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THE
CANADA LANCET

A Monthly Journal of Medical and Surgical Science, Criticism and News

THE OLDEST MEDICAL JOURNAL IN THE DOMINION

Vol. LIV

TORONTO, CANADA, DECEMBER, 1920

No. 4



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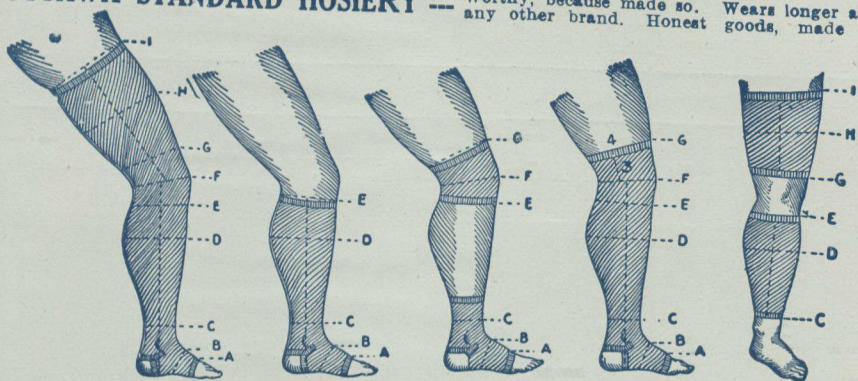
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The Canada Lancet

JOHN FERGUSON M.A., M.D., AND W. EWART FERGUSON, M.B., EDITORS

VOL. LIV.

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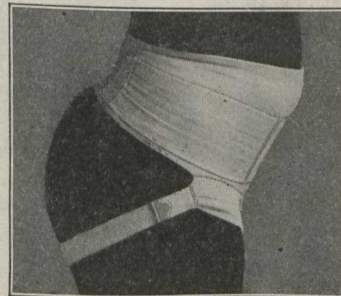
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The Canada Lancet

Vol. LIV

TORONTO, DECEMBER, 1920

No. 4

EDITORIAL

THE LIFE PROTECTION ASSOCIATION OF CANADA (Limited).

We have before us the prospectus of this company. Its authorized capital is \$400,000, and is incorporated under the Ontario Companies Act. The following officers are given: Hon. President, Dr. C. K. Clarke, M.D., LL.D., late Dean of the Medical Faculty of the University of Toronto; Directors, E. L. Cousins, Chief Engineer and Manager, Toronto Harbor Commission; Dr. H. K. Detweiler, M.B., M.D., Clinician; James E. Day, of Day, Ferguson and Walsh Corporation, Attorneys; J. S. Douglas, Managing Director and General Manager the Mail and Empire, all of Toronto, and Henry Watters, Ottawa, Chairman of Education and Research, Ontario College of Pharmacy; Board of Diagnosticians, Chairman, Dr. G. S. Strathy, M.D., C.M., M.R.C.S., L.R.C.P., Clinician; Dr. F. Arnold Clarkson, M.B., Clinician; Dr. John A. Oille, M.B., M.D., Clinician; Dr. H. K. Detweiler, M.B., M.D., Clinician; Dr. S. Young, B.A., M.B., Clinician; Medical Director, Lieut.-Colonel H. C. S. Elliott, M.D., C.M., L.R.C.P., O.B.E.; Secretary-Treasurer, T. Morley Harvey; General Offices, Royal Bank Building, Toronto.

In a letter accompanying the prospectus, or rather announcement of the company, the advantages of the company are set forth, such as the prolonging of life and the finding of a sound investment. The announcement of the association states that of the capital \$250,000 is 8% cumulative preferred shares (par value \$100), and \$150,000 is common stock. With each two shares of preferred, the purchaser receives one share of common stock.

We are told that this is the first association of its kind in the British Empire, and the second in the world. The announcement states that "the ethics of the medical profession do not permit physicians to

advertise and the public continues to consult the family physician only when the body is impaired and frequently beyond remedial aid." Then further we are told, "with accomplished physicians and a well-equipped laboratory, it furnishes the subscriber with a careful report upon his health, makes recommendations regarding diet and exercise, but does not prescribe."

Then, again, it goes on to state, "The main object of the association is by means of a national and continuous advertising campaign, to bring home to the public mind the fact that the human machine needs periodical examination as much as an automobile or a piano, and that, without this, it is unfair to expect the physician to remedy long-neglected impairments."

Now, these quotations sound very nice but do they fit in with the 8 per cent. cumulative dividend idea? If the main object is to educate the people to get examined periodically, why the need for 20,000 members, as is expected in the first year?

The announcement states that "the association's objective in the first year's operations is a membership of 20,000." It is also stated that "an advertising appropriation of \$50,000 it is conservatively estimated that this figure is well within the bounds of reasonable expectation." It would seem that the real idea is the securing of members "at an annual cost of \$15."

"Under no circumstances will the association's examiners or diagnosticians prescribe direct for the subscriber, although the family physician will be given every possible co-operation and be kept advised of the character of the urinalysis report every four months."

This does seem wonderfully kind and good to the family physician, who, no doubt, will greatly appreciate being assisted in this manner!

The announcement also tells us that "arrangements are being made for local examiners in every community throughout the country." "The reports from these physicians will pass through the hands of a medical director to the Diagnostical Board, together with the urinalysis reports from the home office laboratory. The findings of the diagnosticians will be communicated to the subscriber who, in the event of any impairment, will be recommended to consult his family physician, and the latter will be supplied with the technical features of the case, together with such recommendations as he may desire."

The family physician, again, should feel thankful to this association for working up business for him. The association proposes spend-

ing \$50,000 in advertising for members, and then these members are examined (diagnosticated), and, if anything is found wrong they are "recommended to consult the family physicians." How beautifully altruistic all this is!

Then we learn that a man in Victoria or Halifax, for \$15 a year, can have his case diagnosed, and treatment outlined by some local doctor who represents the association as its examiner, and who sends his reports to the head office for scrutiny by "the Diagnostical Board." This does seem to be a brilliant way of keeping the people in good health.

There is to be a regular campaign for members. It is stated some members are expected through advertisements in the newspapers. But it is stated also that in addition to the members secured in this way, "an Industrial Department will keep in constant touch with large commercial institutions, inviting them to secure reports upon the health of their various executives in order to avoid the inevitable derangement of business due to the sudden collapse or death of an important official." Then also "special agents will be appointed in all the small towns in Canada to secure memberships and carefully explain the character of the association's operations."

Now, this is very thoughtful. Just notice how careful the association is going to be to such great concerns as the Canada Pacific Railway, or the Massey-Harris Company, or some large bank, in order that they do not come to grief through the unexpected sickness of some official. The agents are to scour "the small towns" for membership. But these agents are to "carefully explain the character of the association's operations." This, we suppose, would cover the \$250,000 preferred stock, and the \$150,000 common stock, and the 8 per cent. cumulative dividends. As people do not usually work for nothing these "special agents" will no doubt be paid either salary or commission.

How thoughtful this is for it is a new method of solving the problem of unemployment. This should help the health of the people.

But a combination of the shrewd business men and some medical practitioners may start a similar association in Winnipeg, and offer the same advantages for \$10 a year. Or some other city may start such a scheme and do the work for \$5 a year. There is no telling where competition may lead to.

On the last page there is an estimate of how the association will do from a money making point of view. As this part of the announcement would not be of any use in the securing of members, we think it must

be for the purpose of trying to sell the shares of the association. Here it is:

8% cumulative preferred stock		\$250,000
To be issued	\$150,000	
Common stock		\$150,000
To be issued	\$150,000	

The \$150,000 8% preferred stock will be issued at par with a bonus of 50% common stock.

Estimate of earnings, expenses and profits: Gross income, first year of operating, 20,000 members at \$15 each. \$300,000

Operating expenses:

Rent and administration	\$ 35,000	
Advertising	\$ 50,000	
Literature and postage	\$ 20,500	
Medical fees and laboratory expenses	\$120,000	
10% depreciation on office and laboratory equipment	\$ 1,500	
	<hr/>	
	\$227,000	\$227,000
	<hr/>	
Net earnings		\$ 73,000
Dividend on preferred stock		\$ 12,000
		<hr/>
Net to common or at rate of over 40%		\$ 61,000

Croesus had nothing so good as this; and we think it puts the tales in the Arabian Nights in the shade. With such a money-making scheme as this placed before it, the medical profession may turn Victory bonds and Ontario debentures aside and apply for the common stock in the "Life Protection Association of Canada."

But to be quite frank, we do not like the scheme. We are of the opinion that it will tend to commercialize the profession and lower it in the estimation of the people. We do feel that the great bodies of the medical profession such as the Canadian Medical Association, the Ontario Medical Association, the Toronto Academy of Medicine, the Medical Faculties of the Universities, and College of Physicians and Surgeons for each province should look closely into this new movement. If there is no rule governing such things, it is time one was enacted.

THE ROCKEFELLER GIFTS TO CANADIAN UNIVERSITIES.

Preliminary apportionment of the \$5,000,000 fund set aside by the Rockefeller Foundation for the aid of medical education in Canada was announced a short time ago in a statement by George E. Vincent, president of the Foundation.

"This action follows eight months of investigation, including visits by representatives of the Foundation to the principal medical centres of the Dominion," the statement said:

"The appropriations now made are of two classes: first, contributions toward increasing the permanent resources in buildings and endowments of schools already well established; second, contributions to annual income of institutions which are undergoing reorganization.

The following appropriations were announced for the establishment of schools:

McGill University, Montreal	\$1,000,000
University of Toronto	1,000,000
Dalhousie University, Halifax	500,000
University of Manitoba, Winnipeg	500,000

This leaves a reserve for future distribution of two million dollars from the income of which the Université de Montreal and the University of Alberta, Edmonton, receive \$25,000 each for the year 1920-21.

Applications from these schools for further aid will be considered.

Of the \$2,000,000 reserved for future distribution, the income is to be used toward current expenses, fellowships and other forms of aid to medical education.

In each case the apportionment now announced, represent contributions to plans of development, worked out by the institutions concerned, which involves substantial sums from other sources.

In the foregoing several points merit attention. In the first place \$2,000,000 remains undistributed, and may remain so indefinitely; but the interest is to be used in aid of medical education as outlined. It will be observed for the four great Western Provinces the sum is comparatively small. These are the younger parts of Canada, and most in need. We could have wished that a larger share had gone out west to aid in research and education. Manitoba receives \$500,000, and the University of Alberta is to be aided to the extent of \$25,000 for the coming year. It is to be hoped that this young University shall yet receive a substantial portion of the remaining \$2,000,000.

Then one notices that the Province of Quebec fares better than Ontario. McGill University receives \$1,000,000, the same as Toronto, but the University of Montreal (Laval) gets aid to the extent of \$25,000 next year out of the income of the \$2,000,000.

The University of Dalhousie in Halifax receives \$500,000. This good old university supplies the needs of the Maritime Provinces, and we hope may share still further when the remaining part of the Rockefeller fund is apportioned.

It was a surprise to many to find that Queen's University, Kingston, and Western University, London, were not on the list of institutions to be assisted. Queen's University is an old seat of learning and has done splendid work in the past. Aid to this university would meet with unanimous approval. The Western University, London, bids fair to perform great service for the central and western part of Ontario. It is among the youngest of our universities, and this alone should create for it a strong claim to be a participant when further distribution is made.

It was a praiseworthy thought that sent \$5,000,000 of the Rockefeller Foundation to this country, but it would be a matter for much regret if our many millionaires should permit this occasion to pass without implementing the Rockefeller gift by gifts totalling as much or more in aid of our Canadian Universities. The gift, however, from across the line may have the effect of inducing some in this country, who can spare the money, to give liberally.

FAITH HEALING.

This topic is like the poor, always with us. It is only because certain persons put forward the claim to be able to heal people by faith, or the statement from time to time that cures are effected in this way that we take up the subject. It is the duty of a medical journal to examine, with strict impartiality, into the merits or demerits of every form of healing the sick.

Some diseases are of a purely suggested nature. They belong to the psychosis group. In such cases time often works a cure, and in some of them a suggestion may do the same. The charm working of an Indian, the absent treatment of a Christian Scientist, the suggestion of a hypnotist, or the prayer of a devout person, may act as the required stimulus to the mind of the afflicted party. But there is nothing supernatural in this. Indeed, it is just as ordinary and along ordinary laws

as the applying of a splint to a broken arm or the giving of a dose of castor oil for constipation.

Then there are many diseases that have a time limit. These cases get well or die in a reasonably short time. Such cases are not cured by faith, but by time limit. Proper treatment may do much to hasten the recovery and reduce the death-rate. Mental stimulation, such as inspiring the patient with hope and confidence, is of value, but here again we are working on the line of natural law. The mental attitude influences the functions of the body. "A merry heart goes all the day, and a sad one tires in a mile." Happiness aids digestion while sadness depresses it. There is nothing more than the ordinary laws of physiology in this.

There are also a large group of organic diseases, many of which are recognized as highly fatal. Some of these are very chronic and are marked by periods of improvement and relapse. Patients ill with such diseases are seldom able to view their own conditions sanely, and may be influenced by false hopes to declare they feel very much better than they are. Under such mental exhilaration they may even walk though they had not done so for some time. They may put on weight, due to better appetite. Such cases may readily be featured as cures by faith. Their improvement, or cure, as may sometimes happen, is only along the line again of natural laws that govern the human body, both in health and disease. Under mental influence pain may be forgotten.

Now many fall back upon the New Testament for their warrant that diseases can and are cured by faith. But here again our sincere friends are not reasoning well. All of the miraculous cures wrought by Christ and his disciples were done to demonstrate power, and not as a system of healing, otherwise this method would have been made universal. Then, again, the accounts in the New Testament enjoin the use of means. Further, a careful study of the New Testament makes it quite clear that the power of healing the sick in a miraculous manner was not handed on to an indefinite time in the future. We have taken the opinion of eminent Greek and Biblical scholars, and this is the view held, that the New Testament does not give a warrant for faith healing for the successors of the disciples.

Is there proof of this in practical life? We think there is. To faith a case of cancer in the liver would be as easily cured, as a case of fancied or hysterical paralysis. What do we find, however? Many cases of hysterical paralysees are cured by faith (mental suggestion), none of cancer of the liver. The centuries present no such cure. The fact that many persons throw away their crutches and walk only proves that their

cases were of the neurotic type, or in their exaltation they forgot their pain, or summoned up a dormant energy.

Recently there was reported the case of a consumptive woman who was so influenced in a church meeting that she walked home, though she had been taken to the church on a stretcher.. She soon relapsed. Cases of hip disease were reported as cured at the same church meeting, but the diagnosis was not verified by proper experts.

Just the other day we read that at a twentieth-plane meeting the old custom of laying on of hands was practised, and the statement made that many had been cured in this way. Here we are back to suggestion. This is exactly what happens when a neurotic is benefitted by Christian Science. It is not faith but suggestion founded on fraud.

UNIVERSITY OF TORONTO MEDICAL DEPARTMENT.

Some rumors have come to our ears that important changes are to be made in the working of the medical department of the University of Toronto. With the proposed plan for all-time teachers, and how they are to be trained for their duties as teachers we are not at present concerned.

What we do propose saying a few words upon is the proposition as we have heard it that only ninety students will be admitted each year to the study of medicine. This cannot be allowed to come into operation. The Medical Department is asking for large sums of money from the Government of Ontario, and, in face of this, proposes to limit the number to be educated. No legislature would stand for this.

The entire Province is asked to contribute money, and only ninety of her sons are to be admitted as students. The remainder, desiring a medical education, must go somewhere else than to the medical college of the Provincial University, notwithstanding that this College has been liberally aided by public funds, and is seeking further aid from the treasury of the Province.

We do not believe that it is in the best interest of the University of Toronto to make any effort to limit the numbers of medical students attending her classes. The limit should only be determined by the accommodation for them. Should the numbers increase beyond present accommodation, then more accommodation must be found. If anyone possess the required **standard for entrance and makes application** within the proper time, we do not believe the University could legally refuse admission.

ORIGINAL CONTRIBUTIONS

THE ROLE OF THE ENDOCRINES IN THE PRODUCTION OF
MENTAL DISORDER.

BY H. CRICHTON MILLER, M.D., Ch. B.

THE title of this paper is ambitious; the paper itself is the reverse. I cannot claim to instruct my hearers, and I have no desire to provoke controversy. My sole aim is to stimulate thought along a line upon which a great deal of thinking is necessary before we reach the stage at which discussion becomes profitable.

I desire at the outset to express my deep indebtedness to Miss Katharine Pilkington, of the Royal Society of Medicine, without whose patient co-operation I could not have attempted to grapple with the extensive and frequently conflicting literature of the subject.

I will begin by drawing your attention to a few desultory points in psychopathology which are familiar to all of us.

Take, for instance, the rooted conviction—which is not by any means restricted to the laity, but is common among practitioners—that mental improvement can only be associated with increase of bodily weight. When we consider the great group of hypothyroidic mental cases we realise not merely that some patients can only recover mentally as they lose weight, but also that others must not be expected to change in weight during their recovery, because the increased activity of the thyroid neutralises the gain in weight due to an otherwise improved nutrition. I submit that the almost universal conception of mental recovery and weight-gaining calls for reservations if we think more frequently in terms of hormones.

Or take the case of the neuropathic girl, who generally reaches the neurologist or the psychotherapist when she is in her early twenties. How often the mother replies to questions about the patient's previous health: "She has always been the one in my family to take every disease that was going, from mumps to diphtheria." Are we to assume that the association of the psychoneurosis with a low resistance to infection is merely coincidence? If not—and I, for my part, am unable to do so—we must surely group together the psychoneurosis, the diathesis, an unsatisfactory endocrine equilibrium and a low immunising reaction.

Again, let us consider the connection between the growth of hair and mental disorder. Take three simple cases as examples: (1) The case of

the smooth-faced young man suffering from dementia præcox. (2) the case of the middle-aged woman whose hypertrichosis fluctuates with her manic depressive condition; (3) the girl of marriageable age with an illusion of hypertrichosis. We must regard the first of these instances as affording confirmatory evidence of the influence of the testicular hormone in the production of many—if not all—cases of dementia præcox. The researches of Sir Frederick Mott on the one hand, and those of Jung on the other, into this subject may be compared to the two pillars of a bridge whereby the gap in our knowledge is to be spanned; the connecting structure, however, has not yet been built on to these notable foundations. In regard to the second case, that of the manic depressive woman with hypertrichosis, I venture to say that every practical psychotherapist lays stress on the importance of these variations; I am not equally sure that he connects the thought-life of the patient directly with the hair-growth. Yet we cannot avoid the conclusion that thought influences the endocrine system, which, while reciprocally influencing thought, also influences hair-growth. I say "reciprocally" for, though the influence of the genital hormones on the growth of the hair cannot be doubted, we have to remember that facial hypertrichosis would provide any woman with material for conflict. This fact is, no doubt, the central one in the third case, that of the girl of marriageable age who has an obsessional illusion of hypertrichosis; yet in this case there appears to be something of a more general nature involved as a causative factor. It is as though hair in abnormal situations were the outward and visible sign of regression towards the ape-level of development, and that therefore the girl with the obsessional illusion of hypertrichosis is but expressing her terror that the primitive sexual level to which her thought-life has sunk will manifest itself in this external way. At all events we perceive that hair-growth is intimately associated with the sexual life, and we know it to be also associated with the thyroid gland. It seems to me probable that the pituitary gland also influences this phenomenon on the one hand and influences the mental life on the other; but my experience has not been sufficiently wide in this matter to allow of my offering any generalisation.

Reverting to the thyroid, I submit that the mental effects of thyroid insufficiency are not only of a general kind, but also of a specific nature. Hypothyroidism does not merely produce a lethargy, or a lowering of the general mental life: it influences the creative activities infinitely more than it does the reproductive. For instance, examples of abnormal memories in cretins are well known, but I venture to say that no one, as

yet, has met with the myxœdematous artist. This brings us to the question of the parallelism between endocrine equilibrium and diathesis, which Sajous has endeavored to establish. I shall refer to this later, but at this moment I merely point out that a correlation is invariably perceptible between physical reaction to stimuli and psychical reaction to stimuli. If, therefore, thyroid insufficiently increases physical inertia, it is natural that it should, at the same time, increase mental inertia. Irritability of body, restlessness, rapidity of expression, swiftness of thought—all these must be linked up in some way, and it is to the hormone balance in general and the thyroid equilibrium in particular, that we look for a unifying factor.

In dealing with the thyroid, however, the only unit of the endocrine group of which we have anything like a working knowledge—how many of us have realised that the entire literature of the subject will need to be rewritten in the course of the next generation? Consider the recent discoveries made concerning the parathyroids, including the suggestive researches of Dr. David Forsyth. We know from these that certain physiological effects of the thyroid itself are antagonised by those of the parathyroids, just as certain of its functions are antagonised by those of the adrenals. And yet we speak—as I have been speaking—of the thyroid function with no differentiation between these two principles. Consider again such a theory as Horsley's of the ætiology of epilepsy. We are compelled to ask: Is the cause thyroid inadequacy in relation to parathyroid activity? Or is it parathyroid inadequacy in relation to thyroid activity? Or is it either of these in further relation to the functions of other endocrine glands?

Whatever is meant by the "epileptic diathesis" I take it that there is a specific endocrine equilibrium correlated to it; while we have only to turn to history for evidence of the relationship between epilepsy and genius. Again, seeing that we know one of these two hormones to be pressor and the other depressor in action, how is it that we composedly prescribe preparations of thyroid extract without ascertaining whether they contain both principles or the thyroid hormone only?

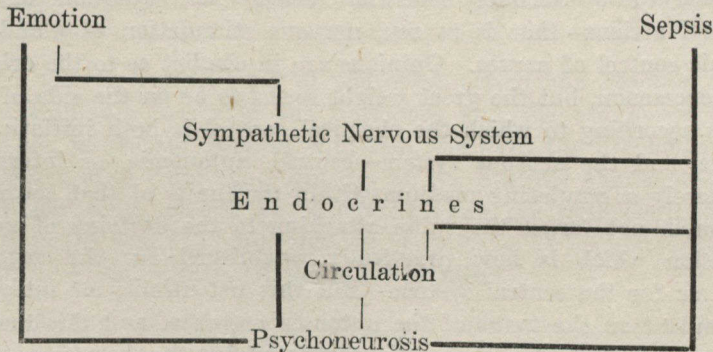
I have referred to manic depression; in its grosser forms it is known to all alienists as a phase of paranoia, but depression in its milder forms as a phase of cyclothymia comes under the notice of every intelligent observer of human conduct. Periodic variation in mental states is a phenomenon which, although we are so well accustomed to it, might reasonably excite our astonishment. For, be it noted, we are not dealing with a condition in which the mental variation is secondary to some

cases obeying a rhythmic law with an exactitude which is persistently psychogenesis in most, if not all, cases of manic depression, I see these cases of cyclothymia or early manic depression permanently cured by psychoanalysis. And yet, convinced though I am of a pure and mysteriously insusceptibility to external influences whether physical or psychic, favourable or unfavourable. I recall at this moment two cases in one of which there was an appreciable ten-days' cycle, while the other had a perfect four-year periodicity. Though I feel compelled to attribute the origin of the condition to mental and emotional factors, I can only interpret the periodicity as due to a physiological function. I believe that we are logically compelled to postulate a mechanism whereby the thought-life in repression and conflict becomes reflected in the endocrine system and so assumes that rhythmic fluctuation which we cannot easily attribute to purely psychical processes. Not long ago, in an address delivered in this hall, it was claimed that the familiar symptoms of dark rings round the eyes is, from the psychoanalytical point of view, a periodic physical function—as, for example, the psychic changes periodically accompanying menstruation. We are dealing with a condition in which the main aetiological factor is psychic. If anyone be in-manifestation of exhibitionism. I do not quote this as an example of Freudian generalisations, but merely in order to point out that, being largely occupied with mental mechanisms, that school tends to ignore those links without which the chain from psychical repression to somatic symptom is incomplete. I wonder what connecting links the author of that statement would postulate if he were compelled to think in terms of psychophysical interaction! Would it be a vasomotor change due to the repressed exhibitionism of a stimulation of the gonads, or a temporary adrenal deficiency?

Enough has been said to indicate the vast field that lies at hand for patient research and thoughtful speculation, for though the literature of the ductless glands is already enormous its practical bearings are very scanty. Leonard Williams and one or two others, however, have led us on by a bold therapeutic empiricism to results far more notable than could have been achieved on more laboratory endings. We stand today between a moderately successful endocrine therapy on the one hand and a vast amount of unco-ordinated laboratory data on the other. In confirmation of this statement we need only reflect on the apparent incompatibility of hormone therapy based in the "stimulative" principle with that based on the "supplementary" theory, whereas now, more than ever, we need a scientific basis for endocrine treatment, especially in

relation to mental disorder. For the endocrine link is obviously accessible to treatment and therefore this is the link which, as medical knowledge advances, will be less and less frequently involved. I mean that the internal secretory system will not be so often attacked when we have manned the outpost and learned to forestall endocrine disorders by dealing promptly and effectively with (a) early psychopathic states, and (b) septic conditions. Seeing, however, that, as yet, we deal so with neither of these things—seeing that we allow about ninety-nine per cent. of curable psychopathic states to run their course—seeing that we tolerate in all classes of patients an intolerable amount of chronic sepsis—oral and otherwise, seeing that, in short, the outposts are *not* manned, we need now, more urgently than we shall ever need in the future, to be able to deal directly with the endocrine situation.

By way of attempting to convey a mental impression of this endocrine relationship, I submit in a very tentative way the following diagram:—



Here it will be seen that, as I have already suggested, the endocrine link may be attacked from either the physical or the mental side. It is, of course, clear that a psychoneurosis may be purely psychogenic and involve no somatic factor whatever, but everyone will admit that the involvement of the physical factor is extremely common. Presumably the emotional disturbance influences the endocrines through the sympathetic nervous system, but since this system is a link which is inaccessible to direct treatment, its importance is secondary. The endocrine factor may act directly in producing the neurosis (for example, hyperthyroidism causing tremor) or indirectly through the circulation (for example, hypoadrenia causing a lowering of the cerebral blood-pressure, this in its turn producing headache, irritability, and so on). At the same time it must not be forgotten that the

endocrine factor may act reciprocally with the emotional one in influencing the mental life (for example, the depression of hypothyroidism) while any change in the circulation is reflected in the thought-life.

Turning now to the somatic side, it is clear that a chronic intoxication may poison any and every gland of the endocrine group, but it seems probable that the thyroid is the most susceptible to streptococcal infections—from teeth, tonsils and antrum—and that the adrenals have a special susceptibility to *B. coli* invasions. Be that as it may, once the normal equilibrium has been disturbed by sepsis, the path to the neurosis is clear. Again, septic conditions acting directly on the arteries may produce—indeed, must produce—a psychical disorder: either a mere depression or a definite neurosis, as, for instance, asthma in sclerotics. Lastly, that auto-intoxication may act directly in producing mental disorder is probable, though not so obviously certain as has been maintained.

We may now consider somewhat closely the question of these reciprocal actions—that is to say, nervous stimulation of glands and hormonal control of nerves. Opinions are in conflict as to the origin of this phenomenon, but the great weight seems to be on the side of those theories according to which the chemical control is both initiative and ultimate, and the nervous system—central, autonomic, or interactionary—merely a regulating medium within the limits of that control.

We must not forget the value attaching to the doctrine of nervous integration which is now practically established for the vegetative as well as for the central system. But this potentiality of integration is dependent on the *tonus* of the autonomic system, and this tonus, as Cannon has effectually shown, is regulated by the hormones of the endocrine glands.

In this connection Eppinger and Hees have propounded their fascinating, but purely speculative, theory with its interesting clinical picture of "vagatonia" and its theoretical hormone, "automin." According to these authors the entire vegetative nervous system is under the control of the ductless glands, and since the adrenal bodies are continuously influencing the sympathetic, there must, they conclude, be some substance influencing the cranial or sacral autonomies (whose actions antagonise those of the sympathetic) and so maintaining equilibrium. They have therefore postulated such a secretion, to which they have given the provisional name of "automin," and they consider that it is most probably produced by the pancreas. Hence they have developed the picture I have just mentioned, of vagatonia

—or vagus overbalance—due to a defect in the secretion. Now, since the emotions find their paths of differential expression through the vegetative nervous system, it is obvious that this hypothesis of “vagatonia” and its correlatives and antagonists, would be of great value in considering the ætiology of mental disorder, but it must be, in the light of facts, reluctantly abandoned. Its drawback is not that it is unsupported by a single shadow of proof (because, as we have seen, endocrinology moves freely in a world of theory yielding practical results), but that in Swale Vincent’s words: “it is based upon the false assumption that adrenalin is essential for the maintenance of health or even of life, and that among other functions it normally maintains the tonus of the sympathetic nervous system.” With the disproof of this assumption Swale Vincent contends that the argument for the existence of autonomin falls to the ground. The action of adrenalin is certainly identical with that produced by stimulation of the sympathetic nervous system, but the sympathetic system can, of itself, do anything that can be accomplished by adrenalin.

From the various theories of endocrine action and reaction emerges the indisputable fact that the hormones and the autonomic nervous system act as mutual controls, and that “between the nervous system—or portions of it—and the hormones of the ductless glands there is an exceedingly close affinity as important from the pathogenic point of view as is the fact that disturbances of function in an endocrine gland may involve one or more of the other glands.”

The effector channels, so to speak, of endocrine influence are, *ipso facto*, currents in the blood stream, but its determining factors vary. It may be due to: (1) Direct embryological relationship either between the endocrines themselves (as, for instance, between the thyroid and the female generative organs), or between the ductless glands and other organs or tissues (as between the suprarenals and the liver); (2) chemical mediation between the autonomic and the central nervous systems; (3) direct action of the secretions on the central nervous system and its “power stations”; (4) effect on blood-pressure; (5) protective—that is, immunising—mechanism of the hormones. To these may perhaps be added a sixth factor, hypothetically advanced by Dr. Fielding Garrison—namely, the maintenance of thermo-dynamic equilibrium in the body, not only in conserving its energy, but also in dissecting the dissipation of that energy. Let us now briefly consider these modes of influence:—

(1) The striking fact of the correlation among the endocrine organs themselves, and between these organs and others less strictly "endocrine," and the no less remarkable discovery that this relationship is widely differential in degree, produces the conviction that in the primitive organism and in the embryo the controlling factor of life and growth is the direct chemical action of glands or tissues. The reasons for this conclusion have been clearly shown by Noel Paton. The further extremely interesting fact that this relationship is most intimate between the ductless glands and the reproductive organs is highly significant for the psychiatrist, who is thereby enabled to form a more or less definite picture of the far-reaching influences of sexual psychopathology. I have already given examples indicative of this intimate association in which must be sought the final solution of the problem of psychophysical interaction in the genesis of mental disorder. On the one hand, we cannot accept a somatic explanation which would discover in the activity of the glandular functions the direct causes, not only of the physical symptoms, but also of the mental manifestations. If we did so we should be compelled to write down our psychotherapeutic successes as curious coincidences or unimportant illusions—that is a frankly impossible proceeding. Yet, on the other hand, we cannot satisfy ourselves by a mere statement of psychogenesis, and a description of symptoms in terms of symbolical significance. All our explanations of mental disorder should be based not only on a conception of intimate psychophysical interaction, but also on a realisation of the manner in which somatic—and notably endocrinic—factors may contribute to the development of a psychopathic state. An illustration is afforded by the following case: A girl of 26 was engaged to be married. After a few weeks she suffered from "nervous breakdown" and was treated by three physicians in turn, all well-known men: one a psychoanalyst, the other a suggestionist, and the third a "downright" man of the "no-nonsense" school. At the end of four months she was so much worse that certification was in sight. She was depressed and even desperate; moaned all day long, paced up and down her room and lay on the floor in animal-like postures. From the analytic point of view there was apparently ample material for a breakdown, particularly in three factors: (a) a long history of disturbance; (b) a strong emotional fixation on her mother; (c) an injured sense of *amour-propre* in that her betrothed was the discarded suitor of an elder sister. The case therefore was one in which the prospect of marriage was intolerable; a regression took place and the neurosis developed in the form of feigned insanity as the most

effective defence against the imminent demands of life. Analytically, the picture was complete. Yet in point of fact, what happened? The patient who showed clear signs of hypothyroidism was, for the first time, treated with thyroid extract. She improved very rapidly without psychic treatment and has, apparently, settled her own conflicts. I submit then that here we have a case in which the psychosexual conflict was the intrinsic causative factor, but in which the endocrine disequilibrium produced a condition without which the conflict could not have assumed its pathogenic importance. In other words the balance between the attractions of responsible adult and married life, and those at home as "mother's pet" was adversely settled by an endocrine condition invariably associated with diminution of desire.

In dementia præcox the general tendency to withdraw from the demands of life must surely have as a contributory factor, in many cases, a feeling of sexual inadequacy quite apart from the actual fear of it.

Take as a further illustration the familiar clinical picture of climacteric disorder. Who can deny that in the vast majority of cases there is an important emotional element based upon the relinquishing of long-cherished maternal aspirations? Indeed, a well-known analyst has said that every woman who has trouble at the menopause should be analysed, a view from which, by the way, I venture to differ. On the other hand, how can we ignore the great transformation from endocrine equilibrium that occurs at the end of the generative life? Harrower says that "the symptoms of the climacteric are most probably due to loss of the hormone stimuli to which the body has been accustomed during thirty years or more of reproductive life." Not only is the balance between the gonads and the thyroid implicated, but also—and very notably—that between the gonads and the adrenals. Apart from their developmental relationship (Schafer) it is clear that by blood-pressure effects the adrenals exert an influence on the generative function second only to that which they exert on the cerebral function.

Since the primary energies of the organism are concerned with self-preservation or race (that is, extended self) preservation and are expressed, whether emotionally or somatically, in feeding and reproduction, we cannot be surprised that the thyroid gland directly influences, not only metabolism and reproduction, but also the general hormone equilibrium throughout the body. It is easy to see from this standpoint of "primary energies" why the thyroid should be so intensely susceptible to strong emotions, and also why, when it is diseased or functioning de-

fectively, there should be a corresponding emotional derangement and instability apart from the hormone effect on the nervous system.

(2) We come now to consider the endocrine hormones as intermediaries between the central and vegetative nervous systems. Though it seems paradoxical to say so, their effect here is probably due to their maintenance of the autonomic tonus whereby the necessary independence of these systems is maintained. Head and others have demonstrated that under pathological conditions the viscera—which, normally, gives no pain-reactions to stimuli—become responsive to such stimuli in an intense degree, and frequently in an interesting way, since “the pain is referred, not to the affected viscus, but to some portion of the skin whose sensory nerves arise from that segment of the cord to which the afferent nerves from the viscus run.” It is impossible to regard this result apart from the question of secretory influence, and it may be taken as an illustration of the way in which, given endocrine deficiency, the boundaries may be overstepped and the vegetative life obtruded disastrously into the sphere of consciousness. Then there is the other side to be considered, in which the effect of the central nervous system is reactionary, the starting being some abnormal condition in that system itself. Cannon observes that “any high degree of excitement in the central nervous system is likely to break over the threshold of the sympathetic division and to disturb the functions of all the organs which that division innervates.” He further remarks that “disturbances in the realm of the sympathetic, though originated by nervous discharge, are automatically augmented and prolonged by the chemical effects of the adrenal secretion.”

Under such circumstances there would be a widespread affection of the endocrine glands with the inevitable results by which the vicious circle again becomes complete.

(3) The direct action of the hormones on the central nervous system is a problem beyond hope of solution at present. Dr. Fielding Garrison—whose classification is here chiefly adopted—may well be quoted with regard to it: “It brings us,” he says, “into what Ehrlich calls “that obscure province of physiology—the specific irritability of organised tissues—for we are altogether unable to estimate the possibilities of combination, equilibrium, or reaction produced by the contact of a chemical substance in the blood with the chemoreceptors in a nerve cell. . . . We have no calculus fine enough for the rate of change of these evanescent combinations which we may assume to be constantly taking place within the cell.”

(4) The action of the endocrines on the circulation has been constantly investigated ever since Addison first suggested that these secretions have a specific influence on the whole organism. The hormones responsible for these actions are, according to MacLeod, "either substances which alter the hydrogenion concentration of the blood, or so-called 'pressor' and 'depressor' substances produced by the ductless glands or by the activity of the tissues." And though MacLeod and others insist that the nervous system has a greater part in the control of the circulation than that played by the internal secretions, we must again remind ourselves that this nerve-control is exercised chiefly through the sympathetic system which is dependent on the secretions for its tone. The fact remains, however, that the principal circulatory effect of adrenalin is directly on the musculature of the arteries. Hence we have two distinct ætiological chains involving the adrenal glands and the emotional life, one being the sympathetic nervous system and the other the simpler and more obvious routs of arterial tonus and cerebral vascularisation. Neurasthenia has been described as neither more nor less than hypoadrenia. While it is sheer waste of time to discuss a term like neurasthenia with its vague connotation, we must remember how frequently the clinical picture contains a blend of the anxiety neurosis and the true hypoadrenia. We must ask ourselves in such cases (and they are very numerous) how far the physical factor is primary and how far it is secondary; how far the physical factor is amenable to treatment, and how far the psychic factor is amenable. Are we to disentangle the patient's emotional life for him, leaving his blood-pressure at, let us say 90 m.m.? Or are we to deal with his endocrine and vascular condition, leaving him to handle his conflicts with the aid of the clearer vision that will follow an improved cerebral circulation? Or, finally, are we to deal with both factors simultaneously?

Consider, here, the question of obstinate insomnia, showing as it usually does notable factors of psychic strain. How often may it not be due to hyperadrenia? How often do we take steps to exclude this factor? Finally, what is our treatment if we conclude that it is present? So far as vascular effects are concerned, there is unquestionably a baffling triangle of forces consisting of the thyroid, gonads, and adrenals. Thyroid inadequacy makes for adrenal over-effect while gonad over-action has the same result. Admitting that all thought-processes are influenced by any departure from the normal in cerebral blood-pressure, we have in these three endocrines alone a permanent possibility of interference in the mental life.

(5) I have referred in a hypothetical case at the beginning of the paper to the part taken by the hormones of the ductless glands in projecting the body from microbial invasion. Sajous, following the lead of Brown-Esquard has constructed along this line a whole system of medicine with the endocrines as its central feature. He practically identifies the endocrine system with diathesis. In his opinion the ductless glands are immunising centres, and their hormones have the function of assuming great importance in that the bacterial origin of mental disorders has been considerably emphasised of late years. To represent Sajous's central proposition graphically we should have to insert in our diagram (p. 157) an arrow running from "endocrine" to "sepsis" indicating the protection afforded by the ductless glands against the bacterial factor whose invasion would produce a neurosis.

(6) The last aspect of endocrine activity is Dr. Fielding Garrison's theory that the ductless glands may represent the factors of thermodynamic equilibrium (*a*) conservation of energy and (*b*) its dissipation in one direction only. In all animal life except the very lowest forms (*b*) is from a higher to a lower potential—a splitting up of synthesis into elements. Dr. Garrison quotes Lord Kelvin's observation that if the second law of energy could be reversed for human beings we should have to imagine "men with knowledge of the future but no memory of the past, growing backwards to infancy or even embryonic life." This, as Dr. Garrison observes, "is, of course, an extreme example," but he asks (and this is important for us) whether, after all, it is "widely different from the sexual infantilism of pituitary disease and kindred physical regressions." At all events this problem of a thermodynamic function of the endocrine deserves close attention—as, for instance, in the subnormal temperature of myxœdema and in the fever of delirium.

It remains for us to touch briefly on the psychological problem already hinted at—that is to say, the influence of the emotional life on endocrine activity. It is true that in the primary organism, the embryo and the very young infant, the action of the glands on the tissues is directly chemical. The regulative nervous controls come into force as the need for them arises. We are therefore compelled to acknowledge that there is reason in support of those who contend that the psychic phenomenon is allied to chemical rather than to nervous action. "From this standpoint," Harrower says, "all psychic processes, whether emotions or states of mind, are to be explained in terms of glandular secretion." I prefer to say "the *inception* of all psychic processes," allowing to the

system the prestige of direction and domination. The question is of importance rather from a genetic point of view than from any other. If we take the three primary instincts, nutrition, self-preservation, and reproduction, however far we may attribute the concomitant psychic phenomena of the first and third to hormonal or chemical factors, we are compelled in the case of the second to recognize the paramount place of nerve stimulation as the first link in the chain, while the subsequent response of the ductless glands is perhaps greater in this case than in any other. I have in mind the influence of fear on the thyroid and adrenals.

In this connection I may refer to an article by Professor Patten, of Pennsylvania, reviewing the factors of consciousness as generally estimated and dealing specially with this question of direct stimulation—that is, apart from the action of the nerves. He combats what he calls the “standard explanation of psychic phenomena”—namely, that “the environment excites the nerves and the nerves evoke consciousness,” observing that the nervous evoke consciousness,” observing that the nervous system is a biological mechanism developed in the course of ages, and that its part is to harmonise external stimuli with internal response. He proceeds to ask whether the nerves are the source of this internal response or merely the directions of a pulse that has an independent origin—whether consciousness is a “chemical transformation or a biological mechanism?” “Are its antecedents in the blood or in nerve irritation?” He considers—and this is significant for the standpoint under discussion—that the action of glands and their influence on states of consciousness afford the answers to the questions. “The glands accumulate their material and either overflow by increased pressure of their contents or discharge as the result of nerve-stimuli. If it is a self-discharge we dream; if the discharge results from nerve stimuli, thought becomes logical and adjustive. The nerves are a mechanism, not for creating consciousness, but for making thought-currents run parallel to external events. From blood to gland, from gland to pulse, and from pulse to nerve-reaction is the series through which our life processes go. The pulse in terms of consciousness is emotion; nerve excitation becomes ideas.”

I have quoted this not because I am in agreement with the author, but because it is an illuminating criticism of our accepted views, which we are apt to regard complacently as final.

I am aware that in this paper I have asked many questions and answered few. I have been endeavouring to stimulate imagination with regard

to the subtle relationship of thought to symptom and of mind to matter at that point where the connection appears most vital. Life is largely a matter of action and reaction, of swaying conflicts between thyroid and adrenals, between instinct and ethics, between the dicta of the complete analyst and the ramblings of the amateur endocrinologist, and in this paper I have tried to indicate the primary somatic conflict as the prototype of the higher psychic struggle. In the early stages of development indeed, the somatic conflict itself represents the ultimate psychic struggle; in the later stages it may reflect, reinforce, restrain, or reinterpret that struggle which is at the same time man's proud distinction from the beast and his permanent possibility of triumph or disaster.

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CURRENT MEDICAL LITERATURE

THE CAUSE OF ECLAMPSIA.

Professor Hastings Tweedy, F.R.C.P.I., noticed as early as 1913 that ordinary food becomes poisonous during pregnancy, and when in this condition gives rise to toxemia and eclampsia. In the present paper he maintains that eclampsia is due to a deficiency of antibodies. Antibodies are concerned in the later processes of digestion. They become active shortly after birth, stimulated by an antigen present in the colostrum and early food of infants. They are provided to an extent far in excess of normal requirements, but are not unlimited in amount.

During pregnancy the antibodies are called on to fulfil a double role—their normal work and to deal with the albumin which is being constantly exuded into the maternal blood from the ovum. That ovum protein is present in the blood is abundantly proved by the Abderhalden serum test for pregnancy, and its toxic effect is noted through all degrees of toxemia from morning sickness to eclampsia.

Should food be taken in excess, or should the exuded ovum albumin increase beyond certain limits, the amount of antibodies may not be sufficient to detoxicate both and toxemia may result. In such circumstances a low diet (such as milk) will reduce the total amount of antibodies necessary, and health may again be established. If this is not successful, absolute starvation as practised at the Rotunda Hospital,

Dublin, may set free sufficient antibodies to deal with the foetal proteins. Should at any time a stationary condition of ill-health be established, there is nothing for it but to empty the uterus, and thus get rid of the continued exudation of foetal protein.

The above views explain much that was formerly obscure. It is now plain why multiple births are especially liable to eclampsia. Blood-letting, while it may relieve the immediate symptoms, also removes the antibodies, and does not increase the chances of recovery. Free absorption of water and intravenous saline act by diluting the poison, but, since this is a protein substance, they cannot help much in its elimination. Similarly, sweating induced by various methods cannot get rid of the toxic protein substance.

Finally, the writer mentions the interesting fact that the semi-starvation incident to the war in Germany, while it increased the incidence of most diseases, brought about a marked decrease in the number of cases of eclampsia.—*The Dublin Journal of Medical Science.* L

WHAT IS A NORMAL BLOOD PRESSURE?

Beside the pumping of the heart and the volume of circulating fluid, the tone of the vessels is an obvious third in maintenance of circulation. A good rule of thumb is that the blood pressure should be within 16 per cent. of 100 plus the age of the patient. A blood pressure beyond 150 is probably always pathologic, even at ages beyond fifty, though more or less excused by vascular changes due to senility. However, it should be borne in mind that the sphygmomanometer registers not merely true blood pressure but the resistance of various tissues including especially the arterial walls, against the constricting force required to occlude the vessel tested—usually the brachial. With marked arterial fibrosis, obvious or not, the sphygmomanometer may give an exaggerated idea of blood pressure and lead to reduction, as by nitrates which not only reduce vascular but cardiac tone so as to impair the nutritive and metabolic processes of the body generally. Realization of this fact largely explains the paradox of a combination of weak circulation and high blood pressure. It may be questioned whether, at the moment, and there ever exists an indication to increase the cardiac force when the blood pressure, essential plus normal degrees of tissue and arterial resistance, is within normal limits. On the other hand, the question should always be considered whether an abnormally high blood pressure is not, after all, a conservative balance of factors of resistance,

such as interstitial changes in the kidneys and other viscera so that, if the blood pressure is reduced toward the normal, the condition is increased in danger since the pathologic changes at the root of the troubles are largely ineradicable. So far as the writer knows all medication that directly lowers the tone of the arterioles, lowers that of the heart also. Friction, warmth and other simple hygienic measures aimed at lessening the resistance of the superficial blood vessels are safe and useful, except for the obvious danger of maintaining a constant threat of perspiration and subsequent chilling. It ought to be unnecessary to add the caution that a blood pressure decidedly below the standard for a given age is not always an indication of a favorable preservation of youthfulness. While the sphygmomanometer is a far more accurate instrument than the average finger, a further caution is required as for any other instrument or diagnostic test: It records the condition at the moment and there is no assurance that this is typical of a general state so that repeated observations are necessary for reliability. The cultivation of the palpation of the pulse for tension and quality as well as rate should not be allowed to lapse. Hoover has called special attention to the value of touch applied by plugging the femoral artery at the emergence below Poupart's ligament, as more truly estimating blood pressure in the direction of current than the sphygmomanometer which measures lateral pressure.—*Therapeutic Digest.*

PERSONAL AND NEWS ITEMS

The Board of Control, Toronto, decided all the hospital grants would be laid over for next year's Council. This means that \$300,000 will not be added to the overdraft reported by the City Auditor.

Graduate nurses in Ottawa have increased their fees 50 per cent. for 24 hours' duty and 25 per cent. for 12 hours' duty. The new rates went into effect on December 1, and as a result the trained nurses now ask \$5 a day for 12 hours and \$6 for 24 hours. The former rate was \$4 a day regardless of the amount of time spent on duty.

Prof. A. B. Macallum, formerly professor of physiology at the University of Toronto, and recently resigned as chairman of the Industrial Research Committee at Ottawa, will go to Peking, China, in March. He is to deliver a seven months' course of lectures at the Medical College there, under the direction of the Rockefeller Foundation, of New York.

The Board of Control recently decided to recommend to council that a grant of \$150,000 be made to the National Sanitarium Association to help rebuild the hospital at Muskoka which was partly burned recently. Sir William Gage headed a large deputation.

According to word received here late to-day, the Methodist Mission hospital boat, Thomas Crosby, operated between lumber and mining camps on the northern coast of British Columbia, has been wrecked on Ueen Charlotte Island. The crew has been saved.

Property Commissioner Chisholm, Toronto, Harry Rowland, of the Department of Public Health, and D. D. Dunlop, inspector of Prisons for the Provincial Government, paid a visit to the Toronto Jail grounds to-day to look over the proposed site of the new Isolation Hospital and nurses' home. The proposed location on the jail grounds was looked over and all three expressed themselves as being very favorable to the location.

One-third of the estate of the late Dr. Walter S. Ferguson, who died on Oct. 17th, is left to his widow, Mrs. Alexa A. Ferguson, and the residue will be divided among his son, Ivan O. Ferguson, and two daughters, Norma and Bessie Ferguson, of this city. The estate is estimated at 18,304.

Dr. W. E. Ferguson, Pathologist to the Toronto Western Hospital, recently discovered a well marked case of leprosy in Toronto. Many of the specific organisms were found.

In its presentment to Judge Snider in County Court the Grand Jury condemned the Ontario Hospital at Hamilton as being a veritable fire-trap. Better protection against outbreak of fire was urged by the Grand Jury, which recommended that a stair-tower be built at each end of the main building, to be composed of brick walls and cement stairs. An increase in the medical staff of the institution was also strongly recommended. The jury reported that there were 618 men and 552 women confined as patients there.

Miss Myra Goodeve, R.R.C., and Miss Mildred Robertson, late matron and assistant matron of the Dominion Orthopedic Hospital, Christie street, Toronto, announce that they have taken over the Private Hospital known as "Lyndhurst Hospital," 100 Yorkville avenue, Toronto. Nurses who are graduates of General Hospital training schools are in charge of the operating room and of the surgical, medical and maternity wards.

Six million three hundred and twenty-one thousand five hundred and eleven dollars—that is a great success. McGill makes up this amount

by gifts of \$1,000,000 each from the Province of Quebec and the Rockefeller Foundation, by \$1,000,000 from graduates' subscriptions and the remaining millions through special committees and citizens' organizations. Over 4,000 people contributed to this result, which surpasses the objective set for the Centenary Endowment Fund by more than a million and a quarter.

Applications for further hospital grants were made to the Board of Control, Toronto, St. Michael's requesting \$80,589 to cover the deficit on the year's operations, and the Sisters of St. Joseph asked that the usual per diem allowance of \$1.50 be extended to incurable cases under their charge, numbering 193. The M.O.H. and Finance Commissioner will report on the applications, while the Social Service Commission will also report on the request of the Sisters of St. Joseph.

Lorne Inge, a soldier settler near Manor, Saskatchewan, died recently of sleeping sickness. He was removed to the Regina Hospital where his death occurred.

The smallpox, prevalent in Ontario for last year, is not of a fatal type. Official figures show that, with 4,614 cases this year, only 28 deaths have resulted. A mortality much below other common diseases.

Statistics for November show 99 deaths from tuberculosis, 21 from typhoid and 43 from diphtheria in Ontario. The latter disease is at a bad stage. Influenzal pneumonia caused 19 deaths during the month, and primary pneumonia caused 116. Medical officers reported 494 cases of venereal disease during November.

The Academy of Sciences has awarded the Janssen Medal to William W. Coblentz, physicist in the Bureau of Standards at Washington, for his discoveries in connection with rays emanating from the earth and stars. William W. Coblentz is a native of Ohio. He has been attached to the Bureau of Standards for twelve years and developed a method of measuring radiant heat by infra red and ultra violet rays. He has devised an instrument for astronomers to measure heat from the stars and also developed during the war signal instruments for ship at sea, and an instrument for detecting moving bodies, such as ships, by their heat emanations in the dark.

Shortly after midnight of 30 November fire broke out at the Muskoka Free Hospital for Consumptives about three miles from Gravenhurst, and despite the valiant work of the nurses, the staff and the Gravenhurst fire brigade the three main buildings were destroyed. The 200 patients in the institution were all removed in safety from the burning buildings in the grounds of the institution.

Fearing defeat of a by-law for \$2,000,000 for a new hospital in Hamilton, the joint committee representing the Hospital Board, Hospital staff and Medical Society suggested to the Board of Control that the expenditure be restricted to \$500,000 and used for an extension of Mount Hamilton Hospital. The controllers approved of the plan.

Dr. W. J. Defries desires to announce that his practice is now entirely confined to the administration of anaesthetics. 30 Bloor street west, North 7536.

The Town of Cobalt and the Township of Coleman have agreed to equip the old Cook Camp at the Trethewey mine, now owned by the Coniagas Company, as an Isolation Hospital, to replace the building at Mileage 104, which formerly did duty as an isolation hospital. The Coniagas Company will charge only a nominal rental fee for the use of the building, which has been approved of by Dr. E. W. Mitchell, Medical Officer of Health.

Excluding building and equipment the Medical Faculty of Toronto University estimate their expenditures for the next year at \$340,000. In the clinical department the expenditure is to be increased to \$150,000, and in the primary department from \$50,000 to \$100,000. When they made this report to the Royal Commission recently, they also stated that new buildings are needed.

According to the annual report of the Woodstock General Hospital Trust, 731 patients were treated in the institution during the past year. The report shows a deficit for the year of \$4,000. This is over and above monies received from fees and grants from the City and County Councils. The cost per patient per day has increased from \$2.16 in 1919, to \$2.66 for the past year. The trust had intended building an additional wing to the hospital this year, but the high cost of construction has made a postponement necessary.

On November 23rd Dr. S. Nixon Davis met with an accident which might have caused his death. He was driving along the Welland Canal bank in his car on the way to Welland from Welland Junction. The cinders and the mud on the road caused one of the radius rods to break. He did not know that it was broken till he struck a specially bad spot in the road, when the car got twisted in a rut, turned sideways, and then rolled over. It righted itself, but slid to the water's edge and luckily stopped. Dr. Nixon was picked up a few minutes after and taken to the Welland General Hospital, where it was found he had sustained a scalp wound and a split ear.

OBITUARY

GEORGE M. CAMPBELL, M.D.

Dr. George M. Campbell, one of the leading physicians of Halifax, died there on December 12th, after a lingering illness. He was 59 years of age.

J. G. LITTLE, M.D.

Dr. J. G. Little, of Killarney, Man., fell or jumped from the third floor fire escape of a Winnipeg hotel on November 29th, and was killed. Dr. Little left his wife and child in their room, stating that he was going down town. Shortly afterwards his body was picked up in the court below the fire escape.

JOHN B. HALL, M.C.P.S.

One of the foremost homeopathic practitioners in Canada, Dr. John B. Hall, died recently at the family residence, 326 Jarvis street, Toronto, in his 84th year. Dr. Hall had never completely recovered from the effects of an attack of influenza two years ago, but, although in steadily declining health, he was able to attend his patients until within a week of his death. Dr. Hall was widely known, not only in Toronto, but throughout Canada. He had practised his profession in Toronto since 1876. He was born in Lincoln, England, but was brought by his father to this side of the Atlantic at an early age. The latter settled with his family in Cleveland Ohio, where he followed the profession of druggist. Later he came to Toronto and entered upon the practice of homeopathy, the first exponent of that branch of medicine in Toronto.

The son, John B., secured his medical degree from the Medical College at Oberlin, Ohio, in 1860. He practised in Cleveland for six years. In 1866 he removed to St. Paul, Minnesota, and ten years later to Toronto. He served as a surgeon during the whole of the American War.

His greatest hobby was the breeding of horses. He was instrumental in establishing the Americo-Arab breed of horse, having stables both at Toronto and at Oyster Bay, Long Island.

Dr. Hall is survived by his widow, formerly Miss Martha Coon, of Cleveland; three sons, Charles, of the firm of Smith, McKenzie, Hall and Hunter, Toronto; Henry, of British Columbia, and Cleve, of New York; and two sisters, Mrs. Edward Carter, of Toronto, and Mrs. Alice Lafin, of Los Angeles. The funeral took place from the residence to Mount Pleasant Cemetery.

DR. S. A. MORAN

Dr. Sheldon Arthur Moran M.C.P.S., aged 42, died on Tuesday, December 21st, 1920, at his home, 1010 Gerrard Street east. He suffered a nervous breakdown four years ago, and had never fully recovered. Born near Belleville, he came to Toronto with his father, Dr. J. B. Moran, ten years ago, and had practised in the east ever since. He graduated from Toronto University. He was a member of the Masonic Order. Surviving are his widow, two children, Catharine and Robert, and his parents.

LT.-COL. ROBERT ARTHUR BOWIE, M.D.

Lieut.-Col. Robert A. Bowie, one of Brockville's leading physicians and best known citizens, was killed at St. Vincent de Paul Hospital on November 26th, at which institution he was paying a regular call on patients. He had just entered the hospital and while talking of a pending operation, in front of the elevator shaft, opened the gate. Unnoticing, he stepped through, but the elevator was not in its place, and he fell to the basement, a distance of twelve or fifteen feet. When picked up he was unconscious. All the local physicians were soon at his side, but he never regained consciousness, passing away a little more than an hour after he had come to the hospital. Both legs and his jaw were fractured, and he also sustained internal injuries.

His wife, who was Miss Pattullo, daughter of Mr. G. R. Pattullo, Woodstock, survives, with three daughters. He also leaves one brother, Major Allison G. Bowie of Brockville, and four sisters: Mrs. W. B. Scott, Montreal; Mrs. W. S. Buell, Vancouver, B.C.; Mrs. J. G. Gardner, and Miss Jessie Bowie Brockville.

Dr. Robert Arthur Bowie served overseas throughout the war. He enlisted in the Canadian Army Medical Corps in 1915, and was second in command of the Duchess of Connaught's Red Cross Hospital, Cliveden, afterwards becoming chief surgeon at Moore Barracks Hospital, Shorncliffe; he was transferred to France in 1916, and transferred to No. 1 Canadian General Hospital; returning to England in December, 1918, he was appointed second in command and chief of the Surgical Division of the Ontario Hospital, Orpington. He was appointed consultant in surgery to Canadian Headquarters, London, in August, 1919. He was mentioned in despatches in 1918, and previously his services were brought to the notice of the Secretary of States for War. Dr. Bowie returned to Brockville in November, 1919. His father, the late Major Robert Bowie, was Mayor of Brockville.

He was about 50 years of age and was graduated from McGill College, and later took post graduate work in London and Vienna. He was a member of the Brockville football team when it won the Dominion Intermediate championship in 1896, and also of the McGill Senior Rugby team. On the Saturday previous to his death he was an interested spectator at the championship match in Kingston. He was at the time of his death a Warden of St. Peter's Church, Medical Officer of the Brockville Rifles and District Medical Officer of the Grand Trunk Railway. Friends and fellow professional men, as well as many in other walks of life, from points in Ontario and Quebec, joined with the citizens of Brockville, in paying tribute to the memory of the distinguished soldier and surgeon. It seemed as if the whole town turned out en masse, lining the streets along which the cortege passed, first to St. Peter's Church, of which he was a warden, thence to the cemetery. There was a great display of floral emblems surrounding the casket and also filling a large sleigh. The Church of England clergy joined in the service conducted by the rector, Rev. A. F. C. Whalley, assisted by Rev. Prof. Bedford-Jones, principal of Bishop's College, Lennoxville, Que., and a former rector of St. Peter's. The honorary pallbearers were: Dr. Carron, Dr. Robertson, Dr. Moles, Judge Reynolds, C. E. Baynes-Reed and M. Atkinson. The chief mourners, apart from the immediate relatives, included G. R. Pattullo and H. Loundsborough, Woodstock; G. B. Sweetnam, W. D. Gregory, A. B. Ballantyne, Toronto; Dr. Rutherford and fraternal societies and clubs of which Dr. Bowie was a member, were represented.

BOOK REVIEWS

HYGIENE OF COMMUNICABLE DISEASES.

A Handbook for sanitarians, medical officers of the Army and Navy, and general practitioners. By Francis M. Munson, M.D., Lieutenant, Medical Corps, U.S.A., retired; Lecturer on Hygiene and Instructor in Military Surgery, School of Medicine, Georgetown University; Formerly Instructor in Medical Zoology, Georgetown College; Late Brigade Surgeon, U. S. Marines. Illustrated, Paul B. Hoeber, New York. Prince, \$3.50.

The first portion of the book takes up Epidemiology, Prophylaxis and Sanitation. In this section we find discussed the causes of communicable diseases, infection and immunity, dissemination of communicable diseases, general prophylaxis, and subjects bearing upon general

prevention, and the science of infection. In the second part we find an account of the diseases spread by oral and nasal discharges, fecal borne, venereal diseases, insect borne, wound infections, spread by infected animal foods and a miscellaneous group of infections. The entire arrangement of the book is most skilful and scientific. The text is up to date in every respect, and is bound to command immediate attention from the medical profession and more particularly from those who are charged with the responsible duties of caring for public health problems. The book is printed, bound and illustrated in excellent style. The paper is very good. We wish to congratulate both author and publisher on the many merits of this volume.

A CONSULTING SURGEON IN THE NEAR EAST.

By A. H. Tubby, C.B., C.M.G., M.S., F.R.C.S., a Consulting Surgeon to the Mediterranean and Egyptian Expeditionary Forces, 1915-1917, lieutenant-Colonel R.A.M.C. (F), and formerly Temporary Colonel, A.M.S.; Consulting Surgeon to the Westminster, Royal National Orthopaedic, Evelina and Christ's Hospitals, etc. London, Christophers, 22 Berners street, W.I. Price, 15 shillings net.

If one wishes to have a clear and intimate knowledge of what took place in a surgical way in the army in Egypt, Gallipoli, Mudros, and around the Mediterranean, he should lose no time in securing a copy of this very illuminating book. Mr. A. H. Tubby is an excellent writer, and he has a fascinating subject. There is not a dull page in the book, and it is full of useful information. One learns more about the war by reading this book than in most histories. Once commenced the reader cannot but finish the book.

NEW TREATISE ON MEDICINE.

In 21 volumes under the direction of M. W. G. H. Roger, Dean of the Faculty of Paris, physician to the Hotel Dieu, member of the Academy of Medicine; F. Vidal, Professor in the Faculty of Paris, member of the Academy of Sciences and the Academy of Medicine; P. J. Teissier, Professor in the Faculty of Paris, physician to the Hospital Claude-Bernard, member of the Academy of Medicine. Volume 1. Infections maladies, 482 pages with 55 illustrations. Masson and Company. Price, 35 francs net.

In this volume and the remaining 20 volumes the entire field of internal medicine is to be covered in a very thorough manner. If the remaining volumes maintain the high standard of the first volume, the

series will constitute a superb system on the practice of medicine. So far we do not know of any translation, and it must therefore be read in French.

INVESTIGATIONS OF THE CENTRAL NERVOUS SYSTEM.

By R. H. Clarke, M.A., M.B., and E. E. Henderson, B.A., M.B., F.R.C.S. Special volume of the Johns Hopkins Hospital Reports, 1920.

This is a masterly piece of scientific work, and redounds to the credit of Dr. R. H. Clarke in a special sense. The illustrations are numerous and superb, and are the work of Drs. Clarke and Henderson. This volume does not make light reading; for it plunges deeply into the subject of the central nervous system, and along new and original channels. It lays down sure foundations for diagnosis, and will prove of the utmost value to the surgeon who has to operate upon the brain. We praise the volume and wish for it many earnest students.

SUGAR DIABETES.

By Dr. Marcel Labbe, Professor of Pathology in the Faculty of Paris, physician to the Charité Studies' Clinical, physiological, and therapeutic. Masson and Company, 120 Boulevard Saint-Germain, Paris, 1920. Price, 20 francs net.

This volume, the author states, is the outcome of long and careful study over a period of twelve years. The author has done much original work on the subject of diabetes mellitus, which gives the book a special value and interest. We regret that a work of such merit has not yet been translated into English, and many English-speaking physicians may be unable to read the French edition. The work of Dr. Labbé calls for highest praise.

DISEASES OF THE DIGESTIVE TRACT.

By Gaston Lyon, formerly Chief of Clinical Medicine at the Faculty of Medicine of Paris, one volume. Masson and Company, Paris. Price, 16 francs.

In this medium sized volume of 360 pages one finds a very fine statement of modern views on the diseases of the digestive tract. The author has had long and extensive experience on this class of affections, and has set forth his views in a clear and helpful manner. The descriptions of the diseases are well stated, and the treatment is explicit and valuable. The book contains many well-thought-out prescriptions which add much to its usefulness. We can recommend this book very highly.

ANTIGENS AND ANTIBODIES.

The General Characters, the Diagnostic and Therapeutic Applications, by M. Nicolle, of the Pasteur Institute. Masson and Company, Paris. Price 4.5 francs.

This is a very timely volume. It gives a concise account of antigens and their preparation and characters. The second part goes into their uses for diagnostic purposes. The third portion gives the methods of using them therapeutically. Such a book should be in the hands of every practising physician. It is regrettable that there is not an English translation of such a useful contribution.

NOTES ON MIDWIFERY.

By J. M. Munro Kerr, M.D., Professor of Obstetrics and Gynaecology, Glasgow University, Gynaecological Surgeon, Royal Infirmary, Hon. Fellow American Gynaecological Society, etc., and James Hendry, M.A., B.Sc., M.B., Assistant to Professor of Obstetrics and Gynaecology, Glasgow University, Assistant Obstetric Surgeon, Royal Maternity Hospital, etc. Second edition. Glasgow: Maclehose, Jackson and Company, 1920. Price, 10 shillings, 6 pence.

Here we have a very valuable and concise manual of midwifery. The anatomy of the female genital organs is set forth in a clear and excellent manner. Then follows a good description of the signs of pregnancy. The authors further deal in a most satisfactory way with normal and abnormal labor. The principal operations are also discussed, and an account of infant feeding is given. There is a blank page for each one of text for the purpose of notes. Such a book as this will prove a boon to the student.

INTERNATIONAL HEALTH BOARD, AND HOOK WORM AND MALARIA.

These two volumes are reports made by the Rockefeller Foundation. The one on Hook Worm and Malaria is the result of the researches of the Uncinariasis Commission to the Orient. The members of the Commission were S. T. Darling, M.D., M. A. Barber, M.D., and H. P. Hocker, M.D. The volume of International Health Board contains much needed information on this topic. The names associated in this work are George E. Vincent, Wickliffe Rose, Herman M. Biggs, Wallace Buttrick, Simon Flexner, F. T. Gates, W. C. Gorgos, S. J. Murphy, J. D. Rockefeller, Jr., W. T. Sedgwick, V. C. Vaughan and W. H. Welch with E. R. Embree, secretary. This Board takes up all matters of health of an international character. These reports are very valuable.

MISCELLANEOUS

NATIONAL SANITARIUM ASSOCIATION SEEKS AID.

Executive members of the National Sanitarium Association, comprising the Muskoka Cottage Sanitarium, the Toronto Free Hospital for Consumptives, and the Muskoka Hospital for Consumptives, headed by Sir William Gage, have asked the Ontario Government for a grant on capital account of \$75,000 towards the maintenance of these institutions. A similar sum is asked from the City of Toronto, and members of the Board of Control were on hand to insist that the whole amount should be contributed by the Province.

"My understanding is that the Government can only be committed in conjunction with the city," said Premier Drury. "We should determine the respective use of hospitals in the Province and in the city, and arrange our grants accordingly."

Premier Drury maintained that as 63 per cent. of the patients treated by the Association came from the City of Toronto, the municipality should put up that percentage of the amount required, the Government would be quite willing to supply the remaining 37 per cent.

Mayor Church argued strenuously that the city was doing its share in supporting charitable institutions. Its commitments for this sort of work were now close to a million dollars. As the Association received patients from all over the Province, he thought the Government should assume the larger part of the responsibility.

The Premier replied that the proportion of patients treated from Toronto and those from the rest of the Province should be worked out on a percentage basis. Mr. Drury finally agreed that the Government would grant a sum in proportion to the amount given by the City of Toronto.

NUMBER OF STUDENTS AT TORONTO UNIVERSITY

Official figures given out by the registrar show 4,566 students in attendance. But this difference of 671 is more than accounted for in three specific ways: The removal of non-graduate students (approximately 350) from the Ontario College of Education; the transfer of the

teaching of anatomy to some 20 dental students from the Faculty of Medicine to their own new department at R.C.D.S., and the discontinuance of the returned soldiers' matriculation class, in which 172 were registered last year. A comparative schedule of registration has been drawn up as follows:

Faculty or Department	Pre-war	Post-war	
	1914-15	1919-20	1920-21
Music	—	20	11
Arts	2161	1989	2114
Graduate Studies	—	169	150
Medicine	660	1284	1009
Applied Science and Engineering.....	563	819	806
Household Science	96	—	—
Education	412	423	68
Forestry	48	48	54
Social Service	293	335	354
Returned Soldiers' Matriculation Class...	172
Summer Session	243
Total	4428	5237	4566

Until 1916, graduate studies were included in the Faculty of Arts.

Total registrations in 1899 and 1900 were but 1,269, jumping to 4,044 in 1909-10. In practically the same period, the staff was increased from 146 to 429, later figures being as follows:

Arts	200	245	239
Medicine	145	189	160
Applied Science	73	189	78
Household Science	8	11	9
Education	26	32	29
Forestry	2	4	3
Music	3
	474	568	526

As explained, these figures for the present session are approximate, certain other appointments having still to be made.

WORLD IN DANGER OF TYPHUS EPIDEMIC

Dr. L. Haden Guest, of London, who has been investigating conditions in Russia, reports to the *Lancet* (London) that the whole of that country has been swept by typhus and relapsing fever, and that all indications point unmistakably to a formidable epidemic in the coming winter. Cholera also has made its appearance and smallpox is widely prevalent.

The *Lancet* warns the world at large that unless immediate and effective steps be taken these frightful diseases will spread through the border States to other countries, and before long will appear all over the world. "The Council of the League of Nations has thoroughly studied the position, with the aid of some of the best known epidemiologists in the world; they have a reasonable and economical program, and have appointed commissioners, but the actual work cannot proceed until they have obtained money guarantees from the different nations, which so far have not materialized, except in the case of a few countries, including Great Britain and Canada. The future of the matter may well prove, in the parlance of the day, an "acid test" of the reality of the League as a family of nations, ready to act for common good and to protect members of the family who are threatened by disaster.

 MEDICAL STUDENTS PASS EXAMINATIONS

The following candidates have passed the November examinations of the College of Physicians and Surgeons:

Robert Henry Baker, Coboconk, Ont.; William Francis Beamish, Palmerston, Ont.; Michael Joseph Brown, Toronto; Richard Davidson Cowan, Galt, Ont.; Agnes Ann Curtin, Kemptville, Ont.; Edmund Floyd Day, Thamesford, Ont.; William Blake Gibb, Haverstraw, N.Y.; Francis Robert Goodfellow, Godfrey, Ont.; Frederick Cyril Greenwood, St. Catharines, Ont.; Claude Malcolm Hall, Kenmore, Ont.; Bernard Vincent Hunt, Kingston, Ont.; Charles Gregory Johnstone, Port Arthur, Ont.; George Russell Jones, Webbwood, Ont.; Graham Albert Jordan, Hamilton, Ont.; Milburn Watts Kemp, Port Dover, Ont.; James Douglas Kinsman, Fonthill, Ont.; Ambrose Bernard Lawler, Kingston, Ont.; George Edwin Lipsitt, Marksville, Ont.; John Joseph McClintock, Toronto; Florence Spaulding McConney, Toronto; George Oliver McDonald,

R. R. 3, Lakeside, Ont.; James Edward McGillivray, Toronto; Harry John Quinn, Brantford, Ont.; John Spence Reid, Tillsonburg, Ont.; Roy Clifford Shaver, Stayner, Ont.; Roy Wilfrid Simpson, Grand Valley, Ont.; Wray Lionel Spratt, Ottawa, Ont.; Alvie Earl Stewart, R. R. 2, Ancaster, Ont.; Jabez Franklin Stoness, Perth Road, Ont.; Ewart G. Wheler, Toronto; Harold Lloyd Ellis, New York City; Thomas Arthur Ellis, Niagara Falls S., Ont.

TORONTO'S VITAL STATISTICS

An increase in diphtheria, scarlet fever and typhoid cases in Toronto during November over the same month last year and a big decrease in the comparative number of cases of smallpox, chicken pox and mumps was reported by the Department of Public Health to-day. The figures are:

	Nov. 1920.	Nov. 1919.
Diphtheria	263	248
Scarlet Fever	176	112
Typhoid	11	5
Measles	19	19
Smallpox	15	811
Tuberculosis	45	16
Chickenpox	110	340
Whooping Cough	75	37
Mumps	13	106
Diphtheria carriers	75	17

McCRAE MEMORIAL SITE IN BELGIUM

The committee appointed some time ago by the Guelph Canadian Club to raise a sum of money from the various clubs throughout the country for the purpose of erecting a suitable memorial to the late Lieut.-Col. John McCrae, the author of "In Flanders Fields," is making progress. The sum of \$1,786 has been secured for this purpose, and the committee are not sure if this is sufficient to erect the kind of memorial desired and they recommend that they be authorized to communicate with Dr. Creelman, Agent-General of Ontario in London, asking him to find out what a suitable memorial would cost with erection, etc. Dr. Hobbs stated that the Belgian Government had very generously donated a suitable site for this memorial in the famous city of Ypres.

HURON COUNTY MEDICAL ASSOCIATION

The Huron County Medical Association met in Goderich Nov. 3rd, 1920. The president, Dr. J. C. Gandier in the chair, and a goodly number of Huron practitioners present. Several present spoke of the loss to our association owing to the death of Dr. J. P. Kennedy of Wingham whose name appeared on the program for that meeting.

Dr. Macklin of Goderich gave a paper on Encephalitis Lethargica describing minutely the symptoms as read by him from three patients in his own practice.

Dr. W. Gunn of Clinton read a paper entitled the functional intelligences of the body and the relation which these have to higher consciousness.

The paper went to show that the principles underlying all the inventions and utilities employed by man are simply imitations or copies of those that are already in use in our own bodies. Too much importance was placed on the frontal lobes as a factor in the higher consciousness. All the nervous activities of the body, in short every cell is linked up in the function of higher consciousness, and the frontal lobes of the brain simply as transformers of functional intelligences.

In a diagnostic or physical sense heat, light, motion and electricity may be represented in terms of each other by means of suitable transformers; in a psychologic sense why should not the same principle hold good?

The motor areas of the brain act as inhibitory or transforming centres in relation to the cord reflexes.

If practically every device and invention employed by man has its analogy in the body, as was shown by numerous examples, it is probable that the principle of a transformer for the functional intelligences should be included also.

All the functional activities or intelligences of the body act as a dynamo and these activities light up into higher consciousness by means of a transformer.

Dr. Gunn's paper was something new to the Association and was listened to with wrapt attention and the doctor was invited to favour the members at some future meeting with more psychological research.

Huron Medical Association is quite alive, and attendance is in general good.

DECLINE IN BIRTHS

There were fewer births and fewer marriages in November, 1920, than in November, 1919. On the other hand the number of deaths was greater. The figures are:

	1920	1919
Births	1,044	1,073
Marriages	625	720
Deaths	531	465

CASE OF LEPROSY IN TORONTO

A case of leprosy has been discovered in Toronto. The disease is very rare on this continent. As far as can be ascertained, the only previous occurrence of the disease in the city was the case of a Chinaman diagnosed by the General Hospital doctors about eight years ago.

The patient recently found to be afflicted with the disease is a woman from the West Indies. The case was diagnosed by Dr. J. Nathan McKinley, nose and throat specialist, and the germs isolated by Dr. W. E. Ferguson, pathologist at the Western Hospital.

The germs closely resemble those of tuberculosis and were first isolated by Hansen in 1871. Being very chronic it may take some years to develop. It usually affects the face, the nose, the throat, the hands and feet. Two forms of the disease are known—anaesthetic and nodular. The former is painful and attacks the hands and feet. The latter is not painful and it is to this class that the case now creating a great deal of interest in medical circles of the city, belongs. The other cases known to be on the continent at the present time are in Minnesota, Louisiana, Nova Scotia and Cape Breton.

Referring to serums recently discovered, Dr. Ferguson stated that none had yet been proved a certain cure in all cases.

THE ROCKEFELLER FOUNDATION

To assist Medical Schools in Central Europe, the Rockefeller Foundation announces a co-operative program covering the following points:

1. Aid in the rehabilitation of scientific equipment for medical teaching and research.

2. Aid in furnishing medical journals to universities throughout Europe.
3. An invitation to the authorities of Belgrade University Medical School to study medical education in America and England, as guests of the Foundation.

Colonel F. F. Russell, who has been in Prague since August serving as technical adviser in public health laboratory organization to the Czech Ministry of Hygiene, will arrange the details of the Foundation's co-operation with the medical schools.

These activities of the Rockefeller Foundation in Central Europe are the result of investigations made there recently by representatives of the Foundation. The following extract from a report submitted to the Foundation by one of its officers sent to Europe to make a special inquiry into their needs, gives some idea of conditions in Central Europe with respect to medical education :

Decisions of far-reaching significance in the matter of medical school support, the training of nurses, the care of the sick and the prevention of disease must be made in these countries within the next few years. Expert guidance and some assistance in starting sound programs now may mean much for generations to come.

Medical schools of high rank and of long standing exist in the following cities of Central Europe: Vienna, Gratz, Budapest, Prague, Cracow. Other schools of importance are at Warsaw and Lemberg in Poland, at Innsbruck in Austria, at Zagreb (or Agram) in the Croatian state of Jugo-Slavia.

This comparatively small number of medical schools serves a total population of approximately seventy-five million people. With the single exception of Austria, all of the countries of the region under consideration suffer from a great shortage of physicians.

There are reported to be less than 300 doctors in all Serbia. Outside of the Army medical forces, less than 2,000 physicians are available to care for the twenty-five million inhabitants of Poland. Additional schools are needed adequately to serve these countries, particularly those of the south and east.

There is a five year interruption of medical training in Europe which will affect the supply of physicians available during the coming generation. The instruction of adequate numbers of physicians for the years immediately ahead is essential.

In all of the universities of Central Europe the equipment (glass-ware, rubber, chemicals and apparatus usually replenished year by year) has been very largely used up during the four years of the war and the two years of disorganized conditions and low exchange which have followed the armistice.

The situation in Germany is somewhat different and that country is adequately supplied with medical schools and much scientific apparatus is manufactured in Germany.

The greatest desire for American and British Medical Journals was expressed at every university visited. The journals are supplied on an arrangement whereby the university concerned pays in its national currency at the pre-war rates of exchanges, the Foundation making up the difference due to loss in exchange.

The Secretary arranged personally for the supply of journals to the following universities:—Vienna, Budapest, Zagreb, Prague, Cracow, Lemberg, Warsaw.

It is proposed to extend the services to Gratz, Innsbruck and Bucharest, in Central Europe, and to some thirty of the principal centers in France, Belgium, Italy and Germany.

With the idea that Belgrade is one of the strategic points in a world program in which a medical school must be established in the near future, it has been decided to invite a group of four (4) of the men responsible for its developments to make a visit to America for study and inspection.

It may also be decided that further assistance will be given by lending a technical adviser in the organization of medical education and that the Belgrade officials will be authorized to recommend to the Foundation from time to time as candidates for fellowships in specialized postgraduate medical study, persons who may be under appointment or consideration for the faculty of the proposed school in Belgrade.

A VACCINE FOR YELLOW FEVER

Mr. George E. Vincent, President of the Rockefeller Foundation, authorizes the following:

The discovery By Dr. Hideyo Noguchi, at the Rockefeller Institute for Medical Research, of a vaccine for yellow fever, introduces a new factor in yellow fever control through the possibility of making persons immune to yellow fever by vaccination.

Heretofore, work in yellow fever control has been entirely that of prevention of infection by controlling breeding places of the mosquito which carried the yellow fever germ. The isolation of the yellow fever

organism, however, has made it possible for Dr. Noguchi to develop a serum which it is believed will reduce the mortality from yellow fever and a vaccine which gives promise of protecting the non-immunes against contracting the disease.

Already vaccination against yellow fever of people going to tropical countries is being made in New York. This work is being done at the Broad Street Hospital with vaccine furnished by the Rockefeller Institute.

The first shipment of vaccine for yellow fever from the Rockefeller Institute to tropical countries was made a year ago when three hundred bottles were sent to Mexico. Other shipments have been made since then, the latest on November 10th. All vaccine supplied to Mexico is sent to the Mexican Department of Health which arranges for its distribution.

The Central American Countries are so well convinced of the efficacy of Dr. Noguchi's vaccine that they are permitting travel without quarantine detention of those who have been successfully vaccinated.

CAUSES OF DEATH

The Census Bureau's annual bulletin on mortality statistics for the death registration area in continental United States, which will be issued shortly, shows 1,096,436 deaths as having occurred in 1919. This represents a rate of 12.9 per 1,000 population, and is the lowest rate recorded in any year since the establishment of the registration area. The rate for 1919 is in striking contrast with the unusually high rate for 1918 due to the pandemic of influenza, which was 18 per 1,000. This is a drop of 5.1 per 1,000 population.

The death registration area in 1919 comprised 33 states, the District of Columbia and 18 registration cities in nonregistration states, with a total estimated population of 85,147,892, or 81.1 per cent of the estimated population of the United States. The States of Delaware, Florida and Mississippi were added to the area in 1919 and Nebraska in 1920, so that now the only states not in the area are Alabama, Arizona, Arkansas, Georgia, Idaho, Iowa, Nevada, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, West Virginia and Wyoming. The Territory of Hawaii is part of the registration area but the figures given in this summary relate to the area in continental United States.

The following table shows, for the death registration area in continental United States in 1909, the total number of deaths and the death rate by certain leading causes, together with the percentage which each cause contributed to the total:

Cause of death.	Number of deaths	Rate per 100,000 population	Percent of total
All causes (1).....	1,096,436	1,187.7	100.0
Organic diseases of the heart.....	111,579	131.0	10.2
Tuberculosis (all forms).....	106,985	125.6	9.8
Tuberculosis of the lungs (2).....	94,772	111.3	8.6
Tuberculosis meningitis	5,175	6.1	0.5
Other forms of tuberculosis.....	7,038	8.3	0.6
Pneumonia (all forms)	105,213	123.6	9.6
Influenza	84,113	98.8	7.7
Acute nephritis and Bright's disease.....	75,005	88.1	6.8
Cancer and other malignant tumors	68,551	80.5	6.3
External causes (suicide excepted).....	67,654	79.5	6.2
Cerebral hemorrhage and softening	65,918	78.6	6.1
Congenital debility and malformations.....	56,714	66.6	5.2
Diarrhea and enteritis (under 2 years).....	37,635	44.2	3.4
Diabetes	12,683	14.9	1.2
Diphtheria and croup.....	12,551	14.7	1.1
Bronchitis	10,913	12.8	1.0
Appendicitis and typhlitis	10,029	11.8	0.9
Suicide	9,732	11.4	0.9
Puerperal affections, other than puerperal septicemia	11.2	0.9	9,538
Respiratory diseases, other than pneumonia and bronchitis	8,865	10.4	0.8
Hernia and intestinal obstruction.....	8,853	10.4	0.8
Typhoid fever	7,850	9.2	0.7
Cirrhosis of the liver	6,704	7.9	0.6
Meningitis	5,508	6.5	0.5
Puerperal septicemia	4,950	5.8	0.5
Whooping cough	4,714	5.5	0.4
Rheumatism	3,907	4.6	0.4
Measles	3,296	3.9	0.3
Malaria	3,275	3.8	0.3
Scarlet fever	2,383	2.8	0.2
Erysipelas	2,186	2.6	0.2
Smallpox	358	0.4	.3
All other defined causes	172,161	202.2	15.7
Unknown and ill-defined causes	15.603	18.3	1.4

(1) Exclusive of stillbirths.

(2) Includes acute miliary tuberculosis.

(3) Less than one-tenth of one per cent.

VENEREAL DISEASE PROBLEMS

Before permitting the exhibition of moving pictures dealing with venereal disease the Government is to be asked to consult the Provincial Board of Health and the National Council for Combating Venereal Disease. A resolution was passed to this effect by the Ontario Provincial Committee of the Canadian Council at their recent meeting in the headquarters at 154 Bay street. The Government is requested to seek this advice before submitting the picture to the Board of Censors. This is an aftermath of the showing of "Open Your Eyes" at a Yonge Street theatre recently.

A committee was appointed to go into the question of forming a closely-knit organization of the Government, Provincial Council and Municipal Councils, similar to that now in practice in the British Isles. The Government was urged to remove all restrictions on the importation of arsenical preparations for the treatment of syphilis. The embargo placed upon them during the war has not been removed, and physicians find this a hindrance to securing necessary drugs which are under the embargo.

Reports were received from a committee which approached the Manufacturers' Association and the Trades and Labor Council with a view to arranging for a widespread distribution of literature and the utilization of speakers before various audiences. A strong speakers' committee has already been formed in Toronto. Branch Councils have been formed in London, Brantford and Hamilton. Mrs. Neville Rolfe, O. B.E.; Miss Grant, M.B.E., and Dr. Rupert Hallam of the commission sent out by the British National Council for Combating Venereal Disease were present, and gave some interesting information in regard to the methods pursued by the British Council for dealing with the plague.

MEDICAL MATRICULATION

Under date of October 25th a circular has been issued from the Registrar's Office of the University of Toronto with reference to certain amendments and additions to the Curriculum of Matriculation. The changes announced refer especially to the Faculty of Medicine. It is announced:

1. That the number of students to be admitted to the First Year in medicine for the session of 1920-21 will be greatly reduced.
2. Applications for admission will be received until September 16, 1920, after which a selection will be made.

3. In this selection regard will be had (a) to those returned soldiers who have complied with the entrance requirements of October, 1920; (b) to those applicants whose certificates are of a higher standing than Pass Junior Matriculation; (c) residence in the Province of Ontario.

4. A student must have completed his seventeenth (formerly sixteenth) year before the first of October of the year which he proposes to enter.

5. Only under exceptional circumstances will a candidate of thirty years or over be admitted.

DANGER IN HORSE-HAIR SHAVING BRUSHES.

Surgeon-General Cumming, of the United States Public Health Service, has just issued a fresh warning against the use of horse-hair shaving brushes, to which not a few cases of anthrax have been traced.

He says: "The Public Health Service has made every effort possible under existing laws and regulations to prevent the occurrence of anthrax due to infected shaving brushes, but in spite of its efforts anthrax cases occur and will continue to occur unless the public ceases to buy and use horse-hair brushes for shaving.

"It is the consensus of expert opinion that shaving-brush anthrax is contracted only when the shaving brush is made of horse-hair; and Congress at the next Session will be asked to prohibit the use of horse hair for that purpose. It is doubtful, however, if any effective measures can be taken by health officials to curtail the use of the horse-hair shaving brushes now in trade channels, some of which are presumably infected, except a direct warning to the public not to buy or use such brushes.

Dr. Cumming strongly urges the issue of such an appeal by State Health Officials and its widest possible publicity, as the only way, pending additional legislature, to obviate their potential danger.

GIFT TO BRANTFORD HOSPITAL

Remembering the needs of his home town, H. W. Petrie, machinery and tool manufacturer of Toronto, has donated the interest of a \$25,000 victory bond, for a period of five years, to the Brantford General Hospital.

The gift, which at the end of five years will reach the substantial total of \$9,340 compound interest, will be used as a trust fund to be spent as the directors see fit, the money to be called the Petrie Trust Fund.

Mr. Petrie said he had occasion to visit Brantford recently, when he called at the hospital and witnessed with great satisfaction the work

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going on there. He noticed that a lot of excellent work was being done for the community, but learned that the hospital was without endowment funds, depending entirely upon subscriptions and the generosity of his old townsmen.

MEDICAL PREPARATIONS

TREATMENT OF HEMORRHAGE.

Recognizing the fact that the utility of Adrenalin in therapeutics hinges upon its remarkable contractile effect upon the small blood-vessels, the physician readily accepts it as the most available styptic we have. Its action is manifested whether it be applied directly to the exposed vessel, administered subcutaneously in the bleeding area, or, as in intestinal hemorrhage, given intravenously. When applied locally the response is so vigorous that the tissue is actually blanched; and in combination with local anaesthetics it prevents excessive bleeding during and after operations on mucous membranes and other structures.

In the advertising section of this issue the reader will find the fourth of a series of little essays on "Adrenalin in Medicine," in which the topic discussed is "The treatment of Hemorrhage." While most practitioners are more or less familiar with the therapeutics of Adrenalin, a perusal of this brief article will serve to refresh the memory of any one who has momentarily lost sight of this remarkable and dependable agent in minor surgery. A notable point that may have been overlooked is that Adrenalin not only controls bleeding by vasoconstriction, but it also shortens the coagulation period, whereby it occupies a distinctly unique position among hemostatics.

HOW THE WAR WAS WON

The questions, "Who won the war?" and "How was the war won?", have been discussed by many persons and from many angles. Everyone admits that Marshal Foch was a considerable factor in shaping the course of events, and a statement from him carries great weight.

Interviewed in Paris recently, Marshal Foch said: "How then did I win the war? *I did it by smoking my pipe.* I mean to say in not getting excited, in concentrating all my strength." This is great testimony to the value of tobacco.

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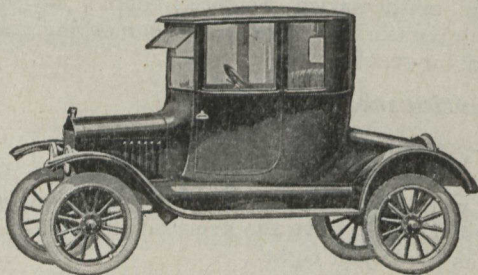
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no wrapper on can—only my own directions. It was correctly applied—patient's son reported next day father much better. Following morning found patient greatly improved—he was restful—free from pain; cyanosis gone, temperature lowered. Patient said: 'I don't know what the application was, but I am certain it saved my life.'"

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Adrenalin in Medicine

4—Treatment of Hemorrhage

IN the control of all kinds of hemorrhage, with the exception of that following chloroform narcosis, Adrenalin is an efficient aid. The object of hemostatic treatment is to constrict the lumen of the bleeding vessels, thereby retarding the flow of blood and facilitating the formation of a clot which acts as a plug and arrests the hemorrhage.

Adrenalin is effective not only by virtue of its obvious vasoconstrictor action, but also because *it shortens the coagulation time.* This has been demonstrated by Cannon and his co-workers to be true particularly when small doses are injected intravenously or even subcutaneously.

In severe hemorrhages one drachm of Adrenalin 1:1000 in a pint of hot salt solution may be given by hypodermoclysis in the subcutaneous tissue under the breast or by infusion directly into a vein. This is not a large dose of Adrenalin if the hypodermoclysis or the infusion is given slowly.

Adrenalin is oxidized in the circulation so rapidly that the result of this injection is not the tumultuous effect that would be expected of one drachm of Adrenalin; it is rather the

evenly sustained effect of a few minims. Adrenalin restores and maintains the arterial tension, and the volume of fluid introduced into the almost exsanguinated vessels gives the heart something upon which to contract.

Superficial hemorrhages and others which, because of their location, are readily accessible may be treated by the topical application of previously moistened compresses to which are added a few drops of Adrenalin 1:1000. In the category of hemorrhages which are amenable to this local measure are those of the nose, mouth, throat, ear, vagina, uterus, and rectum.

In hematemesis give by mouth about one drachm of the 1:1000 solution. The ingestion of the remedy in this case brings it into immediate contact with the bleeding vessels. In hematuria the injection into the bladder of an ounce or two of a solution of Adrenalin 1:5000 or 1:10,000 is frequently effective.

Because of its vasoconstrictor action, Adrenalin is utilized also as an application to mucous membranes which are the sites of vascular engorgement or inflammation. Dilution to 1:5000 is proper when Adrenalin is used for this purpose.



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