsarean section", preferring "vaginal hysterotomy."

STEPHEN REBAUDI: "Hyperemesis gravidarum und Adrenalintherapie." *Zent. f. Gyn.* No. 44, 1909.

The author reviews briefly the theories as to the causation of vomiting of pregnancy, stating that pernicious vomiting has only been met with by him in a proportion of one case in a thousand.

The usual division into the nerve and toxic theories are mentioned. According to either theory either nervous or tonic influences or both combined, act by causing irritation of the vomiting nerve centre and others related to it, in this way giving rise to anti-peristaltic movements in the upper portion of the gastro-intestinal tract.

It is especially interesting that a close relationship exists between the functions of the genital apparatus and the vasomotor centre. The author then develops the theory of this relationship in detail, references being made to the association of hyperæmia of the nasal mucous membrane of pregnancy and menstruation in women.

The toxic product of ovaries thus developed from the cells of the corpus luteum, the various maternal poisons of foetal or placental origin which are developed in the course of pregnancy, are all characterized by the distinct effect they produce upon the vasomotor centres of the cord. Upon this depend the special and pathological syndromes which characterize the various periods of the sexual life.

In the belief that the symptoms could be benefited by something that would regulate the action of the vasomotor centres and being impressed by the work of Freund in the employment of adrenalin in the course of vomiting of pregnancy, the author undertook its employment believing that it acts by regulating the vasomotor centres and that it has a tonic action on the neuro-muscular system.

A case is then given, in great detail, of apparently severe vomiting of pregnancy in which the author was called upon to empty the uterus on account of the gravity of the symptoms. Before doing so he received permission to employ adrenalin which was given in the form of Parke Davis' 1/1000 adrenalin solution, 10 drops being given morning and evening.

For the first three days the patient received absolutely nothing by the stomach, but 150 grm. of water with 20 drops of laudanum were administered per rectum.

The patient went to term after a rapid recovery and was delivered of a 3027 grm. child.

F. WEBER: "Zur Anwendung der Blutleere der unteren Körperhälfte nach Momburg in der Geburtshilfe." *Zent. f. Gyn.* No. 41, 1909.

Momburg's suggestion that postpartum hæmorrhage can be checked by the application of a tightly applied ligature around the body at the level of the umbilicus, has attracted considerable attention on account of the simplicity and ease of its employment.

The author of the paper has employed this treatment in a series of cases in the University Frauen Klinik in Munich. He employed a rubber tube about the thickness of the thumb. This was wrapped twice around the body and pulled sufficiently tight to cause the disappearance of the femoral pulse in the lower limbs. It is of special importance if satisfactory results are to be obtained that the tube be applied sufficiently tight to cause the obliteration of the femoral pulse. The obliteration of the femoral pulse is the guide as to the degree of tightness with which the rubber tube should be applied in order to avoid bruising or over-compression of the abdominal organs. The ends of the tube may be either knotted or held by assistants. The tube may be left applied in place from 5 to 35 minutes.

The treatment was employed chiefly for atony of the uterus.

Out of 16 cases, in 5 of them hæmorrhage occurred with the placenta still adherent. Immediately following application of the rubber tubing the bleeding stopped in every case immediately, and the uterus became in a few minutes of a stony hardness and in the course

of the next quarter of an hour the placenta was discharged without any further bleeding, the tube still encircling the abdomen.

In these cases the Momburg tube seemed to bring about most satisfactory results.

Equally satisfactory results were obtained in 11 cases of atonic hæmorrhage from the uterus in which the condition first developed after the expulsion of the placenta. The tube was removed gradually. In every case the uterus remained well contracted, if not quite so hard as when the tube was in position. No hæmorrhage worthy of the name followed the removal of the tube.

The authors have also employed the tube in cases where operative procedure was necessary and where hæmorrhage was undesirable, with equally satisfactory results. The employment of the tube is recommended in cases of severe tear of the cervix or where it is necessary to do a vaginal Cæsarean section. The tube in these cases, may be placed around the body but not tightened until the hæmorrhage is manifest.

In 40 cases the authors have had perfectly satisfactory results. In but 3 cases did the application of the tube fail to check the hæmorrhage; two cases of atonic post partum hæmorrhage and a third case in which there was a manual removal of the placenta and repair of an extensively lacerated cervix.

Rielander has suggested that in these cases of failure the cause is to be found in incomplete emptying of the stomach or bowels.

The author suggests the possibility that in certain cases the aorta may not lie directly upon the vertebral column but rather to one side, in which case compression exerted by the tube would be incomplete.

In none of the authors' cases were there any accidents or injuries that could be attributed to the use of the tube. In a few of the cases the patients complained of some tenderness in the lower limbs which disappeared in a day or two.

F. HITSCHMANN and L. ADLER. "The Formation of the Mucous Membrane of the Uterus of Woman at Puberty with special regard to Menstruation." *Monatsschrift für Geburtshilfe und Gynakologie*, Jan., 1908. Bd. XXVII, Heft 1.

(An Abstract)

This paper represents the most valuable contribution made to our knowledge of the uterine mucosa during the last quarter century. Not so much is it that the authors describe anything new, for they scarcely do this; but rather is it that they correctly interpret the old. They are the first to definitely thread together the various multiform

histological pictures which the uterine mucosa presents and to enunciate the fact of a periodic rotation therein. They are the first to reduce this order out of the former chaos, to deduce the law of a fixed cyclic periodicity throughout the life-time of the menstruating mucosa. This important deduction constitutes the main thesis of the present paper, and therein is embodied the authors' justification to originality. As they correctly observe, for many years, indeed since the discovery by Nylander of the epithelial cilia, our knowledge of the uterine mucosa has remained more or less stationary. Throughout this time our conception of the mucosa has been that of a fixed tissue which at stated intervals, in accordance with the menstrual habit of the individual, submitted itself to a hæmorrhagic discharge. It is true that certain histological changes habitually were found in this mucosa, such as the changes in the number and character of the glands themselves or alterations more or less pronounced in the proportion of glandular and interstitial tissues. But these changes were regarded commonly as pathological—the so-called different varieties of glandular or interstitial endometritis.

In the light of this recent work we now know that these changes are but physiological, that they represent solely the different phases of the menstrual cycle. We are told that the uterine mucosa, throughout menstrual life, is never a fixed definite tissue but is always undergoing rhythmic change; that each month, in its premenstrual phase, the mucosa provides for the reception of a fertilised ovum; and if fertilisation occur, the early decidua-like changes of the premenstrual phase become simply more accentuated toward the formation of a definite decidua, while if impregnation be missed, this escape is indicated by a sudden hæmorrhagic destruction of the upbuilt tissue. In such way, then, the present article describes the life-history of the menstruating mucosa, and the included illustrations, old and familiar as are their faces, amply corroborate this description.

In what follows I have simply epitomized the authors' text and have endeavoured, in so far as possible, to permit them to tell their own story in their own words.

In the opening of their paper the authors give a brief résumé of the previous literature on the subject of the mucous membrane of the uterus and especially of the microscopic alterations of the mucous membrane in menstruation. They point out that in almost all cases investigators regarded the non-menstruating and the menstruating mucous membrane apart from each other and did not assume any intimate connection between the one and the other. The mucous membrane of the uterus was invariably described as though, so far as changes of tissue were concerned, only the changes of menstruation

had to be considered, and as though it always remained the same between two menstruating periods. After quoting at some length the statements on the subject made by Henle, Ruge, Gebhard, Nagel, Waldeyer, and Von Ebner, they pass on to their own investigations. These embrace 58 cases; the material was taken by operation from the living subject and fixed in fresh condition, and in the majority of cases numerous different portions of the uterus were utilised for the investigation.

The authors establish the fact that according to the histological changes of the mucous membrane the following four phases are to be distinguished in the cycle of the transformation of the mucous membrane:

1. Postmenstrual period.
2. Interval.
3. Premenstrual period.
4. Menstruation.

Then they describe the characteristics of the mucous membrane in the separate stages, beginning with

I. The Premenstrual period.

The chief characteristics of this phase are as follows: The mucous membrane, which in the interval is still relatively low, swells on the 6th-7th day before menstruation to two or three times its size, and this swelling is responded to by the changes in the component parts, the glands, and the connective tissue. The glands enlarge, and crested, papillary protuberances rise into the interior. The glandular lumina grow wider and wider, and the mucous membrane thus acquires a mesh-like, spongy formation at its base, while at the surface the excretory ducts of the glands become flatter and farther removed from each other owing to the swelling out of the connective tissue and to the cedema. The cells of the connective tissue of the surface of the mucous membrane become richer in protoplasm, and the nucleus colours slightly. The vessels are dilated, and there occurs extravasation of serum and lymphocyte elements. We have therefore a separation of the mucous membrane into a compact and a spongy portion; the glands themselves are peculiarly enlarged and filled with secretion; the epithelium secretes; and the connective tissue at the surface is swollen out and becomes similar to that of the decidua. These four changes—which the authors regard as cardinal—appear simultaneously and make the premenstrual mucous membrane so characteristic that it cannot be mistaken by anyone who has once seen it. While they are not always developed to an equal extent, they are invariably present in premenstrual cases. Thus the whole premenstrual mucous membrane acquires a great similarity to the decidua.

The authors then describe in detail the changes in the glands, the epithelium and protoplasm. In connection with the question of secretion they think there can be no doubt that the epithelial cells which show abundance of plasma, as opposed to those which were completely filled by the nucleus, are occupied in the formation of secretion.

Among other points of special interest they draw attention to the fact that mitoses are entirely absent in the premenstrual phase, and that there is a radical difference between the production of mucus of the cervix and that of the body of the uterus. In the cervix the mucus can be found in the epithelium, and the epithelia also stain on the application of mucus-colouring media; secretion follows regularly and is not confined to any special period. The glands of the body, on the other hand, secrete only in the premenstrual period; mucus is not observable in the epithelium, and it is only in the glandular lumen that the secretion acquires the capacity of giving the familiar mucus reactions. The whole question of the secretion of the uterine glands has hitherto been little studied, and the fact that they form a mucus-like secretion, though only at definite periods (*viz.* premenstrually) is of great interest, all the more so as the authors were able to establish that the same process occurs in the case of the young decidua also.

Finally, in describing the changes in the connective tissue, the authors point out the importance of having established the premenstrual occurrence of such changes in the superficial layers, inasmuch as it explains the much-cited statement of Ruge that the decidua-cell is not characteristic for pregnancy, because it also occurs outside pregnancy.

II. Menstruation.

The approach of the menstruation may be recognised by the fully distended wide capillaries and the minute extravasations of blood round them. The extravasations of blood in the superficial layers, originally very small, increase more and more in volume until they finally meet. Thus microscopically we have a complete picture of menstruation even before a drop of blood has yet reached the cavum uteri.

In consequence of the succeeding hæmorrhage into the superficial layers the tissue is rent in many places. Together with the blood, lymphocytes and leucocytes make their way in great numbers into the tissue. Thus red and white blood-corpuscles may be seen between the connective tissue cells which have been loosened and disarranged, and the distinctive character of the premenstrual connective tissue cells of the compact portion is obliterated.

The glands, in the course of the phase of menstruation, undergo retrogressive change, which show the following characteristics: The formerly wide glands become narrow; the lumen disappears, and the one glandular wall appears to touch the other; the epithelium is short and poor in protoplasm, so that almost the whole cell is occupied by the nucleus, the course of the glands is straight and tense. Together with these narrow glands, however, and in direct neighbourhood with them, there also occur broad glands: these two glandular forms are different not only in shape but also in function and contents, inasmuch as the epithelium of the broad glands is engaged in secretion and the lumen is filled with secretion, while the narrow glands are without contents and the epithelium shows no suggestion of secretion.

The rapid alteration of form in the glands and the epithelium is very noticeable, and it is not easy to see how the epithelium is able to follow such a marked reduction in volume. No doubt there occurs shedding of the epithelia.

The mucous membrane becomes low towards the end of menstruation. The division into a compact and a spongy portion vanishes. As regards the much-disputed question of the loss of the epithelium the authors are inclined to keep separate the superficial desquamation and the loss of the epithelium in the glands. Contrary to the general view, their observations showed that in the majority of cases the mucous membrane was deprived of the superficial epithelium over wide areas; they also convinced themselves that the epithelium is lost even in the protected portions. Moreover there may occur loss of the whole stratum of the compact layer. If larger portions of the mucous membrane are shed at once, they may cause acute pain—membranous dysmenorrhœa. Opportunities for such sheddings are always afforded by the structure of the mucous membrane in menstruation, and another factor also has to be taken into account, viz. the contractions which are produced by the passage of the blood or on the clotting of the blood, etc. Such contractions may result in a detaching of the compact layer, and the more violent the contraction the more extensive may the resulting detachment be. If no contractions occur, the menstruation may pass over without any noteworthy losses of the surface of the mucous membrane taking place.

The loss of the epithelium by mechanical shedding is, however, not a constant one, and thus one is forced to the assumption that epithelium is lost in other ways as well, and that compensation is secured by the quite regular formation of mitoses in the postmenstrual period and in the interval.

III. Postmenstrual period.

In this phase the mucous membrane becomes very low; at the commencement remnants of the hæmorrhage are frequently found sub-epithelially, but they are gradually removed. It is noticeable that, in the case of a typical menstruation, blood-pigment very rarely occurs. Rapid regeneration of the surface epithelium takes place.

The type of the postmenstrual glands is exclusively collaborate; the epithelium is low, and the protoplasm scanty.

The further development of the mucous membrane now depends on the new formation of cells in the epithelium. This formation evidently commences either during the hæmorrhage or immediately after. The authors did not observe any mitoses during hæmorrhage, though Mandl reports such; but they noted abundant formation of new cells one day after menstruation. Such new formation of cells takes place during the whole of the postmenstrual period and also in the interval, ceasing at about the time when processes of secretion begin to make themselves observable in the cell-protoplasm, i.e., towards the close of the interval.

These active new formations of cells prove that epithelium must have been previously lost, and their extent indicates that the previous destruction must have been very considerable.

The authors then describe the microscopical conditions of the phase in detail.

IV. Interval.

The cell-regeneration continues during the first half of the interval but is not nearly so active as in the postmenstrual period. As it diminishes, important changes take place in the epithelium. The cells become higher and richer in protoplasm, and the glands follow the change of the epithelium. These changes are described in detail by the authors. Towards the end of the interval the œdematous infiltration of the tissues can be clearly seen, being most in evidence at the surface.

The transition to the premenstrual phase shows the following characteristics. The mucous membrane of the interval is rather higher than the postmenstrual one; the glands are, to begin with, only slightly sinuate, but later on become so much more markedly; and at the end of the interval the formation of secondary sinuses is demonstrable. The epithelium becomes higher and higher; at first it shows no secretory action, and it does not enter on the stage of formation of secretion till towards the end of the interval.

In summing up the results of their investigations the authors emphasise the fact that it was hitherto generally assumed that the

mucosa of the uterus remains the same between two menstruations. Indeed only the interval, and to some extent the postmenstrual period also, had hitherto been recognised; the whole cyclic change remained absolutely unknown. The conditions applicable to only one phase,—i.e. the longest—were defined as normal and were described by the standard authors on the subject as though they were quite fixed. Everything which did not fit in with the limits thus drawn was declared to be pathological; thus, for example, *endometritis glandularis* was postulated.

It was not only the premenstrual changes that were overlooked but the whole fundamental cyclic change of the mucous membrane, the regular transition of the one form of gland into the other, and the cause and significance of such changes all remained unknown. The authors have now shown that the mucous membrane of the uterus of woman at puberty is in a constant state of transformation from the cessation of one hæmorrhage to the cessation of the next. The cycle falls into various phases, in which the mucous membrane behaves so characteristically that its temporal relation to the menstruation can be accurately defined from the microscopic appearance presented. The secretory activity of the glands of the uterus is restricted to a definite phase—the premenstrual. All the elements of the mucous membrane participate in its cyclic movement.

It is thus clear that it is impossible to obtain successful results from a study either of the non-menstruating mucous membrane by itself or of menstruating uteri by themselves, though this is the course which has so frequently been followed by investigations even in recent times. The hæmorrhage has to be considered in its relation to the whole cycle; it merely signifies the last phase of the cyclic development of the mucosa of the uterus, the retrogressive metamorphosis of the mucous membrane which has become almost decidual in its character, the introduction to a new cycle—to the new preparation for the admittance of an impregnated ovule.

It is natural to assume that the most important changes take place before the commencement of hæmorrhage. The conditions of the blood-pressure are in agreement with this assumption. The blood-pressure rises premenstrually until it attains its greatest height immediately before menstruation, and then falls pretty suddenly with the commencement of the hæmorrhage; and with the sinking of the blood-pressure the mucous membrane also decreases.

This cyclic transformation of the mucosa of the uterus is of fundamental importance for our comprehension of the physiological processes, and it is of great diagnostic value, for it allows us to determine

the temporal relation of the mucosa to the menstruation from the microscopic conditions alone.

The premenstrual changes of the mucosa deserve special attention. They can only be estimated in their full significance when the young decidua is brought into comparison with them. We then recognise that we have before us premenstrually the beginning of a decidua-formation both morphologically and functionally; there only exist differences of grade between the two. If hæmorrhage does not occur and conception follows, the decidua is formed from the premenstrual mucous membrane merely by the further development of the latter.

In this resemblance of the premenstrual mucous membrane to a decidua lies also the significance of the cyclic transformation which renders such a development possible every month.

A comparison with what takes place in animals demonstrates the significance of what is functionally the most striking and tangible phenomenon in the premenstrual mucous membrane and in the decidua, viz. the formation of secretion by the glands of the body of the uterus. The authors, from some few investigations made on the uterus of the dog, came to the conclusion that there is a great resemblance between the premenstrual mucous in man and that of the dog in "heat," and they note the probability that the "heat" of mammals which have no regular secretion of blood is homologous to the menstruation of man. Thus, since it is generally admitted that "heat" signifies the preparation of the mucous membrane for the admittance of the ovum, they believe that we are justified in making the same assumption regarding the premenstrual metamorphosis of the mucous membrane. The impregnated ovule would accordingly establish itself in the mucous membrane of the uterus in the premenstrual phase, the impregnated ovule would accordingly be that of the first period missed. It must be imagined that the ovule, within a period which begins six or seven days before the commencement of the menstruation, reaches the cavity of the uterus and so comes to nidation. Since we are obliged to allow for a longer and hitherto undetermined period of time to account for the migration of the ovule through the canal of the Fallopian tube, the extravasation of the ovule from the follicle and the conception might perfectly well take place in the postmenstrual period or in the interval. The nidation, however, would occur in the premenstrual phase.

With regard to the question whether hæmorrhage takes place by rhexis or diapedesis, the authors express the opinion that probably both processes occur. They were unable to determine the cause of the hæmorrhage itself.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

The fifth regular meeting of the Society was held Friday evening December 3rd, 1909, Dr. W. Grant Stewart, President, in the Chair.

LIVING CASE: FRACTURE OF THE FEMUR.

A. R. PENNOYER, M.D.—I show this case to-night because it represents fairly well the class of cases of fracture of the femur which we will be with increasing frequency operating on in the future, i.e., cases which we cannot reduce by ordinary means or hold in position. The man is 35 years of age and was brought to the hospital under the service of Dr. Shepherd on the 9th of June last. He was unconscious and in a rather seriously injured condition. While working on a platform which was covered with old iron, old stoves, etc., it fell and he was thrown some 20 or 25 feet to the ground, falling among the débris, some of which fell on top of him. Examination revealed a fracture of the base of the skull through the anterior fossa and a compound comminuted fracture of the right leg, at or about the junction of the middle and lower third. He had a crush of the left hand and a high fracture of the left femur. He was unconscious for two or three days, then partially conscious for a while and for nearly two weeks was quite irrational. We treated the fracture in the right leg with the ordinary plaster with a window. He was very restless and it was difficult to keep the parts in position. Repeated attempts at reducing the fracture of the femur were unavailing and after these failures we decided that it could not be done unless by the open method. I then operated, using the method of Lane, and fixed the limb after the operation in a splint, for something under three weeks, after which the splint was taken off and from that time on both active and passive movements and massage were given and on the 42nd day he left the hospital and is now able to work. He has a slight limp, but that is on account of the somewhat faulty result in the other leg which shows a little shortening. The X-ray plates submitted show nicely the high fracture of femur with very faulty position of fragments, and the second one shows how perfectly the fragments are held together and in what good alignment by the plating.

J. ALEX. HUTCHISON, M.D.—I only wish to express my appreciation of the satisfactory treatment in this case. There can be hardly any doubt as to the treatment here that the open method was the proper method, and it is just in these difficult cases that the excellent results of this form of treatment are manifest.

G. E. ARMSTRONG, M.D.—The report of this case opens a very interesting field for discussion. Hospital surgeons are naturally keenly alive to the many points that arise in the diagnosis, complications and treatment of fractures.

There are three men to-day with whose methods every operator should be intimately acquainted. These three men represent three distinct schools. (1) Professor Bardenhauer in Cologne, who has published a book on the treatment of fractures by extension, which is very valuable indeed. Although he has been called the bloodiest surgeon in Germany, his methods in the treatment of fractures are conservative and for the most part bloodless and are followed by a great many. He would practically treat all fractures with extension and manipulation. I have been three times at his clinic, which is a very large one. He has arrangements at the foot of each bed for the charts, history, etc., of each case and also a pocket for the different skiagraphic plates taken during the treatment. It is astonishing what brilliant results he gets by manipulation and extension. He is rather severe in his criticism of the open method, and certainly his results justify his contention.

(2) One then goes to the other extreme and visits Mr. Lane's clinic at Guy's. He practically plates all the fractures that come to his clinic. He is very emphatic in his view that the open method is the only method which should be employed in the treatment of fractures and his results cannot be bettered.

(3) There has come upon the stage, not just in recent years though in England but recently, the treatment of M. Lucas-Championnière, of the Hôtel Dieu of Paris. He holds views that seem to us rather extreme, that mobilization may be carried too far, and, in fact, he is not very particular about getting the fragments into very exact position; he is after functional results, and while I do not think his functional results are as good as Bardenhauer's or Mr. Lane's, yet they are certainly good. Now, any one engaged in the daily treatment of these fractures, when he visits these three clinics with such masters at the head of them, teaching these different views, gets a great deal of food for thought and reflection.

I have come to hold certain views, and one is that when I cannot, with all the assistance I have in the General Hospital, and that is abundant, reduce these fractures and get them into perfect alignment, it is better to resort to the open method if there are no contra indications. I have tried it again and again and even when the fracture is opened up under ether and exposed, even then it is often extremely difficult to get them in alignment, there may be a muscle between the fragments, or a fragment may be so displaced as to prevent reduction. The other day after opening up one of these difficult cases it was only when I put

Lane's big tongs on that I could bring the bones into perfect position. I have the most profound sympathy for anyone who has an imperfect result in a fracture; it is a field in which there are most likely to arise strained relations between the doctor and the patient, and I do not know of any position where he is more likely to fall down innocently than in such cases. I treat fractures difficult to reduce more and more by the open method, but there are a great many who do not. No less an authority than Professor Eiselsburg has recently published a series of cases that demonstrate that perfect anatomical replacement is not always necessary to obtain a good functional result.

Now, the question arises if the functional result is good how far we are justified in exposing the patient to any increased risk by the open method. I always teach students that no man without a hospital, without a technique that he can trust day after day, is justified in treating ordinary fractures by the open method. On the other hand, a hospital man with a technique that he knows he can trust, and modern facilities at hand, can often get more satisfactory results by the open method.

In the matter of Professor Lucas-Championnière of the Hôtel Dieu, those of us who were students thirty years ago remember how Frank Hamilton insisted upon perfect immobilization. He went so far as to claim that delayed union in many fractures was due to movement in the bed and he would sling these fractures in a crib so that the movement of the patient in the bed would give the least possibility of motion at the line of fracture. I think these fractures should always be immobilized for a time, but a little irritation at the line of fracture, after fixation is fairly well established, is a stimulation to throw out the callus and to change that callus into good strong bone. In addition to the massage the more one can apply the ambulatory method the better, and in those in which you cannot, I have hastened union in many cases by the application of a Bier's bandage or passive hyperæmia. I do not think the last word has been said by any means on the treatment of fractures, but certainly the question of the open and the closed method is an interesting one.

A. R. PENNOYER, M.D.—I was interested in Dr. Armstrong's remarks especially the point which he makes with regard to leaving splints on too long. In my clinic we are leaving off the splints very much earlier than previously, because I think fixation takes place in a couple of weeks after this, care is all that is necessary for the progress of the case.

LIVING CASE: THE VALUE OF MESMERISM IN DIAGNOSIS,
WITH DEMONSTRATION.

D. A. SHIRRS, M.D.—This patient came from Sherbrooke, where some 14 or 15 weeks previously he had fallen a distance of some 26 feet,

injuring his back. He was supposed to have a fracture of the spine; he had a motor paralysis of both lower extremities and a sensory paralysis of both upper extremities; there was retention of urine and a marked area of hyperæsthesia in relation to the area of the spinal column supposed to be injured and all the typical symptoms of compression of the spinal cord. Besides that there was a distinct Tic, a peculiar jerking of his head—this had been of four weeks duration, coming on some time after the accident.

On going into the history of the case I learned that four years previously he had been under the care of Sir William Gowers, in London, for four months. At that time a diagnosis was made of an intracranial growth. There was nystagmus, headache, vomiting, some trouble in vision, a marked staggering gait, tinnitis, and other symptoms pointing to a cerebral neoplasm. His head was shaved and he was prepared for operation, and I believe Sir Victor Horsley examined him, but operation was deferred and he was put on heroic doses of the iodide of potassium and the symptoms slowly disappeared in about eight months. About a year ago he came to this country as a carpenter and was employed in the vicinity of Sherbrooke. He did not seem to have any difficulty in climbing to great heights and would work on the top of a building without any symptoms of his old trouble. His fall was the result of the breaking of a plank upon which he was standing.

The patient mentioned to me that while in the London Hospital he had seen Dr. Russell and I therefore sent for him to see the patient with me, but he could not recall the case.

After due consideration I came to the conclusion that we were dealing with a case of cerebral inhibition. There was no doubt he had had the injury with a considerable amount of bruising, which had produced a traumatic neurosis, with the symptoms just mentioned. I advised Dr. Hutchison, under whose care the patient was admitted, that nothing further should be done until we could observe the patient more closely. On Tuesday I saw him, and again on Sunday and I was more confirmed in my opinion. There was a distinct deformity in the spinal column in the situation of this hyperæsthetic area, but the X-Ray showed no displacement or other abnormality. On Friday, after the clinic, I had the patient brought down to the outdoor department and he was put into the hypnotic state and made to walk. On Tuesday of last week I thought it might be an interesting case to demonstrate to the fourth years students, for as a rule the average student or young graduate has a very imperfect idea of what hysteria is or mental inhibition. The patient was brought down to the clinic and the case was discussed before the class. I referred to cases where patients had been bedridden for years

and yet on some great shock, fire, etc., they have got up and walked about. One can easily recall dreams where the faces of those we have not seen for years have come out perfectly distinctly, which in our waking state we could not recall, and the same with voices. I remember a case of Dr. Stewart's; he gave the girl a sum to do, but found that she could not do it, and yet under hypnosis given the same sum she did it perfectly. What is this inhibition? We all know that it is comparatively easy to walk across a plank say six inches broad and 25 feet long over a quiet brook, but attempt this again when the brook is swollen with recent floods and rushing madly along, and notice how hesitatingly you will cross. There is here the element of fear.

This afternoon I made the patient walk up and down the ward under hypnosis and with his consent he will go to sleep again and walk up and down this room. I may say that after he was put to sleep the first time the Tic disappeared though it reappears for a few minutes after each sleep.

C. K. RUSSEL, M.D.—This case has been of great interest to me. I saw him at the end of last week and he certainly has improved very much; especially as regards a very marked spastic tic from which he was then suffering. At that time as Dr. Shirres has said, he could not walk at all. I do not remember seeing him in Queen's Square Hospital, though he remembers me, but from what he tells me of his treatment there, which was electricity, I can be quite sure that he was diagnosed as a functional condition, and as he said, went out cured. I have not much personal experience with hypnotism or mesmerism. I saw a good deal of it on the other side, and my experience did not encourage me to take it up personally very much. It is not so much the influence one has over the patient in making them do anything that was wrong, but it was the influence on their character in general. Some cases that I followed at Zurich were really in a worse state mentally than their previous physical condition; in fact it seemed to me that in driving out the devil that possessed him seven others came to take his place, and I think that is one thing which has deterred me from taking the matter up seriously. I have written to Queen's Square Hospital as I think it would be interesting to get the notes of this patient's case while there. I think the treatment practised there is just as efficacious, and perhaps less dangerous, than hypnotism, that is to simply overcome his cerebral inhibition by some external stimulus such as a strong current of electricity administered with the wire brush and associated with proper suggestions. This I think has some educational value on the patient's mind and tends to keep him from becoming affected again, for some time at least.

J. ALEX. HUTCHISON, M.D.—With regard to the patient I might

say that his presence in Montreal is due to the fact of there being no X-Ray apparatus in Sherbrooke. Those in charge of him there felt that radiographs should be taken and I was asked to arrange for his admission to the hospital practically with that object in view. Had there been an X-Ray in Sherbrooke and perhaps not a Dr. Shirres, this man might have been in the same condition and from a surgical point of view it might have been a very puzzling case. Also this case would have been a very serious one for a railway company. The situation in Sherbrooke is not unlike a great many other towns of similar population, with many competent men, but without the presence of an experienced expert neurologist, and such cases continue to deceive able and experienced practitioners. When he was admitted to my service the man showed a very distinct appearance of fear on his face and looked fearfully at everything, and this was particularly well marked if two or three persons came to the bedside, he became so confused he could not speak a word. With reference to the retention, I catheterized him myself, and taking my clue from Dr. Shirres's diagnosis I told him that it would be the last time he would require the catheter, and I think, with one exception, it was. He has been very easily open to suggestion and we have made a practice of complimenting him on his general improvement and telling him he was getting better and his improvement has been marked from day to day. We make him walk every day, which he is able to do with very slight support.

D. A. SHIRRES, M.D.—I think Dr. Russel is right with the majority of medical men in what he says as regards the ill effects of hypnosis, but I think the opinion has been wrongly held, as I know from men who have practised it for years. We have tried everything else, and we are getting perfect results and none of these cases have shown any character deterioration, nor have I found any bad effects or mental weakness in my own cases. I have tried, as Dr. Russel has tried, sometimes with success, giving the faradic brush, giving different forms of stimulation, but in the majority of picked cases one gets better results with hypnosis. The only thing I do not like about it is that it savours of the quack and is not recognised yet sufficiently by our colleagues. I am absolutely certain that in this case the patient will be leaving the hospital in two days and able to walk.

THE SPIROCHAETE AND ITS DIAGNOSTIC SIGNIFICANCE.

R. P. CAMPBELL, M.D.—Read the paper of the evening.

C. B. KEENAN, M.D.—I must say that as a means of finding these small micro-organisms, I have found the India ink method of much value. It is simple and takes but a short time and it is very easy to

find the flat, ribbon-like spirochætes when they are present. I think you will find yourself well repaid by trying this method and it is almost as accurate as the dark stage, although one must admit that in the use of the India ink method you have no chance of seeing the living spirochæte move, and that is of course, a strong point in favour of the dark stage. Yet you will find the results by both methods excellent.

FIVE CASES OF TUBERCULOSIS OF THE EYE.

R. A. KERRY, M.D. read the report of these cases and the result of treatment by the injection of iodoform.

J. W. STIRLING, M.D.—Dr. Kerry's contribution to the treatment of cases of tuberculosis of the eye is interesting. I have not had much experience in the use of iodoform. It is a comparatively limited number of years since the diagnosis of tuberculosis in the eye has attained any prominence, but during the two past years its presence has been very frequently detected, in fact, 50 per cent of the cases of uvetis and scleritis have been traced to it. The treatment is a matter of import. In some of the cases which I have had we have used the injections of the bacillary emulsion or tuberculin, the treatment spreading over a more or less lengthy period with a result that possibly might be claimed as good in that the disease was apparently stopped for the time being. One point about these tubercular lesions is that they frequently tend to recur, in one of my own cases after two years. In the most of my cases I have limited myself to the installation of atropine and the administration of the syrup of the iodide of iron, with the result that after varying periods they came to rest very much in the same manner as Dr. Kerry reports under the treatment by iodoform. The question always arises in these cases as to the permanency of the cure and if the iodoform gives a permanent cure so much the better. Under general tonic treatment we get a certain period of rest, but I am always watching for recurrences. The reaction following injections is against its general use in eye cases. In lung cases, the slight local reaction following the injection of tuberculin is of but little import, whereas a local reaction in the eye may cause further marked deterioration of vision.

DR. GURD:—I would like to confirm what Dr. Kerry has said with regard to the case which came under my care, the eye was given the iodoform treatment and she is perfectly well now.

GEO. H. MATTHEWSON, M.D.—At the Massachusetts Eye and Ear Infirmary in Boston they take it for granted that nearly all their cases of scleritis and a great many of their corneal conditions are tubercular. The therapeutic measure they employ there is the injection of tuberculin, giving small doses so that there will be no reaction in the eye. I have seen some excellent results there under this treatment.

S. H. MCKEE, M.D.—I would like to congratulate Dr. Kerry upon his series of cases. I had no idea that tuberculosis of the eye was as common here as it seems to be. In many cases the diagnosis is not an easy matter, and one would have liked to have heard from Dr. Kerry, his means of diagnosis in these cases. The method most in vogue is the sub-cutaneous injection of Koch's tuberculin. With this method, as Axenfeld points out, there are two points to consider, first, will a small lesion in the eye, if it is tubercular, give you a reaction, and again, if you get a reaction, is it due to this tubercular lesion of the eye? I do not think that either of these points can be decided upon until there has been considerably more work done in this comparatively new field. The diagnosis in many cases depends upon the histological picture. Where the uveal tract is involved, and where you have the eye reacting to some irritant, it is necessary if you are to diagnose tuberculosis, to have a definite tubercular picture, that is, a definite tubercle consisting of epitheloid cells with necrosis, and perhaps bacilli. Certainly necrosis is necessary. I have lately seen in the literature a case of tuberculous iridocyclitis reported where it is stated the diagnosis of tuberculosis was made from the histological examination, and where in the description of the histological picture, it says distinctly there was no necrosis seen. I only mention this to show how error may creep in, and how easy it is to say that the case is tuberculous because of the presence of giant cells. I may say that I have had no experience in treating tuberculosis of the eye. The method which seems at the present time to be giving most satisfaction in the European clinics is that of von Hippel. He uses the injection of new tuberculin in very small doses, 1/500 of a mg. This is given every second day and increased at each injection, but always stopping before 1/50 of a mg is given, and never increasing the dose if there is any severe reaction.
