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# The Treatment of Syphilis

FRANK G. MACK, M.B.

THIS is a subject which especially concerns the general practitioner, although no one practicing any branch of medicine can afford to be without knowledge of it. There appear to be some physicians, especially those of the older school, who do not, as patients often complain, "use the needle." The problem of advising as to the future treatment of patients in whom the disease has been detected in hospital or clinic and who are compelled to return to homes remote from the larger towns or cities is greatly complicated by this fact. With present day diagnostic and therapeutic facilities there is no need for any doctor to refuse to treat these cases by modern methods.

When a British Royal Commission has estimated that from 7 to 10 per cent. of the population of Great Britain is infected with syphilis and routine Wassermann tests of patients in general hospitals on this continent give positive findings as high as 10 to 12 per cent., it is difficult to believe that any practitioner is correct in saying that he does not see cause of syphilis in his practice. "Alert suspiciousness of mind, necessary though it may be in all medical diagnosis, is an absolute prerequisite to the successful detection of syphilis" and "the physician who has a psychical blind-spot for the disease sustains a life handicap as a diagnostician." (Stokes).

The modern treatment of syphilis began in the period from 1905 to 1910 in which the cause of the disease—the *Spirochaeta pallida*—was discovered by Schaudinn and Hoffman, the serological test was devised by Wassermann, and Salvarsan and Neosalvarsan were produced by Ehrlich. In the period which has elapsed since then a structure of treatment has been erected on this foundation which is not yet completed, which has undergone many changes and continues to evolve, yet affords a definite and useful means of dealing with this protean disease. Through elaborate correlation of the results and statistics of many large clinics, the co-operation of clinicians and extensive animal experimentation a large and reliable fund of information as to the effects of modern treatment has been obtained. Thus it has been possible to outline certain principles of treatment which have been almost universally accepted. The most authoritative texts on the subject are Stokes', "Modern Clinical Syphilology" 2nd Edition, and Moore's "The Modern Treatment of Syphilis."

The methods of treatment now in vogue are not those of twenty-five years ago. Salvarsan, though shown by statistics to be therapeutically superior has been almost entirely supplanted by the more convenient Neosalvarsan. Mercury has been replaced by Bismuth in routine use for several years. Of the older remedies the Iodides alone remain, with the realization that they have little or no spirochaeticidal action and are only useful in the removal of late inflammatory exudates. Among the newer remedies are Tryparsamide, the pentavalent arsenical, useless in early syphilis but valuable in neuro-syphilis; Bismarsen, in which a bismuth molecule has been introduced into the salvarsan radical, for intramuscular use only; and therapeutic hyper-

pyrexia which is best induced by inoculation with benign tertian malaria and is of greatest efficacy in paresis, but is valuable in all forms of neurosyphilis. The difficulty in keeping the infection alive during transportation of blood from the distant larger centres causes malaria to be used in this province much less than it should be.

Mercury, as already mentioned, is not now routinely used, but it may be of value in the treatment of infants and elderly people and those whose remoteness of residence makes more suitable treatment impossible. It is most effective, under such circumstances, when given by inunction of mercurial ointment and less so when given internally as Hydrarg. cum Crete. It should be recognized that these methods are inferior to intramuscular injection and are only feeble substitutes for more active treatment. In infants mercurial inunction or, even, Hydrarg. cum Crete gr.  $\frac{1}{4}$  t.i.d. are still, used but in older children small doses of bismuth given intramuscularly are preferred associated, if possible, with intravenous injections of neosalvarsan. The technical difficulties of intravenous injection in young children are often so great that the procedure is impossible, especially for the inexperienced, and intramuscular injections of sulpharsphenamine or bismarsen may have to be substituted. When using mercury in any form the urine should be examined regularly for albumen, the gums should be watched for beginning gingivitis which may, to some extent, be prevented by treatment of the teeth and care of the mouth. Diarrhoea and intestinal colic require reduction of dosage.

Bismuth, introduced by Sazerac and Levaditi for the treatment of syphilis in 1921, is probably best given as bismuth salicylate, potassium bismuth tartrate or bismuth metal. These are all insoluble preparations and the dose of each is 0.2 g., to be given intramuscularly only. The metallic bismuth in saline suspension is the preparation used by the writer in private and clinic practice for several years and it seems to be as satisfactory and effective as any. There are many other preparations of bismuth, both soluble and insoluble, each with its own proprietary name and it is difficult for the practitioner to resist the specious claims of the "detail man" that his particular preparation is superior to all others. The observation's of Moore with regard to the virtues of the soluble and insoluble preparations of bismuth seem reasonable. He states that "the available data indicate, first, that while the exact mode of action of bismuth—is as yet unknown, it is more treponemistatic than treponemicidal; second that, in order to accomplish this effect, it is desirable to maintain a low concentration of bismuth in the blood and tissues over a very long period of time; third, that this can be done more readily, and with less inconvenience and expense to the patient, by means of intramuscular injections of insoluble rather than soluble salts; fourth, that, with average therapeutic dosage, toxic manifestations in patients are no more common with insoluble than with soluble preparations and that there appears to be no danger of storing dangerous amounts of bismuth in the body."—"I know of no evidence, however, that *in the long run* soluble bismuth preparations will do more than (or on the basis of the theoretical considerations just discussed, even as much as) the insoluble compounds."

Bismuth in any form is to be given intramuscularly only. It has much the same undesirable toxic effects as mercury and, in addition, may in some patients cause skin eruptions and arthritic pains. The appearance of a bluish discoloration, on the gums as a bluish line at the gingival margin or on the buccal mucosa as patchy deposits is common and does not call for cessation

of treatment unless accompanied by much gingivitis. The injection is best given into the muscles of the upper outer quadrant of the buttock. Always draw back the plunger before injecting the drug to make sure the needle has not entered a vein or artery.

There is some difference of opinion as to the optimum dose of neosalvarsan. Fairly recently the late J. F. Schamberg advised the use of rather small doses, not exceeding 0.6 g. in a man, regarding prolonged administration of smaller doses as safer than the use of 0.75 or 0.9 g. Moore thinks the use of smaller doses tends to the development of an arsenic resistant infection. It is probably safe to make the initial dose in a small person 0.45 g. and to give 0.6 g. in the succeeding doses. In a heavy man 0.75 or even 0.9 g. may be safe. The treatment should be given at intervals of a week. Shorter intervals may be more effective but greatly increase the danger of toxic effects. The patient should not eat for a few hours before treatment and it is better for him not to eat much for several hours after. The injection should be given into any suitable vein at the elbow with the patient recumbent, never sitting, and should be given slowly. The drug is to be dissolved slowly in about 10 c.c. of sterile distilled water, avoiding aeration from violent stirring or agitation, and should be injected soon after dissolving as it rapidly becomes toxic on standing. As the drug is now available in packages containing an ampoule of the drug and an ampoule of doubly distilled sterile water any physician who can give an intravenous injection should be able to administer the treatment. Great care must be taken to make sure that the needle is properly in the vein before beginning the injection so as to avoid infiltrating the tissues. This is not quite as serious as with salvarsan but it is a very painful and often temporarily crippling accident which does not enhance the reputation of the treatment or of the operator. While it is urged that every practitioner be prepared to treat syphilis by intravenous injection of neosalvarsan, it is only proper to call attention to some of the more common toxic effects so that care may be taken to avoid them as much as possible. Fortunately they are not common and should not deter anyone from using the treatment. These general reactions may be considered under the following classification.

Jarisch-Herxheimer reaction or therapeutic shock.

Angioneurotic symptom complex.

Reactions due to myocardial injury.

Post-salvarsan dermatitides.

Those reactions so rare that in a paper of this scope they can only be mentioned, such as reactions due to injuries to the nervous system, blood dyscrasias; post-salvarsan jaundice and renal injury.

The Jarisch-Herxheimer reaction or therapeutic shock is assumed to be due to the sudden destruction of large numbers of spirochaetes with resultant liberation and absorption of their proteins and endotoxins. The first injection is often followed by elevation of temperature, which may be preceded by a chill, general aching and malaise. Cutaneous lesions, if present, may be intensified for a day or two. Avoidance of this reaction is most important in late syphilis and may be life saving in gumma of the larynx, in cardiovascular syphilis and in some cases of neurosyphilis. An acute inflammatory reaction due to this cause may so accentuate the lesions of the disease as to threaten life or cause crippling damage. Such reaction may best be avoided by careful preliminary treatment with the iodides and the

heavy metals carried on for several weeks if necessary before venturing on the use of the arsenical.

Angioneurotic reactions include the nitritoid crisis of Milian and are believed to be due to excessive speed of injection in some instances and to intravascular agglutination of red corpuscles with resultant formation of multiple minute emboli in others. The use of adrenalin 1-1000 in 10 minim dose given intramuscularly, with due caution in hypertension and cardiovascular syphilis, will relieve the symptoms. Later injections of neosalvarsan may usually be given without reaction if the same dose of adrenalin be given five minutes before. The symptoms are suffusion of the conjunctivae, cutaneous flushing, choking cough, swelling of the lips and tongue, severe lumbar pain and even syncope with weak, thready pulse and a sensation of impending death. These reactions are, fortunately, less severe and less common than with salvarsan.

In patients with cardiovascular syphilis large doses of the salvarsan may result in an immediate, very severe and often fatal reaction due to myocardial injury with fainting, extreme pallor, profuse sweating and collapse. Should the patient recover no further salvarsan treatment should be given.

The post-salvarsan dermatitides range from transient slight erythemas to the disastrous exfoliative dermatitis which may be fatal. Moore urges that when a patient develops, in the midst of antisiphilitic treatment, any skin eruption which is not readily recognizable as *not* related to salvarsan the safest course is to discontinue treatment at once. The danger on the one hand is the development of the dreaded exfoliative dermatitis and on the other of depriving the patient of needed treatment for his syphilis. If the rash is macular or maculopapular, especially if itchy and inclined to scale, give further neosalvarsan with great caution, and if papulovesicular, vesicular, exfoliative, lichenoid or purpuric give no more. An exfoliative dermatitis may appear suddenly and without warning, but usually some prodromal signs, especially in the form of erythema and itching, most common on the forearms, may warn of its approaching onset. The mortality rate is given as high as 25 per cent. by some but in a fairly large experience I have seen only one death from this cause, although some have been desperately ill and all have been confined to bed for weeks or months. Prompt hospitalization should be insisted upon. The colloid bath, prepared by dissolving a teacupful of bicarbonate of soda in a bath tub half full of water at 100°F. and stirring about in the water a cheese cloth bag containing oatmeal porridge (3 cups of oatmeal in 2 quarts of water) is very soothing and useful. Sterile olive oil and calamine liniment are useful as local applications. Despite some opinions to the contrary, my own experience leads me to believe that daily intravenous injections of sodium thiosulphate in doses of 1 g. are very valuable, especially if given early, and will sometimes abort an attack. No attempt should be made to eradicate foci of infection during the attack as the general resistance to infection is much depressed.

Before beginning treatment the diagnosis must be established beyond question. The ideal time to begin is in the seronegative primary stage, at which time the chance of cure is greatest. The diagnosis must be made by laboratory methods, not by physical and morphological appearances. All too often the apparently "soft sore" is really syphilitic. Chancroid seems to be uncommon in this country. Stokes puts the matter very bluntly, though perhaps with some exaggeration, when he says, "The time will come when to

make a diagnosis of chancroid until four months have elapsed since the appearance of the lesion will be regarded as naïve, and as proof of the physician's unfamiliarity with the modern clinical diagnosis of syphilis." The diagnosis should be made by darkfield examination for the spirochaetes in the serum obtained from the sore. This, of course, is not a method that is generally available to the practitioner. When it is not possible to have it the next best method is to make smears of the serum, spread on slides as if they were blood films, and to send them to the laboratory for examination by staining methods. The percentage of positive results is, unfortunately, small. Specimens of blood should also be sent in to the laboratory every four or five days for several weeks, for the performance of the Kahn and Hinton tests. The latter test usually becomes positive before the Kahn does and, also, remains positive after the Kahn test becomes negative. It appears to be very accurate and very sensitive so that the reversal of the Hinton test from positive to negative, under treatment, is even more satisfactory than the obtaining of a negative Kahn test. In the secondary stage these tests are positive in almost 100 per cent. of cases. The patient then, however, requires much more prolonged treatment and the probability of complete cure is not as great.

Examination of the cerebrospinal fluid for evidence of involvement of the central nervous system is essential before cessation of treatment. It should, if possible, be done at the end of the first course and at least, before the end of the first year of treatment.

Before beginning treatment a careful physical examination especially of the circulatory and nervous systems, of the lungs for tuberculosis and an examination of the urine should be made and carefully noted to serve as a basis for comparison with later periodical physical examinations.

"The aim of treatment in early syphilis is the complete eradication of the syphilitic infection and the "cure" of the patient. This is quite unlike the situation in late syphilis where, in most instances, the most that can be accomplished is the amelioration of symptoms and the arrest of the progress of the disease. A subsidiary aim of treatment is the control of infectiousness." (Moore).

The determination of cure is not yet possible by any single test and each case must be subjected to prolonged clinical and serological investigation. The indifference, ignorance and psychological peculiarities of many patients make this difficult of attainment.

Even by modern methods the treatment of early cases requires from twelve to eighteen months of steady treatment. Definitely secondary stage cases probably need two years of treatment and sometimes more. During the first year there should be no rest periods. It has been my practice to give neosalvarsan at weekly intervals in courses of eight to ten injections with bismuth administered concurrently on different days, but also at weekly intervals. Some authorities prefer to give a course of neosalvarsan alone and to follow it with bismuth but I believe the combined treatment is a little more effective and that the toxicity is no greater. If the Kahn test was negative at the beginning of treatment, I have tended to complete the treatment, after the first combined course with bismuth only in courses of ten injections, pausing for a week or two only between courses and having a Kahn test done at the end of each course. When the Kahn test has been positive at the beginning of treatment, I have usually given from four to six doses of neosalvarsan together with ten of bismuth in the second course even if the

Kahn test at the end of the first course had become negative. The remainder of the treatment has usually consisted of bismuth alone until the completion of the periods suggested above. If the Kahn test remains positive at the end of the first course a full series of neosalvarsan injections should be given in the second course and often much longer, depending upon subsequent Kahn tests. A recent article by Stokes et al. (Jour. of the American Medical Association, April 21, 1934) tends to show, from careful study of statistics, that every early case should receive at least twenty injections of neosalvarsan in the first year to obtain the best chance of "cure." Financial considerations often make this an ideal rather than a practical procedure both in clinic and private practice.

In dealing with late syphilis it is important to bear in mind what has already been said about the Jarisch-Herxheimer reaction and the danger of using the arsenicals in cardiovascular syphilis. The chief reliance will usually be placed upon the iodides and the heavy metals.

The treatment of neurosyphilis is too complex and too large a subject to enter upon in a paper of this scope. It usually requires the most skilled and careful treatment by the expert.



# Post-Operative Pulmonary Complications\*

V. D. SCHAFFNER, M.D.

POST-Operative pulmonary disease has for years been an annoyance and a source of frequent worry to all surgeons.

It would appear from the statistical study of several clinics that about 3% of patients operated upon develop post-operative pulmonary complications and about  $\frac{1}{2}$  of 1% of total operations have a lethal ending from this cause to say nothing of the disabling remote effects such as bronchiectasis and lung abscess.<sup>1</sup>

Exact figures on the percentage of post-operative disease going on to lung abscess and bronchiectasis are not at hand, but it is the opinion of some of the senior surgeons at this hospital that it is very high. This is especially so in regard to bronchiectasis.

For these latter reasons alone the condition deserves our every attention as to prevention and cure.

As with all diseases the question of prevention and cure comes only after a thorough understanding of the underlying causes, the pathogenesis and the ultimate pathological conditions present.

It would appear from a review of the literature that until recent years this understanding has not been approached and we are still far from that goal, but the prevailing ideas have certainly changed to a great extent.

In picking up old case histories one will find in the final diagnosis the words "Post-operative pneumonia" coupled with the name of the disease for which the patient was operated upon.

In the light of recent investigation it would appear that such a diagnosis is wrong or at least is wrong at the onset of the disease.

So-called post-operative pneumonia has always been considered queer in some detail and varying from the ordinary lobar and broncho-pneumonias and for years it was left at that.

Recently, with improved technique in diagnosis especially with regard to X-ray, and stimulated interest in the subject, the diagnosis of "Post-operative pneumonia" is becoming less frequent and the one of "Post-operative atelectasis" and "Massive Collapse" is being substituted in its place, and it is probably true that practically 100% of disease of this type starts as lung collapse of varying degrees—i.e. massive collapse, lobar atelectasis and lobular atelectasis. Elwyn & Lee pointed this out in 1924 and Lee again restated his claim in 1928.

Numerous case histories have been reviewed in regard to this point and the clinical evidence together with the X-rays have indicated atelectasis to be the condition primarily present. Therefore in considering post-operative pulmonary complications the subject matter of this paper will be confined to the various degrees of atelectasis.

\*Read at the meeting of the Valley Medical Society, Kentville, N. S., October 30, 1934.

As the clinical entity acute massive collapse of the lung was first described in 1908 by the English Pasteur<sup>4</sup>. He found the condition in children dying suddenly with nasal and pharyngeal diphtheria.

Interest in the condition has been restimulated in the last ten years especially by the works of Scott,<sup>5</sup> Churchill<sup>6</sup>, Jackson & Lee<sup>7</sup> and Band and Hall<sup>8</sup> et al and for complete review reference is made to their work.

Let us briefly consider the pathological appearance of the lung in massive collapse and atelectasis as observed in clinical and experimental cases. In the first place the lung, or affected part, is heavy, of a deep red colour and deeply congested. There is practically no reduction in size and normal lung cepitations are not to be found. The cut surface is bloody and simulates that of infarction.

Microscopic sections show that the alveoli are collapsed and airless. The bronchi or bronchioles supplying the affected part are filled with plugs of tenacious mucus or inflammatory exudate. The cells lining the alveoli are oedematous and swollen and the vessels are congested with exudation of red blood cells into the alveoli and lung parenchyma.

If unrelieved the condition goes on to extensive peribronchial purulent exudation from superimposed infection giving a mixed picture of collapse and broncho-pneumonia.

If the condition goes on still further it will develop into a bronchiectasis as a result of chronic peribronchial infection or to lung abscess as a result of necrosis from extensive congestion and infarction. In regard to this latter point Yates<sup>9</sup> recently points out that primary abscess of the lung arises practically exclusively in an atelectatic lung. To quote from his article: "The volume of inspired air is the chief factor in determining the expanse of the alveolar surfaces; the volume of blood forced through the pulmonary artery is the chief factor determining the expanse of the capillary surface. However greatly or abruptly, either factor may fluctuate an immediate equal fluctuation in the other factor results".<sup>2</sup>

"The practical significance of this organization may not be ignored. . . This is particularly pertinent in primary abscess which apparently arise in atelectatic lungs. . . the circulation of the blood in the capillaries of the pulmonary vessels nearly ceases and the volume of blood supplied by the bronchial artery also nearly ceases." This in reality amounts to true pulmonary infarction. Abscesses result from necrosis and liquefaction of these infarcted areas.<sup>3</sup>

In considering the etiology and pathogenesis of atelectasis we are dealing with one of the most interesting and at the same time the most important aspect of the whole condition.

It must be admitted that at present much is theoretical and problematical but much is also definitely known.

Various ideas of its production have existed but evidence of proof either clinical or experimental has been wanting. Certain parts of the process however, have been proven to exist and perhaps one is justified to theorize beyond that.

Pasteur in his first description believed it due to compression of a paralyzed diaphragm incident to diphtheria. This, however, has never seemed to be an adequate explanation.

Elliott suggested collapse as due to a plugging of the bronchus by a mucoid plug with resulting absorption of air distal to the plug. As we shall

see later from the result of recent experimental investigation, simple plugging is not sufficient to cause collapse of any part of the lung.

Scrimger<sup>11</sup> in a paper published in 1921 suggested that collapse might be due to a spastic condition of the bronchiolar tree.

Much experimental work has been done on the production of massive collapse and atelectasis, particularly by Lee, Jackson, Band et al, but in a paper of this scope their works cannot be discussed in detail.

Band's<sup>12</sup> recent work, however, includes that of previous works with some extension. All experiments were carried out on dogs and he definitely showed that simple plugging of a bronchus or radicle regardless of its size is not sufficient to cause collapse of the lung. Plugs of various materials have been introduced through a bronchoscope and even the right primary bronchus has been completely blocked off and that per se does not produce collapse. Another factor is necessary and that factor is interference with respiratory movements. Again this latter factor in itself will not produce collapse.

If a bronchus or radicle is plugged with, let us say, gum acacia of a viscosity equal to that of bronchial secretion, nothing in particular happens except that air does not pass in and out of the part of the lung supplied by that particular plugged bronchus.<sup>4</sup> The part does not become airless or collapsed. If now to this is added tight strapping of the chest, section of the phrenic nerve or other interference, immediate collapse results.

This is interesting and gives a clue for treatment. As far as can be determined experimentation has not gone beyond this point and as far as can be made out no explanation has been offered as to why air should be absorbed from the alveoli when these two conditions are present and not when one is present alone. Perhaps here one is justified in theorizing a bit and a possible solution will be suggested when treatment is discussed.

Now in the light of this experimental evidence, how may we trace the development in clinical cases? The answer is whatever develops or results in increased bronchial secretions coupled with the factors interfering with respiratory movements will produce atelectasis.

In regard to the former, many things have to be considered. In the first place most major operations are done under a general anaesthetic and this alone to a varying degree is irritating to the bronchial mucous membrane. If the patient already has a low grade chronic infection, the effects of the irritation are increased. Recent acute upper respiratory infections also appear to have a very definite effect on the amount of irritation produced.

In regard to the latter necessity for atelectasis, namely interference with respiratory movements, many factors have to be considered.

In the first place much of our pre-operative medication in the use of large quantities of drugs which depress the respiratory centre is probably not good. Morphia for instance in large doses depresses the respiratory centre.

Position on the table is of great importance. This has been emphasized by Scott<sup>13</sup> in a paper published in 1927, where he showed that the position in kidney operations frequently produces contra-lateral collapse in the lung on the side of the chest where respiratory movements are definitely interfered with for the duration of the operation. Perhaps, however, the greatest factor causing interference with movements of the chest and diaphragm is pain. It is a well known fact that the diaphragm will not contract to a normal

extent in the presence of an acute inflammatory condition in the abdomen. Pain will cause an inhibition of this movement and an analysis of our cases has shown that collapse occurs more frequently in the right lower lobe following right-sided abdominal incisions.

The onset of the disease in the cases observed in this hospital is usually the first or second day after operation, but may occur any time during the course of post-operative convalescence. It is rare to see the development of atelectasis after the fifth day and extremely rare beyond this time. The accompanying symptoms are extremely variable as are also the signs, and a definite clinical picture cannot be given.

The onset may be dramatic as in lobar pneumonia, with a sudden pain in the chest, chill, a sudden rise of temperature to 103 or 104, dyspnoea and cough. On the other hand, the patient more frequently complains only of cough with a milder rise in temperature from 101 to 102F. When examined a wide variation in physical signs is to be found. The patient is usually cyanotic and in cases of massive collapse this is usually marked. Depending upon the amount of lung involved the respirations are increased varying from 25 to 30 and 50 to 60.

The side of the chest affected moves less than does the unaffected side and if the condition approaches complete collapse, retraction of the affected side with expansion of the unaffected side during inspiration is to be seen.

The percussion note is dull simulating that of pneumonia rather than fluid.

The breath sounds contrary to the prevailing idea are usually not absent and this does not appear to depend upon the position or quantity of lung affected. In the large majority of cases the breath sounds are very loud, dry, harsh and blowing,—much louder than usually heard in lobar pneumonia and they develop at a much earlier date than they do in the latter disease. Seldom are rales heard and if they are they are usually of the fine moist type.

If the atelectatic area is large it can be demonstrated clinically that the heart is displaced to the side of the lesion. X-rays should be taken of all cases as they usually reveal more clearly than any other examination the condition present. The typical X-ray picture is shifting of the heart and trachea towards the affected side with depression of the ribs and elevation of the diaphragm of that side. The lung shadow varies from a haziness to a greatly increased density, simulating the appearance of fluid. The areas of increased density may be scattered and small (lobular) or may correspond to the marking of a whole lobe or lung.

The diagnosis is usually made with ease, but the old question of pneumonia or atelectasis may arise but as stated above, it is probably quite safe to assume that there is no such thing as a primary post-operative pneumonia. The development of a massive collapse and its signs are so definite that no mention need be made of it.

Assuming that two things are necessary to produce atelectasis, namely bronchial obstruction and interference with respiratory movements (and this much has been proved), much can be done to prevent its development.

If the patient already has chronic pulmonary disease, the choice of anaesthetic should receive careful consideration. He should be given an anaesthetic with the smallest possible irritating effect on the bronchial mucus membrane and at the same time one which depresses to a small degree the respiratory and cough centres. For this latter reason the hypnotic sedatives combined

with gas should not be used. Straight nitrous oxide and oxygen are probably best when they can be used.<sup>7</sup>

It is true that post-operative complications develop after spinal anaesthesia, but these certainly cannot be blamed on the anaesthetic. It in itself cannot create either of the conditions necessary for atelectasis. Pre-operative medication doubtlessly has in certain cases, a deleterious effect. Morphia has a depressive effect upon the cough and respiratory centres and if given in large enough doses to outlast the duration of the operation, bronchial secretion will remain and accumulate in the bronchi and bronchioles. It is reported that nembutal does not possess this depressing action, but we are unable to make any statement in this regard. However, if morphia is to be given it would appear better to give it three quarters to one hour before operation instead of on the stretcher.<sup>8</sup>

The next factor to consider is position on the operating room table and this is frequently disregarded for the convenience and ease of the surgeon. Slight elevation of the shoulders with slight flexion of the trunk makes for the greatest range of respiratory movements. The more the body is extended the less this range of movement.<sup>9</sup>

Doubtlessly in doing upper abdominal work and especially gall bladders, it is easier for the surgeon to put a sand bag at the back at the lower dorsal and upper lumbar region, but in so doing he is definitely interfering with the respiratory movements of that patient and making the development of lung complications more probable.<sup>10</sup>

The position for kidney operations is especially bad and as pointed out before, contra-lateral collapse frequently occurs.

Following the operation it is well to induce deep respiration by administration of oxygen-carbon-dioxide mixture. This does two things—it increases the range of respiratory movements and brings the patient sufficiently out of the anaesthetic for the return of the cough reflex and secretions will be coughed up instead of running deeper into the bronchi while the patient is still in a prone and unconscious condition.<sup>11</sup>

Strappings should be put on in such a way as not to compress the chest or interfere with the movement of the diaphragm. In going back to the ward a pillow should be placed under the head and a thin pillow under the upper part of the shoulders thereby producing slight flexion. This is contrary to the ordinary procedure as the patient is usually left perfectly prone and extended until out of the anaesthetic. As soon as possible the shoulders should be elevated, supported by the upper part of a Gatch bed and pillows, producing as far as possible the position assumed in a hammock. It is probably better not to elevate the knees by means of the lower section of the Gatch bed as in so doing the patient becomes too comfortable and will not move about sufficiently for his own good.

Once atelectasis or collapse has developed our method of treatment is simple and we have found it extremely efficacious. It consists of hyper-ventilation by means of carbon-dioxide. A rubber bag designed by Dr. Christie of this hospital is used. It is oval in shape and somewhat larger than a football. At one end there is a small intake valve which can be connected to the lead from the oxygen tank. At the other end there is a large "T" shaped two-way valve to which a rubber mouth piece is attached. This valve can open the mouth-piece to the outside air or into the bag. With the "T" valve closed, the bag is filled with a gas mixture of 95% oxygen and 5% carbon dioxide and when filled the lower intake valve is closed.

It is important that 95% oxygen be used instead of air or a gas mixture of a lower percentage of oxygen. This is due to the fact that if a low percentage of gas is used an anoxemia, with resulting distress is produced so rapidly that the patient cannot tolerate the bag for a sufficient length of time for the carbon dioxide to reach a high enough concentration to produce deep respiration.

The mouthpiece is then placed in the mouth and the teeth and lips tightly closed upon it. It is so constructed that there are rubber flanges to fit between the lips and teeth and from these perpendicular pieces which are grasped by the teeth. The nose is clamped and the "T" valve opened into the bag. The patient is now breathing into the bag as a closed system.

This is carried on to toleration, which is usually from five to eight minutes. The details should always be carefully explained to the patient and his confidence obtained as success depends upon co-operation. Nurses using the bag should be thoroughly instructed.

As the patient rebreathes the gas contents of the bag, the oxygen is slowly used up and the carbon dioxide increases in quantity by virtue of the patient's own production of the gas. As the carbon-dioxide increases in concentration, the respiration becomes deeper until finally all the muscles of respiration are contracting at their maximum. At about this period the patient begins to cough severely, productive of plugs of thick tenacious mucus. The plugs are expelled with a surprising amount of force at times to a distance of several feet. In one of our cases an actual muco-fibrinous cast of a bronchial tree was coughed up.<sup>13</sup>

Our routine of use is a treatment to toleration every hour for three doses and then every two hours for two to three days. No fear need be entertained concerning injurious effects upon the wound as a result of deep breathing and coughing. In all our cases we have had no cause to worry in this regard.

The results have been surprising. The patient rapidly feels better and the temperature drops suddenly. In our series it has reached normal within the first or second day and all signs disappear in from two to three days.

In cases of massive collapse, if one listens over the affected chest with a stethoscope, one will hear a tremendous rush of air into the lung following the coughing, and the whole thing is usually over after the first treatment. The heart immediately resumes its normal position, breath sounds are heard, the pulse and temperature drop and the patient's acute and alarming symptoms immediately disappear. Nothing is more dramatic.

In concluding, one more question presents itself and in considering it let it be thoroughly understood that the answer to it is entirely theoretical.

By what means does hyperventilation cause expulsion of bronchial plugs and the relief of atelectasis?

It has been argued that the marked increase in the depth of respiration causes the bronchi to expand somewhat and in this manner air is sucked by the plugs into the alveoli and that coughing will cause their expulsion.

That such a mechanism holds true, however, would appear to be very doubtful. In the first place the bronchus is a tapered structure and any material plugging it would fit into it like a cork. Any pressure upon it such as an attempt of air going by it would only serve to force it further into the bronchus and make its remaining there more certain.

Dr. Archibald<sup>14</sup> pointed out this danger especially with coughing, in 1928.

The fact that large and branched casts of a bronchial tree have been obtained after hyperventilation treatment would also suggest that air does not enter the alveoli by way of the bronchus.

If gas does not get into the alveoli by way of the bronchus, in what manner does this come about? It is obvious that it is necessary for the alveoli to be filled with gas in order that obstructing mucus be expelled with such force as it is in hyperventilation treatment.

It is a well known fact that the amount for  $\text{CO}_2$  taken up by or released from blood with changes in pressure does not follow Henry's law of solution of gases. A small increase in pressure will cause a greatly increased amount of  $\text{CO}_2$  to be taken up by blood and the converse also holds true.<sup>14</sup>

If blood is exposed to a vacuum all the  $\text{CO}_2$  will come off and if exposed to a partial vacuum, part of it will be expelled.

The important thing to keep in mind is that it requires only small changes in pressure for the transit of comparatively large amounts of  $\text{CO}_2$  into or from the blood.

Now what happens when we start a treatment with  $\text{CO}_2$  hyperventilation? At the start the alveoli are collapsed distal to a thick tenacious bronchial plug. The ribs are depressed and the diaphragm elevated. The rebreathing of carbon-dioxide stimulates the respiratory centre and all muscles of respiration contract to their maximum. In so doing the pressure in the pleural space is decreased or to use the popular term, the negative pressure is increased. Now as the alveoli, in the affected part of the lung, are collapsed and their air passages blocked, this decrease in pleural pressure will cause them to become partial vacuums. The result is a diffusion of  $\text{CO}_2$  into them which causes expansion of their walls, the  $\text{CO}_2$  being held in a closed space. If coughing now ensues the result can be compared to the expulsion of a BB shot from an air gun. With coughing the muscles of the chest suddenly contract and squeeze down upon the entrapped gas greatly increasing the pressure within the alveoli and if the pressure is sufficiently great the result must be the expulsion of the plug.

Assuming interference with respiratory movements and blocking of a bronchus are the two necessities for collapse, one can argue the converse of this mechanism in its production.

Let it be warned again that this is suggested only as a possible explanation of mechanism.

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# Functional Disorders of the Colon

J. W. REID, M.D.

THE diseases discussed in this paper are those in which investigation fails to disclose a causative organic factor. Some such factor may be present, but undemonstrable, never the less, the division serves to distinguish the group we call Functional Disorders.

A classification may be made as follows:

1. Simple colonic delay or constipation.
2. Irritable colon, including nervous diarrhoea.
3. Spastic colon, including acute colospasm.
4. Mucous colitis.
5. Membranous colitis.
6. Dilatation, hypertrophy or redundancy, so-called megacolon.

The term colitis as used here is a misnomer, there being no true inflammation of the bowel wall.

For the better understanding of these conditions it is of help to think for a moment of the physiology of the colon. Its movements are of various kinds, slow pendulum movements like those of an amoeba, quick transporting contractions involving various partial lengths of gut and moving the content onwards and occasional mass movements, initiated by the gastro-colic reflex, involving practically the whole gut and occurring usually just after a full meal.

The caecum and ascending colon absorb water from the chyme so that the normal stool consistency is reached at about the mid transverse colon. A third function is the secretion of mucous for its own lubrication and protection.

In its innervation the sympathetic is tonic to the sphincters and relaxes the bowel, conversely the parasympathetic relaxes the sphincter and contracts the bowel. Facts of importance in the etiology of megacolon.

It does not seem to be generally understood that the normal colon is usually full, not empty, and that after a drastic purge it may take a day or two in regaining its normal loaded state and function.

Functional disorders occur most often in women but are said to be increasing among men. Usually the ages run between thirty and fifty, but the patients may be older or younger than that. The so-called nervous person is most often involved. Worrying, introspective, restless sort of people. Those who are unhappy in their work, or those who have no work at all are prominent among the sufferers. It has been said that work would cure some and prevent the illness of many.

The etiology is difficult. Neurosis and constipation are the most important factors. The inclusion of constipation, itself a functional disorder, in the etiology of these conditions seems strange, unless one remembers that most constipation is self induced by bad habit.

Neurosis is common and it is difficult to say whether it is cause or effect. It is like a stop sign to most physicians and their efforts cease where neurosis begins. They should remember that many of these people who appear to be bearing up bravely under their illness are not neurotic but heroic.



Some of these cases are associated with previous bowel infections or parasitic infestations. Some with pyorrhoea and chronic nasopharyngeal infection. Others with chronic gastric, gall bladder or appendix disease, and a few with disordered endocrine function. Where organic disease of the stomach, gall bladder or appendix is found the colonic disorder becomes of secondary importance. But as the colon has been shown (1) to have a definite influence in the production of gastric spasm and pain, it is unwise to entirely disregard it, lest it keep such lesion active.

In the experience of some workers,<sup>7</sup> constipation, particularly in middle aged obese women is not infrequently associated with diminished thyroid function and low basal metabolic rates. The symptoms varied from mild constipation, to a severity resembling chronic obstruction, the usual symptoms of hypothyroidism being indefinite and easily missed.

On the other hand<sup>8</sup> masked hyperthyroidism was found to be the basis of the disorder in a small percentage of gastrointestinal cases. In about half the cases in which thyroid disease was suspected, the leading symptom was nervousness, in the remainder general abdominal discomfort, crampy abdominal pain or diarrhoea were the presenting symptoms. Although evidence of a toxic state such as tremor and rapid pulse was present in many cases, exophthalmos and enlargement of the thyroid were uncommon findings.

The role of constipation in etiology is not hard to understand if one remembers the two main types, colic constipation and dyschezia. In the latter, which is far the most common, the delay is in the rectum and is due most often to laziness or bad habit in that the individual does not respond when called to stool. The diagnosis of this type is easy, for it is present if the rectum is found full, in the absence of any desire to defecate.

A tired colon, exasperated by futile efforts to empty itself, forced even to reverse peristalsis in order to store faecal material in its proximal parts and to secrete an excess of mucous for its own protection, and irritated by constant purgation becomes an easy prey to that uncontrolled and irregular action which is called irritable and spastic colon.

The etiology of megacolon has long been a matter of controversy. Organic obstruction can produce it and it has been observed in the foetus. The cases occurring in childhood (Hirschsprung's disease) are considered to be congenital, but the real difficulty appears in the adult cases. Believed to be developmental and latent from childhood by some workers, mechanical by others and neurogenic by most. Hurst considers it an achalasia (absence of relaxation) analogous to that of the cardia which produces dilatation and hypertrophy of the oesophagus, and situated in the pelvi-rectal or anal sphincters. Some think it to be a reflex spasm of the sphincters and still others that it is due to a paralysis of a bowel segment or segments.

Factors supporting its neurogenic origin are the frequent concomitant hypertrophy and dilatation of the urinary bladder, which has a common nerve supply and the work of Adamson & Aird<sup>11</sup> who produced it experimentally. They destroyed the para-sympathetic nerve supply to the bowel in cats, thus producing a relative sympathetic overactivity. Five of thirty animals survived the operation and in all of these dilatation of the colon (as judged from previous controls) was evident in six weeks, marked in ten and gross in fifteen weeks after the operation. Post mortem the urinary bladders in each case were found dilated and hypertrophied, together with extreme dilatation of the colon.

The symptoms of functional disorder are often so vague and obscure that it is difficult to correlate them with any pathology unless one remembers the colon. Both the abdominal and nervous symptoms vary from mild in the irritable and spastic group, to almost complete invalidism in the severe cases of membranous colitis and late megacolon.

The cases of irritable colon complain of constipation, rarely of diarrhoea. Intermittent abdominal discomfort, pain or flatulence is present in every case. Pain is most often in the right or left lower quadrant but may frequently be in the epigastrium.<sup>1</sup> It may be crampy, occurring before stool, and has no definite food relation. There is no elevation of temperature, no nausea and no rigidity over the painful area though tenderness may be elicited on palpation. Pressure over the affected part of the colon may produce epigastric distress.

They are often undernourished, poor appetite and food phobias are common the tongue is usually clean but is flabby and may be marked with the teeth.

The cases of mucous and membranous colitis present an aggravation of all these symptoms, together with the periodic discharge of mucous mixed with the stools, or a membrane. The accompanying nervous symptoms may be severe, with weariness, depression and headache so reducing their vitality and ability to work that they may be almost bedfast and some become profound intestinal neurasthenics.

Attacks of colospasm, brought on by emotion or mental stress, may occur in some cases of spastic colon. The attack is marked by a rapid pulse, disturbed emotional state and severe abdominal pain. The pain may be perineal if the rectum is involved. There is no discharge of mucous or membrane and no diarrhoea.

The stools in irritable colon are frequently in small hard pieces coated with mucous. In nervous diarrhoea they are soft, occurring at times of mental stress or social engagements so that the sufferer dreads to leave his home or office.

In mucous colitis the stool and mucous are intimately mixed, but there is no pus or blood. In the membranous type bleeding may precede the passage of membrane or accompany it. The patient frequently knows when a membrane is separating, owing to the peculiar discomfort present in the abdomen.

The symptoms of megacolon may begin in childhood, obstinate constipation being present from birth or soon after, complicated by occasional obstructive crises. The abdomen is distended, the child poorly nourished and progressive ill health evident. In the late stages distension is enormous, vomiting occurs and pressure symptoms on the heart, lungs and great vessels become evident. Death occurs usually between the third and eighth years, from peritonitis, exhaustion or intercurrent infection.

The adult cases may be discovered in routine X-ray examination, no symptoms being present other than rather severe constipation. Obstructive crisis may occur at intervals and recover spontaneously with the passage of gas and a small amount of soft faeces. There is often little impairment in health, some being even robust.

The X-ray findings are varying degrees of ptosis, sagging, kinks, spastic contraction and delay. The ptosis and kinks generally have little significance and add nothing to the delay. Spasm rarely affects the caecum or

ascending colon, being most evident in the distal half. It may last a few minutes or a few hours. Reverse peristalsis is sometimes observed.

In megacolon the barium meal can be followed through the proximal half of the colon and then is lost in the huge pelvic loop. In half the cases in childhood the functional obstruction is at the pelvi-rectal sphincter and half at the anal. In all the adult cases it is at the anal sphincter. Where the obstruction is pelvirectal, the rectum will be found empty though perhaps ballooned. In the anal cases it is always full. An enema of six or eight quarts may be needed to define the dilated colon as compared with the usual forty ounces.

The diagnosis must be made from organic disease. The fear of malignancy drives doctor and patient alike to a complete investigation which is both time consuming and costly.

The stools must be examined for mucous, pus, visible and occult blood, food residue and parasites. The occurrence together of pus, blood and mucous makes a diagnosis of functional disorder untenable. The gastric juice should be examined as some cases have a definite origin there, and the X-ray will prove a most valuable ally.

The metabolic rate should be studied where there is the least indication of possible thyroid disease. Nor should one forget the occurrence of megacolon in 30% of the cases of acromegaly.

The urinary bladder should be investigated in all cases of megacolon, owing to the frequency with which it is involved.

As prophylaxis people should be taught to cultivate the daily routine of going to stool when mass contraction of the colon occurs best, that is, after the first meal of the day. They should be taught to take a meal sufficient in size to stimulate the gastro-colic reflex. Toast and coffee are not enough.

The use of purgatives and their advertisement in the press should be abolished.

The first step in treatment is the reassurance of the patient by a careful examination and an understandable explanation of his condition. The horrors of two or three days constipation, bred by the vendors of patent cathartics must be explained away. His habits of living must be reviewed in detail, wise counsel given and any excesses, particularly tobacco, corrected. All cathartics must be stopped at once and that alone will cure some cases. Focal infection if gross should be dealt with.

Many severe cases do better if treatment is begun in an institution. They must be given rest, freedom from worry and sleep. For the milder cases a longer nights sleep and an afternoon rest is sufficient, others should have bed rest for two or three weeks at the beginning, later appropriate outdoor exercise is encouraged.

They must cultivate the habit of taking a large breakfast, and going to stool immediately afterward. A real effort must be made to achieve a movement, straining, short of pain, is allowed in the absence of piles or prolapse. If unsuccessful they must forget it and try again next day. If there is no result on the third day a saline enema is given and the routine begun again next day.

The diet must be mixed and sufficiently abundant to combat the under-nutrition. In the early stages butter, cream and carbohydrates are given in abundance. Meat and milk reduced. Vegetables are given as purees, but roughage is restricted. As Williams remarks, it seems a shame to send

such large quantities of cellulose on so painful and flatulant a journey. As improvement occurs a more general diet with meat and milk is allowed.

If medicinal help is needed at first to secure bowel action, liquid petrolatum may be tried and a little cascara added if it seems absolutely necessary. Sometimes the laxative is determined by the degree of gastric acidity and the amount of colon spasm. Magnesium oxide and balladonna being given to the hyperacid, spastic cases, and cascara with nuc. vomica to those with low acid and poor tone.

Hydrochloric acid should always be tried in those painless morning diarrhoeas associated with achlorhydria, but if relief is not quickly obtained, it should be stopped and a search instituted for some further cause.

Colonic irrigation, so much in vogue a few years ago, probably does more harm than good, but vaccines and acidophilus milk seem to retain a definite place in treatment.

The acute cases of colospasm and the mucomembranous crisis are treated by rest in bed, heat to the abdomen, belladonna and a warm enema.

In those cases with low basal metabolic rates the response to thyroid, two grains three times daily, is prompt and gratifying. The constipation may be expected to yield many days before the other symptoms of myxedema give way.

The hyperthyroid cases are promptly relieved by small doses of Lugols solution and some permanently cured by X-Radiation of the thyroid<sup>8</sup>.

The treatment of megacolon has embraced many regimens, dietetic, physical, medicinal and surgical. The cases involving the anal sphincter can be kept in health by medical means, but the treatment is tedious. In the beginning the faecal masses may have to be removed digitally under an anaesthetic, the sphincter stretched and the bowel kept clean by a daily enema. Later irrigations once a week may suffice.

The pelvi-rectal cases present a greater problem, not so easily dealt with. A rectal tube passed beyond the pelvi-rectal kink through the sigmoidoscope will relieve urgent symptoms.

The surgical operations formerly devised to secure permanent relief have been dismal failures. The literature contains an ever increasing number of records of cases cured by lumbar sympathectomy. The operation carries a low mortality, has few objectional sequelae and is followed by remarkable changes in bowel contour and movements.

The technique is admirably described in some of the references.

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## THE CANADIAN MEDICAL ASSOCIATION.

ELSEWHERE in this number of the BULLETIN will be found an account of a recent visit to Halifax of President J. S. McEachren of Calgary and the General Secretary Dr. T. C. Routley. Sixty-five members of the Halifax Branch of the Medical Society of Nova Scotia, together with representatives from three provincial branches extended to these gentlemen a hearty welcome and listened with great interest to their proposals for increasing the scope, influence and activities of organized medicine in Canada. Since the re-organization of the Association in Halifax in 1921 much has been done to cement the profession of Canada. No living organization can stand still and it is well that, from time to time, there should be a stock-taking, especially of defective points, and efforts made in the direction of reform. It is suggested, in the interests of greater unity, that the various provincial bodies should become branches of the National organization. It is admitted that provincial units must retain a certain degree of autonomy in order to deal with local problems. However, it seems quite feasible to establish a scheme, by which there shall be closer relations between the provincial and national bodies to the mutual advantage of each. In the past thirteen years the Canadian Medical Association has accomplished many things which could not possibly be done by smaller units. One cannot read the signs of the times without realizing, that problems of great importance are looming up and that a united profession was never so essential as it is to-day. The present membership of the Association is 3,126 or about 32% of the total number of doctors in Canada. The depression has caused a slight drop, but has not suffered as much as some other bodies. When one realizes that every doctor in Canada has profited by our National activities, and, this irrespective of whether they are members or not it hardly seems necessary to make an appeal for loyal support. It should not be too much to hope for, that in a short time, the association shall be supported by 80% of the profession in Canada. This question of closer union will come up for discussion at our next Annual Meeting in Sydney and it is hoped that it will be given careful and thoughtful consideration. Let us aim to so organize our profession that when important questions arise we shall be able to speak with a united voice.

K. A. MACK.

### Total Ablation of the Thyroid Gland in Congestive Heart Failure and in Angina Pectoris, in Patients Without Thyrotoxicosis.

ONE of the most interesting of recent contributions to Medicine and one now causing considerable speculation and controversy is that which forms the subject of this article. It is a subject which is exercising medical minds in apparently every centre in North America and many in Europe and since it represents a tremendous departure from traditional medical practice there is every reason that it should be disturbing.

It is frequently difficult in Medicine to find the beginning of new things, so many contributions bearing upon the subject having already been made, but the idea which rationalized this—if indeed it may be said to be rationalized—seems to have originated with Dr. H. L. Blumgart of the Harvard Medical School and the Beth Israel Hospital, Boston, and seems to have come out of his laboratory work, begun in 1921, on the rate of blood flow. From those studies it was shown that the rate of blood flow keeps pace with the metabolic rate, and from the clinical side this is apparently confirmed since in thyrotoxicosis the basal metabolic rate is high and the rate of blood flow greatly accelerated, while in myxoedema the basal rate is low and the rate of blood flow definitely diminished. Now since in congestive heart failure the rate of blood flow is low and often impossible of improvement by drugs, it was thought that if the basal metabolic demands were lowered by the removal of the thyroid, the work of the heart would be reduced and compensation would be established at the lower level. Similarly in Angina Pectoris where the coronary vessels are so sclerosed as to prevent the heart from measuring up to normal requirements, it would be found to give a satisfactory account of itself if the basal metabolic rate were reduced by total thyroidectomy to the level of its capacity. The therapeutic problem in both cases would seem therefore to be one of establishing equilibrium between these two factors, and if Mahomet cannot be made to go to the mountain, the mountain must be brought to Mahomet.

Up to now something like two hundred operations of total ablation have been performed, the biggest group by far having been done at the Beth Israel Hospital under the direction of Blumgart, and in association with Mixter and Berlin, surgeons, another internist, a laryngologist and a bio-chemist. Maximal *sub-total* thyroidectomy was first attempted. It produced improvement for a time, but as soon as the residuum of thyroid tissue had undergone some hyperplasia the symptoms recurred, and reoperation for total extirpation of the remnant was found to be technically impossible. X-ray was also tried both as an original treatment and to take care of post-operative remnants. Apparently the most approved methods for delivering large doses at depth were employed but to no avail. Total ablation offered the only thing of permanent value, that thing, of course being myxoedema.

The results of this procedure in the seventy-five cases done at the Beth Israel Hospital have recently been subjected to critical study with the following findings: In the earlier cases the operative mortality was 12%. In the last 22 cases there were no operative deaths. 13% showed moderate improvement for four to ten months, and died subsequently. 7% showed no improvement. On the credit side of the account however, are "55% of cardiac patients formerly incapacitated and confined to bed a great part of the time now working or able to work. A further 13% of cases show definite improvement though having suffered a period of decompensation." In evaluating

these results it would seem fair and wise to remember (a) that this report covers their earliest cases in which there was no experience to direct their selection, as well as their later cases in which, profiting by their experience, they produced much better results; and (b) the type of patient upon which this work is done and their prospect for the existence or kind of existence without operation.

Looking around for criticism of the procedure we find that following the symposium on this subject at the recent meeting of the American Surgical Association, a discussion ensued which was engaged in by about fifteen men including Gallie of Toronto, Crile, Horsley, Cannon, Cutler and Goetsch. Strangely enough the discussion was not so much around the value of the practice as it was around the physiological question of the mechanism by which the results are obtained, having regard chiefly to the relief of pain in angina and the associated factor of diminished adrenal sensitivity following total thyroid ablation. Gallie showed that in Toronto out of nine cases in his experience four were cases of congestive heart failure and five were cases of angina. In the former group he reported only one showing general physical improvement. In the angina group he reported all five "dramatically improved, two of them astoundingly so." Yet when Blumgart, during their symposium at the American College of Surgeons' congress at Boston last month, was asked by us in which group they experienced their best results he was not ready to concede that either the congestive failure group or the angina group had any advantage.

It has been shown that improvement comes following operation only when a marked depression of the basal metabolic rate occurs, and the question naturally arises, are these people made worse by myxoedema than they were by their circulatory condition? Blumgart *et al* have anticipated that question and answered it. It would appear that, within certain limits, the greater the depression of the rate the greater the improvement. It is also true, that to get an adequate depression of the rate some degree of myxoedema must be suffered, the more common apparently being difficulty in keeping warm in cold weather. It is well known, however, that if left alone such patients would develop many of the more undesirable features of that condition up to that described by Kocher in goiter cases as Cachexia Strumipriva. This is not allowed to occur, for with the first signs of the more undesirable features thyroid feeding is instituted. In this connection it has been found that very small doses— $\frac{1}{4}$  grain daily—is usually sufficient to maintain them on the straight and narrow course between the Scylla and Charybdis which is sometimes theirs.

But this contribution to our time is not without some adverse criticism. The current number of the C. M. A. Journal carries an article by Dr. O. R. Lourie of Boston in which he suggests that the practice should be stopped, or at least postponed for some years until we have seen what will have become of those that have now been de-thyroidized. One could wish that he had discussed the question more as a scientific examiner than as an ardent advocate for prohibition of total thyroid ablation. He has very grave fears, first for the potential myxoedema cases, and then for those who still have their thyroids lest total thyroidectomy be employed for all sorts of conditions and become so common as to constitute a very real menace to society. Perhaps when we think of tonsillectomy we can concede on historical grounds some justification for his fear. However, having seen the work which they are doing at

the Beth Israel Hospital, together with at least five of their post-operative cases testifying to a most remarkable rehabilitation, it is difficult to escape the feeling that the procedure is one of real merit in properly selected cases, and the further conviction comes that the selection and the conduct of those cases are problems for groups of men rather than individuals, and where such co-operation and division of responsibility obtains the possibility of "thyroid snatching" will be minimized if not eliminated. The fear that this contingency will arise in the very near future should be further dissipated by the technical difficulties attending the operative procedure. The necessity for preserving the parathyroids and the recurrent laryngeal nerve is more insistent than ever, and is not helped by the fact that the course of the latter is not constant, being mostly outside the capsule of the gland, sometimes inside the capsule and sometimes enclosed within the thyroid structure.

N. H. G.

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### Nurses' Graduation Exercises.

Thirteen nurses received their diplomas at the Halifax Infirmary on October 22nd, eighteen at Victoria General Hospital on October 25th, and twelve at the Children's Hospital on October 30th. At the Halifax Infirmary exercises, Rev. Father William Burns was Chairman and addresses were given by Dr. W. P. Mackasey and Dr. G. H. Murphy. Chief Justice Chisholm presided at the exercises of the Victoria General Hospital, and Dr. Carleton Stanley, President of Dalhousie University, Hon. F. R. Davis, Minister of Public Health, and Rev. Dr. Burns addressed the members of the graduating class. The Chairman at the graduating exercises of the Children's Hospital was Mr. J. L. Hetherington, who read the address which Mr. O. E. Smith had made at the graduating exercises the year before, and Dr. A. E. Doull and Dr. W. D. Forrest each spoke a few words to the graduates.

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"Now, George," said mother Mosquito, "if you're not a good boy daddy won't take you to the nudist colony."

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"The new member claims to be related to you and says he can prove it."  
 "The man's a fool."—"Yes, but that may be a mere coincidence."

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The negro shuffled into the employment agency and said hopefully:—  
 "Don't suppose you don't know nobody as don't want nobody to do nothin,' does you?"



## Branch Societies

### VALLEY MEDICAL SOCIETY.

THE semi-annual meeting of the Valley Medical Society was held at the Cornwallis Inn, Kentville, on October 30th. Dr. P. S. Cochrane of Wolfville was in the chair and there was a good attendance.

The following new members joined the Society:—Drs. V. D. Schaffner, Gordon Mahaney, J. S. Timpany, Donald MacRae and Robertson.

The first paper of the afternoon was by Dr. J. S. Timpany of Digby who was for over forty years a medical missionary in India. He told of many of his personal experiences and briefly discussed three of the commonest of tropical diseases, Leprosy, Plague and Cholera. He said that leprosy was not considered particularly contagious and that it was not now considered as hopeless as formerly. Coming from one who had spent a lifetime in medical work amongst these diseases, the paper was particularly interesting.

Dr. V. D. Schaffner of Kentville, until recently on the surgical side of the Royal Victoria Hospital, Montreal, read a paper on "Post-operative Pulmonary Complications". The paper embodied the results of research and observations by the writer. Atelectasis of the lung was pointed out as being the pathological finding in many of the cases of so-called Post-operative Pneumonia. The efficacy of treatment by means of carbon dioxide and oxygen was stressed and statistics shown to demonstrate the better results of this form of therapy.

The next subject was "The Examination of the Gynaecological Patient" by Dr. H. B. Atlee of Halifax. This paper dealt with important points in posture of the patient, proper taking of the history, the use of specula and differential diagnosis. All abnormal bleeding should be considered with the possibility of carcinoma in mind and all examinations should be thorough. The paper was considered very practical and helpful for the general practitioner.

Dr. H. R. Corbett then presented the case history and X-ray films of a case of Pagets Disease of Bone that had been discovered in making a film of a pathological fracture of the femur.

Dinner was served, after which Dr. Atlee told the members of his impressions of a recent visit to American teaching centres including the DeLee Clinic in Chicago.

(Sgd.) H. E. KELLEY, Secretary-Treasurer,  
Valley Medical Society.

### LUNENBURG-QUEENS MEDICAL SOCIETY.

At a meeting of the Lunenburg-Queens Medical Society held on August 14th, 1934, the following were elected officers:

President, Dr. H. A. Creighton, Lunenburg.

Vice-President, Dr. Frank Hebb, Liverpool.

Secretary-Treasurer, Dr. C. A. Donkin, Bridgewater.

Members of local executive, the above named officers and Drs. L. N. Morrison of Mahone Bay and J. W. Smith of Liverpool.

Representatives on the Committee of the Medical Society of Nova Scotia, Drs. R. McK. Saunders of Lunenburg and W. N. Rehfuss of Bridgewater.

The August meeting was held at the "Dublin House," Dublin Shore, Lunenburg County, a place famous, at least locally, for the nature of its hospitality, particularly its chicken dinners. Although unfortunately, I was unable to be present, I understand that the meeting was a great success from every standpoint. Our Society is in a flourishing condition, we have three or four meetings a year and they are usually well attended.

(Sgd.) C. A. DONKIN, Secretary-Treasurer,  
Lunenburg-Queens Medical Society.

**T**HE Annual Meeting of the Eastern Counties Branch of the Medical Society of Nova Scotia was held at St. Martha's Hospital, Antigonish, on Tuesday, November 6th, 1934, with an attendance of twenty-three. The President, Dr. F. J. MacLeod of Inverness, presided at both the afternoon and evening sessions. The following visiting medical men were present: Dr. Kirk Maclellan, Halifax; Dr. Gerald Burns, Halifax, and Dr. H. G. Grant, General Secretary of the Nova Scotia Medical Society.

Dr. Maclellan spoke on the "Use and Abuse of Obstetric Forceps". His talk was pointed, thorough, comprehensive and best of all most helpful to the general practitioner.

Dr. Gerald Burns read a splendid paper on "Some Post-Operative Pulmonary Complications". Pneumonia and Atelectasis were specially dealt with. Their causes, treatment and prevention were outlined and general information was given as to the number of pulmonary complications that might be expected to occur in a large hospital clinic.

Dr. Grant complimented the Society on its standing and referred to the enthusiasm displayed by the members. He made a strong plea for closer co-operation with the parent organization. His particular request was that the members furnish sufficient material, such as case reports, to supply the needs of one or two issues of the BULLETIN.

Dr. J. J. Carroll gave a paper on the "Care and Treatment of the Tuberculous", which was most instructive. All phases and states of the disease were dealt with, particular attention being given to modern trends in diagnosis and treatment.

In his presidential address Dr. MacLeod gave an outline of some interesting and some puzzling cases which recently came before him in a large mining and general practice. Some of these were given to demonstrate the usual pitfalls in diagnosis and others to show the rarer conditions met with. Not the least interesting was an account of a child born with a measly rash, of a mother suffering from measles and a twin born without any evidence of the disease; the twin contracting measles about ten days later.

Lengthy and satisfactory discussion followed the papers and addresses, which was participated in by all present. A committee of three was appointed to receive and edit case reports for the BULLETIN.

The Annual Dinner was held in the hospital at which three toasts were given; "The King," "The Medical Profession" and "Our Guests"—Speakers to the toasts were, Dr. F. Macleod, Dr. J. S. Brean, Dr. J. J. Cameron, Dr. W. F. MacKinnon, Dr. K. MacLellan, Dr. G. Burns and Dr. H. G. Grant.

The following officers were elected for the coming year:

Honorary Presidents.....	Dr. G. E. Buckley, Guysboro. Dr. J. J. Cameron, Antigonish.
President.....	Dr. J. S. Brean, Mulgrave.
1st Vice-President.....	Dr. D. J. MacMaster, Antigonish.
2nd Vice-President.....	Dr. G. R. Deveau, Arichat.
Secretary-Treasurer.....	Dr. Tom Murphy, Antigonish.

#### EXECUTIVE

Dr. W. F. MacKinnon, Antigonish.  
Dr. C. B. Smith, Goldboro.  
Dr. R. F. MacDonald, Antigonish.  
Dr. T. T. Monaghan, Sherbrooke.  
Dr. H. A. Ratchford, Inverness.  
Dr. W. G. Poirier, Cheticamp.

Representatives on Executive of Medical Society of Nova Scotia.

Dr. F. J. MacLeod, Inverness.  
Dr. D. J. MacMaster, Antigonish.

Dr. P. S. Campbell was on motion elected Honorary Secretary.

P. S. CAMPBELL, Secretary-Treasurer,  
Eastern Counties Medical Society.

#### HALIFAX BRANCH

The Halifax Branch opened the season of 1934-35 with a dinner at the Nova Scotian Hotel on October 10th. Dr. F. V. Woodbury presided and there were 38 members and 3 guests in attendance. Following the dinner the President called the meeting to order and, after the reading of minutes,—announced that the executive had decided to call a special meeting of the Society for Monday, November 5th, for the purpose of hearing an address by Dr. J. S. McEachern, President of the Canadian Medical Association, who had been touring Canada in the interest of the Association.

Two new members were added to the roll of the Society, the Honorable F. R. Davis, and Dr. E. F. Ross.

The speakers for the evening were Dr. H. L. Scammell and Dr. A. M. Marshall. Dr. Scammell spoke on "The Hospitals of New France". He gave a very interesting description of conditions existing in Quebec and northern New Brunswick, based on personal observations while an official of the American College of Surgeons. Dr. Marshall related some of his experiences and impressions gained while doing post-graduate work during the past two years in Edinburgh and Vienna.

Regular Meeting October 24th, Victoria General Hospital. The president called the meeting to order at 8.30 p. m. Doctors P. S. Campbell and G. A. McCurdy were elected to active membership in the Society.

Dr. H. G. Grant, Dean of the Dalhousie Medical School and Director of the Public Health Clinic, introduced the matter of collecting fees from patients at the Clinic. The attending staff of the Clinic felt that fees could and should be collected. Dr. Grant stated that he wished to lay the matter before the Society for an expression of opinion. Several members spoke on the subject. The president suggested that the matter be presented to the Society in concrete form at a subsequent meeting in order that some definite attitude might be adopted.

**Scientific Program:** Doctors Carney and Curry presented a case of myeloma of the spine. The lesion involved the 2nd and 3rd dorsal vertebrae. Laminectomy was performed under Avertin and ether anaesthesia. The patient stood the operation well and had shown subsequent improvement though the prognosis is unfavorable. No other myelomata had been found on X-ray examination.

Dr. Curry then presented a 5 year old boy, who 3 weeks before, had sustained multiple fractures of the skull, including a depressed one. Hemiplegia developed on the second day. In spite of the extreme degree of injury to the head the patient never presented evidence of increased intracranial pressure. This probably was due to the escape of blood from inside the skull through the fracture into the scalp. Decompression over the motor area was performed 10 days after injury, with resulting improvement in the hemiplegia.

Dr. E. F. Ross presented a 13 year old male, who several days after an operation for acute gangrenous appendicitis, developed obstruction in the terminal ileum. Enterostomy and continuous gastric lavage were instituted with excellent results. Dr. Ross demonstrated the apparatus for continuous drainage of the stomach.

Dr. Kinley reported the case of a 50 year old woman with carcinoma of the recto-sigmoid junction, treated by means of preliminary colostomy and subsequent resection of the growth leaving the lower anal segment. As the liver and lymph glands were apparently not involved, the case was considered a suitable one for this type of operation. Dr. Kinley then presented a 46 year old male with a carcinoma of the rectum and multiple metastases in the liver. The only treatment now of any value would be colostomy as a palliative measure.

Dr. A. L. Murphy showed an 8 year old boy with dislocation of the semi-lunar bone in the carpus, resulting from a fall. Several attempts to reduce the dislocation under anaesthesia had failed. An open operation was being contemplated.

Dr. Murphy's second case was a boy with a fracture of both bones of the forearm and supra-condylar fracture of the humerus. Dr. Murphy stressed the value of the plaster cast, the mobilization of the elbow, and the position of acute flexion in supra-condylar fractures.

Dr. Noble showed an adult male with internal derangement of the knee joint. Manipulative measures had failed to replace the meniscus and open operation was employed with good results. Dr. Noble then reviewed in detail the anatomy, mechanism, various injuries of the knee joint, with their differential diagnosis and treatment.

Dr. Gosse presented a case of a middle aged man with chondroma of the hip. The case had been shown to the Society a year previously, at which

time the prognosis appeared hopeless. At operation as much of the growth as possible had been removed. The wound subsequently discharged a large amount of fluid and chondromatous material. Patient later developed Diphtheria. Since that time the hip condition had greatly improved.

Dr. Gosse then related some of his impressions obtained at the recent meeting of the American College of Surgeons in Boston and chiefly the results reported by Blumgart and Berlin in the treatment of certain types of chronic congestive cardiac failure by total ablation of the thyroid gland. Dr. Gosse read several extracts from recent literature on the subject.

Dr. Schwartz showed a female child admitted October 6th with gonococcal infection of the eyes. Treatment consisted of Aolan intramuscularly, irrigations with saline, followed by castor oil instillations, the irrigations being performed every 20 mins. and ice cold compresses applied to the eyes in the interim. The case had made splendid progress and the cornea had escaped damage entirely.

Dr. Schwartz's second case was an adult male with a transitional-cell carcinoma of the nose. The case was interesting in view of the fact that the condition had begun several weeks previously as an apparent inflammatory process, but which had failed to entirely heal under treatment. Treatment now proposed was deep X-ray therapy.

Owing to the large number of cases presented, discussion was necessarily brief. Meeting adjourned at 11.15 p. m.

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A special meeting of the Society was held on November 5th, at the Dalhousie Public Health Clinic, for the purpose of hearing addresses by Doctors J. S. McEachern and T. C. Routley, president and secretary, respectively, of the Canadian Medical Association.

Dr. Woodbury, president of the Society, occupied the chair, and the attendance was the largest in several years. Dr. Woodbury informed the Society that Doctors McEachern and Routley had been touring Canada recently in the interest of improving the organization of the Medical profession throughout the Dominion.

Dr. McEachern commenced by referring to his previous visit to Halifax when he attended the meeting of the Canadian Medical Association held in this city in 1921, an eventful one in the history of the Association. The purpose of medical organization, said the speaker, is the banding together of doctors to do the best work of which they are capable. Most of the organizations in Canada, no matter how ancient, have undergone great changes necessitated by the advance of the times and medical science. In 1920 a Committee was appointed by the Canadian Medical Association to look into the matter of national organization. This Committee reported at the meeting held in Halifax the following year that national organization could only be possible by close co-operation of the C. M. A. and the various provincial associations. A plan was submitted to the latter associations and accepted by them. The next step was a revision of the constitution of the C. M. A.; the Council was to be composed of provincial representatives in proportion to the number of members of the C. M. A. in their respective provinces. This

arrangement has not worked out satisfactorily because the representatives to the Council are not necessarily members of the executive of their provincial societies and therefore are not in close touch with the activities. Another difficulty at present is the lack of uniformity in the various committees in each province. It is obvious, therefore, that medical organization in Canada is national in theory only. The only remedy would seem to require each provincial society to change its constitution.

Dr. McEachern then described how he and Dr. Routley had been touring Canada during the past two months addressing the various medical societies, pointing out the weaknesses of the present system and suggesting a remedy. The Societies of the four Western provinces had agreed to the suggestions that representatives to the Council of the C. M. A. should be members of the executive of their respective provincial medical organizations; and further agreed to have one organization in Canada instead of ten as at present, and that each province should have a branch of the C. M. A., at the same time preserving its autonomy. A resolution to this effect was passed by these Societies. The Ottawa Medical Society likewise passed a resolution endorsing the proposals, while organizations in Quebec, Montreal, Sherbrooke, P. Q., and Saint John, N. B., were favorably inclined, but were not in a position to pass a resolution. In closing Dr. McEachern thanked the Society for their interest and attention and said that he was presenting only a principle. He realized that there would be obstacles in the way of accepting it, but felt certain that these could be overcome.

Dr. Woodbury then introduced the second speaker, Dr. T. C. Routley. Dr. Routley commenced also by referring to the meeting of the C. M. A. at Halifax in 1921, when the future of the Association looked very dark, for there was a debt of \$18,000, no assets, and a membership of less than 800. Fortunately for the Association there were some optimists at the meeting and it was decided to float a bond issue. The chairman of the committee in charge of this was none other than Dr. J. S. McEachern. Such was the progress of the Association thereafter that the bonds were redeemed in five years instead of ten. The speaker then described some of the achievements of the Association in the last thirteen years: For example.

1. In all matters of National Health the Federal Government consults the C. M. A.
2. The Association had been instrumental in obtaining a grant of \$30,000 a year from the Sun Life Assurance Co. of Canada for post-graduate instruction. Unfortunately, owing to the present economic situation, this grant had been temporarily discontinued, but in all probability will soon be renewed.
3. Periodic health examination by insurance companies was initiated by the C. M. A.
4. Through the efforts of the Association the insurance companies pay for a weekly article in over 300 newspapers.
5. Hospital Service Department instituted by the C. M. A. and financed by insurance companies. The insurance companies of Canada in the last eight years have contributed \$366,000 for various purposes, none of which was ear-marked.

6. In the matter of Medical Relief the Association had dealt directly with the Federal Government in order to improve the present situation. Amendments to the B. N. A. Act would be necessary and are now under review.

7. The Committee on Pharmacy had been responsible for reducing the number of patent medicines in Canada from 60,000 to 10,000.

8. Assistance to physicians in completing income tax returns, and the obtaining of exemptions and reductions in taxation.

9. The Association was able to obtain a proper salary for physicians serving Government Unemployment Camps.

10. The Association is prepared to meet the problem of Group Hospitalization.

11. On being advised of the prevalence of trachoma among the Canadian Indians the Association took steps to have medical service provided to cope with the scourge.

12. Quack advertising over the radio was prevented by the Association dealing with the Radio Commission.

13. The Journal of the C. M. A. is one of the best published in the English language. It takes \$5.13 of each membership fee of \$10.00 to publish it.

14. Health insurance is a live issue in British Columbia. The Association by studying the proposition was able to give valuable advice to physicians in that province.

Dr. Routley said he would like to see a field secretary looking after the interests of the three Maritime provincial medical societies, and similar field secretaries all across Canada. As to the question of coercing physicians into belonging to the C. M. A., if the suggested scheme were adopted, members would belong to the provincial branch and not necessarily have to pay the extra \$10.00 fee, but if so, this money would be used as at present. In conclusion the speaker said that he hoped that in 1934 they could look for the same broad leadership which had characterized the meeting of the Association at Halifax in 1921.

The president then announced that the meeting was open for discussion. The Executive of the Medical Society of Nova Scotia had been invited to this meeting and he noticed that Dr. DeWitt of Wolfville, Dr. O'Neil of Sydney, and Dr. Dunbar of Truro were present. Doctors Corston, DeWitt, O'Neil, Dunbar, Joseph Hayes, H. K. MacDonald, and K. A. MacKenzie all expressed themselves as being heartily in favor of the proposed scheme, pointing out, however, that the autonomy of the provincial society must be preserved, and that other obstacles would be encountered, but that no doubt all of these could be satisfactorily overcome. Dr. K. A. MacKenzie moved the following resolution:

"Whereas Dr. McEachern, President of the Canadian Medical Association has placed before the Halifax Branch of the Medical Society of Nova Scotia, a proposition that the various Provincial Medical Associations become branches of the Canadian Medical Association, AND,

Whereas the advantages of the proposition to the profession at large have been set forth:—

Therefore: Resolved that the Halifax Branch of the Medical Society of Nova Scotia approves of the principle with a view to submitting it to the Medical Society of Nova Scotia for their consideration and action.

Further resolved that the Executive of the Canadian Medical Association be requested to submit a well studied plan by which this may be brought into effect."

This resolution was seconded by Dr. J. G. MacDougall, who lauded the accomplishments of the C. M. A. and pointed out that Dr. Routley had been the designer of most of them. The speaker referred to a meeting of the Medical Society of Nova Scotia held in Sydney some years ago when it was decided to abandon the Maritime Medical Association Journal in order to strengthen the Journal of the C. M. A. The Roddick Bill re. the Medical Council of Canada was a step in the right direction, but better national organization is desirable. A discussion of the resolution then took place. Doctors C. S. Morton, M. G. Burris, G. H. Murphy and H. W. Schwartz, and the Honorable Dr. Davis participated, expressing themselves as favorable to the principle of the scheme.

Dr. McEachern responding to the discussion expressed his thanks and gratitude to the Society for their interest and sympathy, and related in amusing fashion some of the objections to the scheme voiced in other parts of the East. Dr. Routley in a few remarks likewise expressed his thanks and gratitude to the Society. The resolution was then put to vote and carried practically unanimously. The president in conclusion said that he felt that the speakers were aware of our sympathy toward their scheme and the resolution, and on behalf of the Halifax Branch thanked them for their most interesting addresses.

On motion the meeting adjourned for refreshments which were served in a most admirable manner by the supervisor and resident staff of the Clinic.

C. W. HOLLAND, Secretary-Treasurer,  
Halifax Branch, Medical Society.

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The following telegram has been received from the Department of Public Health and Welfare, St. John's, Newfoundland.

"The Department of Public Health and Welfare requires house surgeon for general hospital immediately at salary sixty dollars per month, living in. Will probably require additional man in near future. Is there possibility securing one or two graduates in connection mentioned?"

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Teacher—How many kinds of water are there?

Ron—Nine ma'am.

Teacher—Name them.

Ron—Hard, soft, cold, hot, clean, dirty, salt, fresh and soda.



## CASE REPORTS

### CARCINOMA OF THE STOMACH IN A BOY AGED NINETEEN.

L. A., a lad of nineteen was admitted to the Victoria General Hospital on July 23rd, 1934. He complained of poor appetite and of pain in the sacral region of the back. There was nothing of note in his family history. He had had no serious illnesses and was considered to be a healthy lad until three years ago. At this time he developed pain in the epigastric area—it was never severe, occasionally radiated along the right subcostal margin, was of a gnawing type, had no relation to food, did not cause vomiting or nausea, and there was no loss of weight, but he was listless and this time lacked the "pep" that is usually seen in a young boy. After a year and a half the pain disappeared and has not returned since—he received no treatment and did not see a medical doctor.

One year ago, he developed a tired feeling, particularly in the afternoon, lost interest in his school work and was inclined to stay about the house and to sleep during the afternoons. His appetite became poor, developed "heart burn" and gas after his meals, began to be constipated and would go three days without a movement. At this time he was investigated for Pulmonary Tuberculosis—the X-ray showed suspicious infiltrations in both upper lobes, and with this finding he was advised to rest and to follow the out-door, fresh air treatment. Apparently the results were satisfactory, for he did not again consult a doctor until July 16th, 1934.

At this time the boy presented a very altered appearance. He had lost considerable weight—in all thirty pounds—he was very pale with a lemon tint to his skin. In fact, he presented the picture of cachexia with dehydration and extreme toxæmia. He was then advised to go to the hospital—but his only complaints were those listed above. On being questioned he did admit the increasing loss of energy during the past few months.

The physical examination was as follows. A tall, thin, almost emaciated boy, with an extreme pallor, a smooth coated tongue, who seemed to be very tired and listless. The lungs showed impaired apical resonance more marked on the right side, the breath sounds were a fairly good vesicular quality throughout somewhat granular in right apex. No rales or adventitious sounds. The heart showed some enlargement to the left, a blowing systolic murmur at the apex, the muscle sounds were of a poor quality, the rate was rapid, rhythm normal, B.P. 114/52. There was nothing noted in the abdominal or rectal examination. The central nervous system was essentially negative. The head, neck and the extremities did not reveal anything of note. He had moderate fever  $99^{\circ}$ ;- $101^{\circ}$ ;

#### Laboratory Tests:—

Urinalysis—showed slight trace of albumen, with a few pus cells.

Kahn Tests—Negative.

Sputum Test—Negative for Tubercle (repeatedly).

X-ray (chest)—showed old apical infiltration on the left side, with generalized fibrosis of the right lung.

Blood Chemistry—within normal limits.  
 X-ray (vertebrae)—no abnormality reported.  
 Blood picture (admission)—Hb O2 55%.  
 Red Blood Cells, 3,440,000.  
 White Blood Cells, 13,000.  
 Blood Cultures—Negative for any organisms.

*Progress Notes:—*

He was cystoscoped on August 9, '34, to find some explanation of the sacral pain. It was thought he might have had Tuberculous disease of the kidney. The results of the investigation showed normal kidneys and *Pyelograms*.

On August 11th, '34, another blood picture was done—this time by Dr. Ralph Smith. His report is as follows:— The Red Cells reveal definite anisocytosis and poikilocytosis, polychromatophila and punctate basophilia and abundant normablasts and a few megaloblasts. The average size of the cells appears increased.

The White cells—no abnormal varieties found except an occasional myelocyte.

Polymorphs.....	55%
Lymphocytes.....	39.0%
Large Mons.....	5.0%
Eosinophils.....	1.0%
Basophils.....	0.0%

Remarks:—There is a profound anaemia present which I regard as of primary or pernicious type.

With this report we instituted immediately subcutaneous injections of Liver Extract. At the end of five days—there was no response in the reticulocytes and no improvement in the patient.

On August 4th, '34, Dr. Smith reported the blood picture as follows:—

Red Cell count.....	952,000.
Haemoglobin.....	15%.
Color Index.....	Unable to estimate it.
White Cell count.....	24,480.

Remarks:—The appearances are those of a very profound anaemia which I still regard as of a Primary Type. There may be an aplastic element associated and there is a definite lymphocytosis.

On August 10th, the patient showed purpuric spots on the mucous membranes of his mouth—several days later, he began to bleed from the gums. At no stage during his period of observation did he show evidences of frank or macroscopic bleeding in his stools though the stool during the past two weeks of his illness gave a three plus positive on the Gregerson Benzidine Test.

He was given two blood transfusions—but gradually became weaker and expired on August 11, 1934.

The post mortem report by Doctor Ralph Smith follows:—

AUTOPSY No. 34-25.

Tissue 34-5754.

August 20th, 1934.

Name: L. A.

Autopsy performed by Dr. Smith.

Rigor mortis has not commenced. The subject was a white male, tall and thin individual with a very yellow tinge of the skin and some cutaneous haemorrhages.

*Pleural Sacs:* contained a slight quantity of serous fluid which is blood stained.

*Bronchial Glands:* at the root of both lungs were enlarged, hard and whitish with black carbon deposits interposed.

*Bronchi:* showed no special change.

*Both Lungs:* showed some whitish thickened small areas related to the bronchi in the upper lobes somewhat like a sub-acute lymph-spread tuberculosis. The lungs otherwise were pale and somewhat oedematous in their lower lobes, and there was one small healed tuberculous apical lesion on the left side.

*Tongue:* had rather a dry smooth character.

*Oesophagus:* nil of note.

*Pericardial Sac:* contains a small quantity of serous fluid.

*Heart:* Myocardium had a few petechial haemorrhages under the epicardium and showed a definite fatty degeneration of the patchy type. Except for some dilatation of the right side, the valves and chambers of the heart are healthy.

*Peritoneal Sac:* contains a small quantity of serous fluid.

*Stomach:* contains much blackish mucus covering the mucosa (altered blood) and a large chronic ulcer with overhanging edges (about  $1\frac{1}{2}$  ins. in diameter) situated on the posterior wall near the pyloric end of the stomach. There is a small patent vessel in its base which has a hard fibrous character.

*Liver:* is enlarged and has a cafe au lait appearance from combined fatty degeneration and haemosiderin accumulation.

*Intestines:* show no special change.

*Spleen:* is enlarged to  $1\frac{1}{2}$  times its normal size and has a fairly firm congested appearance with a slightly brownish colour from haemosiderin despoit.

*Pancreas:* has a bronzed character but shows no evidence of tumour.

*Gall-bladder:* nil of note.

*Adrenals:* are both enlarged and haemorrhagic looking.

*Kidneys:* have a moderately brownish yellow colour, but show no other special change.

*Urinary Bladder:* nil of note.

Mesenteric and Retro-peritoneal lymph glands especially the latter are haemorrhagic and firm.

*Bone Marrow:* (long Bones) is fatty. There is no erythroblastic reaction present, and in view of the profound anaemia appeared aplastic.

### Histological Examination.

*Stomach Ulcer:* There is an infiltration with spheroidal cells just below the margins and in the fibrous tissue at the edge of the base and also in the superficial lymphatics in the serous coat. The appearances suggest the malignant transformation of a chronic ulcer, i.e., a carcin-

oma of scirrhus type. A malignant ulcer from the outset shows involvement of both base and edges not only edges alone as here.

*Lungs:* show a diffuse secondary spheroidal cell infiltration especially in the peribronchial lymphatics which is extending into the surrounding alveoli and in places it shows a columnar cell adeno-carcinomatous character.

*Bronchial Glands:* are also diffusely infiltrated with a similar secondary malignant deposit.

*Liver:* In addition to the fatty degeneration and deposit of haemosiderin small clumps of malignant spheroidal and columnar cells are seen in the lymphatics around some of the portal tracts, although not visible to the naked eye.

*Spleen:* shows a deposit of haemosiderin, some thickening of its trabeculae and proliferation of the endothelial cells lining the sinuses. No secondary malignant deposits are detected.

*Adrenals:* both show much haemorrhage and a diffuse infiltration especially in the medulla of secondary spheroidal cell carcinoma.

*Mesenteric glands and retroperitoneal glands:* are also haemorrhagic and infiltrated with a secondary carcinomatous deposit.

*Bone Marrow:* shows no erythroblastic change. There is a degree of gelatinous degeneration present. No secondary malignant growths are seen in it.

### Pathological Diagnosis.

Carcinoma of stomach probably following a simple chronic peptic ulcer with secondary metastases in lungs, liver adrenals, bronchial, etc.

This case is being reported because it brings out the following points:—

- (1) The appearance of primary carcinoma of the stomach in a boy of nineteen years.
- (2) The possibility of a carcinoma being engrafted on a chronic ulcer of the stomach.
- (3) the real diagnosis was not made clinically, and to be honest it was not even suspected—it was revealed by the post mortem findings.
- (4) The blood picture was that of a primary or pernicious anemia. It is customary in chronic ulceration of the stomach with a slow leakage of blood to get a picture of a secondary anaemia. Boyd draws attention to the fact that the picture may be that of a pernicious anaemia—and he reports one case which he had under observation such as the one we are now reporting where post mortem disclosed a carcinoma of the stomach.

GERALD ROSS BURNS, M.D.

RALPH P. SMITH, M.D.

### A Behaviour Study in a four year old child.

The following case report is presented as illustrating some interesting features relative to Child Behaviour work.

K. Y., a 4 year old girl presented the following problems:

1. She would not feed herself.
2. Eneuresis.
3. Constipation.
4. Irritability and Crankiness.

*Family History.* The family history was negative. The parents were intelligent people, and anxious to do the best they could for the child: This was the mother's first child, and as she said herself, she was anxious to bring the child up properly, so was fairly strict with her.

*Past History.* There were no illnesses. The patient had been quite healthy except for occasional colds.

*Present Condition.* I was called in to see the child because the mother was not satisfied with her general condition. The irritability and crankiness were to her the important symptoms, as the child previously had been generally good natured. In taking the history the four main complaints listed above were obtained, and I shall mention points relative to each under their respective headings.

(1) *She would not feed herself.* This patient at four years of age still had to be fed, or the child would not eat at all. She would drink a glass of milk at each meal, but this is as much as she would do. This condition had been going on ever since the child was really old enough to feed herself, and was not a recent development. The mother had tried various ways but in all of them she, herself, was impatient and apprehensive, and usually ended up by feeding the child. In other words she was afraid to even let the child go without one meal, and each of these conflicts resulted in a victory for the child, thus impressing further into her mind the knowledge that she wielded the "big stick" at meal times. The mother had now given up the struggle and had resigned herself to feed the child at all meals.

In going back into the child's history, I found that she had not been given any solid food until she was nine months old. With the beginning of it she had several choking spells, and according to the mother, seemed to have difficulty in swallowing solid food for a long time. No doubt the trouble first began at these times. The child probably was anxious to eat, but the mother apprehensive of these choking spells, held back in allowing the child to feed herself, until the child learnt to be fed instead. When the mother did begin to teach the child to feed herself, she refused as it was easier and nicer to be fed, in addition to being the centre of the procedure. These refusals were not allowed to pass by unnoticed, and soon it became that the child would not eat without being fed, because she knew that if she waited long enough she would be fed.

The appetite was good, and the child would eat a good meal as long as it was fed to her. Usually one finds the opposite in behaviour difficulties—the trouble is usually to get the children to eat.

(2) *Eneuresis*—This occurred every night. Within the last six months the bedwetting would frequently be purposeful, as it occurred just on going to bed or first thing in the morning—both occasions being when the child was awake. The mother had scolded the child frequently for wetting at night and punished her, usually by slapping, for wetting the bed purposely. She had previously given up the scolding as she realized it did not do any good and it was then that the child apparently began wetting purposely. From this I gathered that the child knew of the sensation she caused by her bed wetting. When the mother gave up scolding, and there was no more joy in finding the bed wet in the morning, the child sought and found other ways of evoking the same response—namely in wetting the bed at different times. The child, of course, had been taken to the bathroom before going to

bed. The mother was still punishing the child for purposeful bed wetting when I first called in, for which one can hardly blame her. However, when one considers the sequence, it appears that the purposeful bed wetting was not due to naughtiness, but to the stronger desire to evoking the expected response from the parent.

*Constipation.* This had been present for the past three years, but during the past year the mother has had to give a laxative, about every other day at least. The usual procedure was to send the child to the bathroom and if she was unable to pass a stool, the mother would make some remark about "trying" and would express audible dismay over the child being constipated and would refer to it too much in front of her.

*Irritability and Crankiness* were symptoms which were evident only in the past few weeks. The child, by nature, quiet, good natured, generous, was getting irritable and cranky and stingy. There had been one or two temper tantrums, but these fortunately were properly handled, and the child did not exhibit them any more. The irritability was noted in many ways, such as the way in which she answered questions, or did little things asked of her. She frequently cried from trivial causes and was beginning to show signs of negativism, i.e. doing the opposite of what was asked of her. Negativism is inevitably the result of a mind not at rest, and it is the child's response to a charged nervous atmosphere.

The rest of the history showed that the child slept well, was very active in the day time and played normally. The diet was balanced and adequate.

*Examination.* Fairly well developed—the thin tall type of child—obviously jumpy and apprehensive during the examination, but very bright and intelligent. The examination of all systems was essentially negative. No foci of infection could be found. Urinalysis was negative.

*Diagnosis.* In considering the case as a whole, I felt that all the symptoms were closely connected and that there was a common underlying cause. The case was namely that of a nervous child reacting to unsuitable management, and to environmental influences. I use the term "nervous" child as designating one who is born with a sensitive nervous organisation, and it is characteristic of these children to react with extreme susceptibility to any changes in their environment, especially the mental environment, and to influences moulding their conduct.

*Treatment.* If the cause was due to one common underlying condition, then the correction of this would be expected to improve or cure the various behaviour troubles. I explained to the mother that there was nothing physically or organically wrong with the child, and that these disturbances were the results of handling. These would improve, I explained, when she realized how they were produced, and I emphasized the fact that she had nothing to worry or be apprehensive about—in fact this state of worrying was distinctly detrimental to improvement. I, therefore, carefully explained the situation to her, and she quickly grasped my meaning of a nervous child, and the reactions they are likely to show. Here was the first step towards improvement. So often mothers resent being told that they are at fault in the rearing of the child, even though one carefully explains the underlying sensitivity of their nervous organization, and their susceptibility to environmental changes.

The line of treatment adopted was:

- (a) Advice regarding the general handling of the child.
- (b) Advice along each of the lines of presenting difficulties.

(a) General advice—I advised the mother to be less severe with the child, and to allow her more freedom for expression. She was not to admonish the child for each little diversion, remembering that these children have very vivid imaginations, which they project into reality, and as a rule to continually suppress it is to court trouble. In other words, the parents must remain more and more in the background, where these clashes between the child's mind and their's are less likely to take place. Punishments were not to be given unless the child was really naughty, and then the child was not to be threatened with punishment, but punished. All such things as threatening to punish, but not doing so must stop. The mother was to be more aloof from the child, being indifferent to and ignoring all little annoyances, but praising the child if she were good and helpful. The mother had tried some of these before, but usually in a sporadic manner. She had not persisted in it for a long enough period, and as these troubles do not usually clear up in a day or two, it requires a prolonged manner of such handling. Even if the child appears to show no concern about the mother's attitude, it is nevertheless good psychology and should be persisted in.

With the same principles, of not worrying or being apprehensive, of aloofness and indifference, she was to tackle each problem.

b (1) Not feeding herself. For this I suggested the child be fed by herself away from the family table. The food was to be placed in front of her and she was to be left alone, and very small helpings were to be given. After a given time, a half hour usually, the food was to be taken away without any reference to whether it had been eaten or not. This according to the mother had been tried before but without success. I suggested it be retried and persisted in for two days at least. If the child did not eat it would not be serious. Here I met a new difficulty. The child was quite content to sit there and not eat and did not seem to mind when the food was taken away. The same difficulty of apparently not minding and being content to do without had been evident in many ways, and really made the situation more difficult to handle. I advised the mother to also continually ignore the fact of her not minding. Because of the child's reaction to my suggestion I thought it unwise to persist in that measure and modified it so that the child fed herself a part of the meal to begin with for example, the dessert at dinner. That is to say she began with something where the most interest lay. When she did that nicely she was complimented, and since that time she has gradually fed herself parts of each meal until now, two months afterwards, she is eating all of her meals herself. She is still being fed by herself away from the family table, and for this particular child I think it wise to continue doing so for a long time yet.

b (2) Enuresis. I advised the mother to stop punishing the child for wetting the bed even though purposely done. I explained why I thought it was purposely done. If the child could see that the wetting created no excitement, and her interest could be centred elsewhere, she would probably stop. The child's interests were soon developed in being allowed to make her bed in the morning. When she did not wet she was allowed to make her bed, and was spoken of as a big girl, a good girl and a big help to mother.

When she did wet she was not allowed to make her bed as she was a little girl, (without any reference to the wet bed), and little girls cannot make their own beds—only big girls can. For the first 10 days sometimes the bed would be wet and sometimes dry, but this idea was adhered to. Since this time, however, up until now, 2 months later, she has never wet the bed once.

b(3) Constipation. For the treatment of this the mother was told to put the child on the toilet at the same time every day. She was to do it in a most matter of fact manner, as though she expected the child to have a movement. She was to say nothing, but was to leave the child there until she did. I advised the discontinuance of laxatives and the use of plain mineral oil instead. The diet, exercise, and other such factors which usually influence the daily action of the bowels were all adequate, and so were unchanged. The offishness of the mother, as though it did not matter if the child had a stool or not, seemed to be the deciding factor. By the end of the first week daily normal movements were the order. Within three weeks the use of mineral oil was stopped. She has had no recurrence of constipation since.

b(4) The irritability, crankiness, temper tantrums and negativism were later symptoms of the overtired young mind. The ignoring of these things with more freedom of expression allowed to the child, and the calming down of the charged nervous atmosphere soon did away with these trying times. After about one month she showed a tendency to irritability only in the late mornings and late afternoons. This frequently happens in these children. They use up their energy so quickly that by late morning and afternoon there is no free glucose available. Everyone knows how irritable one is likely to become an hour or less before meal time, but after the meal is eaten it gives way to a feeling of contentment. This is most marked in the nervous child because they use up their readily available glucose quickly. A drink of orange juice, or a similar drink, well sweetened and given in the middle of the morning and afternoon usually checks this, as it gives them a fresh supply of available glucose which lasts until meal time. Almost as soon as this was started the mother has had no more trouble with the child's irritability.

This child has responded quickly to the changes suggested. Unfortunately they do not all respond so quickly. The mother is the doctor's strongest ally, and if she is willing to faithfully carry out his suggestions, and if she realizes the true state of affairs, then usually the battle is half won.

When once the diagnosis of behaviour problem is made the treatment is entirely centred around the readjustment of the home influences as regard that particular patient. Drugs are of no value by themselves and their use is very limited.

These children are interesting because they are usually cast outside the ordinary mould, and, generally speaking, have intellectual possibilities above the average and greater potentialities for achievement and for good, even though they are very trying problems in their childhood days.

N. BARRIE COWARD, M.D.



# Department of the Public Health

## PROVINCE OF NOVA SCOTIA

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 Divisional Medical Health Officer - - DR. C. M. BAYNE, Sydney.  
 Divisional Medical Health Officer - - DR. J. J. MACRITCHIE, Halifax.  
 Director of Public Health Laboratory - - DR. D. J. MACKENZIE, Halifax.  
 Pathologist - - - - DR. R. P. SMITH, Halifax.  
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Cole, W. H., New Germany (County).  
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McKay, W. A., Thorburn (County).  
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Churchill, L. P., Shelburne (County).  
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Banks, H. H., Barrington Passage (Barrington Mcpy).  
Herbin, C. A., Lockeport.

## VICTORIA COUNTY

Gillis, R. I., Baddeck (County).

## YARMOUTH COUNTY

Blackadar, R. L., Port Maitland (County).  
Burton, G. V., Yarmouth.  
O'Brien, W. C., Wedgeport.  
Fox, C. J., Pubnico (Argyle Mcpy).

Those physicians wishing to make use of the free diagnostic services offered by the Public Health Laboratory, will please address material to Dr. D. J. MacKenzie, Public Health Laboratory, Pathological Institute, Morris Street, Halifax. This free service has reference to the examination of such specimens as will assist in the diagnosis and control of communicable diseases; including Kahn test, Widal test, blood culture, cerebro spinal fluid, gonococci and sputa smears, bacteriological examination of pleural fluid, urine and faeces for tubercle or typhoid, water and milk analysis.

In connection with Cancer Control, tumor tissues are examined free. These should be addressed to Dr. R. P. Smith, Pathological Institute, Morris Street, Halifax.

All orders for Vaccines and sera are to be sent to the Department of the Public Health, Metropole Building, Halifax.

### Report on Tissues sent for examination to the Pathological Laboratory, from October 1st to November 1st, 1934.

The number of tissues sectioned is 196. In addition to this, 45 tissues from seven autopsies were sectioned, making 241 tissues in all.

Tumours, malignant.....	31
Tumours, simple.....	27
Tumours, suspicious.....	3
Other conditions.....	135
Awaiting Section.....	0
Tissues from seven autopsies.....	45

Communicable Diseases Reported by the Medical Health Officers for the month of October, 1934.

County	Chicken Pox	Diphtheria	Infantile Paralysis	Influenza	Measles	Typhoid Fever	Pneumonia	Scarlet Fever	Tbc. Pulmonary	V. D. G.	V. D. S.	Whooping Cough	German Measles	Paratyphoid	Goitre	Tbc. other forms	Septic Sore Throat	Impetigo	Erysipelas	Pink Eye	TOTAL	
	Annapolis									1												
Antigonish																						
Cape Breton	7	1		4	18	1	3	2	2			10	8									56
Colchester								4														4
Cumberland					200	3		3			1		2									209
Digby				2		4			2													8
Guysboro										1	2											3
Halifax City	2	3	3		2			16				6										32
Halifax		2	1													3						6
Hants								6				6										12
Inverness	1				24		3		3	4	1		7									43
Kings	1			15				2					1				2	4		1		26
Lunenburg	2							5	4													11
Pictou								4														4
Queens	*							4	2		2			1		2						11
Richmond																						
Shelburne							1															1
Victoria																						
Yarmouth																						
TOTAL	13	6	4	21	244	8	7	46	14	5	6	22	18	1		5	2	4		1		427

N. B. \*Numerous.

RETURNS VITAL STATISTICS FOR SEPTEMBER, 1934.

County	Births		Marriages	Deaths		Stillbirths
	M	F		M	F	
Annapolis	10	13	12	8	9	0
Antigonish	15	8	7	9	8	0
Cape Breton	143	122	74	29	24	6
Colchester	22	16	27	13	9	1
Cumberland	34	21	33	16	16	0
Digby	14	11	16	8	7	0
Guysboro	16	17	12	8	6	0
Halifax	148	141	83	42	30	3
Hants	29	27	15	9	20	3
Inverness	15	12	5	6	12	0
Kings	37	44	20	11	13	1
Lunenburg	16	30	26	18	25	0
Pictou	24	21	30	20	22	0
Queens	16	18	5	6	5	0
Richmond	7	12	5	1	0	0
Shelburne	7	14	7	3	8	1
Victoria	5	2	7	3	0	1
Yarmouth	25	15	12	9	5	0
TOTAL	583	544	396	219	219	16

### The Royal College of Physicians and Surgeons of Canada.

THE recent annual meeting of the Royal College of Physicians and Surgeons of Canada, Ottawa, gave evidence of increasing progress of this body toward the high position of prestige and influence in Canadian Medicine which it is destined to occupy.

This evidence consisted in an increased attendance, in a larger number of candidates sitting for the examinations of the College, and above all, in the constant, energetic and unselfish interest shown by the leading spirits.

The Council of the College convened at the Board Room, National Research Building, on Monday morning, October 29th. Eighteen members of Council were present.

Of the many matters discussed, one of special interest was the report of the Examiners. It was noted that twenty-one candidates had presented themselves for the examinations, fourteen for the primary and the remainder for the final. Of these, twelve had passed the primary, and none had been successful in the final. Most of those successful in the primary were undergraduates from Toronto, Montreal and Winnipeg.

The opinion was expressed by the Examiners, all of whom have had experience with the examinations of the Royal College of Surgeons of England, that these students were quite up to the standard required by that College.

It was suggested, in the report of the Examiners that, if possible, arrangements might be made to hold the written examinations at different points in Canada, having in view especially the accommodation of the extreme Eastern and Western parts of the country.

Throughout the discussion the point was emphasized that the future of the College depends upon the interest of the present-day undergraduates, and the taking by them of the primary examination in increasing numbers.

Proposed measures to stimulate this interest, such as lowering the fee, and the putting on of special coaching courses at the various medical schools, were referred to the proper committees for study, and future report.

The general meeting of the College convened in the Auditorium at two o'clock in the afternoon, with the President, Professor Duncan Graham, in the chair. Some seventy-five Fellows were in attendance.

Following the practice instituted last year, a scientific programme took first place in the transactions. The presentations were as follows—

“The Physiology and Biochemistry of the Parathyroid Glands”

J. B. Collip, Professor Biochemistry, McGill University.

“The Surgical Aspect of Hyperparathyroidism”

G. S. Fahrni, Assistant Professor of Clinical Surgery, University of Manitoba.

“Clinical Disorders of the Parathyroid Glands with special reference to Tetany.”

R. S. Farquharson, Professor of Therapeutics, University of Toronto.

The general comment was that the high standard reached in the first scientific programme in 1933 was fully sustained this year, and the expectation is that this feature of the annual meeting will continue to be an outstanding one. These papers will be accessible to the profession generally in the course of the next few months in the pages of the Canadian Medical Association Journal.

Further proceedings of the general meeting included the presentation of the report of Council—the announcement of the names of successful candidates at the examinations of the College—the customary passage of felicitations to His Majesty the King, Patron of the College—and the marking by resolutions of regret and condolence the passing during the year of four Fellows, namely, Doctors F. N. G. Starr, L. deL. Harwood, Arthur Rousseau and H. M. Little.

In the evening at eight o'clock the annual dinner was held in the Quebec Suite, Chateau Laurier.

The guest of honour and chief speaker was Sir Robert Falconer. Sir Robert recounted the high traditions of the medical profession through the ages, and dwelt upon its value to-day as a cultural influence and a stabilizing force in our rather perplexed civilization.

All who were present to hear him were left with the feeling that they had been walking in the high places in the company of a great scholar and a great thinker, and more than one of them expressed the thought that this oration, coming as it did at the end of a day filled with activities, which cannot fail to inspire and uplift the medical profession of Canada, was in itself ample justification for the journey to Ottawa.

J. R. C.

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#### Meeting of the Executive Committee of the Canadian Medical Association.

**T**HE Executive Committee of the Canadian Medical Association met at the Chateau Laurier, Ottawa on Oct. 30th. The agenda contained over 50 items. The following items are of general interest.

1. Annual Meeting, 1935. The invitation of the American Medical Association to have a joint meeting in Atlantic City was accepted at the Calgary meeting. The dates have been fixed for June 10-14, 1935. Details of the meeting were discussed and the slate of section officers completed. The Programme Committee will proceed to Chicago this month to arrange details. This is the first time that a joint meeting has been held in the U. S. A.

2. Steps were taken to establish a memorial to the late Dr. F. N. G. Starr whose activities in the interests of organized medicine are well known. The memorial will probably take the form of a scholarship.

3. The report of the Committee on Economics received some attention. It has been published in full in the Journal and should be carefully read by every member of the Association.

4. Changes in the Bye-laws were discussed and a complete revision is in the hands of a sub-committee. In view of the possibility of radical changes as the result of Dr. McEachren's Trans-Canada tour this work cannot be completed for some time.

5. Dr. L. F. Barker of Baltimore was selected to deliver the Osler Oration at the next Annual Meeting.

6. Dr. George S. Young, owing to pressure of work on other committees and his appointment as Chairman of the Council was obliged to resign as Chairman of the Programme Committee. He was succeeded by Dr. A. Primrose.

7. Dr. R. D. Rudolf was appointed a delegate to the B. M. A. which meets next year in Australia. Two other delegates will be appointed later.

8. The treasurer's report shows some falling off in the paid membership. There is a deficit of 2,000 dollars and an estimated deficit of 4,000 dollars next year, but this is well taken care of by the surplus of more prosperous years. The activities of the Association have been only slightly curtailed and it is hoped that the depression corner will soon be turned.

9. The report of the President and General Secretary on their Western trip proved very interesting and aroused hopes of a bigger and better National organization in the near future.

A number of letters, some critical, some constructive, received due consideration. The session lasted from 9 a.m. until 6.30 p. m. with one hour for lunch.

K. A. MacK.

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### Two's Company. Three's a Crowd.

"Sickness is a matter intimately personal. It is a time when sincerity of dealing cannot be compromised nor human feelings flouted.

"How disturbing, then, is the thought of having a third person or alien party exercise an influence on the relationship between the patient and his physician, the two persons who, above all others, are most vitally concerned when sickness enters the home.

"Yet this third party influence, with all its unpleasant and disturbing sequels, will inevitably be thrust upon patient and physician should some of the current new schemes of medical practice ever gain acceptance.

"Carried to their full development, such plans would mean that your family doctor would be the hireling of a commercial organization or of a department of the state, the former built up necessarily by business promotional efforts, high pressure salesmanship and price competition, the latter made compulsory by legal enactment.

"Experience has already shown that contract or insurance schemes would not be successful if they observed carefully the principles of conduct and fair competition which operate as definitely for the public good as for professional honor. In these principles financial gain is subordinated to the prime object of service to the patient and to humanity.

"Furthermore, the history of some of these ventures reveals highly deplorable tendencies. 'Scare head' advertising has appeared as a means of frightening people into subscribing for memberships. Medical service has been promised at ridiculously low and actually impossible rates. The services of hundreds of physicians have been promised to subscribing members, whereas actually but a small fraction of that number were 'signed up' and available. Patients have found that they must be served by the physician assigned to them, not by the man of their choice. And the poorer classes have paid the same price for medical service as the very wealthy.

"No, the fine, sympathetic, humanitarian service at present rendered by the family physician can never be satisfactorily replaced by a commercial organization that retails medical service for a profit, nor by the state with a mechanized or regimented medical profession. The interjection of such agencies between patient and physician is unnecessary and cannot fail to be disturbing to all parties concerned."—from Mead, Johnson & Company's Announcement in Hygeia, September, 1934.

# Relative Values of Carbohydrates Employed in Infant Feeding

Continued down from 1911

## 1915

"The infant with diarrhea and vomiting is given nothing but tea for from twelve to twenty-four hours, no longer, and then the albumin milk is commenced, not over 5 gm. ten times a day, with 3 per cent. of a maltose-dextrin mixture. The amount of albumin milk is increased by 50 gm. each day until the daily ration totals 300 gm. After the weight has become stationary, carbohydrates can be added up to 5 per cent. of the maltose-dextrin mixture."

"Albumin milk is not so uniformly effectual in dysentery as in cholera infantum. They seem to act better, diluted half and half with oatmeal gruel. After the starvation period he gives 50 gm. of the whey and increases by 50 gm. daily with equal amounts of oatmeal gruel. As improvement sets in 3 per cent. of a dextrin-maltose preparation can be added."—*L. Langstein: Cholera infantum and other severe diarrheas in infants, Therap. Monatsh., V. 29, August, 1915; Abst. J.A.M.A., 65:1314, Oct., 7, 1916.*

## 1916

"Dextrin-maltose, having a higher absorption tolerance than the other sugars, is less likely to cause intestinal disturbances when large amounts of it are given."—*H. R. Mixsell: A brief résumé of the role of carbohydrates in infant feeding, Arch. Pediat., 33:31-36, Jan., 1916.*

## 1916

In cases of malnutrition and indigestion in infancy, "The appetite improves rapidly, and the stools soon become normal in appearance, if the sugars are intelligently prescribed. By this I refer to proper proportions of dextrin and maltose. When there is a tendency to looseness, I have used the preparation known as 'dextrin-maltose, for the extra carbohydrates; . . ."—*M. Ladd: Further experience with homogenized olive oil mixtures, Arch. Pediat., 33:501-512, July, 1916.*

## 1916

"For the addition of sugar, I usually use dextrin-maltose, which does not easily cause fermentation."—*L. L. Meininger: Use of Erweissmilch, Arch. Pediat., 33:529-532, July, 1916.*

## 1916

In the treatment of marasmus, "Three per cent of malt sugar should be administered from the first, afterwards running up to as high a per cent as the child will take."—*L. T. Royster: A Handbook of Infant Feeding, C. V. Mosby Co., St. Louis, 1916, p. 100.*

## 1916

"Least irritating of all sugars, and more readily digested and quickly absorbed, is maltose."—*H. Lowenburg: A Practical Treatise on Infant Feeding and Allied Topics, F. A. Davis Co., Phila., 1916, p. 73.*

## 1916

"Dextrin-maltose is valuable in cases where intestinal disturbances are due to fermentation of milk sugar."

"Treatment (of sugar intoxication) consists in eliminating the latter (whey salts) as well as the sugars from the diet temporarily, and when the symptoms have subsided, a different sugar in proper proportion should be cautiously added; maltose and dextrin are preferable, because they are not apt to produce fermentation, while milk sugar is prone to set up fever and diarrhea."—*E. E. Graham: Diseases of Children, Lea & Febiger, Phila., 1916, pp. 179-201.*

## 1917

"For children who are not gaining on a normal formula with a sufficient amount of sugar of milk, or children who vomit when sugar of milk is fed, or who are constipated, the use of maltose instead of lactose often gives most satisfactory results. This is readily accomplished by substituting for the 4 or 5 per cent. of added sugar of milk an equal amount of dextrin-maltose or malted milk, which latter gives, in addition to the maltose, some protein food and an insignificant amount of fat. In many cases children who have failed to gain on other food will immediately show a marked gain as soon as this change is made."—*R. G. Freeman: Elements of Pediatrics, Macmillan Co., New York, 1917, pp. 191 and 192.*

## 1917

"The carbohydrates most used in infant feeding are the three soluble sugars and starch. The three soluble sugars are lactose, or milk sugar, maltose, or malt sugar, and saccharose, or cane sugar. Maltose is not used in its pure form, on account of its cost. The various commercial preparations of maltose are combinations of maltose with various dextrans, but as in digestion dextrin is converted into maltose, the chemistry is practically the same."

"The sugar which is not absorbed is broken down by the bacteria of the intestine into a great variety of fermentation products, among them being lactic, butyric, acetic, and succinic acids."

"Another effect of the excessive fermentation which results from a relative excess of carbohydrate in the food, is the formation of an excessive amount of gas. This may cause abdominal distention, and, extending backward, it may carry irritating acid products into the stomach, and thus cause vomiting."

"Lactose is the sugar most likely to produce acute symptoms. The stools are practically always green and very irritating. Flatulence and colic are less prominent."

"The maltose-dextrin preparations rarely produce acute exacerbations."—*C. H. Dunn: The Hygienic and Medical Treatment of Children, Southworth Co., Troy, New York, 1917, pp. 423, 424, 425, 428.*

## 1918

"The sugars in the foods are milk sugar which is found in mother's milk as well as in cow's milk, cane sugar and malt sugar. Though milk sugar is a natural ingredient of milk it is not well borne by babies when added to their food; they digest cane sugar, the ordinary granulated sugar, much better; malt sugar is the easiest digested by babies."—*C. G. Leo-Wolf: Nursing in Diseases of Children, C. V. Mosby Co., St. Louis, 1918, p. 24.*

## 1918

"Maltose (malt sugar) has the advantage of being very easily digested; when part of the sugar given is maltose, many children gain more rapidly in weight than when only milk sugar or cane sugar is used."—*L. E. Holt: The Care and Feeding of Children, D. Appleton & Co., New York, 1918, p. 68.*

## 1919

"In the administration of protein milk with its large protein content, by adding to it sugar which is not easily fermented (dextrin-maltose), we produce, instead of pathologic fermentation, a condition of putrefaction which changes the acidity of the intestinal contents to alkalinity, the peristalsis is decreased, the intestinal contents pass slowly through the large intestines with absorption of fluid and excretion of calcium and magnesium salts. These minerals unite with fatty acids to form the typical fat-soap-clay-coloured constipated stools characteristic of protein milk feeding, and it is at this point that dextrin-maltose should be added to the food."

"The majority of the cases were kept on protein milk for a period varying from three to four weeks, and, in many instances, contrary to the usual opinion, we were able to keep the children on protein milk plus starch and dextrin-maltose, sufficient for their caloric needs for a period of several months, in each instance accompanied by a substantial gain in weight and normal increase in vigor and tissue turgor with comparative freedom from digestive symptoms."—*A. Brown and I. F. MacLachlan: Protein milk powder, Canad. M. A. J., 9:528-537, June, 1919.*

Continued down to 1934

MEAD JOHNSON & CO. OF CANADA, LTD., Belleville, Ont.

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## Personal Interest Notes

DR. and Mrs. W. J. MacDonald of Truro left on October 18th for a three weeks motor trip to points in the United States, going as far as West Virginia where they both were engaged in Public Health work for several years.

Dr. and Mrs. Eric W. Macdonald of Reserve Mines left the middle of October for a trip of several weeks to Boston and vicinity.

**Locum-tenens wanted.** Dr. M. G. MacLeod of Whycomagh wants someone to take over his practice beginning, if possible, the first of December.

The wedding took place at St. James United Church, Musquodoboit, on Tuesday, November 6th, of Miss Olla Redden of Caribou Mines and Dr. R. H. MacLeod of Westville. Dr. MacLeod formerly practised in the Musquodoboit Valley.

Dr. and Mrs. L. J. Lovett of Bear River spent the month of October at their hunting lodge on White Sand Stream, Digby County.

Mr. Hugh Kendall, son of Dr. and Mrs. H. E. Kendall of Windsor, who has recently been a surgical patient in the Royal Victoria Hospital, Montreal, is now convalescing.

The guest speaker at the Kiwanis Club at Liverpool on October 1st, was Dr. C. J. W. Beckwith of Kentville. Dr. Beckwith dealt with present day problems of tuberculosis.

The medical staff of the Eastern Kings Memorial Hospital, Wolfville, held its annual meeting on October 9th. Officers elected were: Dr. C. E. A. deWitt, President; Dr. T. A. Kirkpatrick, Vice-President; and Dr. P. S. Cochrane, Secretary-Treasurer. Dr. J. A. M. Hemmeon and Dr. C. E. A. deWitt had been President and Secretary-Treasurer respectively for three years.

Dr. D. J. Hartigan of New Waterford attended an executive meeting of the Nova Scotia and Prince Edward Island Hospital Association at Antigonish on October 8th.

In the October number of the BULLETIN there was published a list of the different firms who helped either by money contributions or by gifts to make our annual meeting a success. Through an oversight the name of Henry Birks and Sons, Limited, was omitted. Several years ago Birks gave the Society a very handsome trophy which has been competed for yearly since that time. This year the cup was won by Dr. L. M. Morton of Yarmouth.



visiting pages

### Diet in Pregnancy

THE mother's diet, during pregnancy and lactation, ought to include:  
 2 pints of milk daily.  
 1 or 2 substantial servings of green vegetables—cabbage, spinach or lettuce—daily.  
 1 or 2 eggs or egg yolks daily.  
 An apple or orange or some fresh fruit daily.  
 Sea fish twice or more a week.  
 Calf's liver once a week.  
 If cod-liver oil can be taken, 2 teaspoonfuls daily is advisable.  
 The rest of the diet can be made up as the woman wishes.—DR. EDWARD MELLANBY, in *Lancet* (Lond.), Nov. 18, 1933.

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# ALPHAMETTES

## A simple medium for Cod Liver Oil therapy

During pregnancy, the need for greater vitamin A and D intake is generally accepted, in order to build up a reserve for the developing foetus and to lower the maternal risk of puerperal pyrexia. Unfortunately, there are many patients who cannot, or will not co-operate when advised to take cod liver oil. Alphamettes present a logical and simple solution to this problem. Alphamettes, being a defatted concentrate of cod liver oil in capsule form, are easy to take, and being defatted, cause none of the gastric distress sometimes associated with cod liver oil "by the teaspoonful."

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**Practice for Sale.** Someone is wanted to take over the practice of the late Dr. George W. Fleming of Petitcodiac, N. B. Both house and equipment are available. For further information apply to Miss Mona Fleming at Petitcodiac, N. B. or Dr. H. G. Grant, Dalhousie Public Health Clinic, Halifax, N. S.

Annual meeting of the Nova Scotia Society for Mental Hygiene. The annual meeting of the Nova Scotia Society for Mental Hygiene was held at the Lord Nelson Hotel, Halifax, on November 5th. The meeting was addressed by Dr. J. S. McEachern, President of the Canadian Medical Association, on "Physical and Mental Health" and Professor J. S. Glen of King's University reviewed the mental hygiene development of recent years. The President, Dr. S. H. Prince, advocated in his address facilities for early and enlightened treatment of incipient mental ills and provision for periodic mental examination open to every citizen of the province. At the conclusion of the meeting, Dr. F. R. Davis, Minister of Public Health, moved a vote of thanks to the speakers which was seconded by the Hon. G. S. Harrington.

Dr. Allan R. Cunningham of Halifax was one of the visitors to the International Cup Races held at Newport.

The wedding took place at Glace Bay on October 20th, 1934, of Miss Alice Jackson, R.N., daughter of Mr. and Mrs. Lyman Jackson, Glace Bay, to Dr. W. W. Bennett, son of the Rev. Sidney and Mrs. Bennett of Belle Isle, Newfoundland. Dr. Bennett graduated from Dalhousie in 1933, has been practising in Caledonia for the past year, and is now located at New Germany.

Dr. Eric W. Macdonald of Reserve Mines recently visited Dr. and Mrs. D. A. Campbell of Bridgewater.

Dr. O. R. Stone of Bridgetown has returned from a week's trip to Boston.

Dr. and Mrs. J. W. McKay of Montreal motored to Nova Scotia and visited friends and relatives in Halifax, Truro and elsewhere in the province. Dr. "Joe" is a son of the late Dr. J. H. McKay of Truro.

Dr. M. H. Dawson of New York, who visited his old home in Truro last August, was called again to Truro in September owing to the very sudden illness and death of his mother, Mrs. C. M. Dawson, a very highly respected energetic and capable resident of the town.

Dr. F. F. Eaton of Truro has a second son preparing himself for the medical profession, Drummond, who has entered the third year of study at McGill University, Montreal.

Dr. and Mrs. G. Victor Burton and Dr. and Mrs. W. S. Phinney, of Yarmouth, report a very pleasant visit to Boston where they attended the Conference of the American College of Surgeons.

Dr. A. S. Cowie, graduate of Dalhousie, '33, who has recently been taking post-graduate work at Minneapolis, has located at Mill Village, Queens County.

For the early intensive intravenous treatment of syphilis.

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The BULLETIN is delighted to hear that Dr. L. W. Johnstone of Sydney Mines who has been confined to hospital has practically recovered from his recent illness and expects to be home shortly. Mrs. Johnstone, who has also been confined to hospital, is now making good recovery.

Dr. and Mrs. T. H. McDonald of Somerville, Mass., recently spent a very pleasant visit in New Glasgow, at the home of the Doctor's mother, Mrs. J. K. McDonald.

Dr. and Mrs. D. W. Archibald of Sydney Mines have returned from a motor trip through eastern Canada and the United States.

Dr. Hugh Martin, who took a post-graduate course in New York, has returned to Sydney Mines, and is continuing as assistant to Dr. L. W. Johnstone.

Col. F. S. Ford of Toronto was in Nova Scotia in September renewing his old acquaintances in the western part of the province.

Dr. and Mrs. F. D. Charman of Truro enjoyed a two weeks trip to Boston and New York in September where they met many friends and relatives.

Dr. A. M. Arbuckle on the staff of the Waldorf Astoria Hotel, New York, has returned to New York, following a pleasant vacation at his former home in Pictou, N. S.

Miss Jean McKinnon of the Massachusetts Art College, Boston, visited her former home in Truro for two weeks in September. She is the talented daughter of Dr. D. L. McKinnon of Truro and was cordially welcomed by her many friends.

Dr. S. W. Williamson of Yarmouth is Chairman of the local School Board. He had the pleasant duty recently of presenting some sixty-eight pupils with their graduating diplomas, the largest class in the history of the Academy.

Dr. and Mrs. R. C. Zinck of Chester have had as a recent visitor the Doctor's mother, who is now a resident of Chicago.

Dr. and Mrs. G. K. Smith of Hantsport are visiting New York for a month.

Dr. A. F. Miller, Medical Superintendent of the Nova Scotia Sanatorium, Kentville, was the special speaker at a meeting of the Kingston Community Club on October 29th. His address, "The Sanatorium and its place in the cure of Tuberculosis" was illustrated with lantern slides and proved of the greatest interest to the audience.


The home of Dr. H. W. Schwartz, Halifax, was the scene of a most enjoyable gathering on Sunday evening, November 4th, when members of the class of 1911 of the Dalhousie Medical School, eight in number, all residing in Halifax, met for an informal supper and class reunion. It proved a most happy gathering, its enjoyment enhanced by the fact that such a function was

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probably unique in the history of Dalhousie Medical classes, eight of the original members still residing in Halifax after the passing of twenty-three years. Those present were Dr. H. B. Atlee, Dr. E. P. Brison, Dr. and Mrs. Frank Davis, (Mrs. Davis was formerly Dr. Bessie Balcom), Dr. J. M. Murdoch, Dr. J. J. MacRitchie, Dr. H. G. Grant and Dr. H. W. Schwartz.

Dr. and Mrs. J. W. MacIntosh, Halifax, have as their guest, Mrs. MacIntosh's mother, Mrs. R. D. MacLauchlan of Charlottetown, P. E. I.

We regret to learn that Dr. V. H. T. Parker of Stellarton had the misfortune to fracture a bone in his foot and was invalided for two or three weeks.

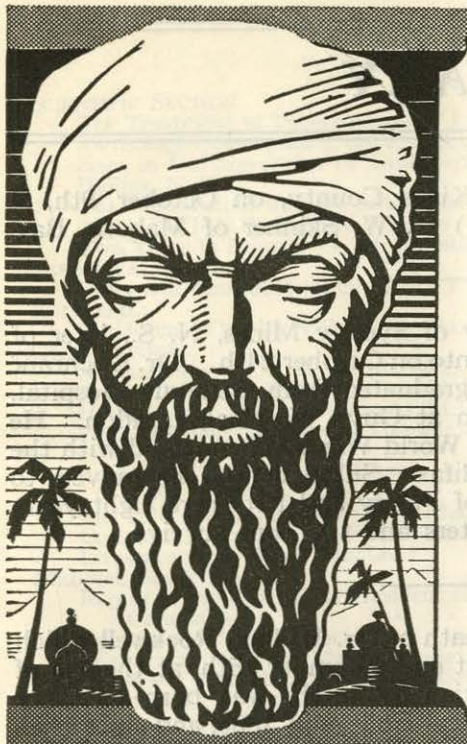
Immunization of school children in regard to diphtheria is being carried out in Moncton. Free clinics are also held for children of pre-school age.

Word has been received that Dr. Walter C. MacKenzie, son of Mr. and Mrs. J. K. MacKenzie, Baddeck, has recently been successful in passing the Minnesota State Board examinations. Dr. MacKenzie is a graduate of Dalhousie, and for the past ten months he has been in the Mayo Institute, Rochester, Minnesota.

#### Hospitals of Nova Scotia on Approved List.

Following is a list of hospitals in this province which are complying with requirements for approval and have been accorded a place on the Approved List of the American College of Surgeons. The asterisk (\*) indicates "Provisionally Approved", or that hospitals so designated have accepted the minimum requirements and are endeavouring to carry them out, but for lack of time or other acceptable reasons, have been unable to do so in every detail:

- Highland View Hospital, Amherst, 72 beds.
  - St. Martha's Hospital, Antigonish, 175 beds.
  - Nova Scotia Hospital, Dartmouth, 500 beds.
  - Glace Bay General Hospital, Glace Bay, 90 beds.
  - St. Joseph's Hospital, Glace Bay, 100 beds.
  - Camp Hill Hospital, Halifax, 150 beds.
  - Children's Hospital, Halifax, 80 beds.
  - Grace Maternity Hospital, Halifax, 102 beds.
  - Halifax Infirmary, Halifax, 185 beds.
  - Victoria General Hospital, Halifax, 252 beds.
  - Nova Scotia Sanatorium, Kentville, 355 beds.
  - Aberdeen Hospital, New Glasgow, 124 beds.
  - New Waterford General Hospital, New Waterford, 50 beds.
  - Hamilton Memorial Hospital, North Sydney, 54 beds.
  - \*St. Rita Hospital, Sydney, 50 beds.
  - \*Sydney, City Hospital, Sydney, 100 beds.
  - \*Harbor View Hospital, Sydney, 35 beds.
  - Colchester County Hospital, Truro, 47 beds.
  - \*Eastern King's Memorial Hospital, Wolfville, 30 beds.
  - \*Yarmouth Hospital, Yarmouth, 70 beds.
- (Extract from *The New Glasgow News*, October 16th).



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## OBITUARY

The death occurred at Cambridge, Kings County, on October 9th, of Mr. E. W. Knolton, father of Mrs. (Dr.) D. W. Skinner of Mahone Bay.

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Dr. Francis J. A. Cochrane formerly of Sydney Mines, N. S., later of Grand Manan, N. B., passed away at Toronto on October 24th. Dr. Cochrane was born at Scotch Village, N. S. He graduated from Bellevue Hospital, New York, took post-graduate instruction at Guy's Hospital, London. He practised at Sydney Mines and during the World War was connected with the Cogswell Street Military Hospital at Halifax. Subsequently, he moved to the Island of Grand Manan in the Bay of Fundy and left there eight years ago for Toronto. His widow, two daughters and two sons survive.

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The BULLETIN regrets to report the death of Dr. William Rockwell which occurred at the Amherst Hospital, Amherst on September 15th, at the age of seventy-five. Dr. Rockwell, a Nova Scotian by birth, was born on May 19th, 1859, graduated from Jefferson Medical College in 1886, and since then practised in River Hebert, Cumberland County, N. S.

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All readers of the BULLETIN will join with the Editorial Staff in a feeling of sincere regret over the death of Mr. I. C. Stewart. Mr. Stewart was President of the Imperial Publishing Company which has published the BULLETIN since its inception and was always most eager and willing to help us in improving format and appearance of it. Mr. Stewart was very well known throughout the Maritimes as editor of the *Maritime Merchant* a trade journal which has done much to stimulate business in the Province. In addition, he was a Governor of Dalhousie University and at all times most willing to give his services for the good of that institution in which he was most actively interested.