

# The Interpretation of Cerebro-Spinal Fluid Findings

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THE study of the cerebro-spinal fluid is a relatively modern development in medicine as compared with that of other body fluids; nevertheless its presence, both in normal and pathological quantities, was known at a time no less remote in medical antiquity than the 5th century B. C. Hippocrates makes no direct mention of this fluid in his writings, yet he certainly knew of its existence, for he tapped the ventricles in a case of hydrocephalus. Then followed more than 2,000 practically barren years during which the ventricles of the brain were regarded more as the abiding place of the soul rather than of the cerebro-spinal fluid. It was not until Haller's work in 1803, and more particularly Magendie's treatise on Physiology in 1825, that a new era was ushered into the history of this fluid. So complete was the work of Magendie regarding its functions as a water cushion and reservoir to regulate the contents of the cranial cavity that few additional functions of any importance have been added to the present day. In 1891, Heinrich Quincke perfected and practiced a safe and simple procedure whereby cerebro-spinal fluid could be removed from the living subject.

The fluid is formed by the Choroid plexuses in the four ventricles, either by secretion or selective filtration. It circulates through the various aqueducts and foramina into the cisterna magna, from which it passes in the subarachnoid spaces downward around the cord and upward over the cortex, to be finally absorbed into the blood by way of the arachnoid villi. A small quantity is absorbed along the perineural lymphatics.

*Composition:* Normal cerebro-spinal fluid is a clear, colorless, limpid fluid which does not clot spontaneously on standing. It contains a few cells, almost entirely lymphocytes. Sugar, in the form of glucose, is present in quite constant quantities. Protein is found in small quantities as serum globulin and serum albumen. Sodium and potassium chloride to the extent of about 0.75%. Urea is always present, but quite variable in quantity. These are the main chemical constituents of the fluid, but, in addition, there are traces of calcium, phosphorus, magnesium, sulphates, cholin and a few other salts. It is faintly alkaline in reaction, and the pressure under normal circumstances is about 130-150 mm. of water in adults when lying down; about 50-100 mm. in children in the same position.

While these factors are remarkably constant in the normal subject, they all vary greatly in pathological processes. Very considerable changes may occur without any appreciable change in the appearance. A faint opalescence, not the smoky tinge of blood, and a slight clot forming in a clear fluid is very suggestive of tuberculous meningitis, poliomyelitis or the more acute forms of syphilis. Opacity of the fluid, in the absence of blood, is indicative of some type of pyogenic meningitis.

The admixture of blood is the commonest cause of a changed appearance. This may be old or recent; pathological or accidental. Blood undergoes

haemolysis in spinal fluid, noticeable in about 24 hours, complete in 4 or 5 days. Old or recent haemorrhage may easily be differentiated by centrifugalization and noting the yellowish discoloration of the clear supernatant fluid. In xanthochromia, or Froin's syndrome, where a portion of the arachnoid space has been shut off from the main reservoir by tumors of the spinal cord or any type of cord compression, the fluid shows a definite yellowish or greenish tinge, quickly undergoes spontaneous massive coagulation and shows excessive protein, but, in this condition, very rarely shows any increase in cellular content.

*Cells:* When estimating the cells, a Fuchs-Rosenthal counting chamber should be used. The margin or error when using a haemocytometer is too great. Counts of 1 to 5 cells per cubic mm. are regarded as normal; 5 to 10 cells per cmm. as somewhat suspicious and above 10 as abnormal. Any cells, other than lymphocytes and an occasional endothelial cell, are looked on with suspicion. A lymphocytic increase is present in all forms of syphilitic involvement of the nervous system, also in poliomyelitis, tuberculous meningitis, and often in disseminated sclerosis. During the acute phase of poliomyelitis and not infrequently in tuberculous meningitis in children, a proportion exceeding 50% of polynuclear cells may be found. In the acute pyogenic types of meningitis, the cellular increase is enormous, composed mainly of polynuclear cells with many large mononuclears. Eosinophiles are very rare and when seen are pathognomonic of infection by animal parasites, usually *Cysticercus*.

*Sugar:* This is normally present to the extent of 0.05% or 50 mg. per 100 cc. It is generally increased in diabetes, encephalitis and sometimes in extra cranial infections which give a polynuclear leucocytosis. It is reduced or absent in all forms of meningitis; moderately reduced or sometimes normal in syphilis, and normal in poliomyelitis. The qualitative test is usually sufficient and can be carried out with Fehling's or with Benedict's reagents. Care must be exercised as to the relative quantities of reagent and fluid used. One cc. of normal fluid will completely reduce about 0.25 cc. of combined Fehling's reagents or 1 cc. of a 1 in 10 dilution of Benedict's qualitative reagent.

*Protein:* These, in the form of albumens and globulin, are found normally to the extent of 0.02 to 0.03%. In syphilitic lesions the rise of globulin is rather striking, but in practically all forms of Meningitis, the increase is due mainly to the serum albumens. In tuberculous meningitis it may reach 0.2% and, in the epidemic form, much higher. The clotting of clear fluids is due to the presence of fibrinogen which accompanies the general increase in protein. Systemic conditions do not affect the quantity of protein in the fluid unless these systemic diseases produce a cerebral oedema, when, as in Uraemia the quantity may be increased.

*Chlorides:* These are remarkably constant at a level of 0.75%. This is diminished in any acute infection of the meninges, particularly tuberculous. Chloride retention is strongly suggestive of renal disease.

*Urea:* This runs parallel to the amount present in the blood. It is somewhat elevated in most cerebral lesions.

The above, briefly stated, are the outstanding clinical conditions in which the individual constituents of the Spinal fluid may show marked variation from the norm. In many diseases that affect the central nervous system these changes vary so much according to local pathological features that it may be useful to consider some of the findings in the specific diseases. Inasmuch as

the most important ones are inflammatory in nature, a brief resume, of the routes by which infection invades the central nervous system is included.

In the great majority of cases infection arrives either via the blood stream or the lymphatics which surround the spinal or cranial nerve trunks. Blood stream infections may result in single or multiple lesions according to whether the general condition is pyaemic or septicaemic in nature. Most chemical poisons are introduced by the blood stream as are the "toxins" which cause the cord changes in pernicious anaemia. Lymphatic infection is not so common, but many of the cases put down to direct extension from the nose, and other cranial foci are, in reality, lymphatic infections carried along the olfactory or other nerves. The toxins of tetanus and diphtheria are lymph borne. Myelitis or Gasserian neuralgia may be due to lymphatic infection from an infected pleura or tooth. Direct extension undoubtedly does occur as in cases of otitis media, mastoiditis, Pott's disease or fracture of the base.

*Neuro-Syphilis:* The etiological agent most frequently encountered in lesions of the central nervous system is the *Treponema pallidum*. This organism has been demonstrated in the cerebro-spinal fluid during the "secondary" stage of syphilis as well as in the brain tissue in tabes and general paresis. The commonest time of onset of symptoms is 3 or 4 years after the primary infection, and usually consists of a perivascular lymphangitis which goes on to gumma formation, either as a gummatous meningitis or gummatous arteritis. *Tabes dorsalis* is a more chronic lesion, located mainly in the lower afferent neurons, and, roughly speaking, appears after a lapse of 10 to 12 years. General paresis is a later but more extensive manifestation of syphilis.

These various degrees of acuteness in luetic lesions of the nervous system are usually reflected in the changes brought about in the cerebro-spinal fluid. In the most acute type—gummatous meningitis—the fluid may be opalescent with a marked pleocytosis, 400 to 500 per cmm. mostly lymphocytic, but with some large mononuclear and polynuclear cells as well. Globulin is increased and the Kahn or Wassermann test is positive. Gummatous arteritis differs only in degree, the cell count being usually lower but with a higher percentage of lymphocytes, reaching 80 to 90%. Sugar is generally decreased in these forms. In tabes one finds a clear fluid showing a cell count between 50 and 150, composed most entirely of lymphocytes. Globulin shows some increase and the Kahn test is nearly always positive. The blood generally shows a positive reaction as well as the Spinal fluid. In general paresis, the picture is much like tabes.

By far the most valuable test for differentiating these various types of luetic infection is the Langé colloidal gold test. Though the chemical basis of the procedure is only partially understood, seeming to depend on the relative balance of globulin and albumen in the fluid, the results are exceedingly sensitive and, like any sensitive test, must be carried out with great care as to the purity of reagents, cleanliness of glassware and accuracy of technic. Very briefly, the test consists in the precipitation of a colloidal suspension of Gold by means of ten gradually increasing dilutions of spinal fluid in an electrolyte. Complete precipitation is represented by the numeral 5 and complete absence of precipitation by 0. Various degrees of partial precipitation are designated by the intervening numerals. In general paresis we get complete precipitation on the left hand side of the series, giving a curve like 5555543100. In tabes dorsalis the curve is strongly to the left but lower—2332210000—being typical of this condition. In the gummatous types, the curve is shifted more to the

right such as 1123321000. Blood in visible quantities renders this test practically useless. Colloidal substances other than Gold may be used, such as benzoin or mastic, and while they have not the delicacy of gold, they demand less care in technic and may be carried out in small laboratories where the colloidal gold technic would be too cumbersome.

A luetic patient should never be pronounced cured until the spinal fluid has been examined and found normal, if, indeed, they can ever be referred to as positively cured. Probably "inactive" would be a better term, as experience has shown us that practically the only times we are sure a cure has been effected is when the patient has acquired a new infection. This view however, is, I think, unduly pessimistic, as the late parasyphilides which we see to-day had their inception often more than a decade ago, when the treatment of syphilis was neither as intensive nor as thorough as it is to-day.

*Tuberculous Meningitis:* Next in frequency to *Treponema pallidum* comes the tubercle bacillus as the inciting cause of lesions in the central nervous system, and infection is invariably secondary to a tuberculous focus elsewhere in the body. The character of the fluid in this condition is well known. Under pressure, clear with fibrin clot on standing. Chlorides reduced to 0.5 or 0.6%; sugar reduced or absent; globulin increased and a cell count of 50 to 250 per cmm. composed very largely of lymphocytes. It must however, be remembered that while certain organisms as a general rule elicit a definite or distinctive cellular response, the type of cell reaction depends more on the acuity of the process than on the causative organisms. I have seen several cases where tubercle bacilli and no other organisms were demonstrated in purulent spinal fluid which showed a very high pleocytosis of the polynuclear type.

*Pyogenic Meningitis.* May be caused by a variety of organisms, chiefly the Meningococcus, Staphylococcus, Streptococcus, Pneumococcus and other bacteria. The epidemic form of meningitis is not usually included with the true pyogenic types but as it differs from them mainly in its epidemiology they are all grouped together. The diagnosis, from a bacteriological examination of the spinal fluid, is usually quite easy. Often in the epidemic form one sees abundant pus cells but no bacteria. This, in the great majority of cases, is due to the ease with which the Meningococcus undergoes autolysis or is destroyed by leucocytic ferments. Such a fluid, following a negative examination for tubercle should always be regarded as of the epidemic type. Further more, the spinal fluid does not always give a true picture of intra-cranial conditions. Basal meningitis may obstruct the foramina of Magendie and Luschka—in which case the patient's spinal fluid, as obtained by lumbar puncture, may be clearing up; while he has, intra cranially, a gradually developing "pyogenic" hydrocephalus.

One form of meningitis which is rather uncommon but interesting is caused by *B. leptothrix*, a pleomorphic organism showing both cocco-bacilli and long thread like forms in the spinal fluid, which, in the terminal stages, often becomes so thick that it will hardly flow through a large bore needle and has a characteristic fishy odor. Out of six or seven cases seen, all but one were associated with otitis media and all were fatal. In all forms of meningitis the colloidal gold curve shows moderate precipitation to the right of the luetic curve such as 0011122321.

*Meningism:* This term, and serous meningitis, are mainly clinical entities in children, which, apart from a slight increase in pressure, produce no appreciable changes in the spinal fluid. They are seen most frequently in the

early stages of infectious fevers, as apical pneumonia, before the disease has become definitely localized in the special organ in question, or in otitis media. Sometimes there is a mild internal hydrocephalus caused by adhesions around one or more of the foramina.

*Brain Abscess:* This is seen as an end result in some cases of septicaemia, pyaemia, skull fracture, infectious processes in the cranial bones or suppurative lung conditions. If the abscess is superficial, a septic meningitis usually supervenes, but if deep seated, the fluid may show an increased pressure with minimal changes in its various constituents. Repeated lumbar punctures may yield valuable information, as well as clinical signs pointing strongly to an intra cranial lesion with a normal fluid and at the same time a definite polynuclear leucocytosis.

*Anterior Poliomyelitis:* The findings vary according to the stage of the disease. In the all important pre-paralytic stage we find a clear or slightly hazy fluid showing an increase in pressure with a cell count of from 25 to 150 per cmm., composed mainly of polynuclear cells with a varying percentage of mononuclear cells; the earlier the stage, the higher the former. Globulin is slightly increased. Sugar is normal, which helps in the difficult differential diagnosis between tuberculous meningitis. The Lange curve shows only slight precipitation, 0112210000 representing the usual graph. A fibrin clot usually develops after standing some hours. When the paralytic phase has supervened, the cells often decrease in number and become largely of the lymphocytic variety. Globulin, however, continues to increase as the disease runs its course.

*Encephalitis:* In the lethargic type one usually finds a moderate increase in pressure, cells and globulin; sugar is normal or increased in quantity; blood is sometimes present in moderate quantities. In the secondary types, such as the toxic encephalitis which sometimes follows scarlet fever and other acute infections, there is usually little or no change in the fluid, depending on whether the causative virus or its toxin is responsible for the cerebral lesion.

*Cerebral Tumor:* All findings in tumors of the brain depend on the site and extent of the new growth. If the foramina are obstructed, very little fluid can be obtained. Pleocytosis occurs if the tumor invades the meninges and brain surface. Pressure may be enormously increased. Other findings are too variable to be of any diagnostic value.

*Thrombosis:* The reaction here depends on the etiology of the lesion, whether syphilitic, secondary to otitis media, or other infection—conditions which have been dealt with elsewhere.

*Oedema:* Cerebral oedema is usually associated with a similar condition elsewhere in the body, but owing to the rigidity of the cranium, it transcends all other forms in importance. Pressure, protein, urea and chlorides may be increased, depending on the cause of the oedema, but lumbar puncture is of greater value as a relief of symptoms than as a diagnostic measure.

*Myelitis:* Often luetic in origin, this condition may, from its specific etiology, show pathognomonic changes. Otherwise, little diagnostic aid may be expected from the spinal fluid.

*Multiple Sclerosis* The fluid is usually clear and under normal pressure. There sometimes is a slight lymphocytic pleocytosis, slight globulin increase and not infrequently a Lange curve of the paretic type, though this disease is not of syphilitic etiology.

In practically all other conditions which show neuropathological changes, such as mental diseases (excluding those of luetic origin) herpes, tetanus, post diphtheritic paralysis, epilepsy, alcoholic psychoses and the familial or congenital types of nervous diseases, the spinal fluid changes—if any occur—are too indefinite to be of any value.

These descriptions of the spinal fluid changes which occur in diseases of the central nervous system contain little that is particularly new and less that is original. In only a few of the lesions do we find any feature which is definitely pathognomonic. Too much should not be expected of the Laboratory in such cases where the findings only furnish one sign among the several which enable the clinician to arrive at a correct diagnosis. The writer's only excuse for such an article is to assist the general practitioner, for whom a Laboratory is available, to better interpret the more obscure findings where no features of a pathognomonic character have been demonstrated.

The general practitioners will appreciate this paper, as we do Dr. MacKenzie's generous response to our request for it.

E. S.

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### The State Medicine Problem.

The article on this subject in this month's issue will not be the first nor the last that Journal readers will see. Arguments pro and con are to be seen in the publications of every medical society. In the hospital we see only the richest and the poorest receiving the best medical and surgical attendance, while the middle class, the "poor but proud", and the rest of us, muddle along without calling a doctor till it's too late, and spend the price of a couple of hard-earned vacations to pay for one illness. The young medical man has paid, or has had paid for him, the price of at least six years' intensive teaching and study; has worked hard for no pay (even a labourer's) at an internship for one or more years; then, at the peak of his knowledge, can earn but a precarious living, till gray hairs and angina pectoris have made him a more trustworthy object to consult. When patients do come, he cannot afford to take holidays or post-graduate study, 30% of his bills are unpaid, 30% of his patients he expects to treat for nothing. The cost of proper medical care is going up, and the doctor is getting less for more knowledge, more work, more study.

Whether these problems are to be settled by State medicine, or whether they will be settled at all, we know not. Nevertheless, it behooves the medical profession to be ready to take the lead when the issue becomes a political one, as it did in England. Mr. Cathie's article shows up what has happened in England, despite the medical profession's bitter, but disunited, opposition.

*(Medical Journal University of Toronto).*

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In 1605 there was organized at what is now known as Annapolis Royal the "Order of Good Cheer." It was intended to keep up the spirits of these pioneer settlers. In recent years a Community Club was established in this historic town. This very worthy club or organization now carries the ancient name, the "Order of Good Cheer."

# The Evolution of Public Health\*

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*Through the Ages one increasing purpose runs.*

## I

MAN has ever contended against the agents that seek his destruction. That he emerged into the open, where he has had some chance for development, is a tribute to his fighting powers, and perhaps more to his having been given an intellect along the way. Without this instrument he must inevitably have perished. With it he became supreme over the beast creation. The subtle judgments of this new reasoning animal were more than a match for the ferocity of the mammoth brutes, which dragged one another in the slime and would quickly have wiped out the last trace of this new challenger of physical force. Man's victory was assured, but it was not complete. Many of the animal creation could be turned into allies; others were harmless; but there were multitudes which retained their malignity and set about to do by stealth and subtlety what their big brothers had failed to accomplish by physical strength. These were the unseen animals, or, as they are now known, the germs of disease. It took man's intelligence a long time to grasp the character and might of this unusual enemy. In the wrecks about him, where Death seemed often to stalk unhampered, he read the existence of a cause, but could not discern its nature. He invented hypotheses to explain his data, and naturally the simplest and easiest of comprehension became the vogue of the time. Hence primitive people laid their affliction at the door of their deities. Disease was the scourge of the gods for the sins of the people. The form of cure depended on the religious tenets and practices of the sect afflicted. It might be offering of sacrifice, or an extravaganza of propitiation, designed to flatter and cajole into benevolence the particular god invoked. Many of the numerous superstitions of medicine had their origin in this way. Naturally they took many shapes. Evil spirits, witches, fairies, devils—all came into the field as the causative agents in disease. Man's insatiable hunger for finding a reason for phenomena had to be satisfied somehow, and, the evidence of the senses having failed, mystery must be explained by mystery. Whoever has a rabbit foot tucked away in his clothing to protect him from disease and bring him good luck, quite unconsciously reflects a type of preventive medicine thought good in those times. To-day, there hover about the medical profession groups of monntebanks and fakirs who claim to cure or prevent disease by using

\*From the Dalhousie Review, April, 1932.

fantastic methods. These are the professional descendants of the witch-charmers and dung-eating therapeutists of a fairly remote antiquity. Their methods are more modern and plausible, but their ignorance is equally profound. The old time medical plagiarist had often the sincerity of unattainable knowledge. The modern charlatan has the sophistry which distorts true knowledge and the avarice to turn the practice to monetary gain.

Throughout the long evolutionary process there were always outstanding searchers after the truth. The crumbling of civilizations and the social and political upheavals therefrom made some wide gaps between the torchbearers of medical knowledge, but they never lost sight of one another. Garnering the good, eliminating what experience proved useless, went on with a steadfastness and an erudition which showed that the greatest minds were bent to the task of plucking out the mysteries of disease. Hippocrates and his school laid down as fundamental the observation of phenomena and the study and interpretation of data, generalization and the building of principles from the process.

Thus began and thus grew the method of inductive reasoning to which science owes all it has. It is the proud boast of medicine that induction had its birth and its application in the minds and hands of men who were endeavouring to understand the ills that flesh seemed heir to, and bring their skill and intelligence to repair broken bodies, to save life and alleviate the sufferings of mankind. This work, begun four centuries before Christ, never lost its essential beauty. It was the medical Ark of the Covenant, and while the centuries have wrought many alterations in its structure, changed its appearance by many additions and embellishments, it harbours still the great soul of the healing art. Whispers may still be heard in such words as Sir Astley Cooper's: Nothing is known in our profession by guess; study of data from whatever source available, and wise interpretation, are the only true basis of legitimate theory or justifiable action.

Evolutionary processes waste no time watching the clock. It is a long call from Hippocrates to Pasteur and Lister—about twenty-three centuries. But the latter were offsprings of the Hippocratic system, appearing perhaps long after the time was ripe. Their coming was inevitable, if tardy. They were not the sons of the bond-woman, but of the free parents of scientific endeavour; and they changed the whole outlook of medicine and the human race. They found disease to be for the most part the result of the efforts of the lower forms of animal life to destroy the higher ones. Man's intelligence had subdued the visible brute creation, but till now had no knowledge of the invisible. Pasteur plodding steadfastly on, experiment after experiment, began to weave a net about the hidden foe and, with the aid of the much improved microscope, gradually decoyed him into the field of vision. Human



eyes then looked for the first time on the germs of disease. The old masters' dicta of observation and experiment were justified at last. A great truth had been born to the world, which would be to all the people. Lister followed up with the application of the new discovery to surgery. One disease after another yielded its causative germ to the prying eyes of investigation. The list is a long one, and the end is not yet. A great department of biological science arose from this discovery, and the saving of human life is quite beyond reckoning. Lord Moynihan estimates that Lister's and Pasteur's discoveries have saved more lives than "all the wars of all the ages have thrown away." Late in coming, this great truth was pursued through the centuries. Observation on communicable diseases brought scientific men close to the secret. The pillar of light through the long shadows was observation and investigation. Often dimmed, entirely lost sometimes, it reappeared again as some new discovery or invention brought encouragement and inspiration. Even what we now know as preventive medicine began to assume some form before the little army of microbes was marched up to defend and stabilize it. These efforts in prevention of disease were necessarily weak on account of the lack of essential knowledge of the malady itself. This was evident in the futile attempts made to stem the tide of the plagues which more than once overran Europe. Some fairly good sanitation was practised, however, wherever general intelligence prevailed, and even among the Israelites, who were not noted for scientific achievement, we find the health laws laid down by Moses during the exodus are models in many ways of sanitary common sense. Probably his previous attainments in the wisdom of the Egyptians served him well in guarding the health of a whole nation on a forty-year march. Compared to the work of Lister and Pasteur, however, all the discoveries and advancement preceding were

.....but seed,  
Of what in them is flower and fruit.

## II

The gap between Hippocrates and Lister was about twenty-three centuries. Between Lister's first application of the new truth to surgery and this present year of grace is a period of about sixty-five years. Comparisons are said to be odious, and an appraisal of the achievements of these years might give the creations of the wide stretch of centuries a shabby look. Besides, it would draw one well beyond the scope of this article. Art is long and life is short. Scientific and social progress move forward on its whole front; and until all the constituent units are doing their part, there is sure to be delay. Whether civilization has now a united front and is keeping step, may be debatable; but there is little

doubt that the advancement in medicine and its application to public health and to the whole course of social legislation since Lister's day has had nothing to approach it in the history of the human race. Only in these years has the world shaken off the old philosophy of medicine which accepted disease as inevitable and its cure as the only concern worth while. How could they set up defence work against an enemy whom they could not see, and whose habits and fighting methods they could not understand? Their preventive measures were, therefore, built upon the broadest inferences, and, while useful and salutary, they fell sadly short when real emergencies arose. Again, one wants to acknowledge that a few real prophylactic discoveries had been made. Jenner made the simple enough observation that the dairy-maids who had had cow-pox did not take small-pox, or, if they did, only in a very mild form. From this came vaccination, and the control for ever of this most virulent disease. Other similar observations on the habits of certain diseases brought useful results in their treatment. It is only, however, since the discovery of micro-organisms that the scientific rationale of those procedures have been fully understood, and the relation of cause and effect placed on a permanent basis. The medical world was well versed in the observation and study of the symptoms of disease. What doctors call clinical methods had about exhausted themselves. A great array of observed phenomena and pathological data had to be linked up with their essential causes, and the entrancing call of a new world where many things would be made clear, drew investigators from the ends of the earth. Some, who at the beginning scoffed, remained to pray and labour in the new field. One discovery after another was almost greedily snatched up, and a new literature on the science and art of medicine, curative and preventive, was placed at the service of mankind. Research, a term of comparatively recent times, has become the watchword of every modern pilgrim in scientific endeavour. Everywhere over the world, the silent untrumpeted searcher reaches further and further into the mysterious realm beyond the ordinary ken, meets face to face the myriad hordes which have so much to do with the ailments of the flesh, appraises their capacities for good or ill, determines the agencies that can curb them in their worst moods, and brings back to the world of men the dominant power of knowledge and the sword of the spirit of scientific truth.

Research, too, is giving us an ever increasing knowledge of the chemistry, normal and abnormal, of the body cells. The unit of life, the cell, is therefore pretty carefully scrutinized, and has yielded many secrets which are of much value in studying the habits of disease. Its great mystery, that of life itself, it still guards jealously, and within its fastness it will probably continue to observe the speculation and theories of men who seem to have reached a barrier they may not pass.

What we call public health to-day is the direct offspring of our fuller knowledge of the cause and spread of disease. Preventive medicine, not much more than a pious wish with the ancients, now rests on proved data, and its usefulness reaches the people through many channels. The doctors, while engaged in the business of curing disease, could keep their secret rites within their cult with some warrant. When research showed them what many of these diseases were and how they could be prevented, a new era dawned. The application of new preventive measures depended upon the co-operation of the general public, and this in turn upon an intelligent conception of the why and wherefore of their actions. They were not likely to boil the water which was infecting them with typhoid fever, if they did not know the germ of the disease was probably present there. They were not going to bother about protecting themselves from pulmonary tuberculosis if they did not know a living germ was the cause and could easily be transmitted to themselves. Legislation, the crystallization of public opinion, could not be effective until the men and women of the nation could think in the terms of the new doctrines of health. Education was, of course, the agency to prepare the way for the coming of public health laws, and the numerous organizations that are now active throughout the length and breadth of the land.

Over the whole world the dissemination of knowledge of public health since Lister's day has been striking, although eminently logical and inevitable. The democracy of education, the widespread power of the press, the public platform and the numerous organizations of both Church and State, which the new truths quickened into being, carried the word of preventive medicine to all the people. Governments began to feel the impelling force of an awakening that came from the intimate life and homes of the town and countryside, and breathed the spirit of a mighty truth. The old horrors of hospital gangrene from infected wounds (rotting) had gone; child-birth fever, which had so often closed the eyes of the young mother to her offspring and her new happiness, was banished for ever as the accursed thing it was. Surgery, strong in a security it never knew before, went forward to save millions of lives. Medicine laid aside much of its old and useless therapeutics, and, moulding the new truths to its use, not only placed curative methods on a rational basis, but practically wiped out a number of diseases which formerly took a big toll of human life. Dr. Gorgas went down to the fever infested zone of Panama, and there performed the miracle of changing a land that reeked with pestilence and death into a veritable health resort. The erstwhile invisible enemy was dragged under the microscope, its secrets were disclosed, and effective measures were taken to guard the human species from attack. President Roosevelt's engineers and his army of

workmen followed in the wake of this strange new light, and the great canal became a fact. The bones of the French workmen, who in less enlightened days essayed the same great undertaking, bore testimony to the tragic contrast between the old empirical methods of guarding public health in the tropics and the new ones based on scientific research. Such striking examples of the new sanitation made a profound impression on the public mind. Governments began to establish health departments and encourage research. Voluntary organization sprang up in all directions. Economics came into the picture, and the dictum that *a nation's health is a nation's wealth* began to have a real meaning. The old order had changed; the new had succeeded; and God had indeed fulfilled Himself in beneficent ways.

While to-day in every civilized country there is activity in the control of all diseases, it is to the so-called communicable ailments that the most persistent efforts are directed. They come into our every-day life, and are more susceptible to control by health laws and regulations. One of the familiar examples is tuberculosis of the lungs, or what was called consumption before we knew the causative germ, *the bacillus tuberculosis*. As consumption, it was almost invariably fatal to the person attacked, and among the members of a household almost as certain to spread. Ignorant of the living germ, ignorant of the value of fresh air and sunshine, they closed their windows tight, drew down their blinds creating inside an incubator for the propagation of this white plague, and within the memory of many of us, one brother or sister followed another until the tragedies were told in the increasing graves of that household:

The pity of't, Iago; Oh Iago, the pity of't.

We can cure many now, and with sufficient equipment we can control the spread of this disease. In our own country it is the biggest job of both government and voluntary departments of health. Governments no longer close their eyes to their responsibilities, and the public health budget is an ever increasing one. The medical profession, more than at any previous time in its long history, is co-operating with public health bodies. Research is almost every year placing some new agency in the hands of our health officers to increase their effectiveness in the field. It has much to do still, for there are yet mysteries to unravel. Cancer is not solved, and there are others too. But the future is bright with promise. We must go on, because, in our complex civilization, a reasonable control of disease is fundamental. It is vital and national, and in its close analysis goes to the root of our best conception of democracy.

## III

While it is quite true, as Oliver Wendell Holmes observed, that "our fairest forms are never reached", yet health departments are entitled to ideals, and the one that best expresses their summum bonum is that the full benefits of modern medical science, curative and preventive, should be easily accessible to every man, woman and child in our country. Short of this, there is work to do. Two powerful enemies of this consummation in our Dominion are geography and poverty. The latter has no geographical boundaries, and has to be reckoned with throughout the world; the former obtrudes itself most stubbornly in the newer countries like Canada where the frontiersman still has his work to do, and where the ever widening and thinly spreading colonization of our broad tracts of prairies and wilderness must continue to create perplexing problems of a social and economic character. Even in our own sea-girt Nova Scotia we have far too many villages and settlements which are receiving but a tithe of what modern medicine has to offer. They are the places remote from the medical centres. They have both the factors mentioned to contend with. Many of the people in these villages are poor, and only in severe illness are the services of a doctor sought. A thirty or forty mile trip of a medical man costs money, and under our present system he has no source of income other than his fees, for his own and his family's support. Making all allowance for the traditional and very real charity of the medical profession, it is too much to expect that such service can be more than a partial effort while both doctor and patient suffer from an economic inhibition, the one disturbed by big inroads into his professional time with at best but the hope of inadequate remuneration; the other fearful of the financial stress this unexpected and unprovided expense is sure to cause the family, resulting too often in a long put off call when it is too late to do any good. Travelling clinics and Government subsidized doctors are to some extent meeting such conditions in the western provinces, where, of course, the great distances from the centres accentuate the problem of adequate medical service. Red Cross and other organizations do their part, and do it well. Government medical health officers and nurses cover what ground and labour their number and physical resources will permit; but, with it all, one is obliged to recognize that there are still many of our people who are not getting the service modern medicine and surgery have to offer. State medicine has been suggested as a remedy, and there is much to be said for combining a modified State service with private practice, the one being supplement or complement of the other. In fact, government health departments, as at present constituted, are capable of development in the direction of State medicine. For instance, in Nova Scotia the pathological laborator-

ies belong to the province and their two departments, each under a skilled expert, render a free service to the whole province. We have, therefore, a modern scientific centre closely linked with the hospitals and doctors. Tissue examination, the last to go on the free list, is designed to strike a blow at the increasing incidence of cancer by enabling doctors to make an early diagnosis. In communicable diseases the laboratories are a constant centre of appeal. It is here the hidden germ is isolated and studied, and here, too, are made the numerous vaccines and sera which research has proved useful in curing and combating these diseases. Clinical data coming from the practitioner in the towns or countryside are linked up with the evidence of the microscope and the dicta of biological chemistry; and so far as human effort can contrive, the patient is given his best weapons of defence and cure. In a word, public health organization unites the powers of the clinical and the strictly scientific, and focusses them on the patient himself. We can find no more striking example than this of public health organization working at its best.

More than half the efforts of health departments have to do with prevention of disease, or what we call preventive medicine. It is the offspring of the discoveries of Lister and Pasteur. In many ways it is the most vitally significant activity in our modern life. It has placed the medical art on an elevation it never knew before, because it is more blessed to prevent than to cure. Here it is often true that the patient must minister to himself. He must know something of the subtleties of diseases, that he may learn to avoid them. He must know of the part sane living, hygiene and a proper adaptation of the mental and bodily forces bear to the various phases and exigencies of life. He must know that without good health there is no happiness, and without this element, community and national life become a dreary and purposeless business, a suitable breeding ground for those social disorders which like rank weeds spring from the unhealthy soil of a decadent nation. He must know, finally, that he is practising a high type of patriotism when in his community he maintains by precept and example the highest standards of public health. And the health departments must help him to do all this. Their job is to lead the way by advancing health education, and by placing within the people's reach those agencies which science and economics have evolved and perfected to prevent the spread and virulence of disease. They may approach the many sided problems in as many different ways, for methods must vary often to meet the relentless demand of circumstances; but the obligation itself is fixed and definite, and its execution alone is the warrant for the efforts of Governments in creating effective health machinery at the public expense.

Health and Education, as departments of government, must start hand in hand and travel a goodly part of the way together;

in fact, they should always be within calling distance, with the universities and schools sending out their latest discoveries to help to illumine the way. Health education properly woven into the work of the common school will do more in moulding a practical and effective community interest in the things that make and keep people well than any amount of effusive and, as it often is, extravagant propaganda. And I am far from frowning upon public platform instruction, so long as it is well measured, simple and practical. Mental indigestion and morbophobia may be more serious than german measles or infected tonsils and, therefore, such simple language as that used in the Sermon on the Mount is more fitting on the health rostrum than thundering eloquence or highly embellished illustration. Prince Edward Island has combined public health and education under one Ministry, and in so small a province the fusion of the two is as logical as it is economical. Health bureaus over the continent keep a pretty constant stream of literature going. Radio health talks by men devoting their lives to this work, and the innumerable demonstrations promoted by various clubs and other organizations, must surely be playing an important part.

Much of the force of preventive medicine is expended in devising and enforcing methods of starving off disease micro-organisms. Feed them well, they prosper; and birth control does not enter the calculations of those tiny mischief makers. They multiply with a rapidity which would speedily settle the matter of filling the earth, were their fecundity ever to reach the paragon of animals himself. Their increase of appetite, as in Hamlet's taunt, "grows by what it feeds on." Consequently we have epidemics, and the world has often stood aghast at the terrible havoc wrought. The influenza epidemic of 1918 is the nearest to our time, and it was a mild affair to some of the widespread scourges of communicable diseases recorded in history. We may still have epidemics, for there are a few diseases yet whose subtleties we do not fully understand, but we are gradually starving them down and weakening their virulence. And we are doing this by isolation and the use of vaccines and sera. A lot of the machinery of public health has to do with isolation; all our quarantine laws and regulations are directed to this end, and both our federal and provincial health departments are exercised to the full to make this effort a vitally national one. The disease is tied up at our ports of entrance; wherever it appears, a cordon is thrown about it in the way of a rigid quarantine and its activities, thus balked and limited, become feeble and are finally under control. Organization working in every detail means as much in such a crisis as that which makes available the physical resources of a country to repel the invading enemy.

The present war on tuberculosis has nothing more effective than isolation. We have no drug remedy, and vaccines and sera

up to the present have been practically negative. As far as cure goes, there is little more to rely on than nature's resources of fresh air, sunlight and good food, and of course, the regulation of the patient's life by competent nursing and medical supervision. Surgery helps in certain cases. We can cure some patients and improve a great many, and this is all worth while; but if it were all our public health efforts could accomplish, we should be only marking time, picking up the wrecks and endeavouring to repair them, while the vicious agents which caused them went rampant through the land increasing their fury and adding to the toll of victims. But we can do more. Treating and curing the infected person is good, but preventing him from transferring the contagion to others in the home or in the community is better. Many cases cannot be cured, but they can all be isolated and controlled so that the insidious germ may find no new soil for further growth. It must therefore be starved out by cutting it off from its fresh supplies, and herein lies the biggest job of our public health organizations. Co-operation of the public is essential here, with all that lie behind it in the way of education, good sanitation and intelligent zeal. Governments supply certain essential machinery when they build and equip sanatoria and tuberculosis annexes, but despite these provisions many patients must be cared for in their homes, and the services of trained medical clinicians and nurses are a necessary part of the organization.

#### IV

Of the utmost importance in the provincial organization is the local general hospital. They have sprung up all over the Dominion, and we have in Nova Scotia, apart from the three distinctly Government hospitals, some twenty-three of them. They are the response of the public to the conviction that sick people are likely to be more comfortable and have a better chance of getting well when placed in environment specially designed for the purpose and under the care of persons whose training and wisdom fit them for the work. Many of these hospitals came into being as the result of much effort, and even sacrifice, and they may thus be said to represent the very best type of Christian and humanitarian sentiment in their constituencies. They rank among the most encouraging signs of our times, standing as they do for a consciousness awakened to the call of advancing science as applied to disease, and a deep seated impulse to help those who are unable to help themselves. These hospitals have done well so far, but they are capable of further development. The hospital should become the health centre for the community it represents. Its graduates are peculiarly fitted to meet all the requirements of nursing service in the district. Free clinics, including dentistry, should have their



base of operations just here. No ailment need be lost sight of in the scope of the community hospital.

One's judgment is that, potentially at least, they are the most important health units in the province. They have not all as yet developed a provincial or national consciousness which would link them together in a great chain of units devoted as much to prevention as to the cure of disease. There is little doubt that this is coming. Already some of the hospitals are giving practical evidence of an awakening in the building and equipping of accommodation to take care of their own tuberculous patients. The idea once grasped by the local general hospital, that it is a real vital part of the whole system of public health, will give it a deeper inspiration and a wider vision of usefulness, without disturbing in the least its present measure of service. Its claim on Government funds, too, would be greatly strengthened. Such an awakening is indeed a "consummation devoutly to be wished," particularly in Nova Scotia, where our limited revenue will stand only a certain strain, and where, therefore, the avoidance of overlapping and the adoption of the wisest co-operation of all public health resources, voluntary and governmental, are essential to any worthy measure of success.

Both federal and provincial Governments are entrusted with the administration of public health. The Department of Pensions and National Health at Ottawa has broadly to do with such health matters as touch the Dominion as a whole. Hence national quarantine regulations, national research laboratories, and the like are the distinct function of the federal department. The regulations and enforcement of international health laws and the inspection and care of immigrants are also a part of the department's function. But the most intensive health work, as in education, comes under the provincial Governments. The official machinery seems to be reasonably ample in the provinces. Keeping them all working to the best advantage is a bigger problem perhaps than the creation of new units. From the Minister of Health to the Municipal Health Officer in the towns and country there is a sequence of interest and duties that never allows them to get far apart. The Government and municipal health officers, including the public health nurses and municipal boards, are the advance corps. They must keep well to the front, in actual touch with realities, and see that the health laws are being observed. The Minister's department has the responsibility of endeavouring to co-ordinate the various health activities in the province. The Government and local hospitals are his concern, as well as inspecting and reporting on the sanitary conditions of the jails and prisons. The whole system is well designed to reach to the haunts of disease and its causes, and perhaps is as good as can be devised.

From even such swallow-flight observations, back through the years, it is easy to see how well equipped our generation is over all its predecessors for carrying on the only war civilization should permit, namely, the war on disease. Wisdom may still lag behind knowledge, as the increasing incidence of venereal diseases in our time seems to suggest. But sooner or later, they will go hand in hand and the world will be the gainer. There is more beauty in the victories of peace than in those of violence. There are better ways of utilizing the glorious things of science than choking human beings with poison gas and blowing their bodies at the moon with high explosives. Surely the "common sense of most" must ultimately prevail. If we must fight, let us set our faces against the three arch-enemies, disease, poverty and squalor; against those conditions in our social and economic life which breed misery and discontent, and against the things which beset and hamper the full mental and physical development of the baby born to the poorest and most obscure parents in the land. His arrival in this world involves the obligation of nature and society to see that he has a fair chance. We were never so well equipped as now to make our pilgrimage a brighter and better matter. Governments have grave responsibilities in this great endeavour, but their currents flow from the people, and the stream rises no higher than its source.

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**J. G. Fitzgerald, M.B., M.D., Tor., LL.D.**

The new Dean of the Faculty of Medicine, Toronto University, is Dr. Fitzgerald so well known to all who attend meetings of the Canadian Medical, Canadian Public Health and Canadian Tuberculosis Associations. He is the Director of the School of Hygiene and of the Connaught Laboratories. On the subjects of Health, Hygiene and Preventive Medicine he has written widely and is a recognized authority. In 1930 he was appointed to the Health Committee of the League of Nations. He is 50 years of age.

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"We are so apt to enthrone in the sunshine of our memory the apparently striking success and to allow the many failures to slip into the quiet shadows of forgetfulness." (Prof. D. P. D. Wilkie, Edinburgh).

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Doctor:—"Your wife has imaginary ailments. I'll give her some imaginary medicine."

Husband:—"And send in an imaginary bill."

# The Fellowship of the Royal College of Surgeons of England

By PROF. WILLIAM WRIGHT, M.D., D.Sc., F.R.C.S.

Dean, London Hospital Medical College, University of London  
Examiner in Anatomy for the Fellowship.

This article is taken from the Medical Journal of the University of Toronto, one of our valued exchanges. It is published in the BULLETIN for the information of members of our profession who may be interested in obtaining the F. R. C. S. degree. In particular attention is drawn to the opportunity of taking the Primary examinations in Canada, the place of examination being determined by the number and location of applicants.

TO the making of many books there is no end"; the same might be said of the making of diplomas. As, however, there are books and books—the biblia abiblia of Charles Lamb—so there are diplomas and diplomas. Among diplomas it is safe to say that none stands higher than that of Fellow of the Royal College of Surgeons of England, which for many years has held an unrivalled position among the surgical diplomas or degrees of Great Britain. The possession of it is now regarded as practically obligatory for membership of the honorary staff of all the hospitals connected with the medical faculties of the English Universities. It may be of interest to learn how the diploma came into existence and how it may be obtained, but first a few words about the Royal College itself.

Although the Charter of the College only dates from 1800, the Charter descends from an earlier Charter granted by Edward IV as far back as 1462, to the Freemen of the Mystery of Barbers in the City of London, practising Surgery. Before the date of this earlier Charter there were two Guilds exercising authority in London in matters relating to the practice of Surgery—the Barbers' Guild of which we first hear in 1308, and a rival Surgeons' Guild, mentioned in the City Records of the year 1369. By a charter of Henry VIII, the two Guilds became united, an open and visible sign of the union being the joint occupancy of Barbers' Hall, which still stands on its old fifteenth century site in Monkwell Street. The union, never we may imagine a very happy one, was dissolved in 1745, the surgeons finding a new home in Surgeons' Hall in the Old Bailey, entering into possession in 1751.

The grant of the Charter of 1800, to which reference has previously been made, whereby the name of the Royal College of Surgeons in London was first authorized, was probably hastened by the Company of Surgeons, which had recently acquired a freehold site in Lincoln's Inn Fields, being entrusted with the care of the Hunterian Collection of Museum Specimens.

In 1843 still another Charter was granted whereby the name of the College was changed to that of the Royal College of Surgeons of England and a new class of members was instituted who were to be known as Fellows, from and by whom the Council was to be elected. "The first Fellows, three hundred in number, were chosen mainly from the Surgeons, Assistant Surgeons, and Lecturers of the Metropolitan and Provincial Hospitals. They were elected under one general diploma on December 11th, 1843. A further election of two

hundred and forty-two Fellows took place on the 26th August, 1844, and these included a considerable number of representatives of the Naval, Military and Indian Forces."

The first examination for the Diploma of Fellow was held in December, 1844. It lasted two days, the first day being devoted to the subjects of Anatomy and Physiology, the second to those of Pathology, Therapeutics and Surgery. The examination in Anatomy and Physiology was made a separate examination with the distinguishing title of "the Primary Examination," under a by-law passed in 1874. The first Primary examination under these new conditions took place in May, 1876. At the present time there are between 2,000 and 2,100 Fellows.

The Primary and Final examinations are each held twice a year in London; the Primary in the early part of June and December, the Final in the latter part of May and November. In 1929 a Primary examination was held in Toronto, in 1930 in Montreal, in 1931 in Melbourne and Toronto, these being the only occasions on which the examination has been so far held outside London.

Although at the Primary examination the candidate may be asked questions on any subject which may be fairly regarded as lying within the broad fields of Anatomy including embryology, and of Physiology including histology and bio-chemistry, special attention is given to such matters as have an important bearing on the surgeon's art. The examination consists of written and oral portions, there being four questions in the Anatomy paper all of which must be answered, and six questions in the Physiology paper of which four only are to be answered. The questions set at past examinations are published by Taylor and Francis, Red Lion Court, Fleet St., London, E.C.4, from whom they are obtainable for a small sum. The oral portion of the examination extends over a period of forty minutes, twenty minutes being devoted to each of the two subjects. Although there are no fixed rules as to how this portion of the examination shall be conducted, it is common practice to spend a considerable part of the time available in Anatomy, on Osteology and in Physiology on Histology. In Anatomy the candidate is examined in addition upon dissected bodies, upon dissected parts on trays or in bottles and upon the living model; in Physiology upon such matters as the chemical composition of various body fluids, upon the use of various physiological instruments and upon tracings of the movements occurring in the circulatory and respiratory systems. I would add that occasionally questions are asked in both the written and oral portions of the anatomy examination on morphology should a knowledge of them serve to explain some embryological condition or illustrate some biological principle. The standard of knowledge required from the candidate is high, only something like thirty per cent. of the candidates who present themselves; for examination are usually successful; on the other hand the examination is one in which a candidate who is well prepared has an excellent prospect of passing, provided he retains his composure. As to preparation for the examination there is no better way than by acting as a student demonstrator in one or other subject, or still better in both, an experience which should ensure not only a sound practical knowledge of the subjects, but also engender that sense of confidence so essential for success in all examinations. In the absence of such opportunities, the candidate should spend as much time as possible with forceps and scalpel in the dissecting room, and with test tubes and reagents in the physiological laboratory.

The final examination has never been held away from London, nor is it likely that it ever will be. The subject of examination is Surgery in all its branches—Surgical Anatomy, Surgical Pathology, Operative Surgery. The best preparation which practically speaking is essential, is to have acted as a House Surgeon under able and experienced general surgeons.

While no doubt a student who wishes to obtain the diploma will have to engage himself deeply in the study of the subjects of the examination, he may be promised much pleasure in his pursuit of knowledge, as well as a reasonable prospect of ultimate success.

No diploma carries with it more honour or distinction, an opinion fully confirmed by the increasing number of candidates presenting themselves for it, candidates gathered from all quarters of the Empire.

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The Coffey-Humber Extract of Suprarenal Cortex Substance has been under further study by the W. K. Kellogg Foundation, with the following conclusions:—

“1. The benefits of use of the suprarenal cortex extract, experienced by patients with malignant tumors, in relation to gain in weight and relief from pain did not occur uniformly or in the majority of the patients observed by us.

2. The extract administered to these patients had no selective influence on the growth, necrosis or sloughing of malignant tumors.

3. Cure of malignant disease in patients with advanced carcinoma or sarcoma, in view of the experience of the patients of this series, cannot reasonably be expected to occur as a result of use of the suprarenal cortex extract.

The Foundation, in obtaining and presenting this information, has rendered a great service to the profession and the public.

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A Halifax newspaper tells this story:—

“In a railway carriage were several travellers and a staid, pompous old gentleman. Various and unsuccessful efforts were made to draw him into conversation. At length one said, ‘come sir, I know you are one of us! Tell us what you are travelling in.’ ‘Young man I am travelling in very objectionable and inquisitive company, and the carriage is full of samples.’”

And this reminds us of one of our own stories:—A black dressed non-conformist minister entered a train compartment where a Catholic priest was engrossed in reading the daily paper. All efforts on the part of the minister to start a conversation failed, and at last, he says, “well, I don’t believe in this Purgatory of yours.” A smile spread over the Priest’s face and lowering his paper he says, “Oh well go to hell then.”

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In the House of Commons, during a debate on Prohibition, a member asked: “Does the mover of the motion know that during the South African War 50 per cent. of the teetotallers in a famous Scottish Regiment died? You may think this is an exaggeration,” he continued, “but I knew the man who died.”

# Public Health and the Economic Depression

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HON. JOHN M. ROBB, Minister of Health, Ontario.

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The following article appeared in the March issue of the *Canadian Public Health Journal* which exchanges with the BULLETIN of the Medical Society of Nova Scotia. It is particularly applicable at the present time to the profession in Nova Scotia as well as in Ontario.

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**I**N the present period of financial depression and money stringency, when executives are bending every effort towards the elimination of unnecessary expenditures and when even necessary expenditures are given most critical and careful consideration, the public health budget naturally comes under strict scrutiny. It is pertinent to-day to ask not only "Is the present expenditure on the conservation of health economically sound?" but "Should public health expenditures at a time like this not only be maintained but even increased?" Before answering the question let us consider a few of the possible effects of the present economic distress on the health of our people. Let us see whether the problem is greater or less during a depression, whether a reduced expenditure now will not in the end cost us dearly.

First consider the problem of tuberculosis. We know there are many latent cases which light into activity under conditions of strain, worry, the increased economic burden, the lack of proper food and the inability to provide for themselves and their dependents adequate medical and nursing care. We know that every case is a source of infection for others, especially children, and that the chance of infection is tremendously increased when the family is crowded into a few rooms, when the latent case has become active and, through lack of professional supervision, care and advice, essential measures of prevention are neglected or unknown. The result of the depression would appear to be, therefore, an increase not only in the tuberculosis death rate but also in the tuberculous infections—and these will add to the toll of tuberculosis and to its cost for years to come. Increased expenditure is necessary to provide sanatorium care, visiting nurses and supervision of those already exposed.

Lower income means lessened ability to purchase food. Insufficient food, in turn, brings about a lessening of resistance against disease. Medical science has shown how intimately good health is dependent on a well balanced and adequate diet. How important at this time is the work of the medical officer of health in informing the community through his staff of public health nurses and through the press, of the relative values of various foods, so that every family may have not only an attractive, palatable diet, but also one which protects and promotes health and one which they can afford.

To spend money on public health is true economy. Immunization against certain communicable diseases should be vigorously prosecuted in order to

eliminate the expense involved in treating cases and controlling outbreaks of these diseases. The cost of diphtheria in Canada has never been estimated in dollars, yet every public health officer realizes that the cost of this one disease, in its toll of sickness and death, would exceed the entire amount of money expended in the control of all communicable diseases. Diphtheria can be prevented, and it is being prevented by the use of diphtheria toxoid throughout the Dominion. Is this preventive work to be curtailed?

The safeguarding of water, milk and food supplies has prevented typhoid epidemics—and such safeguarding must be continuously and effectively enforced by the public health authority concerned. To allow any laxity in this regard, through lack of funds, is to court disaster. In industry, too, the accomplishments of factory inspection, of industrial accident prevention and industrial hygiene, testify to the value of money expended not only in the reduction of overhead costs, in the lowered charges for workmen's compensation and in increased efficiency, but also in the continuance in employment and the better health of the employees.

Some activities in public health work bring spectacular results and command immediate support. The conduct of surveys to determine how effective is this or that piece of health work is typical of the work which yields great results but is not so generally known. And this type of work must be prosecuted vigorously and continuously, in order to ensure that all the money spent is well spent and is returning its proper dividend in results. To curtail such work at the present time is to remove one of the most effective means of controlling public health expenditure.

I am firmly of the opinion that during a time of financial stress public health work is urgently needed as a public service even more than in normal times and that bodies, whether constituted on a statutory or a voluntary basis, should make every effort to meet the greater need experienced during a period of depression.

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### Golf, and Infant Feeding.

It is possible to play over the entire course with a single club and bring in a fair score. But playing with only one club is a handicap. The best scores are made when the player carefully studies each shot, determining in advance how he is going to make it, then selects from his bag the particular club best adapted to execute that shot.

For many years, Mead Johnson & Company have offered "matched clubs," so to speak, best adapted to meet the individual requirements of the individual baby.

We believe this a more intelligent and helpful service than to attempt to make one "baby food" to which the baby must be adapted.

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### Hit Him Hard.

A man was crossing a street when a large dog knocked him down. He was getting up when he was knocked down again, this time by a "baby" car.

A policeman rushed to his assistance and asked if he was hurt.

"The dog didn't hurt me," replied the dazed pedestrian. "It was the tin can fastened to his tail that did the damage."

## Nursing Education in Canada

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**N**URSING education is important, not only to the nursing and medical professions but to the general public of whom a very large percentage require nursing service from time to time. It is, therefore, a matter of general satisfaction that nursing education in Canada has been subjected to a survey. The nursing profession are to be congratulated upon their courage in having subjected themselves to a searching analysis. Their sincerity in seeking to learn the truth and to discover means for the correction of defects in the situation is evidenced by their having contributed by far the larger share of the cost of the survey.

The Survey, which is reviewed more fully in another part of this issue of the *Journal*, under "Special Articles," viewed nursing education in the broadest sense, so that it begins with the selection of pupil nurses, their training, the economics of nursing practice in various fields, and then passes to consider how the patient requiring her services and the nurse may be brought together. The Survey has collected the facts to substantiate or to dissipate general impressions. It does establish that standards of admission are, in some training-schools, too low, or that they are not enforced, with the result that the levels of intelligence and education are, to say the least, rather shocking. Bearing this in mind, together with another established fact that many schools are schools without teachers in that they have no full-time instructors, it may seem rather superfluous to have collected and tabulated the opinions of nurses and doctors as to whether there was too much or too little theory in this or that subject. Quality of instruction is vastly more important than hours of instruction, and no matter how many hours are given, if qualified instructors are not in charge, the result will be unsatisfactory. It might also be added that, if the nurse is fatigued by long hours of duty, instruction is largely wasted.

The value of opinions expressed without any standard upon which to base them will doubtless be questioned. How many doctors know, as a standard for purposes of comparison, the intelligence of the average elementary school teacher? It is beside the point, but it would be interesting to have comparable opinions by the nurses on the doctors' intelligence, tact, etc. No matter how much such opinions may be deprecated, there is presented a body of factual material which justifies the work of the Survey and which is sufficient to warrant the recommendations made.

The economic situation of the average nurse is alarming. It is hopeless to expect that any profession will attract and hold any large percentage of intelligent men or women unless it offers a reasonable financial recompense. The present system is obviously unsatisfactory to the nurses and to the public. Irregular employment breaks morale and raises the cost of service. The Survey looks into the future and visualizes the nurse regularly engaged and receiving an adequate income, this being made possible by the spreading of costs in one of several ways. It seems that nursing must be sufficiently socialized that those who require nursing service may receive such service when they require it.

The volume of the Survey is added to by rather full explanations of intelligence tests, methods of teaching, examination systems and other such subjects. The Survey evidently considered it desirable to take the opportunity



of discussing these subjects. It also deals a body blow at some pet phrases, such as, "A little knowledge is a dangerous thing," and stresses that intelligence and education are not incompatible with kindness and consideration.

As is to be expected in a report covering so wide a field there are statements made which will be questioned. The sterilization of morons is not, as far as we know, advocated by responsible authorities as an effective method of combating disease. The value of the sterilization of the feeble-minded, on any wide scale, is even questioned. As health is not mentioned in the British North America Act it is hardly correct to say that health is primarily a matter of provincial jurisdiction.

The value of the Survey will doubtless lie in the stimulation it will provide. It is most helpful to have this report as a basis of discussion. Some years from now, Professor Weir and the Joint Study Committee will know that their effort marked an historical event in nursing education, because it seems impossible that it should be otherwise than lead to many reforms, the need for which the Survey has laid bare.

*(Editorial in April C. M. A. Journal).*

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Lady—"Can you give me a room and bath?"

Clerk—"I can give you a room, madam, but I'm busy now and will give you the bath later."

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Elsie—A little bird told me what kind of a lawyer your father was.

Milner—What did the bird say?

Elsie—Cheep, cheep.

Milner—Well, a duck told me what kind of a doctor your father was.

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Verna (after appendix operation)—Will the scar show?

The Surgeon—Not if you're careful.

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Dr. Beckwith—The man who gives in when he is wrong is wise, but the man who gives in when he is right is—

Dr. Corbett—Married!

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#### A Bad Case.

First Cannibal: "The chief has hay fever."

Second Cannibal: "Serves him right. I told him not to eat that grass widow."

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Apropos of a case reported not long since by Dr. W. Alan Curry, we note the following:—"Patient entered hospital, had some bladder irritation, cystoscoped, found one dead abscessed tooth which was removed."

# A National Health Programme

M. M. BRAUNSTEIN, M.D., Kentville, N. S.

Business Editor's Note:—This is another article by Dr. Braunstein and is published in the BULLETIN in order that as many members of the profession as possible will become conversant with the general problem of State Medicine. When the time comes for the adoption of some kind of provincial and municipal aid in the practice of medicine in Nova Scotia we should be able to say what form it should take.

## Soviet Russia and State Medicine.

### I.

SOVIET Russia, to many, remains a land of mystery, shut out by the prejudice, misrepresentation, or silent contempt that has been the lot of every new idea and experiment. Change is the essence of progress. But social change implies a disturbance of the old balance, perhaps a loss of individual prestige. It means a redistribution of material possessions and a revaluation of standards in accordance with newer concepts. One group in the community must suffer a loss and the individuals of that group, as a group, are the ones who, generally, directly or indirectly oppose change.

Russia, with a population of over one hundred and sixty millions and an area of one-sixth of the land surface of the earth, must exert a marked influence on the course of world events, and, in the words of Prof. Jerome Davis of Yale University "deserves scientific study, intelligent criticism, and not damning epithets. . . the fact is that for the past ten years the Bolshevik government has been operated on, dissected, and laid in its coffin amidst loud applause and rejoicing by distinguished orators in all parts of the world; yet to-day it is stronger, more stable, than ever before in its history and its leaders have been longer in power than any other ruling cabinet in the world. It is high time that we appraised this government as scientifically as possible and as impartially as possible. Surely the world is not so abysmally ignorant that after ten years of the rule of the Soviet we cannot discover a common core of truth about Russia."

In Soviet Russia the State (government: federal, provincial, and county) is gradually assuming complete supervisory control of industry and the natural resources of the country. Every phase of economic life is planned on a national scale. In agriculture, "collective" farms have been organized which already include a large proportion of the vast areas cultivated, "about sixty per cent. of all farms in 1931: The number of collectivized peasant farms increased from 400,000 in 1928 to over 13,000,000 in May, 1931. The largest of the 125 State farms already in operation has 543,000 acres." (Labour Fact Book. Intl. Pub. N. Y. 1931). Every branch of industry, transportation, mining, manufacturing, banking, research, foreign trade, is a part of and must fit into the national programme, formulated to utilize to the utmost and for the greatest common good the material wealth of the nation. "The revolutionary struggle . . . has generated a great system of planning organs through which society is endeavouring to shape its own future. . . the Soviet Union is engaged in a vast programme of construction which aims to improve the material and spiritual conditions of all." (Prof. Geo. S. Counts, Assoc. Director Intl.

Institute. N. Y. City. 'New Russia's Primer' 1931). The Ottawa Citizen is quoted as drawing "attention again to the significance of the greatest social experiment of all times and to point out once more that it is the height of folly to pull faces as its sponsors and suppose that it makes no difference to the rest of us" . . . "It is unquestionably true that this year's schedules of performance are falling short of earlier specifications. . . such predictions of failure however, take account of but one, and that the least essential aspect of the problem. The Five Year Programme is more than a business undertaking; it is a gigantic experiment with a new type of social control. Indications of its success or failure which run in terms of the statistics for new construction or of output may have a definite importance. But what is essential is that the rulers of the country maintain the principle of planned economy and the mechanism of authoritative control over individual behaviour, employing their power to guide the country's development along the general lines marked out by their own ideals. From this standpoint the experiment has not failed, and the character of the new Five Year Plan testifies to its success." (Edgar S. Furniss. Dean. Grad. School. Yale Univ. Current History. March, 1932).

## II.

Medicine remains international in scope, with a freedom of interchange of opinion and experience not duplicated in any other field. State Medicine is not a product of Russian experience alone, but of the public health currents in every progressive country. Disease is not solely a person's private business since it is also harmful to the community of which he is an economic and social unit. In no country is the campaign against disease left entirely to the initiative of individuals or comparatively small groups. The State everywhere has gradually assumed greater responsibilities in matters that affect the health of its citizens: thus—control of contagious diseases, smallpox, diphtheria; sanitary inspection of buildings and food; examination of school children; free distribution of sera and vaccines; care of the insane; free treatment of venereal disease; support of hospitals, sanatoria for the tuberculous, etc. In Soviet Russia every aspect of health and disease is under State control, with a national health programme and the organization of all available medical resources into a unified system. Medical men and women, nurses and pharmacists, are civil servants; universities, hospitals, sanatoria, drug stores, are national institutions. "Since physical and mental health are as important as education" medical service has been put in the same category as the public school system, the State aiming to provide both of them free to practically all citizens. "The nationalization of medicine, however, does not mean the immediate closing of all private hospitals and the prevention of all private practice. . . but the gradual taking over by the State of the responsibility of providing for everyone at his earliest need a free and well qualified medical treatment. . . ."

In this brief survey we can only sketch a few of the salient features of a medical service planned to embrace finally the entire vast population of Russia. Here again our facts are not in every instance the most recent. They will serve however, to indicate the general trend.

The Commissariat (National Department) of Health is "responsible for all matters involving the people's health. . . for the establishment of all regulations promoting it, . . . and . . . abolishing all conditions prejudicial to health." —thus: protection of motherhood and infancy, protection of the physical development of growing youth, drawing up of sanitary regulations, campaign against social and infectious diseases, maintenance and supervision of

all curative institutions, establishment and maintenance of research institutes dealing with every scientific and practical question of health, and, in collaboration with the Commissariat of Education, the organization of all medical instruction.

At the head of this Department is the Commissar (Minister) of Health chosen by the highest executive body in the land. His immediate assistants are the members of a body composed of the head of the health department of the army and navy, a representative of professional and non-professional medical workers, a peasant representative, etc. There is also an Advisory Council, The Scientific Medical Council, a group of about thirty specialists in the various branches of the medical sciences whose expert advice forms the basis for all the health laws drafted by the Department of Health. Almost all of the members of this Council are directors of the various State Scientific Institutes and have back of their decisions the results of research in the best laboratories in the country. To Advisory Council meetings may be invited any person whose services are considered necessary for the better understanding of the matter in hand. This body is furthermore authorized to call congresses of medical workers and to appoint commissions to study any phase of health.

Departments and sub-departments of the Commissariat penetrate every walk of life and every state, county and township. Each local health department has an advisory council on which sit representatives of industrial workers, peasants, and all medical and non medical groups in the community. The local government executive which is charged with the carrying out of all laws and regulations of the national health department includes several representatives of the local health council. Every community problem, all industrial laws, every fact that has any bearing on the individual's mental or physical well-being can thus be brought into mutual agreement with health principles.

Scientific institutes are founded by the State for purposes of research and for the training of specialists in all branches of medicine: e.g. the Tuberculosis Institute, Institute for the Protection of Motherhood and Infancy, Institute of Physical Culture, Institute of Public Feeding, Institute for the Study of Occupational Diseases, the State Scientific Institute for Labour Protection, etc. "The outlying plan of the Institute of Public Feeding is that of a scientific and technical bureau which shall guide and control the feeding and nutrition of the whole population of one hundred and sixty million people. (Guest. *The Lancet*. Nov. 28, 1931). The work of this institute includes the study of the physiology and bio-chemistry of nutrition, the hygiene of food and food preservation, experiments on diet in industry and on collective farms, investigation of diet in disease, co-operating in this work with hospital staffs, education of the public by means of magazines, books, exhibitions, broadcasts, etc., organization and supervision of restaurants and food supplies; the special training in dietetic matters of doctors, chefs, and nurses. The Soviet Government budgeted for an expenditure of over two million rubles on restaurants alone during the year 1931. In August of the same year a staff of over three hundred were employed by the Institute of Public Feeding. "That the Soviet will achieve many interesting results by their scientific investigations of dietetic and nutrition problems in this very wide field should be certain, and the effort at scientific control of the feeding of one hundred and sixty million people will be watched with the greatest sympathy by all scientific medical men." (Guest).

Medical schools are State institutions. Over eighty-five per cent. of the students have the whole of their education free. In return they must, on

graduation, go wherever the government (National Health Dep't.) sends them. After having served three years on the post assigned to them they are free to make a choice of their own. The aim of medical schools in Soviet Russia is not only scientific study of physical and biological processes in health and disease. Sufficient social science is taught to enable medical men and women to understand current social and world events. Physicians render five to six hours service daily. Outside of hours devoted to State service they may carry on research for which it is stated ample opportunity is given, or any other vocation, or have a private practice, which field, however, is necessarily limited. It is the policy of the Health Department to urge graduates of medicine to continue their studies along some special branch before accepting any practical position.

"...The provincial doctor is given privileges as regards house accommodation, food-supply and salary... Every three years (he) is eligible for a period of study leave of four to six months duration." (Guest. *The Lancet*. Nov. 21, 31). at any of the central institutes established for teaching and research. What is the attitude of the average medical practitioner, many of whom are not members of the ruling Communist Party? In the opinion of one investigator who has spent many years in Soviet Russia it is that "politics shall not matter when it is a question of service in the saving of lives and the prevention of suffering."

### III.

A system of social insurance has been established under the administration of the Commissariat of Labour. A specified percentage of the wage bill (about 13% in 1930, *Labour Fact Book*) of every enterprise whether under state or private ownership must be set aside from the proceeds for the insurance fund. No contribution is made by the employee; all is paid by the industry.

The extent and importance attached to health work is shown by the health budget for Moscow which from approximately thirty-six million rubles for 1925-26 had risen to over forty-three million in 1926-27. (Geo. M. Price, M.D. 'Labour Protection in Soviet Russia') Insurance fund "appropriations (in all industries) totalled over one billion five hundred million rubles in 1930 as compared with nine hundred and eighty million in 1929." (*Labour Fact Book*).

All trade union, industrial and office workers in State, co-operative or private enterprises are automatically insured at the time of accepting employment. In 1931 about thirteen million were already included under the social insurance scheme.

"This programme includes provision for old age through pensions, the partial or complete support of those temporarily unable to find work, and extension of medical aid to all ill or crippled workers, (i.e. workers for wages), wounded ex-soldiers, and to the members of their families." (Anna J. Haines, 'Health Work in Soviet Russia'). It provides "full wages from first day of sickness plus payments for all medical care. (General practitioner and specialists' services, hospitalization, maternity, supplies of drugs, surgical instruments, etc., etc.). Benefits are also paid to workers who are quarantined... For accidents: full pay from first day plus cost of medical and surgical care... when unemployment existed... cash benefits and other assistance amounting to about one-half regular wages plus free medical care... for old age and invalidity one tenth former wages up to full wages depending on need... for maternity, woman workers receive full pay (paid by the social insurance fund) for twelve to sixteen weeks of compulsory lay-off... they are also given a lump

sum equal to one month's wages for purchasing articles needed for the child, and twenty-five per cent. extra on their pay for an additional nine months nursing period." (Labour Fact Book).

"Due to insurance and benefits, the Soviet workers have no worry about the future," (Walter Duranty, Special Correspondent in Russia, N. Y. Times). worry and fear that wear away piteously both body and mind, and it is to this feeling of security that some have attributed the voluntary sacrifices the Russian masses are making for what has been termed "the most daring political and economic experiment of the twentieth century." Economic security is a prerequisite of both mental and physical health.

How is the individual reached? In a given city the Tuberculosis Dispensary (clinic) is a subdivision of the local health department and depends on local funds (social insurance fund, etc.) but works under the scientific direction of the central organizations (National Health Dep't. and State Tuberculosis Institute). Its functions are educational, diagnostic and therapeutic.

The doctors on duty in the Dispensary are specialists trained by post-graduate work in the State Tuberculosis Institute. If any patient with tuberculosis presents himself to the out-patient department of a hospital or any of the city clinics or other dispensaries he is immediately directed to the Tuberculosis Dispensary. This same method is followed with regard to other diseases such as occupational diseases, etc. Similarly the hospital outdoor departments have their work outlined. Of the physicians on duty a number are detailed to at home service for those requiring home care.

"An anti-tuberculosis dispensary (clinic) aims not only to cure the sick person but (also) to examine into his living and working conditions... the dispensary inspects the factories and warehouses in its neighbourhood and if it notices something dangerous to health on the premises (dust, poor ventilation, poisonous gases, etc.) it tries, by bringing pressure to bear on the administration of the business, to eliminate that danger... the dispensary carries on a widespread propaganda for sanitary instruction by means of lectures and reports not only within the dispensary but in the nearby factories and warehouses... finally, it maintains close relationship with the workers organizations in its neighbourhood, with the unions, women's clubs, youth movement, and co-operative societies."

"What is more frequently found in the country is a 'flying squadron' i.e. a temporary clinic with special doctors, laboratory equipment, and medicines sent for a limited time into a rural neighbourhood to make a survey and to examine the population. Treatment is carried on for a time and an intensive educational campaign adapted to the peasants' understanding and living conditions. Then the active cases are turned over to the regular local medical facilities for a continuation of the treatment and the 'flying squadron' moves on to another neighbourhood. The permanent stations for such specialized service as well as the 'squadrons' are usually supported by non local funds." (Haines).

The campaign for vaccination is illustrative of still another method of attack. "Special corps of sanitary workers called 'brigades' and analogous to the 'shock brigades' of industrial workers in factories are being sent to backward areas of Russia—and large number of vaccinations are being performed. Strong pressure is brought in other ways to secure vaccination. Thus on the collective farms—there are creches (day nurseries) and schools for children where

they can be left while their mothers work. But no unvaccinated child is admitted to either school or creche. A certificate of vaccination must be produced. Under these conditions the number of cases of vaccinated persons is rapidly increasing and smallpox is only sporadic. The campaign for vaccination is partly carried on by the personal work of the members of the brigades and partly by posters, lectures, and demonstrations. A great deal of educational work is being done." ('Russia in Reconstruction'. Guest. The Lancet. Nov. 21, 1931).

## MODERN PRACTICE.

### Poems You May Not Know.

#### The Doctors do not Doctor as They Did.

A new and strange pathology affects your physiology  
 The modern doctor passes up the pills.  
 He might as well be dead as in the ancient school of medicine;  
 Prescriptions aren't given for your ills  
 Your ankles, ears and lungs and wrists are each assigned to specialists.  
 You find when you are sick there are a lot  
 A flock of them to take care of you and each one has a share of you  
 They tell you what it is you haven't got.

#### Chorus

For the doctors do not doctor as they did,  
 When there's human overhauling to be done.  
 If you feel in bad condition and you send for your physician  
 You discover they have split him ten for one.  
 No, the doctors do not doctor as they did,  
 They've discarded all the practices so plain  
 And when sicknesses defeat you, there's an army comes to treat you  
 For every morbid modern little pain.

My wife enjoys the rheumatiz (at least we all assume it is)  
 Her doctors do not tell us, to be sure.  
 She visits twenty-one of them and every mother's son of them  
 Is giving some installment of the cure.  
 They check her plus and minuses and irrigate her sinuses  
 She takes massage from 1 o'clock to 3,  
 Her ankles get a daily broil, her legs get ukulele oil  
 That has to be injected at the knee.

#### Chorus

No, the doctors do not doctor as they did.  
 Now, they say, they want her blood to be appraised.  
 If the vote goes democratic, it's her spleen that is erratic,  
 If republican, her tariff must be raised.  
 Oh, the doctors and the doctoring they do—  
 And the druggists carry everything but drugs  
 And when germs begin to bite us, every freshman at St. Vitus.  
 Gives three cheers for Alma Mammy, queen of bugs.

(A. M. A. Journal).

# Arrogance and Ignorance in Medicine\*

SIR E. FARQUHAR BUZZARD, M.D., England

WE cannot blind ourselves to the fact that the present position and reputation of the medical profession in the eyes of the public is unsatisfactory. We cannot remain deaf to the censure, sometimes good-natured, sometimes ill-natured, well-founded or baseless, so frequently passed in ordinary conversation on doctors and doctoring. It is not easy to treat as they deserve the cheap sneers which emanate so glibly from the judicial bench, nor to overlook the odious comparisons drawn between qualified and unqualified practice in the columns of our sensational and not too scrupulous newspapers. We are blamed, almost in one breath, for our conservatism, our radicalism, and our trades-unionism. There can be little doubt that, speaking generally, we live in an atmosphere which may be described, as unsympathetic and suspicious, if not actually antagonistic. It may be that such an atmosphere is beneficial to our health, although I doubt it; at any rate we can do no harm and may do good if we investigate its properties and perhaps suggest such measures of ventilation as may appear to be desirable.

The charges laid against us are many, but they may be divided roughly into two groups, those of Arrogance and those of Ignorance. Let us examine the evidence which can be brought to support them, and if we are found guilty, as I have no doubt we shall be, let us hear what can be stated in mitigation. It might save the time of the Court if we plead guilty at once to both charges, and confine ourselves to pleas of justification or provocation.

## *Arrogance*

The indictment of Arrogance is laid in the following terms: "You are inclined to treat your patients as fools, to be too cocksure, and to lay down the law as if you were infallible; you won't listen to what we have got to say, and you are intolerant of the views of others."

The terms of such an indictment are general rather than specific, but certainly contain more than a grain of truth. The answer to them must also be general, and relies for its sufficiency on rather wide considerations which I must endeavor to formulate as briefly as possible.

It must be remembered, in the first place, that at the time of qualification a medical practitioner has spent at least seven years pursuing an educational curriculum which bears no resemblance to that through which the large majority of his patients have passed. In addition to mastering the principles of physics, chemistry and biology, he has spent at least two years in the study of human physiology and anatomy, and at least three more years in acquiring some knowledge of pathology, medicine, surgery, midwifery, and a number of other special subjects. The load of information he has ingested is enormous, probably much greater than he has had time to digest, but that does not constitute the essential difference in his education from that of his future

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patients. During the whole of these seven years he has been trained in precise methods of investigation, has learnt to think scientifically, and to speak in scientific terms, to distinguish between facts and theories, to regard a priori conceptions with suspicion, to appreciate the value of experiments and controls, and generally has developed a critical faculty of which the lay mind is, perhaps mercifully, completely innocent.

Removed from his hospital, separated from his fellow students and teachers, and flung into practice, he finds himself in another world, where he is called upon to discuss medical matters with patients who, nominally educated, are not only ignorant of the rudiments of science, but who are often incapable of clear thinking or clear expression. He finds that their answers are unrelated to his questions, their beliefs are confused with facts, that the identity of post hoc with propter hoc is accepted without reserve, and that hearsay evidence is treated with the greatest respect. In short, he quickly realizes that discussions on questions of health and ill-health are about the most difficult and exacting of the tasks with which he is confronted. If he is wise, and if he values the status of his profession, he will set himself to study this aspect of his work with the devotion he gave to his study of pathology. He will train himself to answer questions with the truth and nothing but the truth, even if he does not always feel justified in imparting the whole truth. He will learn to use language intelligible to his interrogators and he will never hesitate to express his doubts or his ignorance where his patient's welfare is at stake. Lastly, he will be prepared to give unlimited time and attention to practising the arts of listening and questioning, perhaps the most important part of his professional equipment.

#### *Questions and Their Answers*

If he is unwise and impatient he will evade inquisition, ask few questions, turn a deaf ear to stories which may be gold mines of information, and eventually justify the accusation of arrogance. It is not difficult to find excuses for this line if he has chosen it. It may be urged on his behalf that he has not the necessary time to give to the task, or that his attempts to accomplish it have always failed, his explanations having been misinterpreted and his opinions wrongly reported. Little wonder, perhaps, that he has taken the path of least resistance, although at the same time he has closed the door on the possibility of establishing that mutual confidence between doctor and patient which is essential to successful practice.

Although Medicine, year by year, is becoming more scientific in methods of investigation, no medical man can afford, and the profession cannot afford, to neglect the art of questioning or the art of listening. Therein lies an economic problem, the solution of which must some day be sought and found, but which would occupy more time than I can spare for its elaboration now. I refer to the fact that in general practice it is often impossible for a doctor to give to each patient the time necessary, not for physical examination, but for verbal cross-examination, and yet see a sufficient number of patients to earn a living wage. Skilful cross-examination will often define, and thus limit the field of, the necessary physical and chemical examination, but it requires time and perseverance, because what the doctor wants to learn, and what the patient thinks the doctor wants to learn, are rarely the same thing. The doctor may readily earn a reputation for arrogance if he cannot conduct his cross-examination with tact as well as with intelligence.

### *Ignorance*

And now for ignorance; our ignorance and that of the public. Ours is comparative, the public's is superlative. Our knowledge of the factors underlying health and disease, although comparatively small, is infinitely greater than it was even 50 years ago, and is steadily increasing. This knowledge is the standard by which we judge ourselves, but, in the public eye, our knowledge is measured entirely, and perhaps naturally, by our ability to cure. We are criticized, for instance, because we can cure neither cancer nor the common cold, and our critics assume that our ignorance of both conditions is something of which we may well be ashamed. Perhaps, but we can put up some kind of defence. In the first place, the criticism is based on an assumption, a relic of medieval belief, that there are so many diseases for every one of which a cure exists, if we are clever enough to find it. Such an assumption cannot really be supported for a moment by any reasonable argument, and, in fact, the more we know of disease the more does it appear to lack foundation. The claims for prevention of disease, on the other hand, are becoming daily more firmly established, and the future of medicine surely lies in that direction.

### *The Public Demand for Cures*

A cure for cancer is loudly demanded by the public, and every effort has been and is being made to meet that demand by attempts to discover the cause or origin of that disease. In this case we are not justified in assuming that it can be cured or prevented, even if all its mysteries are revealed.

The common cold is on a different footing, and we may probably claim to know all the material facts about it. It is not curable, because it is only the manifestation of a battle royal between invading microbes and the tissues of their victim, and all we can do is to render aid to the latter in order to shorten the struggle and hasten his almost inevitable victory. It is probably preventable, but effectual preventive measures would produce such a social upheaval, and raise such an outcry from the public, that no Minister of Health is ever likely to risk his position or his parts by bringing them into force.

Diseases may probably be divided into several groups: (1) the curable, (2) the preventable, and (3) a group comprising those about which we know too little to determine the scope of their preventability. Of these three groups the smallest is the curable, and it is safe to predict that it will always remain so, while we may legitimately hope that the preventable group will gradually increase.

Let me add, in confidence, that there is yet another group of diseases, by no means insignificant in size, which are never cured, but which almost invariably disappear without, and sometimes in spite of, medical treatment. I might go further and point out that there are many diseases afflicting mankind to which the idea of cure is not, nor is ever likely to be, applicable. For instance, "infantile paralysis" or acute poliomyelitis. Because of its lamentable results, the public naturally assumes that we know nothing about it. If we did, we ought and should be able to cure it. But that is not the case. We know a great deal about it, and the more we know the less likely does it appear that a cure will ever be forthcoming. That it is preventable, that under certain circumstances it may be possible to arrest it, are well-founded beliefs, which we are justified in holding, but a cure for the disease can only be hoped for by those who really *are* ignorant of its pathology.

*Response to the Demand.*

We need not lie awake and fret about this aspect of our ignorance, provided we do not as a profession claim to cure disease. That is a claim we may well leave to quacks and charlatans, who will always find a public ready to believe them. On the contrary, it should be our object to make our methods of practice and our claims so different from those of quacks that the public should have no difficulty in distinguishing them. Therein we fail, and thereby we must plead guilty to a charge of ignorance. How can we expect to be acquitted of such a charge when we see the profession taking up, and following like a flock of sheep, each new "cure-all" stunt as it is offered to it? Sour milk, hormones, all forms of electricity, and lastly ultra-violet rays, to mention only a few, have all been exploited by the profession with so little discrimination that a public cannot but fail to distinguish between qualified and unqualified practice. Without diagnosis and without dignity have doctors applied such measures, each in its turn, to every known ailment, with the result that our wisdom and our honesty, as well as the merits of the curative agent itself, have often become discredited. And our only defence is based on the statement that patients insist on having the newest thing in the way of cures! A very poor excuse, and one quite unworthy of the profession whose scientific status we are anxious to raise.

Perhaps my indictment is drawn in somewhat strong terms, but I should not be exaggerating very greatly if I said that I never see a patient nowadays who has not already been lavishly exposed to artificial or natural sunlight—not a very good advertisement for Old King Sol, or his synthetic offspring!

*Psychological Training*

Yet another aspect of our ignorance on which stress is often, and not always undeservedly laid. It is, perhaps, again the fault of an over-crowded curriculum that the psychological side of our work does not receive the attention which is its due. Every patient is an individual with his own idiosyncrasies and with his own reactions. We are accused of treating them as if they were all alike, and of ignoring their personal characteristics or peculiarities. The art of recognizing such features is not an easy one to acquire, but time and labor spent in that direction is not wasted, even if the results obtained may sometimes upset the lessons we have learnt from clinical signs or from boiling test-tubes. A doctor is apt to be classed as ignorant, perhaps even arrogant, if he has not earned the title of "understanding."

*The True Role of Medical Men.*

I cannot here exhaust the whole sum of our iniquities, but I hope to have indicated some of the lines along which future generations of doctors may count to correct the mistakes of their misguided predecessors. In order to dissipate any gloom I may have produced, I would like to add a few words of reassurance and encouragement. The criticisms, just and unjust, to which I have referred are levelled at professional practice as a whole, rather than at doctors individually, each of whom has it in his power to earn the respect, gratitude, and affection of his patients. The personal status of the doctor depends, not so much on his knowledge or ignorance, his modesty or arrogance, as on his willingness or unwillingness to place all, or more than all, his resources at the disposal of those who seek his help. If I were permitted

to coin a motto, appropriate alike to consulting-room and surgery, it would be "Give and do more than is required of you."

Let me close with a short but true story. A few weeks ago I was staying at an hotel in the south of England, and one evening I received a message to the effect that Lord Mersey, an old and eminent judge, who has since passed away, would like to have a few words with me. He greeted me in the following way: "I wanted to make your acquaintance because I knew and greatly respected your father. Many years ago, towards the end of a long illness, he was asked to see me. After consultation with the other doctors, he came back to my bedside and said, 'I don't know what is the matter with you, but I am confident that you will make a complete recovery.' He was quite right, and I have never forgotten the comfort and hope with which his words inspired me."

To the unthinking my father's words might have sounded like a confession of ignorance. To a great lawyer they appeared to be based on knowledge. There was no claim, no promise, to cure; only confident prophecy, born of experience. If our profession as a whole is to attain its rightful position let it cease to profess to cure, and be content to show the public that its knowledge and experience, though still limited, are assets of value on which reliance can be safely placed.

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The graduating class of Dalhousie Medical College is being assigned to internships in very fine institutions. George A. Wood of Lunenburg goes to the surgical side in Charity Hospital, Cleveland and John Colquhoun of Salt Springs to the medical side of the Montreal General Hospital.

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The profession generally will regret to learn that Dr. A. S. Burns of Kentville is a patient in Camp Hill Hospital suffering from an exacerbation of his G. S. W., war disability.

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Dr. T. D. Archibald, Chief Medical Director, North American Life Assurance Company, Toronto, recently spent a holiday in Halifax, visiting his mother, Mrs. Charles Archibald, Inglis Street.

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Mr. W. F. Dechman, son of Dr. A. A. Dechman of Bridgetown, was married April 4th, 1932, to Miss Catherine MacLeod of Sydney. Another son of Dr. Dechman, George, is one of proprietors of the Fairview Hotel at Bridgewater.

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A weekly newspaper says "The pulpit of the Horton United Church was filled on Sunday morning by etc." He must have been a very large man or they have one of those old-fashioned, single seater pulpits.

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Dr. D. J. Hartigan, accompanied by Mrs. Hartigan and their little daughter, spent several days in Halifax about the middle of April.

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After several weeks in the City Hospital Dr. J. Knox McLeod of Sydney returned to his home where he was some time convalescing. He had a severe attack of pneumonia.

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## Tuberculosis

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**F**OLLOWING previous periods of industrial depression, when the primaries of life, food, shelter and clothing were scarce, an increase in the number of patients afflicted with Tuberculosis was always noted, so we may expect the same result following the present depression. During the coming decade there will be an increase in the tuberculosis incidence.

When one member of a family is stricken it generally means that the other members are susceptible. Their immunity is also poor.

A young man of magnificent physique left Nova Scotia to seek employment in the Canadian West. A few years later, he returned with Tuberculosis of the lungs. He remained with his family until he died. His oldest sister took the disease and she also died. Then followed a younger sister, his mother and three brothers. The father and youngest son left the old home, but the father later died of the same trouble and the youngest son "took the cure," and is still alive to-day.

This is a good but not uncommon example of how the disease is propagated by contact among susceptible people.

In another section of Pictou County another family was entirely wiped out in the same way. The property was inherited by a cousin who lived in a distant part of the province. He was advised to burn the old house, but refused stating he had no fear of "catching consumption." Inside of five years, he was dead of pulmonary tuberculosis. His wife, who was more immune than he, went back to her people and the old farm house fell in ruins, and we trust the tubercle bacilli contained therein perished also.

For the minor and less virulent contagious diseases, we preserve a rigid quarantine followed by more or less efficient fumigation, but in the case of the deadly tubercle, the afflicted one has perfect freedom. He is allowed to attend public meetings, travel by railway trains, sleep in Pullman cars, or hotels, eat in public dining rooms, and conduct himself as a healthy person instead of a menace to society.

So long as this is possible, tuberculosis must be prevalent. We will never be able to rid Nova Scotia of its ravages until there is a rigid isolation and quarantine of every one who has active tuberculosis.

The Public by years of propaganda is well aware of the contagiousness of tuberculosis and are for the most part anxious to co-operate.

Fumigation of contaminated houses is usually a very haphazard performance and is not often done under the supervision of doctor.

When the home is rented and a member dies of tubercle, the family is apt to move leaving the burden of cleaning to their successors.

Patients cannot be isolated in their own homes. The daily contact with the other members of their family is a constant danger, so that the ideal method is hospitalization. The public express some fear of annexes for the tuberculosis connected with our general hospitals. They dread the carrying of the infection to other patients, and there are some grounds for their anxiety. In the Aberdeen Hospital we have had a surprising number of nurses contract tuberculosis even when no T. B. patients are admitted.

Governments and municipalities are very hard pressed for money and it is a poor time to advocate further expenses, yet a second Sanatorium in Eastern Nova Scotia is urgently desirable. Although the greatest difficulty is the poor patient, yet the accommodation in the Provincial Sanatorium is so limited, that even the wealthy have to spend valuable time awaiting room.

There is no difficulty persuading the vast majority of patients that sanatorium treatment is desirable. They are keen to get there, but many are unable to obtain sufficient funds to cover expenses.

It would seem that the time has come when the municipalities or corporations must accept responsibility for these patients. All insane patients at the Nova Scotia Hospital, whether rich or poor have their expenses paid in this manner—the towns or counties collecting from the patients estate when possible.

Tuberculosis is more important than insanity, so why not adopt the same procedure?

R. M. B.

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### PICTOU COUNTY'S NUMBER.

This is Pictou County's number, with Dr. Benvie "at the piano". The case-report section is theirs and so is this section, and we are happy to have it so, particularly as it represents the first contribution of this sort from any county outside this—that is to say, the first assumption on the part of any group, of their responsibility in connection with this co-operative enterprise.

While we value these case reports very highly, and understand that their publication is very generally appreciated, we miss the article on Pictou County hospitals which we had hoped for. This, we hope will come in later, when it will find a ready place in our pages.

The continuance of the case report section to include next month's issue is assured. Some excellent case reports and a historical and descriptive article on the physical plant of the Sanatorium having been prepared. For July, so far, we have nothing in sight, but promises, and it seems to require a great number of them to make much matter; but in spite of that we still have faith that we shall complete our year with all the old sails set and the

new "spanker" as well. However, for the peace of mind of the successor to this writer who would probably wish to continue the section beyond July, we would like to have case-reports ahead for a couple of numbers. We would therefore request—for the last time from this pen—that members or groups who have undertaken to contribute, will kindly do so before the Annual Meeting.

N. H. G.

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### Case Recording.

In order to keep abreast with the field of medicine, every practitioner of to-day must read carefully the current medical literature. On the strength of articles contained therein he may institute a new course of treatment or adopt a new type of surgical procedure.

Each doctor in practice is confronted every day with cases which vary somewhat from the text-book picture. If he is exacting he will keep on record a history of each case, with his observations, his treatment and his results. In the course of time, the accumulated evidence will confirm his judgment in future cases. This doctor now reaches the state where he can contribute to the medical profession pictures of pathological processes supported by his own observations. Evidence such as this is the foundation of facts in medicine.

We would urge every doctor in every field to make careful observations, to keep diligent records and to write his observations for some medical publication. We would also impress upon every medical student that *now* is the time when he should begin to keep his records and write his observations, not only because they are invaluable to him, but also that he might make use of them in medical publications which are now becoming accessible to the student who desires to publish.

*(Editorial Medical Journal, University of Western Ontario.)*

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Reference was made in the last BULLETIN to the recent visit of Dr. Perley Little of Bishop Falls, Newfoundland, to his old home in Belmont. Shortly after his return his father, James W. Little of Belmont, after an illness of seven days passed away.

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In the passing after a long illness of Daniel M. Griffin of Halifax on April 18th, 1932 one of the best insurance men in Canada will be missed by a large circle of business and social friends. He was well and favorably known to many members of the medical profession who will deeply regret his passing and desire to extend sincere sympathy to his family.

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Elsewhere is printed an extract from the regular London letter to the A. M. A. Journal dealing with the scarcity of suitable candidates for the nursing profession. As the C. M. A. and each Provincial Association is now studying Prof. Weir's report on nursing education in Canada, this item is of interest.

## CASE REPORTS

### Two Interesting Mastoiditis Cases.

Male age twelve with history of pain and discharge from the left ear for about ten days following a "cold."

Examination revealed marked swelling, redness and tenderness over left mastoid process, the tympanic membrane was grayish red in color, swollen, and showing no recognizable landmarks. About the centre of the membrane there was a small perforation. On the left side of the neck there was present some swelling and redness.

*Diagnosis* Acute Mastoiditis left side.

*Operation* Mastoidectomy.

Usual mastoid incision was made, and cortex exposed from zygomatic process to tip of mastoid. The cortex was then removed and instead of finding the tympanic antrum, the mastoid sinus was exposed. The ear was then retracted forward and a new opening was started far forward opposite supra-metal spine, the opening was gradually enlarged and free pus found, but very few cells. The whole mastoid having an ebony consistency. The dura and sinis were exposed and found normal in appearance. The wound was then packed with gauze and acro-flavine. An incision over the swelling of the left side of the neck and pus found, wound packed with gauze drain.

The temperature at time of operation was 102 which rose following the operation to 105. On the fifth day temperature was down to 99. The packing was removed and a small gauze wick was inserted.

On seventh day temperature suddenly rose to 105½, and it was thought advisable to open sinus, but as the patient did not appear to be at all distressed it was thought best to wait another day or two and watch him closely.

On the eighth day temperature was normal and on the ninth again rose to 104½. The following day temperature dropped to 98.8 and remained normal, the case taking a normal course and within five weeks of admission to the institution was discharged as cured. The wound having healed nicely and the tympanic membrane beginning to return to its normal markings.

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Male age 44 in good physical condition, complaining of severe pain in the right ear, with a history of swimming a few days previous to the onset.

Examination showed marked redness with bulging posteriorly to tympanic membrane. A large paracentesis was made, which gave immediate relief.

The discharge from the left ear continued for about four weeks without any pain or discomfort to the patient, the temperature varied between normal and 99.8.

At the beginning of the fifth week temperature rose to 100½ and the patient complained of severe pain over the right zygomatic process. Examination revealed some swelling and tenderness over this area, but no tenderness over the mastoid region.

*Diagnosis* Acute Mastoiditis right side.

*Operation* Mastoidectomy.



Usual mastoid incision was made, and cortex exposed from zygomatic process to tip of mastoid. The cortex which was unusually thick was removed and the tympanic antrum was exposed. Free pus was found. The mastoid cells were then cleaned out leaving a large cavity. The zygoma was then exposed and broken down cells were cleaned out to the extent of about one inch laterally. The cavity was then swabbed dry and packed with gauze and acroflavine. On the fifth day the first packing was removed, and the patient made an uneventful recovery.

CHARLES H. SPIRO.

### Perforated Doudenal Ulcer.

The patient is a man of 43 years of age—a car repairer in the C. N. R. Shops at Stellarton, N. S.

For years he has been a heavy drinker. He had suffered for six months from burning and pain in his epigastrium, coming on about 45 minutes after eating, but he attributed this "indigestion" to his drinking habits and never had medical advice regarding his condition.

On Saturday evening, January 20, 1932, after a hearty supper, he joined his friend, his "souter Johnnie" in consuming a dozen quarts of government beer at the latter home. About 10 p. m. he was "seized" by a very excruciating pain in his stomach. There was some nausea, but no vomiting. "Another little drink" was out of the question, his one desire being to get to his home. So aided by his friend, he undertook to walk about 300 yards. This consumed the greater part of an hour, so it was a full hour after the onset of the trouble when I saw him. He was evidently in violent pain, sitting with his arms across his abdomen and groaning. His face was bathed with perspiration. His temperature was 97.2°, pulse 60, respiration 22 and shallow.

The abdomen was retracted and moved but slightly with breathing. It was extremely rigid and board-like to the touch with general tenderness. He was given Morph. Gr. 1/3 hypodermically and moved to the hospital, and operated on at once.

As the perforation was recent, no X-ray was taken to determine the presence of free gas in the abdomen.

The field was prepared with alcoholic bichloride.

Chloroform—Ether anaesthesia was used. The incision was made through the right rectus 1 inch from the midline extending from the costal margin to the umbilicus. When the peritoneum was incised gas and fluid escaped. (By pouring a small amount of saline into the wound before opening the peritoneum, a small amount of gas can be detected by the escaping bubbles J. G. McD.).

There was a very large amount of fluid and undigested food particles found in the abdomen, and no further doubt regarding the correctness of the diagnosis.

The pyloric end of the stomach was indentified and drawn into the wound. In the first part of the duodenum on the anterior surface was an opening the diameter of a cedar lead pencil out of which fluid was coming.

This is the location where perforation is generally found. An ulcer may perforate on the posterior wall into the lesser sac, or a gastric may also rupture, but in the vast majority of cases, the opening is found on the anterior surface

of the first portion of the duodenum. Perforated ulcers are not uncommon in this district and this has always been the type discovered. There were no adhesions, but considerable thickening of the bowel. The ulcer was cauterized with the cautery and the opening closed with a "catgut" purse string. One line of suture (C. G.) was placed at right angles to the gut covering over the purse string. A tag of omentum was then stitched to the wound.

There was but little stenosis of the lumen and so a gastro-enterostomy was not necessary. Where the lumen of the bowel is much lessened by the ulcer and repair, a new opening from the stomach to the duodenum must be made either at the original or at a subsequent operation.

As much as possible of the free fluid was aspirated but as there were many food particles present, a vaselined rubber tube was inserted into the right sub-renal space.

When the amount of foreign material is large, I always drain with a tube, no matter whether the rupture be recent or distant. Cigarette drains in my experience serve largely as "dams" and if one is going to drain, use that which will give a decent opening to the part to be drained. When little foreign matter is present the abdomen can be closed completely.

The abdominal wall was then closed and the patient returned to bed with the head elevated. Pain was relieved with hypodermics of Heroin Gr. 1/6. This rarely produces nausea, which is often the result of Morphia.

The patient had no post operative disturbance of any kind. Water in small amount was taken frequently for two days and then he was given milk every two hours. The fourth day, he was allowed liquids generally until the 10th day, when solids were allowed. As there was no further drainage the tube was removed on the second day; the sinus being kept open with a gauze wick, which was changed every day until healing was complete. He was discharged in three weeks and never had any further ulcer symptoms.

This is the rule in our cases. Once an ulcer perforates, it gives no further trouble provided there is no stenosis. In some cases however, the ulcer remains active or another forms and ulcer treatment has to be instituted either medical or surgical.

I called on this patient last week (March 10th). He had eaten a large dinner of corned beef and cabbage and felt excellent. He is not taking no precautions with his diet and is putting on weight rapidly.

In perforated duodenal ulcer 75% show previous ulcer symptoms, 25% are silent. The pain is very severe, and is felt in the epigastrium and somewhat to the right of the midline or about the umbilicus. Vomiting may or may not be present. There is usually no blood in the vomitus, but it is at times present.

The abdominal wall is always extremely rigid, more so than other forms of abdominal disease. Acute pancreatitis or acute perforation of the gall bladder are similar. Free air under the right diaphragm generally does not show for 5 or 6 hours after perforation.

Following simple closure, the majority of perforated ulcers heal, but it is advisable to follow some form of ulcer treatment after operation.

Stenosis of the duodenum indicates gastro-enterostomy generally at a second operation—the emergency being life saving.

Those operated on within 12 hours as a rule recover, and the later the interference, the worse becomes the prognosis.

R. M. BENVIE.

**Diverticulitis (Meckel)**

Patient, a boy aged 16; previous history negative. On February 6, 1930, while at school felt a pain in epigastric region; this was severe and cramp-like; later it was felt in the region of the umbilicus and to the right, accompanied with nausea but no vomiting.

When first seen the temperature was 98°, pulse 64; some tenderness in lower right hypochondrium but none over the McBurney area; the patient had a very distressed, anxious expression and, as the pain was increasing in intensity, it was felt that there was an acute abdomen and operation was decided on.

Through a right rectus incision the appendix was delivered and removed, showing evidence of slight inflammation. As this was not considered sufficient to account for his intense pain, further search was made and a Meckel's diverticulum was found about one foot from the lower end of the ileum. This was about the size, shape and consistency of the index finger of a rubber glove. The base was crushed, tied and removed and the stump inverted with a purse-string suture. Apparently this did not interfere appreciably with bowel lumen. The diverticulum was only slightly inflamed and contained a small amount of liquid bowel content.

Patient made a good recovery, bowels moving well with enemas and mild laxatives and was discharged on the 12th day.

On February 19th, 13 days after the operation, patient was seized with severe abdominal pain and vomiting. Enemas gave no relief and it was decided that there was an acute obstruction. He was removed to hospital and operated late same night. The bowel was found collapsed several inches above and below the site of the diverticulum, the lumen almost completely occluded in this whole area. About ten inches of bowel was resected and end to end anastomosis done. Patient made an uninterrupted recovery and has been well since.

The interesting feature of the case was the peculiar collapsed condition of this segment of bowel, which must have been due to some disturbance of its innervation at the first operation.

J. C. BALLEM.

## Hospital Service

### SANATORIUM INFIRMARY.

THE Nova Scotia Sanatorium has at last had its new Infirmary completed. About this the latest issue of *Health Rays* has the following:—

“The Infirmary has complete facilities for administration and the care of patients. The ground floor contains the X-ray apparatus, examining rooms, physicians’ offices, waiting rooms and cubicles for patients. Provision has been made here for administering artificial pneumothorax, physiotherapy and artificial sunlight treatment. A dental examining room, nose and throat room, a room for holding autopsies, routine laboratory and fire-proof record storage departments are also located here. The diet kitchen is of the most modern type, being arranged for the scientific feeding of all the patients in the building, and is equipped with frigidaire, milk urns, dish sterilizers, etc. A corridor throughout the centre of this floor leads to a tunnel connecting the building with the present main and the old infirmary.

On the first floor are located the administration offices of the Sanatorium. Here, on either side of the main lobby, are the offices of the Medical Superintendent, Dr. A. F. Miller, and the Business Manager, Mr. E. H. Munro. In the lobby is the office of the information clerk, who has charge of the Sanatorium telephone exchange, and the radio which has recently been installed. Two long distance phone booths are situated nearby. Facing the south are rooms for twenty patients. All the rooms, whether single, two-bed or three-bed wards, open on outdoor porches, which admit the maximum amount of sunlight and air. All porches are equipped with Donovan windows, which prevent the entrance of rain and snow and entirely eliminate draughts. Each room has a modern Gatch bed offering the greatest possible comfort to the patient. By each bed is an electrical connection providing for heating pad, call for nurse, electric light and radio. At the rear of these rooms are located reception rooms, utility rooms, baths, service kitchen and the Matron’s quarters.

An automatic elevator serves each floor. Near the elevator are the nurses’ stations, and above each room door is an automatic light system for summoning the nurse to any particular ward.

The second floor has a capacity of thirty patients, the wards facing south-east, south and southwest, and contain the necessary utility rooms corresponding to the floor below. The third floor also provides for thirty patients; and in addition, contains an up-to-date operating room suitable for the performance of any tuberculous surgery. In this connection is a nurses’ work-room, sterilizing room, room for administering the anaesthetic, wash-up room, doctors’ reception room and library, all grouped about the operating room.

A fourth floor, which has been left in an unfinished state until more money is available, will be utilized in the future for doctors’ quarters, and natural sunlight and air treatment. The operating room as well as the baths and utility rooms throughout the building are all finished in white tile. The floors of the halls, rooms, and wards are covered with Battleship linoleum. The external structure is of smooth cement stucco, and the approximate cost of the building is \$200,000.

It is proposed to use the first floor as an observation centre for women patients who have been admitted to the Sanatorium. After being kept there for from two to four weeks for education and nursing purposes, they will be transferred to other quarters. The second and third floors are devoted to strictly bed cases, special nursing and operative cases.

The present capacity of the Nova Scotia Sanatorium is 271 beds. The eighty additional beds in the new infirmary will bring the capacity up to 350, of which 190 will be infirmary beds and 160 pavilion beds. During the past year arrangements were made with Dalhousie University whereby a three months' course of internship would be given at the Sanatorium to medical students in their final year. The opening of the new building and its increased facilities will undoubtedly enlarge the scope of their training.

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#### Bill Aimed at Nova Scotia Nurses Defeated.

The Massachusetts Senate has refused to accept a bill requiring any applicant to establish American citizenship before she could register as a nurse. Senator John D. MacKay of Quincy, charged that the purpose of the bill "was to deprive young women from Nova Scotia of the right to come to Boston to train for the nursing profession in the excellent hospitals of this district." The bill was defeated by a vote of 17 to 9.

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May 12th is Hospital Day at the Eastern Kings Memorial Hospital, Wolfville. May 11th is the date for this function for Harbor View Hospital, Sydney Mines.

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Sunday Evening, April 10th, the members of the First Presbyterian Church choir, Stellarton, motored to the Aberdeen Hospital, New Glasgow and sang a number of selections that greatly pleased the patients. This is mentioned to show the interest taken by the community in the patients in hospital and to suggest that the mental effect on the patients is most beneficial. Nor is it necessary that these visits should partake of a church service character. Doing good was ever the divine rule even on the Sabbath.

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Due to the generosity of the public of Truro and Colchester the Colchester County T. B. League has been and is successfully answering the many calls that are being made on it for relief in distressed cases. There are several cases in Kentville at present which look solely to the league for maintenance. Fresh cases are being brought to the League's attention practically every month. The League hopes that there will be sufficient funds to successfully carry this campaign on throughout this year.—(*Truro News*).

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#### Shortage of Suitable Candidates for Nursing.

The final report of the Lancet Commission on Nursing has been published. The Commission was appointed in December, 1930, to inquire into the reasons

for the shortage of candidates for nursing in the hospitals throughout the country and to make suggestions. The inquiry was exhaustive; information was collected from 686 hospitals relating to a nursing staff of nearly 44,000. The establishment in 1919 of the general nursing councils gave nursing a definite and a standard curriculum was instituted which led up to examination for admission to state registers. But these developments were not effective in increasing the popularity of nursing as a profession for educated women, although other professions and occupations open to women have become crowded. The nurse's conditions of training and service have fallen into disfavor, although conditions have been much improved in the best training schools. The public is still dominated by a picture of drudgery and cutting off of amusement and amenities which is no longer true. It is estimated that one fifth of the hospitals fail to secure suitable candidates as sisters and one half to secure staff nurses and probationers of the standard they require. Only a few hospitals are in position to insist on secondary education for all applicants and still fewer to demand a school certificate or matriculation. The evidence showed that long hours of work restrict recruiting. In 60 per cent. of hospitals the hours worked daily are from nine to ten; in 26 per cent. they are more than this and in 14 per cent. are less. In 50 per cent. the average weekly hours are from fifty-five to fifty-nine; in 35 per cent. more, and in 15 per cent. less. The commission favors a reduction of working hours to eight or eight and a half daily. The span of day duty should not exceed thirteen hours, during which at least one and one-half hours should be allowed for meals and three clear hours off duty. Other suggestions of the commission are as follows: The food in many hospitals should be less monotonous and more carefully prepared. A separate bedroom should be provided for each nurse, and the possibility of some of the trained staff being allowed to live out should be explored. Some relaxation of ward etiquette might be permitted in the nurses' home. Adequate notice should be given to the nurse of her time off duty. Three weeks' annual leave should be insured. Too much of the nurse's energies are devoted to routine domestic work, which should be performed by ward maids. The curriculum in these schemes should be at first general; later, anatomy, physiology and hygiene should be introduced.

(London Letter to *A. M. A. Journal*).

### Giving the Hospital a Personality.

How many patients or their families really want to see their loved one enter the hospital although they know that the care there is of the very best? Very few.

"Why is it that the hospital builded on sentiment, and on a spirit of service to the physically and mentally unfortunate and sick and suffering fails more often to achieve fully, its whole purpose, as compared with the hotel, and the store, and the movie, and the gasoline station."

This is a question asked in an address to the Children's Hospital Association by the President, Dr. Joseph Brenneman, Chicago.

One of the reasons pointed out, is that a hospital, like any other machine, is as weak as its weakest part. Somewhere between the time the patient enters and leaves the hospital there is apt to occur a misunderstanding about a bill, especially the laboratory fee, and the 'incidentals', a seemingly unex-

plained delay of some kind; or, possibly an encounter with a nurse who seems to be more interested in the orderliness of her linen closet and her daily routine than she is in the comfort of the patient; or with the interne physician who seems to be always 'busy'; or with the hard and fast laws of hospital rules and routine."

In other words the hospital trustees, the superintendent, the medical and surgical staff, the nurses, X-ray, massage and other officials right down to the door-man give the hospital a good or bad name with the public, irrespective of the failures and successes in treatment.

A recent editorial of the Journal of the American Medical Association states "Many a hospital board has been disturbed by the apparent loss of good will on the part of the community that it serves without realizing that its employees at the door have apparently never heard of the idea of service. Many a patient and many a relative of patients have been antagonized by an insolent attendant at the desk or a discourteous employee at the telephone.

"Dr. Brenneman says he can sum up the remedy in one word—tradition. There are hospitals in which it is traditional that kindness, attentiveness, thoughtfulness, and a spirit of service prevail throughout. There are others in which hard rules and chilliness are most evident.

"The staff—from highest to lowest—should have a keen sympathy and a genuine love for the work and for the human souls who occupy the sick beds."

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The passing of the late George E. Calkin of Kentville may bring about some action regarding a hospital for Kentville. It will be remembered that some four years ago Mr. Calkin turned over all his property, estimated at \$40,000, to the Kentville Hospital Commission for the establishment of a 30 bed hospital. The Commission gave him a small salary to manage the properties included in the gift and this has been his sole income since that time. Presumably, the settling of the estate will now bring about some action. Whether it is desirable there should be a hospital at Berwick, one at Kentville and one at Wolfville is a matter for very serious consideration.

## Department of the Public Health

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Deputy Minister of Health - - - DR. T. IVES BYRNE, Halifax.

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 MacLellan, R. A., Rawdon Gold Mines,  
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 Mcpy.).  
 Shankell, F. R., Windsor, (Hantsport  
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 Bishop, B. S., Kentville.  
 Burns, A. S., Kentville (County)  
 DeWitt, C. E. A., Wolfville.

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 Stewart Dugall, Bridgewater.  
 Cochran, W. N., Mahone Bay.  
 Zinck, R. C., Lunenburg.  
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 Chisholm, H. D., Springville, (County).  
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 Stramberg, C. W., Trenton.  
 Dunn, G. A., Pictou.  
 Whitman, G. W., Stellarton.

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 O'Brien, W. C., Wedgeport.  
 Siddall, A. M., Pubnico (Argyle Mcpy.)

"The Public Health Laboratory provides free diagnostic services on public health problems for the entire province. It is, however, to be regretted that misunderstanding exists among physicians as to the scope of this work. Generally speaking, this free service includes any examination that has a direct bearing on any problem of infectious diseases. At present this includes examinations of blood for Kahn test, widal test and culture for the Typhoid group; Cerebro-spinal fluids; smears for Gonococci; sputum, pleural fluid and pus for tubercle bacilli; throat and nasal swabs; urine and faeces for tubercle bacilli and typhoid; water and milk. Physicians desiring this service should address their communications to Dr. D. J. MacKenzie, Public Health Laboratory, Pathological Institute, Morris Street, Halifax, N. S.

Physicians desiring serums and vaccines should address their communications to the Department of Public Health, Halifax, N. S.

All specimens of tissue sent through Government owned or aided hospitals, shall be examined free of charge at the Pathological Institute, Morris Street, Halifax, N. S., under the auspices of the Department of Public Health.

Specimens should be addressed to Dr. Ralph P. Smith, Provincial Pathological Laboratory, Morris Street., Halifax, N. S."

**Report on Tissues sent for Examination to the Provincial Pathological Laboratory of the Department of the Public Health, from 16th March to 15th April, 1932. Inclusive.**

The total number of tissues sectioned was 79 which compares favorably with the monthly average of 66 specimens for 1930-31.

In addition to the above figure 48 tissues were sectioned from 9 autopsies.

An analysis of the nature of the biopsy tissues from the histological reports reveal:—

Tumours—Malignant.....	15
Suspicious.....	1
Simple.....	6
Other Conditions.....	48
Awaiting section.....	9
	—
	79

Unfortunately, the giving of an accurate diagnosis is hindered by many of the specimens arriving at the laboratory unaccompanied by any history whatever. Often the source of the growth is omitted. A short note, the sex, age of patient, duration of tumour and any other relevant points in the history would be much appreciated and would be considerable help in the giving of a fuller report on diagnosis and prognosis.

#### Raw Versus Pasteurized Milk.

The nutritive virtues of milk and milk products have for many years received wide acclaim in this country. There are, however, certain questions in relation to milk that many physicians are likely to have propounded to them repeatedly. The debate about the comparative values of the mammary secretion from different breeds no longer attracts attention to any considerable degree. One of the frequent queries relates to the possible choice between raw and pasteurized milk.

In a recent monthly bulletin of the New Haven Department of Health, Mendel of Yale has pointed out certain sanitary aspects of the problem. That raw milk may carry possibilities of harm from disease-producing micro-organisms with which it may become contaminated under current working conditions in the dairy industry is evident, he says, from recorded experience. It is generally admitted, furthermore, that this menace may in large measure be averted by pasteurization under properly controlled conditions. The possibility of securing "safe milk" through elaborate sanitary control of the entire process of marketing milk may be admitted; but at present the necessary procedures are too elaborate and costly, says Mendel, to make certified milk or other raw milk of equal freedom from objectionable bacterial contamination available to more than a limited number of persons, even if its use were pre-eminently desirable. The truth of these conclusions is all the greater during a period of stress like the present when funds for food purchases are often at a low ebb in many families. One may properly ask whether the use of milk made bacteriologically safer by proper pasteurization is detrimental in other ways.

Almost every mother has been taught that pasteurized milk, and perhaps preferably all milk, should be supplemented with some antiscorbutic, such as

orange juice or tomato juice. In other respects pasteurized milk seems to possess parity with the unheated product, if we may believe the latest studies at the Ohio Agriculture Experiment Station. Comparable animals particularly sensitive to nutritive deficiencies were fed under precisely similar environmental conditions with milks from a constant source of supply. The milk furnished to one of the groups was pasteurized. The assertion that pasteurizing destroys some of the calcifying properties of milk was not substantiated. There were no differences in growth. The Ohio investigators therefore assert that, until further evidence to the contrary is available, no alarm need be felt over the nutritive value of present pasteurized milk supplies.

(*A. M. A. Journal*).

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“I am firmly of the opinion that during a time of financial stress public health work is urgently needed as a public service even more than in normal times and that bodies, whether constituted on a statutory or a voluntary basis should make every effort to meet the greater need experienced during a period of depression.” (Hon. Dr. John M. Robb).

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The joint meeting of the Canadian Public Health Association and the Ontario Health Officers' Association will be held in Toronto, at the Royal York Hotel, May 25, 26, 27, 1932. A very large and interesting programme has been arranged.

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Dr. D. R. McClanahan, a district officer of health in Ontario, at the 15th Annual Meeting of the Ontario Health Officers' Association, read a paper entitled “Observations on Rural Public Health Work in Ontario.” In particular the points noted are:—

- Improvement in the reporting of communicable diseases.
- The problem of nursing service.
- How rural areas may be better served.
- More intensive local health administration.
- The expenditure of more money on health work.
- Better co-operation from the medical profession.
- Increased efforts in health education.

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Dr. George C. Melvin for over thirteen years Chief Medical Officer for New Brunswick has resigned and is spending the winter and spring in California recuperating his health. He is succeeded by Dr. William Warwick until recently District Medical Health Officer for the Southern district.

**Communicable Diseases Reported by the Medical Health Officers for  
the Period March 23rd to April 20th, 1932.**

County	Cer. Sp. Meningitis	Chicken Pox	Diphtheria	Infantile Paralysis	Influenza	German Measles	Measles	Mumps	Paratyphoid	Pneumonia	Scarlet Fever.	Typhoid Fever	Tuberculosis, pul.	Tuberc. other forms	V. D. G.	V. D. S.	Whooping Cough
Annapolis.....	..	..	1	..	29	..	..	1	..	5	..	..	..	..	1	1	30
Antigonish.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cape Breton.....	..	..	2	..	..	..	55	..	..	..	14	..	..	..	..	..	..
Colchester.....	..	..	..	..	27	..	..	2	..	7	3	..	..	..	..	..	..
Cumberland.....	..	..	1	..	30	..	..	..	..	..	..	..	..	..	..	..	..
Digby.....	..	..	..	..	6	..	..	..	..	2	..	..	1	..	..	..	1
Guysboro.....	..	..	..	..	11	..	1	..	..	2	..	..	..	1	..	..	..
Halifax City.....	..	1	5	..	..	..	1	..	..	..	14	..	..	..	..	1	3
Halifax.....	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..
Hants.....	..	..	..	..	..	..	25	1	..	1	6	..	..	..	..	..	..
Inverness.....	..	..	..	..	17	..	..	11	..	3	..	..	..	..	3	..	..
Kings.....	..	..	..	..	2	..	..	19	..	..	..	..	..	..	..	..	..
Lunenburg.....	..	..	..	..	..	1	..	25	..	5	3	..	..	..	..	..	..
Pictou.....	..	2	..	..	18	..	..	9	..	3	..	..	2	..	..	..	8
Queens.....	..	..	..	..	4	..	..	..	..	..	1	..	..	..	..	..	..
Richmond.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Shelburne.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Victoria.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Yarmouth.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
TOTAL.....	..	1	9	..	144	1	82	68	..	28	44	..	3	1	4	2	42

**RETURNS VITAL STATISTICS FOR FEBRUARY, 1932.**

County	Births		Marriages	Deaths		Stillbirths
	M	F		M	F	
Annapolis.....	8	19	4	17	13	0
Antigonish.....	3	7	2	9	13	0
Cape Breton.....	99	76	43	30	32	10
Colchester.....	30	18	9	16	18	1
Cumberland.....	40	32	15	25	19	4
Digby.....	14	23	6	23	13	2
Guysboro.....	16	7	7	5	7	1
Halifax.....	139	110	61	69	59	17
Hants.....	14	18	9	12	12	1
Inverness.....	23	27	4	19	23	0
Kings.....	24	19	11	7	4	2
Lunenburg.....	17	17	11	16	13	2
Pictou.....	30	23	12	26	20	0
Queens.....	6	5	4	0	2	0
Richmond.....	6	9	5	7	4	0
Shelburne.....	20	10	7	9	12	1
Victoria.....	3	4	1	0	2	0
Yarmouth.....	23	22	11	9	14	4
	<u>510</u>	<u>446</u>	<u>222</u>	<u>299</u>	<u>280</u>	<u>45</u>
TOTALS.....	956		222	579		45

▼ *"Calcium A" is an ideal restorative in debility following influenza and the common cold*



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In view of claims being made by various manufacturers regarding the vitamin potency of Cod Liver Oil concentrates, the following points may be emphasized in connection with "Calcium A" which has stood the test of seven years' clinical experience.

(1) The concentrate used in its preparation is exhibited in an oil base enclosed in soft gelatin capsules. It has been our experience that its vitamin potency is much more satisfactorily preserved in oil which is the natural medium for the fat-soluble vitamins A and D.

(2) In addition to 70 milligrams of organically combined calcium and phosphorus, each "Calcium A" capsule contains 3,000 units Vitamin

A (U. S. P. x) and 50 units Vitamin D (Steenbock). This approximates the vitamin value of one teaspoonful Ayerst Biologically - tested Cod Liver Oil. The degree of concentration thus afforded is responsible for the satisfactory results obtained with "Calcium A." (A more highly concentrated preparation is supplied in the form of Alphamettes which con-

tain 10,000 units (U. S. P. x) of Vitamin A and 180 units (Steenbock) of Vitamin D, thus representing over three teaspoonfuls of Ayerst Cod Liver Oil).

(3) "Calcium A" is an entirely Canadian product and since it is intended for professional use is marketed in keeping with professional dignity.

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# "CALCIUM A"

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## Correspondence

### PUNCTUALITY.

To the Editor:—

The season for meetings is at hand again, when members from country districts can attend, being independent of the often unsuitable railway service, and it may be just as well to mention a frequent source of great annoyance now, in an endeavour to have it eliminated in the future.

This is the practice of *not* starting on time.

Meetings are advertised to commence at certain hours. Every member knows that, including the president and secretary.

Complaints are made that outside members do not attend as often as they should. Rarely do you hear complaints that those residing in the town a few yards away do not show up, although they don't.

What happens? The hour of meeting is arranged to suit the convenience of the town men, 8 or 8.30 p. m. sometimes. We drive in to hear a paper that interests us very much, may be 20 to 60 miles or more, and get there on time. Does the president call the meeting to order at 8 or 8.30? Not that you can notice it, but all hands and the cook are chatting for an extra half hour or more, and at last it dawns on the crowd what they are collected for. Result is that sometimes the outsiders have to lose half or all of one of the papers, if they have to catch a train, or get back home. The trains do not wait. They generally start on time, and the conductor and brakeman and driver do not stand around waiting for late passengers who might come after a bit.

Besides the annoyance, it is an insult to the speakers who sometimes come many miles to ask them to wait for the local men to gather during the next half hour, when they have arrived on time, besides the gross discourtesy on the part of the late members. It is just as easy to commence on the hour stated as ten or twenty minutes later, and let those present have the benefit of their promptness, and the lazy ones miss it.

To give specific instances, I may mention the following, among other, meetings I have attended, the first figure being the nominal time of starting, the later the actual time, and this will tend to show the universality of the habit. Taking the places in order geographically, Campbelltown, N. B. Med. 10 to 20 minutes late. Moncton, 6.30 and 7.25, also 8.30 and 9.20. My train left at 10.10 from the station, 20 minutes walk away. 'Nuf said? Saint John, 10 to 20 minutes delay. Amherst nearly on time. About 5 minutes late. Truro, 20 to 50 minutes' delay. Antigonish half an hour. Halifax, 10 to 30 minutes. One has a nice feeling after driving for two hours in the early morning to be on time for a daylight saving nine-o'clock start, which is to us an 8 o'clock one, and the local men who have been accustomed to it for months do not show up to lecture till 20 minutes later. Windsor, 10 to 40 minutes' delay. The president arrived as the meeting closed at 9.40 instead of 8. p. m. Wolfville, 15 minutes' delay. Kentville, on time. Middleton and Bridgewater, fairly on time. Digby, 30 to 40 minutes late, and finally Liverpool slight delay.

For the love of Mike, chairmen, *start* the meetings on the advertised times, let the late comers do all the missing. They will soon learn to come up to scratch!

(Signed) V. F. CONNOR.

Maitland, N. S.,  
April 11th, 1932.

Vancouver, B. C.,  
April 6th, 1932.

The Editor,  
Nova Scotia Medical Bulletin,  
Halifax, N. S.

Dear Sir:—

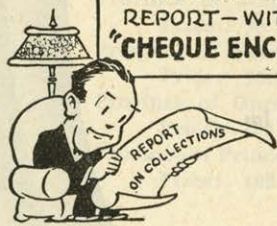
At the close of our Library year on March 31st, I was instructed by the Library Committee to convey to you our thanks for your courtesy in continuing to send us your valuable BULLETIN which is much appreciated by our readers. Again thanking you,

Yours faithfully,

(Signed) L. FIRMIN,  
Librarian.

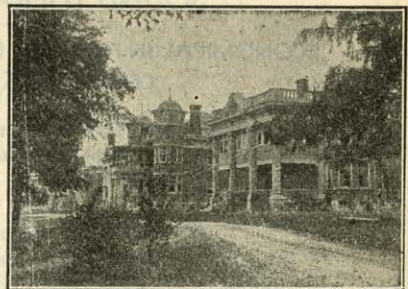


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