

The Canada Lancet

VOL. XLIV.

TORONTO, NOVEMBER, 1910

No. 3

EDITORIAL.

THE ONTARIO MEDICAL COUNCIL.

The elections to this body are at hand. The profession have been made fully aware of the gross mis-management of the funds of the College of Physicians and Surgeons of Ontario. It is now the duty of the registered practitioners of the Province to put an end to this state of affairs.

The profession in every district should demand a full account of the stewardship rendered by the representative of that district. No half-way explanations should be accepted. Each member of the Council should be asked by what means a four days' session was extended into one of six days, and this for three successive years. The demand should be made why some members were paid fees for attending on committees on the days of regular council session. The demand should also be made why five cents a mile each way were paid for travelling when the member is also paid \$20 a day while travelling. A demand should also be made for allowing such an expenditure as \$230 on two committee meetings for the purpose of selecting a system of filing the documents of the Council.

It is the duty of every physician in the Province to see that every dollar that has been improperly expended in these ways be returned to the treasury. We have shown that about \$2,000 has been wrongfully paid for sessional allowances. About \$580 improperly to committees, and about \$1,600 too much for mileage. These sums aggregate over \$4,000 that have been paid out in excess of the slightest shadow of justice or reason. Were persons in the employ of any business concern convicted of such use of the company's funds, they would be at once dismissed.

There are two aspects in which the members of the Council are guilty. In the first place as permitting these improper payments; and, in the second place, as accepting fees not properly coming to them. On both of these counts the expiring Council stands condemned. We may quote the words of Shakespeare,—

We few, we happy few, we band of brothers.

MUNSEY'S MAGAZINE ON THE MAYO BROTHERS.

In our September issue we had some remarks on one article that appeared in the June number of *Munsey's Magazine*.

Quite recently we have been favored by a letter from Dr. W. J. Mayo, and, along with this, copies of several letters that had passed between the Drs. Mayo and various publishers regarding allowing their names to appear in connection with articles about them and their work. These requests were declined.

Dr. W. J. Mayo assures us that "The *Munsey* article was written without their knowledge or consent." This we are very glad to learn and also very pleased to give this statement publicity. From the correspondence which Dr. Mayo has favored us with we believe that they were made the victims of journalististic zeal.

On several occasions we have given publicity to articles dealing with the excellent work which is being done by the Drs. Mayo at Rochester. When the article appeared in *Munsey's Magazine* we thought it incumbent upon us to protest. This is our policy regardless of the person or the institution. Our motto may be found in the words of Othello, "Nothing extenuate nor set down aught in malice."

Our criticism against such an article as appeared in *Munsey's Magazine* stands, but we exonerate the Drs. Mayo of responsibility for its appearance.

 DOMINION REGISTRATION.

This is a winning cause. It is in the interest of the profession of Canada that the medical profession should be one and united. It is so in Britain. If one registers in Ireland he can practise in England or Scotland and *vice versa*. Provincialism in things medical cannot die too soon in this country.

From a good deal of enquiry, we find that the profession in the Maritime Provinces, in Ontario, and in Manitoba, Saskatchewan and Alberta is overwhelmingly in favor of the Dominion Medical Act. In British Columbia, we are well informed that those in the rural districts favor the Act, while those in Vancouver and Victoria are in favor of the protection to be secured under a provincial system of examination. They fear that these cities would be flooded with doctors under the Dominion Act. We hope these narrow views will not live long nor do any harm to the cause.

Just what position the Province of Quebec may take we are not in a position to state. The degree at McGill and Laval carry with them the right to practise in Quebec. But the provincial right would not be taken away by the Dominion Act. Those who wished only to practise in Quebec need not trouble themselves with the wider qualification. Those, however, who wished to locate in some other province would have the way opened up for them.

The duty of all is clear, and we hope all will live up to it.

DR. WILLIAM HUNTER ON SEPSIS IN MEDICINE.

Dr. W. Hunter, of London, England, paid a visit to Toronto recently. On that occasion he addressed the section of medicine of the Toronto Academy of Medicine. The section is to be congratulated upon hearing so inspiring an address. We give it in full in another portion of this issue.

During his address he emphasized the importance of sepsis to the physician as well as to the surgeon. He said we should aim at being antiseptic physicians as well as antiseptic surgeons. He went on to adduce evidence of what important part decayed teeth and pus formations in the gums played in the causation of anæmia, especially in that severe type known as pernicious or Addisonian.

We commend the study of Dr. Hunter's address to our readers. The conclusions at which he has arrived are not the hasty findings of a day, but the outcome of at least 25 years' laborious research. This is the sort of work that tells. He has in his writings made out a strong case in favor of the view that pernicious anæmia is really a chronic infection.

If this be not the case, he asks how can we explain the fever, the perspirations, the stupor, the sudden improvement when all seems hopeless? Whether we can accept all the teachings of Dr. Hunter or not, is not the vital question. The matter of first moment is that his work has marked a distinct step forward.

We are indebted to Dr. F. J. Goodchild for the excellent report of Dr. Hunter's address, which was delivered without manuscript of any sort.

DR. LOUIS WICKHAM'S VISIT TO TORONTO.

Dr. Louis Wickham, of Paris, paid a visit to Toronto. He was the guest of Dr. W. H. B. Aikins, 134 Bloor St. W., who gave a reception for Dr. Wickham on the evening of 19 September.

Dr. Wickham addressed the Academy of Medicine at a special meeting. We give our readers the full text of his lecture. He points out the valuable place that radium holds in the treatment of several diseases. He is careful to point out that radium does not take the place of surgery but is a valuable aid to surgery. It is by avoiding extremes that true advance must be made. The work of Dr. Wickham on radium is well known, and doing much to bring this element into its proper use.

The lecture was fully illustrated with lantern slides. Dr. N. A. Powell, of Toronto, and Dr. R. R. Wallace, of Hamilton, moved a vote of thanks.

TORONTO MEDICAL HEALTH OFFICER.

Le roi est mort, vive le roi is true of more persons than Kings. Dr. Sheard has retired after eighteen years of very faithful service to the citizens of Toronto, in the capacity of Medical Health Officer. We wish him many years health and happiness.

Dr. C. J. Hastings has been called upon to fill the position. We believe that Dr. Hastings will give a good account of himself. The position is no sinecure and we think it will be less so in the future than in the past, as the press and the people are becoming more and more exacting in the service demanded of public servants.

The city has been making some progress in sanitary affairs of late years. The trunk sewer, the septic tanks, and the filtration plant, are all moving on towards completion. Much has been done already to bring the milk supply into a fairly satisfactory condition. We have the public baths, the public lavatories, and the anti-spitting by-laws in operation. A valuable addition has been made to the Isolation Hospital that will help very materially in lessening the risk of dual infection.

For these improvements the city owes much to Dr. Sheard, Dr. Amyot and Dr. W. S. Harrison, who was our alderman or controller for seven years. These contentious matters are now disposed of, and Dr. Hastings will have more time to devote to the real duties pertaining to his office.

THE TORONTO ISOLATION HOSPITAL.

A condition of things that has long been known to be defective has at last reached the stage of public investigation. Several medical men opposed in the first instance the erection of the hospital for diphtheria and scarlet fever as practically one building. The danger of dual infection is always present, and such a system is to invite its occurrence.

During the investigation Dr. Sheard declared that his hands had been tied. He contended that there has not been sufficient accommodation, and that the securing of further accommodation came too late, and after too great a fight for it.

We remember a few years ago that a well-known doctor had to give evidence in Court regarding the case of a child that had contracted another infection after being taken to the Isolation Hospital. He ventured the opinion that the system in use was not a good one. For this he received a severe censure from the judge who was on the bench and hearing the case. This is an instance where the doctor was right.

We hope Dr. Hastings will not allow parsimony on the part of the City Council to tie his hands. The public now know there is a danger of dual infection. Dr. Hastings can count on the medical profession, the medical journals, and the public press in any efforts he may make to secure adequate accommodation.

There will be instances of mixed infection. A case is brought into a hospital that in a day or so may prove to be scarlet fever, or diphtheria. So a case may come in as diphtheria that in a few days develops scarlet fever also. This much granted, there should be every effort made to lessen the risk of dual infection.

In this matter Toronto cannot afford to do an injustice to the public through any parsimony in the matter of money. The funds must be forthcoming for additional buildings and efficient help.

We contend that measles, scarlet fever and diphtheria, should be treated in separate institutions, on separate sites, and under separate staffs. This would not absolutely guard against mixed infections, but it would be the proper thing to do and would lessen the danger greatly.

HYPOCHLORITE TREATMENT OF WATER.

It is much better to keep good water from becoming bad than to make bad water pure; but when the tares get into the wheat it is necessary to do something. Of late the treatment of water by bleaching powder.

Mr. T. Aird Murray, of Toronto, a gentleman of known experience, states that water impregnated to the strength of 1 in 1,000,000 will not be suitable medium for the colon bacillus to live in. When water in an open creek is treated in this manner there are very few bacteria of any kind found in it.

Mr. George H. Johnson, of New York, who has gone into this subject with care, has traced the history of this method of treating

water. It has been proven to be of the utmost value in several places in England where it has been in use for many years.

Drs. Graham and Nasmith, of the Ontario Provincial Laboratory, state that the treatment of water by Chloride of Lime is of undoubted value. It has been proven that chlorine added to the water in the proportion of .4 or .5 to the 1,000,000 parts of water could destroy bacteria without leaving a taste in the water. To be effective the chlorine must be thorough mixed with the water. The best method is to have the chlorine mixed with the water while it is flowing.

Mr. C. A. Jennings has carried on some very interesting observations on the water of Bubbly Creek at Chicago. The water of this Creek is very badly infected with bacteria. The water can be rendered almost free of bacteria by being impregnated of chloride of calcium.

One teaspoonful, level, of chloride of lime, dissolved in three cups of water and one teaspoonful of this solution in two gallons of water will render it free from bacteria, and leave the water good for drinking.

A FEDERAL BOARD OF HEALTH.

This matter has been before the public in some form for considerable time. It came up again at the Public Health Conference which was held in Ottawa recently. Dr. C. A. Hodgetts, the Medical Adviser of the Commission on the Conservation of Natural Resources, urged that there should be a Federal Board to co-operate with the various provincial boards. He contended that the provincial regulations looked well on paper, but were not effectively carried out.

We have repeatedly urged this view. There ought to be a Minister of Health for this growing country. We spend an immense amount of money on dairy improvement, on information about farming and stock breeding, but very little about the health of the people. Taking the value of each life at that fixed by the committee of one hundred, namely, \$1,735, the total value of the people in Canada would be over 12 billions of dollars. This is the largest asset of the country.

WATER AND SEWAGE.

To pollute streams and lakes with sewage should be made a crime. It is an easy way for cities like Toronto, Montreal, Ottawa, etc., to flow their sewage into a river or lake. But the consequences are most disastrous. It has been proven again and again that infection may be carried great distances by water currents.

The city which has the misfortune to be down the stream has to suffer for the sins of the one up the stream. Life and health are too important to be treated in this way. The strong arm of some national statute must be made use of to regulate the whole matter of streams pollution. The values of the lives lost each year through polluted water would be a splendid dividend on the cost of preventing the pollution. The dividend idea may appeal to some people.

The lake shores and the rivers are the natural locations for towns and cities. This means an ever increasing risk of water pollution. Just as the water becomes contaminated the risk to typhoid fever increases. This is not all. It has been shown that three persons are ill from the bad water for every one who actually has typhoid fever.

All this means that lakes and rivers cannot be trusted in the future as they have been in the past. The hope of the future lies along the lines of filtration plants, the sterilization of sewage, and the chemical treatment of both the water and the sewage. This may cost some money, but then it will pay. A government will spend a large amount of money to catch a criminal whose life is of no real value. This is done for the good of the public. Similarly spend money freely to catch the bacteria before they enter the human body.

INFANT PARALYSIS AND ISOLATION.

Dr. Lucian Stark, who has been investigating this disease in the Eastern states makes the following statements:—

"A great many physicians confuse this infant disease with spinal meningitis in their diagnosis," said Dr. Stark. "It is even worse than meningitis. It is worse than smallpox. It is more contagious than any other plague on the face of the earth except, perhaps, cholera, yellow fever or the bubonic plague. Its symptoms are somewhat like ptomaine poisoning. It seizes the victims with a suddenness that is almost harrowing, and they are paralyzed before it has actually been diagnosed as infantile paralysis.

"One of the most certain proofs of the fact that infantile paralysis is contagious is that it follows a railroad from town to town in my State and leaves its deadly imprint whenever it spreads unless checked by isolation. Absolute quarantine is the only method of handling the disease. It is successfully treated by any good doctor where discovered in time, but otherwise it is almost invariably lost; hence the need for prompt action.

"I have had seven hundred cases; seven per cent. of deaths and thirty-five per cent. of complete recoveries. The disease is contracted through the nose and throat."

PROF. J. GEORGE ADAMI'S ADDRESS.

We confidently commend to our readers Prof. Adami's interesting and scholarly address, delivered at the opening of the medical session in Toronto.

The lecturer refers to his memory impressions of the first inaugural address to which he listened, and what now remains of it with him. He refers to the new scene in which the first year's students find themselves, and what sort of friends each may find in the many students seated around him. He then refers to the senior students as those who may expect him to dispel much of the mist that still hangs over medical science.

"You are born into a period of renaissance—rebirth—but of medical new-birth." So it has ever been. There was a "new-birth" in the days of Hippocrates. There was also a "new-birth" in the days of Mogoqui. There was a "new-birth" in the days of John Hunter. So has it ever been. As Thomas Carlyle has told us: "A man is like fire sent forth from heaven. The rest of mankind waited for his coming; and then, too, became aflame." Each great man brings to us a renaissance—rebirth. Goethe in his Faust tells us,—

"'Tis thus at the roaring loom of time we ply."

But each renaissance leaves something more than we had before it came. Each new advance adds and it takes away. It adds to our knowledge and it takes away from our ignorance. With Tennyson we say,—

"Ring out the old, ring in the new,
Ring out the false, ring in the true."

It is this ever onward and upward effort that goes to make the complete physician. Prof. Adami emphasizes the importance of a sound education, both theoretical and practical. The work of the laboratory, the dissecting-room, the lecture-room, must go hand in hand with that done in hospital ward and at the bedside. Either alone is a sort of half education. The first half would make one a theorist and the latter half, an empiricist.

But Prof. Adami is too wise to rest his case here. Speaking of the medical man, especially the medical student, he says: "It is of the highest degree important, not so much that we have culture and an acquaintance with the humanities in the narrower sense, but that at the formative and most susceptible period of his career he shall have mingled and become intimate with those having various interests in life." The doctor must know man for him "The proper study of mankind is man." As the Germans put our learning should not be merely *brod studien*.

The medical man who understands human nature will succeed better than the one who only knows his "ologies." These are necessary; but they must be rounded out with something far more delicate than anything to be found within the cover of books, however good these may be. Prof. John S. Blackie, of Edinburgh, used to tell his students that "Second to coming in contact with people is coming in contact with their books." But the choice of friends and associates is one of the vital problems of every student's career. The future is made or marred when one chooses his companions. Hear the words of Goethe:

"But heard are the voices,
Heard are the Sages,
The Worlds and the Ages:
'Choose well: your choice is
Brief and yet Endless.'"

FIREPROOF HOSPITALS AND ASYLUMS.

From time to time there comes news of a fire in some prison, asylum, or hospital. In some of these events very serious results have occurred and there has been much loss of life.

A few years ago there was a fire in an asylum in Quebec, and it was with very great difficulty that the patients were saved. In Chicago a few years ago no less than 28 patients lost their lives in a fire in the institution.

On the 18th October of this year there was a small fire in the Amasa Wood Hospital, St. Thomas. No great damage was done. On the same date, however, there was a fire in the building used in Winnipeg for scarlet fever patients. The building was completely destroyed. In a pouring cold rain the six nurses on charge saved every patient. The fire was burning fiercely through the ceiling when the last patient was removed. The whole building was a mass of flames in fifteen minutes. This leads one to think that all such institutions should be of such a character as to be safe from destruction by fire. This must be the rule of the future.

ORIGINAL CONTRIBUTIONS.

THE COMPLETE PHYSICIAN*

By J GEORGE ADAMI, M.D., F.R.S., McGill University, Montreal.

"To each, Athene and Apollo give some gift, and each is worthy in his place, but to this child they have given an honour beyond all honours; to cure while others kill."

IT is right and fitting that some formality be associated with the entrance of the man into the direct preparation of his life's work—that the novice in medicine should not simply signalize his entrance into medical life by a humdrum and utterly commonplace visit to the University Registrar and a commercial transaction over the counter, but that he should participate in a ceremony which, however simple in its form, is nevertheless in its essence an initiation. This evening your Professors and the Faculty of Medicine formally but none the less sincerely welcome you. This evening formally you enter upon your novitiate in medicine—to-day marks the beginning of your life-work as members, even if junior members, of that well wishing band of those who devote their lives to the care of the sick and the maimed, to the prevention of disease and the raising of the standard of health, efficiency and happiness in the community. And I should point out to you, not merely are you and your teachers involved in this ceremony. You, gentlemen of the Freshmen year, are privileged to be old enough, and yet young enough, to have been brought up in that great classic of the nursery, Rudyard Kipling's Mowgli cycle. I am old enough, I may add, to have been privileged to read those Jungle Books time and time again to my own youngsters. Thus, if your early education has not been painfully neglected, you will remember all about the Council Rock and how the cubs were brought to the Pack meeting that the other wolves might identify them, after which inspection the cubs were free to run as they pleased, until such time as they had shown their ability to kill their first buck. In this last matter possibly the metaphor is a little strained, I might even say unfortunate. It depends wholly upon what era in the student career you take as representing the killing of the first buck. Well, gentlemen, this is a Pack meeting. To-night you are presented to the whole pack, from Akela, the great grey lone wolf who leads by his strength and cunning, through the badger-coloured veterans who can handle a buck alone, to the young black three-year-olds, some of whom already think that they could; others, also, yet younger are gambolling around. And of course, as in the Cycle, the good old bear of a Baloo is omnipresent, ready to teach the Law of the Jungle. "Good hunting, brothers!" whether it be

* Being the opening address, at the School of Medicine, University of Toronto, September 27th, 1910.

but cub hunting in these days or later the real grim strenuous work of the world!

For myself, I still remember my inaugural lecture or rather the occasion thereof. I think it is Osler who somewhere remarks that looking back on his professional life he finds that he recalls not one steady unfolding of episode out of episode but a series of vignettes—of episodes separated from one another by blanknesses of the forgotten. I know it is the same with me. I was talking the other day with a young minx of fifteen and she volunteered the observation that certain places and events at the ages of four, six, seven, and so on, survived unconnected in her memory, and she wondered whether they too would in time follow their fellows into oblivion. Wherefore I suppose we are all constituted alike; though, by-the-by, I recall that Osler gives the exception of a distinguished graduate of Toronto—a medical man who has made his mark in literature,—who seems to show, by the elaborate analysis of his mental attitude at different periods, that he remembers every little event in his career. It may, therefore, be that Torontonians as a body are differently constituted. But I remember vividly that inaugural lecture, just as I remember my first morning in the dissecting room and the colossal appetite I had for lunch after it. That stands out as one of the greatest appetites of my life. I wonder if you will have the same experience. And of my first year in medicine I recall very little else. I do not recall anything that was said by the lecturer on that occasion. It is indeed given to very few men in a generation to enunciate thoughts in words that remain engraved upon the minds of their hearers, and as a class medical men, even if they be college professors, do not shine as orators. Most of us are amply satisfied if we can talk clear common-sense without frills, save it may be for an occasional aside, or anecdote, to flick up the attention of our hearers. You must not expect too much of us, or of me. But I have a vivid mental picture of the chemical theatre of the school in which, because of its size, the lecture was held, with medallions of the great chemists on the walls, of the array of the staff, with the Principal in the chair; of the dense crowd of students on the benches; a vivid memory of my attitude of mind; the unaccustomedness of it all; the wonderment what friends I should find in that crowd of strange faces; the wonderment what the new life would lead to. And so I imagine it will be with you. You to-night are taking part in an event which will remain with you through life. Wherefore I would that my remarks if they cannot be memorable be at least attuned to the state of mind of you who to-night enter upon your medical career.

And here, Mr. Dean, and more particularly gentlemen of the final year, perchance I owe you an apology. There are two orders of inaugural lectures. The one order strives after that supreme sensation that

may come to the mountain climber who, starting at early dawn deep down in the valley, still so folded in shadow and filled with clinging mist that even the immediate path is scarce to be traced, experiences a sudden rift in that mist and through the rift is vouchsafed a transient view of the topmost pinnacle he would attain unto, poised in the upper air, its cold pure snow flushed and glowing in the generous sunlight—a revelation that with invincible attraction calls him onwards and upwards. It may be that as inaugural lecturer I am expected to play the part of the sun, to dispel the mist, in my erudition to afford to freshmen and faculty alike a glimpse of the topmost heights of medical science.

The sensation undoubtedly is supreme, but unfortunately the sun may not always be sufficiently strong to dispel the mist, or may at most reveal the clouds that cap the summit. And if it be vouchsafed, such a revelation avails more to the practised mountaineer than to the novice. For him the other order of address is the more serviceable, where the lecturer takes the part of the practised climber and advises about the path and its dangers—the pine tree's withered branch, the awful avalanche, and so on—and above all strives to enthuse into his hearers the spirit and ideals of a mountaineer. This is the course that I shall take to-night, and happily there is at hand a text—or rather a whole bible—whereon to base my remarks. Indeed I do not doubt but that from one end to the other of this continent the inaugural lectures of the medical schools are this year being based upon this one document. I refer, of course, to the recently published report of the Carnegie Foundation for the Advancement of Teaching upon "Medical Education in the United States and Canada." It is a work that is extraordinarily full of meat and so frank and fearless in its criticism of the various schools of medicine and their methods, or want of method, that action for libel has already been taken against its authors in more than one quarter and others promise to follow. It has stirred up the profession on this continent in diverse ways, but more particularly to realisation of the ideals of medical training, of the possibilities, and of present defects, to an extent that no individual man, or association, or plan of campaign has ever accomplished.

I am not going to inflict upon you a detailed study of this remarkable work, but, without implying that I accept all its decisions, I want to utilize its data and conclusions in such a way that I may give to you, undergraduates of Toronto, some idea of your opportunities, some idea of what you have before you to attain unto, some idea of the complete practitioner as we regard him in this year of grace.

You are born into an era not of medical renaissance—rebirth—but of medical new-birth. Are you going to make use of your opportunities? Is the school you have chosen going to give you the opportunity to seize

the chances that offer? It is evident from the disclosures of the Carnegie Report that these are all-important questions. You have had a large choice afforded you: there are seven schools in Canada, and as judging from the past it is more than an even chance that after graduation you will practise in the United States, it may be added that there are one hundred and forty-eight schools that one or other of you might have selected south of the border. Think of it, one hundred and forty-eight schools! This excludes the post graduate schools, but includes three for women only, seven for negroes only, thirty-two devoted to medical sectarianism (15 homeopathic, 8 eclectic, 1 physio-medical and 8 osteopathic)—all I would emphasize in the United States. The number available for the ordinary medical student is still over one hundred.

Have you made a wise choice of this abundance of opportunities? We can, I may say, answer the question in the Scottish way by asking another question or series of questions and finding the answers to them.

What ideals, in the first place, should you have before you? What should be your estimate of the complete physician? What, therefore, should be the ideal course of training that you should place before yourselves? Let us think this out and then consider the means afforded to you for accomplishing these objects.

First and foremost as to the complete physician. He must be thoroughly trained in the practice of his profession. What does this mean? Not that when he graduates he is to be fully supplied with all the data concerning disease. That were impossible. The medical man is or should be learning new facts, new methods his whole life long: not five years, not ten years suffice to give him full knowledge. It does mean, however, that he shall be thoroughly equipped to know how to proceed in the making of a diagnosis and in affording rational treatment; that he shall, as I have said, be a thoroughly trained man. He must already have such close personal experience of the commoner ailments that he can recognize and treat them with sureness: he must be so equipped that approaching any case that presents itself he is able to utilize the appropriate modern methods of diagnosis, and, applying them, to come to a sound conclusion as to the nature of the disease, and from this be prepared to treat that disease rationally to the utmost possible degree. To do full justice to his patient, to possess for himself a quiet conscience, the practitioner must feel that he has accomplished all that is possible. I do not mean that he personally must be able to do everything for the patient, that he must combine all the specialties. But he must have that amount of knowledge which tells him either what he himself can do, or what may appropriately be done for the case by others rather than by himself.

What does this imply? It means that as regards ordinary ailments he shall already be thoroughly familiar with them. Lectures and books cannot afford that familiarity. He must have come into personal contact with them. This necessitates a long training in the hospital and the dispensary; in the dispensary that he may encounter abundant examples of minor ailments and more chronic ambulatory cases and learn thus to recognize their salient features; in the hospital, that studying day by day at the bedside individual examples of more acute disease, he may gain a knowledge of the evolution and course of disease processes.

Here I may point out is the weakest spot in American medical education. According to the Carnegie report there are not thirty schools in the United States and Canada that enjoy acceptable hospital facilities—nay, reading the report carefully, there are at the present moment not fifteen. Most schools it is true advertise an official connection between themselves and one or more hospitals and dispensaries, but on closer study it is evident that the connection is little more than on paper; either the wards are filled with pay patients who cannot be examined by the student, so that what is heralded as a hospital of three hundred beds is for student purposes but one of twenty of thirty—or by the rules of the hospital the free patient is free to elect whether to submit to examination by students or no; or while the hospital is open to the students the school staff has no status as such in the hospital. Thus even Harvard, for example, has no initiative in filling staff positions at the Boston hospitals. Often the services rotate every three or four months, irrespective of the needs of the student. Too often while the material is abundant, as at the great Cook County hospital in Chicago, the student is not allowed within the wards, the most that is granted to him being a transient examination of patients wheeled into the clinical amphitheatre. No opportunity is afforded him to sit down quietly at the bedside and study the patient, to make a detailed examination, to follow the course of the disease, or the results of an operation. Under these conditions is it a wonder that, after graduation at these imperfect schools, American graduates crowd to Vienna and Berlin, to make use of the abundant clinical material there afforded and so complete their education? Is it a wonder that thanks to their appalling ignorance of elementary clinical matters they are a matter of contemptuous amusement and a proverb to our European colleagues? They cannot in Europe understand a system or want of system which at the same moment evolves some of the most brilliant workers in modern medicine, along with a multitude of egregious ignoramuses. As a result the status of American medicine suffers. Men are skeptical as to the value of our work because the fruit is so unlike what their knowledge of the tree would lead them to expect.

Well, gentlemen, in this respect you may set yourselves at ease Toronto—and, as in private duty bound, I must add, McGill—are among the fifteen or so institutions in which the hospital facilities pass muster. We have preserved the British tradition. There is here cordial co-operation between the school and the hospitals; you will have free access to the wards, and if in the past there have been too many pay patients in the wards here, unavailable to the students, by the time you reach your fourth and fifth years, the great new University hospital will be ready to receive you. I do indeed congratulate you on your choice of a school which will afford such noble opportunities.

But hospital and dispensary attendance of to-day is a very different matter from "walking the hospital" as known to previous generations. Our forbears depended for their knowledge and diagnosis of disease upon their unaided senses, and undoubtedly, doing this, they trained certain of those senses, notably sight and touch, to a degree of acuteness that few in these degenerate days nearly approach. But, granting this, it must be acknowledged that their knowledge of disease was much more limited than what it is in your power to possess now-a-days, and that their treatment was in the strictest sense empirical. The advances have been rapid and remarkable: in the field of surgery they approach the marvellous. In little more than a generation medicine has been elevated from an art to a science, and to practice it the individual has to have a training in science and acquire the scientific spirit. To use rationally the instruments of precision now afforded to him he must have a sound training in Physics: to utilize the information that the body fluids and discharges of the patient can yield him, to understand the action of the drugs he uses, and comprehend the normal and abnormal processes within the tissues, he must be so much of a Chemist that he is familiar not merely with the principles of chemical action but with the data of organic chemistry. Since the processes of disease are but the outcome of factors operative in health, either working in an excessive or a defective manner, to have any sane understanding of morbid states he must be well grounded in Physiology,—the study of the functions of the body in health,—while to give him a broad and sane grasp of the principles that govern living matter, a course in Biology is equally essential. It goes without saying that he must know Human Anatomy if he is to perform any operation, or have an adequate mental picture of the disturbances of the mechanisms of the body or of the individual viscera. Nor can he do his duty toward a patient suffering from one or other of the acute infectious diseases unless he has undergone a course in Bacteriology and thereby gained a knowledge of the technique of bacterial diagnosis and of the nature of bacterial vaccines and antitoxic sera. And lastly, as the coping stone of this arch upon which is built the scientific study of

disease, he must in the post-mortem room and in the laboratory study the actual effects of disease upon the body, so that he may be familiar with the disturbances that may be set up in the individual tissues, and may, when he encounters his patient, have so vivid a mental picture of the association of disturbances likely to be present in any given form of disease, and indicated by the various symptoms and physical signs, that, as though, provided with a mental fluoroscope, he sees that patient through and through and is able to picture to himself the effect that disturbance of the one viscus must have upon another and upon the system at large. For upon sound Pathology depends pre-eminently sound diagnosis, intelligent prognosis and rational treatment.

Think what all this means! If the prospective doctor is to embrace the opportunities afforded to him in the hospital it means that before entering upon the study of medicine proper, he must spend years of preparation, years studying various branches of natural science. There is at present great debate as to where these years should in the main be spent. I see that the Carnegie report only places in the first class of medical schools those, sixteen in number, which demand that before entering the four years' course in the medical school, the student shall have attended a college or university for two full years. Not making this demand, Toronto and McGill, while referred to repeatedly with approval, are considered as of a lower class. Nor does it seem to me that the fact that we demand an additional fifth year in medicine is fully appreciated. Here two questions may be asked, namely, "Is a college course and Arts degree essential for the complete physician?" and secondly, "Is the Carnegie Report justified in making the entrance requirements of the school the standard whereby to classify the medical schools of this continent?"

Now, gentlemen, let me confess that I find some difficulty in answering the first of these questions. As I shall point out later, knowledge of medical science is very far from being all that is required of the medical man and, for his development, it is of the highest degree important, not so much that he have culture and an acquaintance with "the humanities" in the narrower sense but that at the formative and most susceptible period of his career he shall have mingled and become intimate with those having various interests in life. Than this there is nothing more broadening. It is the generous intercourse of man with man, the learning to know and look up to and copy one's fellows for their innate worth apart from all sordid considerations, the mingling with and weighing all sorts and conditions of one's fellows—the education in humanity, rather than in the humanities—that constitutes the supreme value of an Arts course. He is a better man who has experienced this.

But, on the other hand, I cannot conscientiously urge that we demand of all our graduates eight years at the University, three in the Arts course, five in the medical school, or even seven years with but two in the Arts course. For one thing so prolonged a training leads a man to become stale—as we termed it at Cambridge. Intensive learning cannot be continued year after year without sapping the capacity to receive and perceive facts. Time and again I noted at Cambridge that men who had already won high distinction at Scotch universities in mathematics or classics and who had come to the English university to gain further academic distinction along the same lines and sweep the board of prizes—academic hogs if I may so term them—were beaten easily by younger men fresh from the English public schools. They had grown stale. And at McGill we have noted as a common occurrence that the frequent B.A.'s. among our students—of course, as in the foregoing instance, there are brilliant exceptions—do but poorly in their first two or three years under us. In part this must be attributed to staleness; in part, I am convinced, to the fact that the more bookish academic training, if too long continued, actually unfits a man for the dissecting room and the laboratory and the frame of mind necessary for scientific research—for using his eyes and brains and depending upon what his senses tell him rather than depending upon authority. As a rule in the final years these men get into their pace again and do excellently. Their brains are better trained organs and this eventually tells. But all the same I believe that they have wasted roughly a year of their student life; that they would have been equally capable and equally equipped with two years only in Arts. In short, I believe that the combined course such as is afforded in Toronto is educationally superior to what the Carnegie Report accepts as its ideal. But this, you will urge, is practically the standard commended by the Carnegie Report. That also asks for two years in “college.” Let me say that while I regard this modern American plan as better than nothing, it is in my opinion radically defective. It is a method merely of removing from the medical school the burden and the responsibilities of directing the preliminary scientific education of the medical student so as to afford time for adequate instruction in the other branches of the Medical Curriculum. It holds that Biology, Physics, Inorganic and Organic Chemistry are best given to the student before he enters the Medical School. Here I am prepared to join issue. Into the effects of the plan upon reducing the number of eventual medical graduates I will enter later, only saying here that I doubt if this be the soundest method of attaining that result. There comes in here the matter of economy of effort. Take for instance the subject of chemistry and let us admit, as will be admitted, that the student has already obtained the grammar of this subject at the high school. Which is more economical,

which will afford the better education, that the student attend the academic course in this subject, courses devised for those intending to be teachers, metallurgists, commercial chemists, scientists of various orders, courses in which, from the natural delicacy of the Arts professor, the illustrations are drawn as a rule from every branch of chemical industry save the medical; or a course or courses forming an integral and graded portion of the medical curriculum, in which illustrations, equally valuable from the educational point of view, are afforded which have a direct bearing upon medical science, illustrations which the student can apply in his later years, which must come into and be known by him in his later life work?

I speak feelingly, for I cannot but acknowledge that I have suffered permanently from the harmful effects of such an academic course. It was a course given by one who in his day was accounted the foremost teacher of chemistry in England. Without doubt I learnt something from it. I must have. But also I learnt to dislike the subject. All that I remember to-day regarding it is the waste of hours over details and diagrams regarding the Vinegar method of making white lead or the White lead method of making vinegar—I really forget which: it does not matter—the various methods of making sulphuric acid, the properties of vanadium and other of the rarer metals. All these details which had to be learnt repelled me. I needed and longed for matter such as I obtained in the zoology course, run as it was by a man with a biological mind and not a systematist—matter which I could not but feel was golden grain that must germinate and bear fruit for my later studies.

The student has so much to do, so much to accomplish in the few years of his undergraduate course that it is our duty not to burden him with unnecessary matter. I who say this do it with full memory that I worked steadily for ten years between registering as a medical student and obtaining my diploma to practise. You must not think that this lengthening of the course is an American movement: America is the last part of the civilized world to fall into line. This ten year course was mapped out for me in its essentials in 1877. But I am convinced it is better that special courses be afforded for the medical student in the preliminary scientific subjects rather than he should attend the routine academic courses in the same: in other words that he should take up those subjects as a medical and not as an Arts' undergraduate, and that the medical faculty should at least have the supervision over the courses in these sciences, even if they be given by the Arts' professors and their staffs, and not in the medical college itself. Hence, I am convinced that our five years' curriculum at Toronto and McGill,—a curriculum which allows us to guide and control the teaching of the preliminary sciences, which allows us to afford this with the greatest benefit to the student and

the greatest ^{sum} of his time and labour—I am convinced, I say, that, educationally speaking, this is superior to the Statesian ideal of academic teaching of most of these subjects during a two or three years Arts course, with only four years spent in the medical school. So great in short, is the economy, that though, as I have said, I prefer that the students should have two years in Arts, studying the humanities primarily and elementary science only as a secondary consideration, I nevertheless believe that we can turn out a thoroughly sound medical man even if he comes to us merely with a good high school education. Saying this I believe that the time is at hand when we should demand the first year's academic course from all our students.

Here parenthetically may I interject a word and a warning to the student before me. It bears upon what I have just been saying. I refer to the common failing of students as a body, that of regarding each separate subject and course as a water-tight compartment, something that has to be got up by itself, that has to be crammed up for examination purposes, and when the examination has been passed "Thank God, that's over and done with: now for the next." This is largely human, largely a survival of the attitude of mind fostered by a cast iron curriculum in the Arts' course, in which perhaps the student may be pardoned for not recognizing fully the bearing of certain political economy, rhetoric or other courses that he is required to take. To some extent, but not entirely, it is the fault of us as teachers, that we do not sufficiently emphasize the constant interdependence of the various branches of medical science. I know that it is not entirely our fault. Thus as one means of breaking down this feeling, I give a course in elementary bacteriology at the end of the first year, as a direct continuation of the course in biology. Nay more, to make the relationship felt I give that course in association with the Professor of Botany. But notwithstanding, if in the examination I so frame a question that its answer demands reference to data and principles which have been treated by my colleagues in the biology lectures I doubt if ten per cent. of the examinees apply their biological knowledge and answer the question. Indeed I hear rumours of grumbling that my conduct is not exactly sportsman-like. Of course they are only freshmen, but we want even freshmen to be something more than mere parrots. What on earth, or in the heavens, is the use of a man cramming his head with knowledge which is not to be applied?

All the same I think we teachers could do more to grade and dovetail our courses. It is impossible to do this by solemn inquisition of the whole Faculty. At McGill I have urged that in connection with each chair there be a consultative Committee of four or five, composed of Professors of related subjects—in connection with my own subject of Pathology, for example:—the Professors of Physiology, Histology, Medicine

and Clinical Medicine, Surgery and Clinical Surgery,—which Committee should be called together by the holder of the chair once a year that he may receive suggestions how more effectually to make his teaching supplement and help the teaching in the allied subjects.

And now I come to the question asked several minutes ago and still unanswered, namely, are the authors of the Carnegie Report justified in classifying the medical schools of the continent primarily according to the entrance requirements? I have no hesitation in answering, certainly not. It is not the *entrance* but the *outcome* that should determine the status of the school. Thus a school may demand an Arts degree for entrance, but if it has not proper control of a hospital or hospitals, if its students have not free entrance to the wards, or if having that entrance the hospital is so full of pay patients that the number of patients available for ward-work and bedside instruction is lamentably inadequate; if, therefore, the students have to be taught by the "case method," by written reports and details of real or supposititious cases rather than by the study of the actual palpitating patient; if, I would add, a school permits its students to begin to specialize before the two, too brief four years' course is complete; then I say in all confidence, it may turn out learned men, but as practical, capable practitioners, ready to do their work in the world, its graduates are not to be put on the same plane with the graduates of a school which, while affording a thoroughly sound education in the preliminary scientific subjects, and controlling that education, affords in addition the fullest clinical opportunities: a school which has trained its students to study intimately and abundantly the living patient.

Let me be absolutely frank. I like the Harvard man. I enjoy him as a friend and cultured companion. Nay, speaking here, for myself, had I out of an indiscriminate dozen Harvard men and a dozen Toronto or McGill men to pick six with whom to live for a year, it is quite possible that the majority of that half dozen would turn out to be Harvard men. Had I again to appoint a thoroughly qualified teacher and investigator in one of the ancillary medical subjects, in Physiology, Pathology and so on I would have little fear in selecting a Harvard man. But if I were taken ill in one of the flourishing country towns over the border and my choice lay between placing myself in the tender mercies of two men, the one a young Harvard graduate, the other a young McGill or Toronto graduate of approximately the same year, there is no doubt into whose hand I would deliver myself. I would choose the Canadian trained man every time. That after all is the crucial test. By their fruits shall ye know them: not by the sapling state.*

* Need I state that I select Harvard for comment, simply as the best example of a type: because it is the outstanding example of a school which, affording magnificent laboratory training is, nevertheless, weak in its hospital relationships.

Wherefore, Gentlemen, I cordially congratulate you. If you have the heart to work, if you seek opportunities and ensue them, you have come to one of the four best schools on the American continent.

I have spoken more than once of the complete physician. Strangely enough the Carnegie Report passes over, so far as I can see, in absolute silence a most important phase of his equipment. It has been said, and I think truly said, that the ideal physician is the man who knows and makes it his duty to treat the patient, not to treat the disease. The Carnegie Report deals only with the education that trains the man how to treat the disease. One rises from reading the Report with the impression that he is the most fully qualified practitioner who has the fullest knowledge of the data of disease, the best training to treat each case as a subject of scientific research. The ideal hospital, we are told, for teaching purposes is that in which the medical and surgical departments are directed and controlled by University Professors without private practice who devote their whole time to teaching and research. Such a hospital, I freely grant, will turn out the greatest mass of valuable papers and monographs upon disease. Will it turn out the best medical men? I know that as a Professor of the Science of medicine you will expect me to take the view expressed in the report. But while I am a Professor of Pathology and while my home was not that of a medical man, I have in my veins the blood of five successive generations of country doctors; and I feel it in my bones that the view is mistaken, or at least must be received in a modified form. It is inevitable in a hospital so conducted that the staff from the heads of the departments downward regard the patients not as human beings to be cured but as cases to be investigated. The inevitable tendency must be that the students trained in such a hospital go out into the world with the conception that their duty is to treat the disease. Now I say straight out that this training does not make the complete physician. It makes the relative failure.

Let me read you a parable from my own experience. When I passed from Cambridge to the hospital, I became acquainted with two men. The one had already for two years been house physician. He had passed through a distinguished course in Arts, had carried everything before him in the medical school, had obtained, if my memory does not fail me, the gold medal in medicine at the London University—which in many respects may be regarded as the Blue ribbon of the English medical student. But he was poor and had to make his own way, could not afford to hold on longer connection with the hospital or to announce himself as a consultant and wait for others to send him patients. At the end of this year, therefore, he mounted his brass plate in one of the artisan suburbs of the great city, in the hopes that even if individual cases did not afford high fees, the teeming population would afford

abundant work and opportunities for practice. I may add that his morals were irreproachable: he was of the "unco' guid," a leader in the prayer meeting movement. Now there was in the final year another man, a very different character. He had entered the school at the same time as the former. That he had ability there was no question. The way in which he kept the students' common room lively was in itself evidence of that. He was not, however, what might be termed a model student. The fact that he had taken three more years to get his licence rather enforced this conclusion. In fact, although somehow one could not help liking him, he was more than a little bit disreputable. We may put it that he enjoyed the society of his fellows more than that of his books. One heard of him attending race meetings, one heard of his exploits in sundry bar-rooms, one saw him very cheerful and distinctly prominent at the annual dinner. If you paid one of your rare visits to the theatre you came across him there so much at his ease, hail fellow well met with every one, that it looked as though he had perpetual entry. And when supplies failing, he at last found it necessary to scrape through, his record did not recommend him for a hospital appointment: it did not recommend him for a partnership or establishment in any first-class neighborhood, and as a coincidence he lighted upon the same second-class suburb as the first, and set up his plate at the opposite side of the road.

Here is the point: by the end of the year the first of the two was still going on foot. I was informed that scarce a baker's dozen of patients had called him in. The second was already doing so well that he could hire a trap. By the end of the second year he had invested in a dog-cart of his own: at the same period scarce one of the baker's dozen of patients had called our first friend in again: they had not even recommended him to their acquaintances: the prospect was so hopeless that he had taken down his plate and was leaving the neighborhood. I hear of him now, after years of struggle, as a consultant of moderate reputation, the only position he is qualified to fill. Even here his lack of humour prevents him from being a full success. He treats the patients he sees for a brief quarter of an hour as cases, not as living and frail human beings: he does not create a bond of human sympathy between himself and the practitioner who calls in his aid. The practitioner selects him in the hope that his extensive knowledge, his familiarity with recent literature, may be of use in suggesting some other method of treatment. The ideal consultant, you will find, is on good terms with his patient in two minutes, in five he has become such an old friend that the patient is exposing freely all his or her foibles and anxieties, in fifteen he has so thorough a grasp of the character and disposition of the patient that he can proceed to treat him or her, over and above his or her disease.

That, gentlemen, is what you have to strive after. I do not suggest to you for a moment that you take my second acquaintance as your example, but in citing his case I assuredly want to impress upon you that the sympathetic study of your fellow-men and fellow-women, the capacity to enter into their lives, to see the world from their standpoint, this is the primary desideratum. He had acquired this, and to it was due his limited but nevertheless very real success as a second class practitioner. You can do the same without frequenting race tracks and bar-rooms, without cutting lectures and hospital work. There is abundant humanity to profit from, even in the Y.M.C.A. The ancient philosopher laid down as the rule for a right existence, "Know thyself." You will remember Pallas Athene's proffered gift to Paris in "Oenone"—"Self reverence, self knowledge, self control." Verily a noble endowment, and happy the man possessed thereof, for these lead surely to sovereign power. Nevertheless it is not sovereign power that the medical man places foremost. The rule for the complete physician is, I would maintain, "Forget thyself, know thy fellow." After all it is the old, old lesson that I have to preach to you. Though you know all the 'ologies and practice all the modern methods of diagnosis and treatment, though you know Latin, German, French, Italian and "speak with tongues of men and of angels and have not charity"—do not let your hearts go out to your fellows—you are become "as sounding brass and as a tinkling cymbal."

It has been the main glory, the main strength of British medical education that it has recognized this, the main weakness of German medicine that it has too largely neglected it. Do not think from this that I esteem lightly the university hospital as a centre for medical research. I doubt if any one here more fully appreciates its importance in this relationship that I do. By all means, I would say, appoint a paid Professor of Medicine and a paid Professor of Surgery to devote their days to teaching and research; but let them be each "primus inter pares," giving them the deciding voice in matters of teaching within the hospital, but by no means give them the control of all the wards. On the contrary give them direction purely of a ward or wards that may be devoted to the study of particular diseases and conditions, on the study of which they for the time being are concentrating their energies: give them the right to all cases of one or other order that present themselves at the hospitals. Many patients are only too glad to think that they are being made the object of intensive study. My Old Cambridge friend, Dr. Strangeways has proved this to the hilt. At present he and his colleagues in the hospital he has established are studying Rheumatoid Arthritis and, knowing this, patients present themselves for admission from all over England. As regards the main mass of the beds place these in the hands of certain leading physicians and surgeons of the city who at the same

time through their work and power of teaching are recognized members of the Medical Faculty. The very fact that these men have gained leading positions is proof positive that they possess the supreme gift of sympathy with and understanding of the patient. It is from these men as they pass from case to case and from bed to bed that the student will learn the invaluable lesson of the approach and study of the individual. I would even go so far as to say, make a point of appointing to the staff the leading family physician of the city as distinct from the consultant or specialist. He may not be able to lecture "worth anything." Do not expect him to. But the students who accompany him round the wards are likely to obtain lessons of greater value from him than from any other single member of the staff.

As already stated, it is for its value in this study of humanity that I particularly esteem the years spent in the Arts Faculty. Similarly for its formative value I entreat you, gentlemen of the freshmen year, to enter heartily into the life of your year of the Faculty. Work heartily, work thoroughly, but do not be book-worms and smugs. Mingle freely with your fellows, study them and get to know them—yea, regard it as a treasure of price if you have the fortune to gain the entree into the homes and family life of the citizens of this good city.

Lastly, although I believe that the new fifth year, spent as it will be largely in the hospital will be magnificent training, I would urge every one of you to strive by every means to spend one or two years as a resident in some hospital, before embarking in general practice. You may ill be able to afford the expense, and it may seem as though you are casting your bread upon the waters. I could only assure you that the loaves will be returned to you a hundred fold in the years that are to come.

An education such as you receive here in Toronto, the rational and necessary training of a capable physician, already let me impress upon you, costs double as much as either you or your parents pay for it. It is to the interest of the State that you should have the best possible education. But the result of the enormous increase in the cost of a modern medical education is that the proprietary medical school which in the past flourished in Canada, as it has done in the States to an even greater extent, is doomed. In competition with the schools connected with reputable universities it cannot afford the necessary expenditure without a heavy deficit. Within the last year no less than twelve of these have disappeared. The ungloved revelations of the Carnegie Report must result in the disappearance of all of them, and with them will go that manufacture of the crude unfinished article, that has been the discredit of American Medicine, the article poured out in such quantities that compared with European, and it may be added, with living standards, this

continent possesses at least four times as many medical men as are necessary. There is no need to-day—there is no place to-day—for the poor untrained student. The poor trained student is a very different matter. Living in Montreal is expensive, more expensive than it is in most cities of this continent. Nevertheless a recent prizeman under me, one of the first three men in the final year results, was a qualified mason who during his course put in one of the summers as a bricklayer in order to place him in funds. He is the only man who in his papers has given me the derivation of all terms, distinguishing between origin from classical and New Testament Greek. I looked the words up and found him correct in every case. While saying this I cannot but feel that on this continent we are sadly deficient in that system of government and other scholarships which in the old country help the bright but poor student from the elementary to the high school, from the high school to the university, even to what we are accustomed to regard, mistakenly, as those most exclusive and expensive institutions, Oxford and Cambridge.*

Admittedly the increasing length and the increasing cost of the Medical course penalises the poor student. The establishment of Scholarships would remove this defect in what from every other consideration is a laudable as it is a necessary advance.

But, once graduated, with the reduction of the output the well trained man need not fear as to his future. Looked purely from the commercial aspect, gentlemen, you can well afford the extra time necessary to make you sound practitioners.

It is to the interest of our universities, and for their reputations, that a thoroughly trained product be turned out, that quality not quantity be the goal. But unaided they cannot bring about the elevation of the medical profession. They need the support of public opinion and of the State. They must have, I would particularly add, the support of the provincial licensing bodies. What is the use of the University doing its best if the examination afforded by the provincial college of Physicians and Surgeons is of such a nature that it permits improperly qualified men to creep and intrude and climb into the fold? From what I have seen I am wholly at one with the contention of the Carnegie Report, that the method of examination followed by the State and provincial licensing bodies is imperfect. It must be so when we find that some of the notoriously inefficient schools of this continent—schools without proper laboratory equipment, without clinical facilities—pass as large a

* I would commend to everyone interested in the democratization of learning the remarkable report on *Ordnance and Working Class Education*, published in 1928. In the recent (October) number of the *University Magazine*, my colleague, Professor Dale, gives a clear and sympathetic account of what is being done along these lines in Great Britain.

proportion of their graduates as do the reputable schools. The examination being, too often, purely written and oral upon set subjects, the student has only to obtain the questions set for the last three or four years to find out what is expected of him and floor his examiners. It is merely a matter of pernicious cram. Your trained teacher can distinguish between genuine knowledge and parrot-like statements of undigested facts. And so long as the professional teacher is regarded as anathema by the provincial board for so long must the examinations lay themselves open to criticism. I do not ask that the University be given control: far from it: but when it is the object of both University and Provincial Board or college to give their "exeat" only to fully qualified men let the general profession of the province and the universities be united in this matter of examination, particularly when, as here in Ontario, both University and Provincial Board are State Institutions. And, I would add, let competent practitioners make the examination a genuine test. Make the examination practical. Let competent practitioners test the candidate at the bedside. I know the difficulty in carrying out this recommendation. It means a great increase in the length, and in the expense, of the examination and this extra expense ought to be borne by the candidate, who nevertheless at this particular period of his career is least able to bear it. I do not see, however, why it is not possible to place the candidate under bond, and require of him payment in instalments over, say, five years.

I could worry my text to much greater length but must by now have stretched your patience to breaking point. If I have criticized the Carnegie Report I ask you not to go away thinking that I depreciate it. On the contrary. No one interested in the future of medical education on the continent but must welcome it and its fearless review of defects, even if it itself is not without defects.* A strong progressive school has nothing to fear, everything to gain from it. The loud squealing of the institutions whose nakedness, poverty and false pretences are exposed to the light is only natural. All I have to point out is that the Report does not cover the whole field: that we can go farther than the Report. Sound training in medical science is an essential but you, gentlemen, if you want to develop into the complete physician must add to this knowledge of, the sympathy for, the love of your fellow-men.

* One of our Canadian schools, that at Halifax, has, for example, been more severely criticized than the circumstances would seem to require. Through its Dean it has issued a protest, so temperate in its language and so reasonable that it is impossible not to sympathize with the school and its endeavours, and to wish that the Report may be the means of stimulating interest and obtaining the monetary support it needs to reach the standard it would attain unto.

THE USE OF RADIUM IN THE TREATMENT OF CANCER AND OTHER DISEASES—SELECTIVE ACTION OF RADIUM.*

By DR. LOUIS WICKHAM, 4 Rue St. Philippe du Roule, Paris.

AS a rule, when speaking to a general practitioner about radium as a means of curing diseases, I find that in his mind arise three ideas:

1. The idea of a burn.
2. The idea of an action only on the skin.
3. The idea of an action localized on a small area.

These opinions are right, but only to a very limited extent. Certainly radium can act on the surface as a caustic and on a small area, and in so doing radium is interesting, because the burning is produced without pain, the degree of destruction can be controlled, and the newly formed tissues are often, after a burn, smooth, supple, and with the exception of telangiectasis, sometimes very satisfactory.

I will explain further on how radium acts as a caustic, but this is not the only aim, the chief aim, of my lecture to-day. If the influence of radium ended there, it would not be worthy of the special consideration which must be given to it, because we possess a good number of other destructive agents.

I will endeavor to demonstrate, taking great care not to fall into exaggeration,

1st. That radium can, by a special action which is called "Selective Action," influence favorably certain pathological tissues without burning them.

2nd. That radium can be used to act deeply on subcutaneous diseases and also on certain distant tumours, some of these even thought at first inaccessible.

3rd. That radium can be used for treating somewhat larger surfaces, and even can claim some action on the general system.

In conclusion, that radium in so doing shows itself as a useful weapon against several diseases, especially against cancer, and often helps surgery and x-rays by completing and prolonging their effects.

I wish first to dwell on: the *Selective Action of Radium*, as this action is most important and often overlooked. In fact, what raises radium to a higher level than the ordinary caustic is that even when a burn is produced, it can act in a selective manner far beyond the portion burnt, as a very subtle modifying agent, leading certain pathological cells to degeneration without injuring the surrounding ones. Furthermore, thanks to certain conditions of technic, the burning can be avoided, and the selective curative action alone employed.

*Abstracted from a lecture-demonstration given before the Academy of Medicine, Toronto, Sept. 30, 1910.

This once said, we must bear in mind that this selective action cannot be produced in all kinds of pathological tissues, but especially on malignant tumours, such as epithelioma, sarcoma, lymphadenoma, mycosis lungoides, on enlarged tuberculous glands, on angiomatous keloid tissues, on eczemas, and on the nerves to produce analgesia.

There follows an histological study made with Doctors Degrais and Gaud which will not only show the selective power of radium on cancer cells, but also at what depth in certain cases of cancer this selective quality may act upon the cells.

You see on this slide the breast of a patient. On the right there is an enormous cancerous infiltration. On palpation this breast presented a hard and somewhat homogeneous mass, which measured $6\frac{1}{4}$ inches transversely. In a single part which I here show you I gathered and placed 9 centigrammes of pure sulphate of radium, that is to say, 190 milligrammes, contained in four flat varnished apparatus superposed, the first one applied naked without any screen on the skin. These 19 centigrammes were left in place for 48 consecutive hours.

A charged electroscope which was presented on the opposite side of the breast was discharged in 8 to 9 seconds, and in like manner a screen of platino-cyanide of barium was illuminated. These experiments clearly showed that the very penetrating rays had traversed the $6\frac{1}{2}$ inches of tissues.

However, it does not follow that because the rays traverse an organic tissue of such thickness they must necessarily act therapeutically on all their way through these tissues; in fact, we will see that a therapeutical action is only in proportion to the amount of rays which reaches a special spot; and it must be understood also that each layer of cells cuts off a certain number of rays, so that the deepest layers receive but a very small amount of rays.

As the patient underwent an operation for the removal of the breast on the sixteenth day after the 48 hours application was completed, we were enabled to make a histological examination of the tumor, in order to ascertain what changes had taken place in the cells, and at what depth these changes were observed.

This photograph was taken just before the operation. Observe the difference in the size of the breast, which has diminished in size during the sixteen days so that it now measures only $5\frac{1}{2}$ inches in diameter. Instead of one hard, homogeneous mass, distinct hard nodules could be felt.

After the breast was removed we cut it through the middle in the same direction as the rays traversed it. Here is the photograph of this section.

The arrow shows you the direction of the rays. The apparatus had been placed at A and directed from A to B. You can see a large burn on the surface, and farther, you at once observe a very decided difference in appearance of the cancerous tissues which lay directly in the path of the rays and those which were beyond them.

The former are hard and smooth, somewhat sclerotic tissue; the latter are greyer and softer and have an encephaloidic character.

For the histological examination, sections were taken from a cancerous gland of the axilla, which had not been irradiated and from the breast tumor at different levels, namely, $\frac{1}{2}$, $3\frac{1}{2}$ and $5\frac{1}{2}$ inches.

Here is a slide which shows with slight magnification both non-irradiated and irradiated tissues at the depth of half an inch. The nature of the cancer is a typical lobulated epithelioma. You can see at the first glance, by comparison, that the amount of the connective tissue stroma has increased. This connective tissue penetrates into the epithelial lobes and separates them. It contains newly formed nuclei, which you will see more clearly in the more highly magnified section which I will now show you. The connective tissue contains, as you see, young fibroblast and lymphocyte cells.

These changes are not the sign of an inflammatory condition, because the multinuclear leucocytes are wanting and because there are no nuclei of pus. Therefore, this tissue is a young embryonic, infiltrated tissue.

Besides these connective tissue changes, there can be seen changes in the cancer cells. These changes consist of a degeneration which bears at the same time both on the nucleus and on the protoplasm of the cell.

The nuclei are generally changed; in some cells they are enlarged; in others they are either multi-lobulated and proliferated or contracted; the chromatic filaments are changed, and many other changes can be observed, such as some pseudo-parasitic bodies and some corpuscles—acidophiles. At the end of this process of degeneration we find cells in cytolysis, with a nucleus in karyolysis, and this is the last expression of the liquefaction of the cell and its nucleus. The radium rays bring about at the same time a cellular degeneration and an embryonic modification, and the modifications end in a stage where the cancerous tissues have been absorbed and have disappeared and are replaced by a fibrous tissue.

This transformation explains why, from a clinical point of view, the big malignant tumors, while disappearing under the influence of radium, leave in their place different little hard fibrous masses.

When possible these fibrous masses must be surgically extirpated, because very often they still contain cancer cells ready for recurrence. For the same reason, when these hard masses are obtained, it is wiser and more prudent to still treat them, for a long time keeping them under the

influence of radium and watching them carefully. I will show you a practical case to illustrate this conclusion.

This is a model, made in September, 1908, which represents a case of lobulated epithelioma with proliferating nuclei, developed in the form of an enormous tumor on the left cheek. The tumor projected two inches above the normal level of the cheek and extended on a surface of 3 inches vertically and 4 inches transversely.

After treatment by radium, without any surgical operation, the tumor after five months was reduced to the level of the normal surrounding tissue. The base of the tumor, which at first was firmly and solidly fixed to the face, quite inoperable surgically, gradually became loosened. Through the apex of the tumor, where you see an ulceration, a large quantity of thickish white secretion resembling milk was gradually discharged, being the result of the special radium reaction. A radium tube had been introduced inside the tumor through the ulcerated apex, and the exterior had been treated by the crossfire method, *i.e.*, by means of placing flat varnish apparatus opposite each other and circumventing the base. Thus an enormous quantity of radio-active energy was introduced, literally saturating the tumor.

The technique was conducted in such a manner as not to produce any irritation or burning of the surface. In the last cancerous lobe, the one situated at the extremity, opposite to the apparatus, and six and a half inches distant from them, the histological modifications still exist, though very much less pronounced.

The demonstration given by this case, that radium in a given "radio-active strength" can act strongly at a depth of $3\frac{1}{2}$ inches and even farther, is most interesting and of practical importance, especially as some observers in Paris have limited the penetrative action of radium to about one inch.

Now I will show you a more precise and definite demonstration of the selective action of radium on cancer cells.

This is a glandular acinus infected by cancer and this is a cancer nodule. The latter received fewer rays than the acini glands, as it was farther from the apparatus. Nevertheless the first have remained unchanged, whilst the second are undergoing degeneration.

The selective action of radium is thus clearly shown and explains why it is possible to transform deep subcutaneous as well as superficial cancers without causing any irritation of the skin.

How must we understand the transformation? Is it the expression of a real specific action of radium having a special character, special laws? It may be, and I think it is so. But we cannot up to the present say precisely whether this transformation is anything else but a degree of destruction, a more or less resistance of the tissues. In fact, if we

increase the doses of rays we find that the changes involve not only the cancer cells but some of the surrounding normal cells; and if we continue to increase the doses we bring about an equal destruction of all the elements irradiated, so producing complete necrosis.

Nevertheless, it must be known that the different tissues which respond to selective action are more or less susceptible to the rays. If we consider the different kinds of cancer we see that a small dose can transform a lymphosarcoma, where a larger dose is necessary for ordinary sarcomas, and doses still larger for the different kinds of epitheliomata. But experience shows many exceptions to what I am now stating; and I have met with epitheliomata easily transformed and ordinary sarcomas difficult to transform.

If we consider eczema we find that rebellious eczema to be transformed by radium by selective manner needs absorption in its elements of very small quantity of rays; keloids need a larger quantity of rays than eczema. In a case of flat angioma of the scalp a cure has been obtained without the slightest inflammation or burning of the surface; the epidermis was still there and undamaged. Nevertheless, the tissues under the epidermis were entirely changed; the big enlarged vessels had disappeared; so also the sebaceous glands. Evidently, it was a fibrous change which has taken place. All these transformations were due to selective action of radium.

We are now ready to look over the clinical part of the subject, and I will, before dwelling with the cases themselves, show in what consists the radioactive energy of radium, and how the instruments are constructed for therapeutical use, and how the rays can be dosed and utilized.

Radium is an element discovered in Paris by Professor and Me. Curie ten years ago, out of pitchblend (oxide of uranium), an element which has the property of emitting a gas named emanation and rays named A, B and Y rays. The gas emanation has no penetrating power; it does not go through substances, and any cover retains it; so it can only be utilized when radium's salts are free, for example, when in solutions. In that way radium may be therapeutically useful, and I have given the name of emaniferous methods to those which utilize the emanation; but I will leave this question to the end of my lecture.

The methods which are usually and commonly employed are the *radiferous methods*. The radium rays are of three different kinds—alpha, beta and gamma rays.

By interposing a screen, we change the quantity of the rays and produce at the same time a radiation composed of rays of weak number it is true, *but having a strong power of penetration*. This is the principle of the so-called filtration that I began using in March, 1907.

The filtration represents a distinct progress in radiumtherapy. Its chief advantages are the following:

1. By cutting out the weak penetrative rays it permits the accumulation in the deep subcutaneous tissues of a certain quantity of rays without causing any irritation to the surface, provided that the duration of the application is not too long.

2. The filtration produces a gentle passage of the rays and their slow and progressive arrival in the tissues, which is important, in treating, for example, some irritable cancers.

3. The small quantity of rays emitted in the same time permits what I call the night application, an apparatus being applied in the evening, taken off in the morning, without the slightest inconvenience for the skin, if the doses are well regulated, and without the slightest discomfort for the patient, and that is a very convenient and practical mode of treatment.

Of course it is understood that these advantages vary in proportion to the thickness of the filters used. You will perceive more clearly these different considerations, when I explain the different reactions which it is possible to obtain and the cases themselves.

Thanks to special technics which are very delicate and complex, the following reactions can be obtained:

1. A superficial necrosis of the tissues.
2. A deeper necrosis with selective action still deeper.
3. A superficial action by selective action without any burning.
4. A deeply produced selective action without any superficial burning.

These different kinds of reactions, it must be clearly understood, are not sharply defined but schematic, merging more or less one into the other.

Now arises a very interesting and important question: how can we manage to produce at our will such different reactions? The answer is: by the difference of the quantity and the quality of the rays absorbed by the tissues, these two factors being combined in different proportions.

That which regulates the degree of intensity of destruction of tissue, from selective action to complete necrosis, is the quantity of rays absorbed by the tissues *in a given time*.

That which regulates the depth at which the chief reaction is produced is the quality and nature of the rays, which, penetrating to a given depth, are there absorbed.

The absorption by the tissues of a large quantity of a predominate number of weakly penetrating rays would produce a necrosis at the surface.

The absorption by the tissues of a large quantity of hard B and Y rays, "rayonnements surpenetrants," strong, penetrating rays, would produce a deeper necrosis.

The absorption of a smaller number of weak, penetrating rays would produce a superficial selective reaction without any burning.

Finally, the absorption of a small number of strong, penetrative rays, combined with the cutting off by filtration of the other rays, would produce a deep-seated selective reaction without any burning of the surface.

Let us now see how we must use the apparatus at our disposal in order to obtain these modifications, in order to obtain the combinations of quantity and quality, in order to obtain such and such quantity or such and such quality of rays.

The quantity of rays used is under the control of three different means:

1. The choice of the radio-active source, which can be more or less intense; the choice of a strong or weak apparatus; the choice of several apparatus applied in the same time, that is to say, the quantity of pure radium used, for treating a simple case.

2. The different duration of the application. A comparatively weak apparatus or a comparatively weak radiation, if left in place for a long time, say 100 hours, will cause the tissues to absorb an enormous quantity of rays. A comparatively powerful apparatus left a very short time in place, say one minute, will cause the tissue to absorb a rather comparatively feeble quantity of rays.

3. The filtration which cuts off a given quantity of rays. These factors all affect the quantity of rays absorbed.

Now, in regard to the quality of the rays absorbed, it can be modified only by filtration. Do you want the majority of the rays to be of very weak penetrative power? Then you choose apparatus made so that their varnish is as thin as possible and apply them without screen. The linen apparatus having a very thin varnish gives passage to a great quantity of the rays.

Do you want the majority of the rays to be of greater penetrative power? Then you interpose light screens 1-100, 2-100, 5-100, etc., of aluminum.

Do you want the majority of the rays to be of super-penetrative power? Then you interpose screens which will allow none but these to pass; screens of 1mm. and 3mm. thickness of lead.

If we recapitulate all we have said, we see that, in short, radium-therapy has four factors to deal with, each of which can be varied *ad infinitum* and combined one with the other.

They are:

1. The radio-active source capable of infinite varieties of form and power.
2. The screens, which can be of any desired thickness and density.
3. The duration and method of the applications, also capable of infinite variations.
4. Lastly, the factor resulting from the nature and sensitiveness of the tissues treated and individual idiosyncrasies.

And you can easily understand how complex are these new methods of treatment, and how necessary it is to have a thorough knowledge as well as a wide experience, in order to obtain the maximum value and utility from the employment of a radium apparatus.

Now I come to the practical part of my lecture, in showing the cases themselves and explaining the methods and doses employed.

Here a splendid series of photographs were shown and explained, indicating the results obtained in the treatment of angiomata, keloids and eczemas.

I have now arrived at the subject of cancer, and while developing further the question of selective action, will show in what different clinical ways the cancer tissue reacts under the influence of radium.

I will place them in different groups, speaking of superficial cancers but rapidly. I think that the more important work of radium is in the treatment of deep and grave cancers.

There is a first group for which some burning may be made.

The first slide represents a budding epithelioma at its four stages of degeneration. The treatment was made with an apparatus containing a 1-4 of pure bromide of radium and left in place 6 hours.

On this other case the budding epithelioma being much larger it was necessary to apply three hours more.

I am going to show you some small rodent ulcers, which can be very well treated by the varnish apparatus containing a 1-4 of pure radium applied without any screen from 1 to 3 hours.

These epitheliomata are, generally speaking, easy to treat and cure, and such as well by many other means; nevertheless in this group we meet with very resistant cases.

1. Those which present lymphangitic irritation on their periphery.
2. Those which are situated on bone, on cartilage, as the temples, forehead, nose, ear, and in general in all the regions which are not fleshy, and especially in thin persons.
3. Those which recur in cicatrices.

For all those cases a burn must be avoided; sometimes a light inflammatory reaction may be allowed. The treatment must be conducted with the view of obtaining the selective action of radium.

For the eyelids, radium is most specially useful, because not only are they difficult to treat, but radium can be of much service to them in those cases where x-rays can only be applied with difficulty.

We now come to the grave cases of cancers, and here we enter into the field of major surgery. I wish to lay stress upon this because I consider it the culminating point in the study of radium.

Here I should like at once to make some precise statements, which I should, in the natural order, give later on as my conclusions.

Firstly, the radium therapist in presence of one of these cases must never neglect to ask the advice of a surgeon: that is a question of the patient's security, because it is the best way of bringing back into a wise direction the present radium therapeutic movement and prevent it from going into exaggeration and into the hands of quacks. Therefore, if the surgeon says he is sure of a cure in cases where the cancer is only beginning, he must operate at once. Very often it will be better to use radium first to diminish the virulence of the cancer, and then, after a lapse of a fortnight, the operation may be performed.

Radium can be employed on the scar after the surgical extirpation to make the result more secure.

Secondly, if the surgeon finds the case difficult to operate, or furthermore, if the case is inoperable, or finally, if the surgeon is obliged to produce a large deformity, then recourse to radium must be considered. Amongst the different aids to surgery radium in most cases must be recognized as its most useful auxiliary. There is then an association between surgery and radium, and by this association, as we will see, surgery extends its own activity. In short, radium opens the way to new and wider surgical fields.

Thirdly, if the knife cannot even reach the place where cancer lies, radium must also be considered.

I will extract from the number of cases I have treated those in which radium has been successful, and those which permit me to give some useful consideration.

I have said that if surgery considers a case inoperable or difficult to operate, it can then call in radium; and in so doing it in no way abandons its own position, but, on the contrary, strengthens it. The reason for this is very apparent.

To obtain the best results it is necessary to inundate the tumors entirely and at every stage with the greatest possible amount of rays. Surgery, then, can step in to offer to the rays less thickness of tissue to be traversed, in different ways, such as making perforation with a trocar in the tumor so as to introduce (as Dr. Abbe was the first to do) one, or better, several tubes of radium in the most useful places, enabling one or

more tubes deeply embedded in the tissue to send their rays in a cross-firing manner.

These tubes must be of the greatest radio-active power possible; they should contain at least from 5 to 10 centigrammes of pure radium and their walls, forming the filter, must be as thin as possible, not more than 3-10 mm. of silver, so that a considerable quantity of rays may be put in action.

These tubes are left in place 24 or even 48 hours. During this time other apparatus may be applied on the cutaneous surface of the tumor, but now with thick filters to prevent any necrosis of the surface, and thus the cross-fire is made in every direction.

But there are other methods in which surgery and radium can work together. Surgery can perform a large incision to enable the placing of apparatus inside the wound, and it can also excise the maximum of the growth.

One patient, after the extirpation of a small cancer of the labio-gingival region, had a sub-maxillary metastasis, spreading rapidly in an acute manner in the neck to such an extent that it was judged inoperable and absolutely hopeless.

The histological type of the tumor was "Epitheliome-tubulo-lobulo-meta-atypique."

It developed rapidly and looked extremely malignant. My friend, Dr. Banjet, a noted surgeon in Paris, was asked to take away the maximum possible of the tumor in September, 1909. He cut it slice by slice and only stopped when near the large vessels and muscles of the neck. At that moment the entire base and circumference of the wound was still a mass of cancerous tissue. It seemed quite certain that to Dr. Banjet his surgical intervention was perfectly useless, perhaps even harmful, and that in a month, as he had said, the cancer would bud again.

During 48 hours I placed very large doses of radium inside the wound without filter, and outside with thick filters. After three months the wound was almost cicatrised.

Other series of treatment were again given outside the wound, followed by periods of rest. What is the actual state of the patient now? In the place of his cancer is a hard, fibrous mass, which impedes the movements of the neck.

In such a case is it possible to speak of a cure? Unhappily, I do not think so, because in the middle of the fibrous tissue there must certainly be some epithelial lobes, seeds of a future recurrence, and for this reason I recommencé treatment about every two months.

But, even if we cannot yet claim a cure, you will, however, certainly grant that radium in this case has played a very interesting and

useful part; inasmuch as a full year after the beginning of radium treatment the man is still alive and in good condition.

It is not only in diminishing the thickness of the neoplastic tissues that surgery can render radium more useful, but also in creating artificial orifices so as to conduct radium on the growth or in profiting by the natural orifices; and, in both cases, surgical skill is necessary for conducting the radium apparatus to a good position, right on the cancers when they are otherwise out of our reach.

With Drs. Gaultier and Labey I decided the following technic for the treatment of a cancer of the pylorus in a patient who was in a very low state:

Dr. Labey performed an ordinary gastro-enterostomy, but instead of closing the artificial stomachic orifice, he arranged on the anterior wall of the stomach an orifice which permitted the passage of a probe containing a tube of radium. This probe was so curved as to allow the surgeon to place the tube of radium on the cancer of the pylorus.

At the same time I placed powerful apparatus with thick filter on the skin of the gastric region where the tumor could be felt, and thus produced the "cross-fire." The applications were repeated with special technic which I have no time to detail.

At the fifth month the stomachic orifice was permitted to close.

The operation took place in June, 1909, and to-day, 15 months after, the patient is apparently in good health. Of course I cannot in this case draw any conclusion in favor of radium, since gastro-enterostomy is known to sometimes greatly prolong the existence of the patient.

I have simply mentioned it to draw your attention to different new operations that surgery may perform for utilizing the therapeutic force offered by radium.

I have treated cancer of the larynx by performing tracheotomy, and cancer of the intestines after colotomy.

Even for the introduction of the tubes by natural orifices the skill of the surgeon is needed.

Cancers of the œsophagus, of the rectum, benefit greatly by radium treatment, but on the express condition that the seat of the cancer be exactly located by œsophagoscopy or rectoscopy, so that, by these means, the radium tubes may be placed on the exact point.

I can speak of a case of cancer of the rectum which, treated in April, 1909, has regressed in such a manner that the patient, a year and a half after, is still in an apparently good state.

But I wish to lay stress on a particularly successful case: it concerns an English colleague. He had been attacked by cancer of the neck of the bladder; the diagnosis had been clearly made in England first, and was confirmed in France, each time with the cystoscope. The patient suffered

considerably, had frequent mictions, lost blood, and a nodule was felt in the prostate.

We asked Dr. Pastreau, a distinguished urologist surgeon, to make the application. With great skill the place was marked by the urethroscope, and the apparatus placed every time in the right place without any breaking or irritation of the mucous membrane, and with a gentleness of hand indispensable in such a case. The treatment began in November last; little by little the pain diminished, then ceased; the other symptoms also weakened to their disappearance, and now our colleague is in excellent condition.

Is he definitely cured? It is very difficult to say or to foresee the future, but let us at least consider the present.

At the present moment our English colleague is a happy man, full of hope, once more enjoying life, and when he compares his present state, eleven months after, with what, without radium, he knows would be his state, it is impossible for him not to have for this therapeutical agent a great deal of gratitude.

There remains yet another most interesting use for radium in combination with surgery. This resides in the property of radium to cause decongestion of the tissues and modify the virulence of cancerous cells. And so in a difficult case, if radium be first applied, when the knife intervenes, it will encounter ground where the virulence will be greatly less.

But cancer is not the only ground on which we find such services rendered by radium to surgery in preparing the way for the bistoury by previous action.

Here is a case of an enormous angioma on which it was impossible to operate. All the tumors were full of blood and very fluctuating. By a long preliminary treatment we obtained the regression that you see here. It is considerable, but the important point is that the tissues still projecting are no longer so soft, full of blood, and dangerous to operate, but rather sclerotic.

Here is a case of cheloide which was operated on three times, each time with recurrence of a larger tumor, and we therefore proposed the following technic: Radium action first on and around the tumor. Surgical extirpation, and then treatment of the cicatrice by radium. This technic seems to have succeeded, no further recurrence having appeared, although the operation was performed 18 months ago.

I will now go rapidly through desperate cases of cancer in which surgery felt more or less powerless, and where radium by itself without the help of surgery has been able to bring relief of some interest:

1. A cancerous mass of the sub-maxillary region, which has been reduced by radium, but the original cancer which existed in the tonsils

and descended to the pharynx could not be destroyed, and so carried of the patient.

2. A case of a complete and durable regression of a lymphosarcoma of the cervical region; the tumor was very projecting, but although the result is really striking the term cure is quite incorrect, since, later on, metastasis developed in the mediastinum, to which the patient finally succumbed.

3. An adenopathy, which was sent to us as a case of Hodgkin's disease. The treatment rapidly caused the entire disappearance of the morbid mass. Unhappily, the patient is at this moment very ill in his general health and in danger of death.

Radium seems to have played in some of these cases a useful part, since it decidedly prolonged the life of the patient.

4. A case which profited very much from radium: It is a myxosarcoma of the shoulder, which was largely operated upon several times. After each operation there was a rapid and more extensive recurrence, which finally became so considerable that an operation was scarcely possible. The surgeon asked us to treat it with radium. The place has been well cleared of the malignant tumor, and it has remained in a healthy state during a year. Lately a recurrence has appeared in the anterior wall of the armpit, but it has equally and entirely regressed under the influence of radium.

5. A case of recurrence of cancer of the breast which disappeared under radium and the patient keeps in a good state. Indeed on the breast radium has clearly a favorable action, as it is easy to treat and to inundate with rays; and in those cases which are quite operable and not too advanced, but where the patients have refused surgical extirpation we have obtained very fine and lasting results.

It is only in case of a formal refusal of surgical help that we have used radium.

One of our cases which was inoperable, the patient being 78 years of age, was treated for the first time in November, 1907, nearly three years ago; it regressed and still maintains its good appearance, thanks to the series of applications given at long intervals.

In one case where the patient has peremptorily refused the extirpation of her breast, I proposed the following combination: surgical extirpation of the entire lymphatic mass and the sub-pectoral and axillary glands, treatment by very intense radio-activity at the point of the section by knife of the lymphatic vessels close to the breast, treatment of the breast itself by cross-fire by applying to the surface several powerful apparatus with filters, and, if possible, the introduction by perforation of a tube into the heart of the tumor. Finally, action of x-rays on the larger

operated surface. This again exemplifies how surgery can establish new technics.

In uterine disease radium is of great use. I must say that no other auxiliary to surgery may be offered better than radium. These small, powerful tubes can easily enter into uterine tumors, and in many cases we have had relief, stoppage of blood, of secretions, and, in fact, produced great help. In combining in cross-fire the inside treatment with the outside application of apparatus of the abdomen we have obtained in some cases excellent results.

It must be known that if some cases, like cases of giant-celled sarcoma, respond admirably to the curative influence of radium, there are some others which up to now do not respond so well to radium; the mouth, for example, is a difficult region to treat, either because our technics are yet insufficient or because the region prevents application of sufficient length, the reverses are numerous. Thus for the mouth, more than for any other part, surgery must intervene first.

It is true that there are cases of cancer of the mouth where radium has succeeded; one on the hard palate, regressed more than a year ago, and still retains its good condition.

I come now to another side of the question—the emaniferous methods of which I have already given some hints.

As a certain amount of radium is consumed in utilizing the gas emanation, of course only a small quantity can be practically employed. But this drawback is counterbalanced by two conditions, firstly, the radio-activity produced by induction and inference. The radio-active inference is due to a quality of the gas emanation which renders radio-active all the tissues that are affected by it, and make them as radio-active substances themselves.

Secondly, the fact that the emanation can cover and affect very large grounds and surfaces.

The radium salts can be put in solution either by employing the soluble salts, bromide of radium, for example, or by employing the insoluble salts, sulphate of radium.

These solutions have been perfectly closed by Mr. Jaboin, my chemist, of the Radium Laboratory of Paris, since 1905—they can be injected in the tissues—they can be incorporated into pharmaceutical substances, as quinine, etc., and be ingested by the mouth. They can be included in muds called radiferous muds, or spread on large towels. These muds and towels can wrap and cover the whole of a member, the abdomen, or the entire body. They can also be prepared as artificial mineral radiferous waters, and baths can be given.

If these therapeutic processes had remained in the realms of pure speculation, I should certainly not have spoken of them; but they have been put into practice.

It has been demonstrated that an insoluble injection introduced into a tumor produces a permanent radio-activity in the tumor. I have used with success a paraffine vaseline substance containing radium to spread it under a rebellious cancer nodule of the breast, and in applying at the same time an apparatus outside I performed a cross-fire, which reduced the nodule. In many cases I have supplemented the external treatment of cancer by injections of radium inside the tumor.

For treating gonorrhoeic arthritis, injections of insoluble radium have shown themselves very efficacious. Injected in the general system in cases of leukaemia, the red corpuscles of the blood have been found increased in number.

I will not insist upon this side of the question as it is a new one, but without any doubt it shows a great future.

In conclusion, I shall feel happy if I have succeeded in demonstrating, without undue exaggeration, that radium must be considered as an important weapon, worthy of full consideration; that it does not interfere with surgery or x-rays, but, on the contrary, that it can be most usefully associated with surgical and x-rays treatment, and can even act beneficially when these methods of treatment cannot be employed.

SEPSIS IN MEDICINE.*

By WILLIAM HUNTER, M.D., F.R.C.P., London, Eng.

DR. John Ferguson, the chairman of the Section of Medicine of the Toronto Academy of Medicine, introduced Dr. William Hunter, of London, England, to the fellows. He said that Dr. Hunter had done splendid work on the various blood diseases, but especially on that obstinate, obscure and serious one known as progressive, pernicious or Addisonian anæmia. The fellows would, no doubt, be glad to hear from Dr. Hunter's own lips an account of his investigations.

Mr. President and Gentlemen,—I feel very much indebted for the kind mention of the President and extremely sorry that the discussion of the evening is interrupted on the subject chosen, infantile paralysis. I gather that you have unique opportunity of elucidating the mysteries of poliomyelitis anterior acuta. I feel, sir, greatly indebted to Prof. McPhedran for the opportunity of meeting the Toronto Academy of Medicine, because I am here as a student interested in your universities, medical education, and in the great progress which this continent and especially this Canadian continent is making in medicine.

*Address before the Section of Medicine of the Toronto Academy of Medicine, 11th October, 1910.

The ties that bind Canadian with English medicine are extremely close, and I feel extraordinarily interested by what I have seen and what I formerly knew about the great energy and satisfactory development which has taken place.

I would like to say that I am so impressed by this, that I feel that the future of medicine is going to lie on this continent, especially I hope, (sound Canadian as I feel myself to be) that it will lie with you more than with anyone else, because you in Canada have been in singularly close touch with the traditions of English medicine throughout the whole history of medical education in this country, and for that reason you have escaped some of the drawbacks of the smaller states farther south.

My object in coming to Toronto was not only to meet friends, but also to see your great developments in connection with Toronto University, and I spent yesterday in visiting your laboratories of biology, physiology, pathology, also physics, and I may say that they fully bear out what some of you probably know, namely, the extraordinary good report that has been given of Toronto University in that Carnegie report which has just been issued. You may not have read these things in praise of yourself, because you are a modest people. In reading this report I was impressed by the actual prominence given the Canadian Universities Montreal and yourselves first, as the largest university in this country, in connection with all the names and ideals which that report held out.

If these are reached they will revolutionize medicine, not only here, but likely at home also. Now, we will wait to hear what they have to say of us.

Apart from that in deciding what subject to address you on to-night, I do not wish to take up your time, but think I might say something that may help you practically in your work.

You have referred, sir, to work which has been my lot to be interested in, for the last 25 years. It has been work which refers to the rarest of all diseases to the most mysterious of all blood diseases.

I remember very well when you referred to the character of the work that I got interested in 25 years ago, as a young worker, that I took the first case I came across in the laboratories and got interested in blood pigments, and spent five years trying to explain that piece of pigment. How I spent two years investigating one case of anæmia and ten years more trying to explain the features of one case. While in the wilderness, working to explain that disease—the rarest of all, and one which has been most closely before you in Toronto, because I have been familiar with Prof. McPhedran's papers on it. I have always been struck with your teaching here on that subject. Prof. McPhedran was one of the first to recognize the practical outlook that the earlier work of mine

conveyed. I return thanks to him now for the papers which he wrote, as a result of my work those years ago.

The result of five years' work in Cambridge in connection with blood pigment was that it led me back to the subject of blood destruction. The experimental studies made there led me back to the portal circulation. These researches showed that this was the great seat of blood destruction and led me back to the intestinal tract and then I found myself in the midst of a whole series of toxic and suspicious processes, which I could make nothing of. I spent 18 months of hard work in connection with the investigation of poisons of the intestinal tract, and it led me nowhere except to show me that the thing was there.

Now, while wandering in the wilderness of this great business of blood destruction, I remember coming back and describing in the course of a lecture all the details of this blood destruction and formation of pigment in animals, fowls, birds and beast, etc. A kind friend of mine wrote me and said: "It is all very well this research into blood conditions, but what's the practical use of it all?" I wrote back: "I do not know; but these are the facts." This was seventeen years ago. I then pursued the study ten years more keeping steadily on the line that these facts revealed to me. I know now where I was then. I had been working up along the whole Nile of Anæmia and was buried in the Nile's mud Ten years ago I got through into the upper reaches of the Nile, got beyond this great mystery, got through into the great upper lakes of infection, Langanyika like lakes, flowing down, burying themselves in the intestinal tract, and leading out into the cause of this form of Anæmia. It led me to recognize the startling fact that the great rôle of infection in this form of Anæmia was the ordinary infection that we are dealing with every day, namely, the staphylococcal and streptococcal infections, and this infection in my class of cases was situated at the upper portion of the intestinal canal. I spent time in working up from the infectious process in the lower intestinal canal, up with the stomach, and finally I landed at the upper portion of the intestinal tract, finding a mass of infection in connection with septic wounds of the mouth. Wounds round, about diseased teeth caused a mass of infection that was entirely overlooked, and overlooked because the whole subject of the mouth had been relegated to the dental surgeon.

In my first paper I tried to dis-associate the whole subject from this dental aspect. I therefore chose the name "Oral Sepsis." This was some ten years ago, and now this name is a definite name in medicine. I gave it this name to bring out the fact that it was not lack of teeth at all, but it was a question of sepsis associated with these wounds of the mouth and teeth that was so important.

This sepsis of the mouth is a thing that glares us in the face, and has been glaring the whole profession in the face for thousands of years. On looking up the literature of this subject, I found that in the whole literature of medicine there was not a single reference to this class of infection in connection with any disease. The only reference was, that the teeth had to be examined in investigating cases of disease, because they might be notched or might have blue lines round the gums, indicating Hutchison's disease, or lead poisoning.

Now, sir, the practical point of this was that playing a great part in connection with my anæmias was this infection. I was then dealing with pernicious anæmia, a disease rendered mysterious by having this name applied to it. Addisonian anæmia is the name I have given this disease. Pathologists have been rapid in controversy as to the meaning of pernicious.

This great disease which in English and Canadian medicine has been spoken of as pernicious anæmia, and which we now call Addisonian anæmia, is an infective disease.

I have said in my recent work, it fully justifies the amount of interest that has been taken in it for the last 60 years, since the time it was first described. We should hold clearly to the fact that this form of anæmia should not be confounded with other anæmias which resemble it.

I find that the clinical features and etiological features of this great anæmia go deeper into its nature and help better in its diagnosis than the blood changes do, and to which so much attention has been directed for the past fifteen years.

If I am asked to diagnose an anæmia by any report of the blood changes, I say "Let me see the patient for five minutes that I may ascertain the history from his own lips, and I will give the diagnosis quite clearly; but I will not give it from the blood reports."

I wish to say then that in connection with these anæmias the etiological features are most important. They are always connected with the gastro-intestinal tract. The anæmias which give us most trouble in practice, and which we call, for want of a better name, "pernicious," or of a pernicious type, are really divisible into two groups. One, the common condition, septic anæmia, due to septic infection. This septic infection causes certain changes in the blood and in individual cases may cause very severe degrees of anæmia, differing from the Addisonian type of disease, and yet sometimes fatal. This septic anæmia often complicates and causes difficulties in connection with anæmias which one cannot understand. We have thought that if we supply the loss of blood we ought to cure them, and get them well, but they do not always get well. These cases are cases of septic anæmia, and it is only by the removal of the septic factor that one can get practical results. Instead

of relying on the administration of iron, arsenic and oxygen, we must recognize the other factor that is more important, namely, the prevention and removal of the infectious cause.

This removal of sepsis in connection with anæmia is the greatest help and is absolutely fundamental. By the removal of two or three septic foci, one will see the blood bound up from forty to eighty per cent in the course of a fortnight. It must be recognized, therefore that there is this great form of anæmia—septic—which complicates many of the other forms of anæmia. The severe forms of septic anæmias have often been regarded as doubtful cases of pernicious. Real pernicious is the Addisonian infectious disease, which is distinguished from the septic by certain clinical features and blood differences. The two groups of anæmia are therefore:

(1) The septic group. (2) That very severe anæmia, an infective disease with true characters, going through relapses and recoveries, up and down, with great powers of healing and compensation, but the patient always becoming exhausted and dying in the end. This Addisonian anæmia has the peculiarity that it is constantly associated with septic anæmia, and the patient is harried by both forms. The combination of these causes the high fatality. Consequently, we are able to recognize these two anæmias in connection with these severe types, and tear them apart. Hence, the prognosis of this disease is infinitely better than it was. I have patients going on now for ten years, whom I am able to see going up and down through their relapses, but thanks to the removal of septic anæmia, they are carrying their ups and downs on a higher scale of blood condition.

Now, as to the more practical development of this subject, let me say that this oval sepsis was playing a distinct part as a factor in this the most severe of all blood diseases. I came to that conclusion ten years ago on the strength of pathological and clinical observation.

If this common oval sepsis has so great an effect when allied with these severe anæmias, what is it doing with other diseases which may be present? I find this oval sepsis playing such a part in connection with medical diseases that really I feel impressed with the fact that we have to do in medicine with a great mass of sepsis, present in the body, actually causing disease and gravely complicating other diseases. This sepsis I term "medical sepsis." When one finds a patient with tonsilitis, or chronic follicular tonsilitis, we search for bad air and bad water, and ignore all the time that probably lying in front of these tonsils are great masses of extremely foul septic gums, and septic wounds round carious teeth. The pus from this is passing each day over these tonsils. Over and over again, I have proven this in connection with scarlet fever. In these scarlet fever cases I have examined the throat and have noted the

degree of oral sepsis present on admission, and have marked the oral sepsis, as (1) slight, (2) moderate, (3) severe, and later have found that the incidence of all throat complications was three or four times greater in the cases of severe oral sepsis than in those of slight degree. In treatment I, therefore, make myself as responsible for removing oral sepsis as I would to remove a mad dog. I will not have it present for one hour. I will have the mouth carbolized and swabbed out with 1 to 40 carbolic.

This oral sepsis is a most potent cause of stomach disease and other gastro-intestinal diseases. One-half of the cases in the hospital are septic gastritis.

In connection with gastritis, I find by removal of the necrosed roots and septic conditions, the source of the trouble is removed and one can give the patient anything one likes and improvement soon follows.

In regard to colitis, mucous or otherwise, whether the condition is due to the amœba or other organism, I resolve that it shall not be complicated with this mouth sepsis. The last case I had of this kind I removed fifteen to twenty decayed roots and the patient lost his colitis in five days' time.

I find this oral sepsis playing an important part with obscure fevers. Often I am asked to explain some unknown fever in connection with surgical and gynæcological cases, and very, very often trace it to this cause. If I find a crepitation over part of the lung and put it down to this, the surgeon feels the cause of the fever is explained; but if I find the patient has a mass of tartar in the mouth and sepsis around the roots of his teeth, and draw the surgeon's attention to this he will say this is of no importance, and yet if there is sepsis found in any other part of the body, he is delighted with the explanation. One should deal as seriously with infection in the mouth as with infection in any other part of the body.

Let us then introduce the term *antiseptic physician* as well as anti-septic surgeon. Antiseptic medicine is as important as antiseptic surgery. We must recognize that sepsis is playing a greater part in disease in medicine than it is in surgery. It is necessary for each physician not to leave this matter in the hands of the dentist, but to deal with it himself. After that get the patient interested in antiseptics of the mouth. Teach him to keep the mouth free from infection.

In discussing Dr. Hunter's paper Dr. John Ferguson said: "Dr. Hunter has gone into this matter, and like his great namesake, took nothing-for granted without knowing the reason why. He has given us a very interesting exposition of his researches of many years along that interesting subject—of the relation of sepsis to anæmia.

Truly as the scæan gate was the one around which the fiercest battles were fought in the siege of Troy and the one through which the Greeks found entrance in the destruction of Priam's city, so it is that some of the most desperate struggles for the life of the patient are fought at the gateway of the alimentary canal—the mouth.

Dr. McPhedran moved a vote of thanks to Dr. Hunter, and said that in the typical Addisonian pernicious anæmia he had seen so much that he did not formerly understand and could not even yet see where the cause of the trouble lay.

It is not in the mouth or throat, because in all of the typical cases he had examined the mouths were clean, so far as observation went. He recalled a case of a fellow student that died eight years ago. This man was ailing for three years. His mouth was as clean as his face, but like all of these cases he got glossites, like all of them he got stomatitis, patches and abrasions about the tongue.

In this affection there is the variability, sudden changes for better and for worse. He had often seen the patients moribund and, after twenty-four hours, sitting up. Had often see them so far gone that they could not take food or medicine, and next day were feeling very well.

He did not believe any dry had influence in these cases. Arsenic was useless. He had not seen any case recover, except in one instance in which a doctor recovered and practiced medicine for seventeen years, but ultimately died with pernicious anæmia.

Dr. Rudolf seconded the vote of thanks and said he felt a certain amount of credit for this address, and congratulated the section of the academy doubly, first, because by this address he saw a possibility of escaping from his own paper, and, secondly, congratulated the section in hearing one of the most practical addresses we had ever listened to. He agreed with Dr. MacPhedran that oral sepsis does not altogether explain pernicious anæmia. In pernicious anæmia there is often oral sepsis complicating the disease, and though that is cleared up the disease still runs its incidence and fatal course. One woman in the General Hospital last year had no teeth, her gums were hard and polished. She had no glossitis, had a healthy mouth, but died of pernicious anæmia.

Dr. Hunter closed the discussion and said he agreed with Dr. Rudolf that the matter is not all explained by oral sepsis. He had only shown that oral sepsis played a part.

The true Addisonian disease is like typhoid or tuberculosis, and we must free it from every other complicating factor, Addisonian disease is a drain infection.

In reply to Dr. Rudolf's question how can this oral asepsis be brought about, Dr. Hunter said no result will be effected if one drives the treatment through it any cruel way. He dresses the patient's mouth with one

to forty carbolic swabs of cotton wool, rubbing well into the parts and getting the nurse to do this every day. When the patient has his mouth so carefully attended to he learns the habit. The decayed roots should be removed by the dentist.

Carbolic lotion is good, one to forty, one to sixty, one to eighty strengths will sterilize, and even the dilute strength one teaspoonful of one to forty in half a tumbler of water is an excellent disinfectant. In disinfecting these suppurating tracts about the teeth follow the periodontal membrane right down.

It is well to remember that this infection in the mouth is an indication of what is going on in the gastric and intestinal mucosa.

Dr. Hunter corroborated the remark of Dr. MacPhedran who drew attention to the point that there is no disease with so remarkable powers for recovery. This is a true character of Addisonian disease, and he had seen a patient lying at death's door, unconscious, with edema all over the body, vomiting everything, and with a temperature of 104 deg. to 105 deg. He had known that man to wake up out of his sleep and call for a chop and a pint of beer. He had got an immunity and in two or three weeks his blood would improve to 80 or 90 per cent. and he would look well.

There is no anæmia in the world that could do that of itself; yet this happens constantly in the Addisonian infection.

ADDRESS BY DR. JOHN FERGUSON, CHAIRMAN OF THE
SECTION OF MEDICINE, ACADEMY OF MEDICINE,
11TH OCTOBER, 1910.

FELLOWS of the Section of Medicine, I shall not attempt to address you at any length. That I thank you for the honor you have conferred upon me I shall make known by telling you an incident. Some twenty-eight years ago I dined in Mr. I. H. Cameron's house along with Professor W. Osler. During the conversation something arose that induced Mr. Cameron to say in his usual epigrammatic style, "It is better to feel thankful than to say you are thankful." Like Othell,—

Rude am I in my speech,
And little blessed with the soft phrase.

And like the Moor of Venice,—

Therefore little shall I grace my cause
In speaking for myself.

The Academy of Medicine has so far but a short history. Its past is brief, but its future, judging by indications, is bound to be both long and useful. Some eighteen years ago I contributed my views to the medical journals on the formation of an Academy of Medicine in this city. I will venture that the opinion was the first written expression in favor of such a movement. The various interests were united a little over three years ago. The results have more than justified what was then done, and so we can say with Shakespeare,

Thus far our fortune keeps an unward course,
And we are graced with wreaths of victory.

It is now fully thirty years since the late Mr. McKim, the university beadle, put the hood of a medical bachelor over my head. During these thirty years time has not been idle. The teachers of those days are almost all gone; and those who were then engaged in the practice of medicine in Toronto, with few exceptions, have joined the majority. But it is as true to-day as it was with the ancient prophet that though the workmen die, the work goes on. The profession of Toronto is almost a new one; but the spirit of those men, some of whose portraits hang upon our walls, yet remains with us. In the words of Emerson, "Though they have ceased to be our companions they are still our guides." To be loyal to their memory will go a long way to make us loyal to ourselves and the work we have in hand. Something has been done to keep alive the memory of those very worthy names. We are told by Æmelia B. Welby that, "Hope links us to the future, but it is memory that links us to the past." With Lady Macbeth we can truly say, "Memory is the warder of the brain."

The Academy of Medicine of Toronto may well be proud of its position. In a few weeks, at the most, its permanent home will be ready for occupation. In that home there will be stored our pirates and lares—our household gods—in the form of the pictures, books, and other possessions of the academy; and around it will grow up many fond associations, or as the poet puts it,

Tender memories round thee twine,
Like the ivy green round the pine.

To a body of men belonging to any profession, one could not imagine anything that could form such a centre of attraction as a good library. There they can hold communion with the great minds of the present and the past. What a pleasure it is for us to be able to sit down and recall the very words that Galen, or Celsus, or Lænnec, or Cooper penned, and feel within ourselves the workings of their minds as the

image of the printed word stimulates our own centres! Well may we exclaim with Prospero,

My Library
Was dukedom large enough.

For the upbuilding of this library we can all do something. There is no one who cannot contribute his mite towards the filling of the shelves. A mighty country has been built up to the south of us under the motto *e pluribus unum*. So with us what one could not do, all united can for a certainty accomplish. We can contribute our fees, we can give books, we can induce others to give books, and we may be able to secure donations of money. One may be able to aid in one way and another in another way; but the result will prove the truth of the Peace—Pipe song in Longfellow's *Hiawatha* :

All your strength is in your union,
All your danger is in discord;
Therefore be at peace henceforward
And as brothers live together.

The question might well be asked why the medical profession is so proud of the past? The people of any nation are truly loyal and boast of their country in proportion to the numbers and greatness of the deeds which find a record in its history. The medical profession has a long and glorious history. There are no persecutions that can be charged against her. Through the long centuries she has been ever altruistic in the highest sense, seeking only the good of man, holding in her hand the olive branch, as she marched on her way under the guidance of the white-winged dove of peace. Her achievements have been freely given forth for the benefit of mankind; and these achievements are now many and great. The advances that have been made in anatomy, physiology, medicine, surgery, therapeutics, truly bear out the prediction of Hamlet when he said,

There are more things in heaven and earth, Hortaio,
That were dreamt of in your philosophy.

As we recall what has been done in preventive medicine, in the lengthening of human life, in the lessening of the sum total of human suffering, by the work of such men as Morgagni, Paré, Virchow, Hunter, Jenner, Lister, Harvey, Lænnec, Reid, Laveran, Morton, Simpson, well might we exclaim with Miranda, as she listened to the wonderful story that fell from the lips of her father. "Your tale, sir, would cure deafness."

It is because of these achievements that we are proud of our profession; and, in proportion to the heritage left us by our fathers, so should our loyalty to that heritage be.

There is much to be done. We need a larger and better building, even than the one we are soon to occupy, for our meetings, and we need a modern style of home for our valuable collection of books. The academy has now a membership of about 320, and a lesser number, namely, three hundred only were chosen by Gideon for his great task, and three hundred under Leonidas, held the pass at Thermopylæ. For such accommodation we must bend our energies; but, as Lowell tells us,

Be men with Empires in your purpose
And new eras in your brains.

I feel I can count on the cordial support of every member of this section, in whatever efforts may be put forth to make our meetings successful. You are all equal here, and you are all as welcome as you are equal. You can contribute papers, you can exhibit cases, you can take part in the discussions, or you can aid those who do these things by being present. It is sometimes well to remember the words of Carlyle, the Sage of Chelsea, that speech may only be silver, while silence is golden. Your presence is indeed of the greatest value.

As the to-morrows become to-day and pass into the yesterdays, let it be the desire of all of us that our academy should fill an ever enlarging place in our thoughts. In the founding of our academy we could well say with Ovid, *Felix Faustumque sit*, happy and auspicious let it be. So, as time goes on, may we be able to look back and say of it as Horace did of his beloved Mantua,

Ille terrarum mihi præter omnes
Angulus ridet.

For me that corner of the earth smiles more sweetly than all others.

Truly, medicine has some more for man than any other branch of natural science. In the pursuit of our calling it behooves us never to forget that we are something very much higher than mere earners of a living. Mankind has ever been our debtor; for we have been lavish in our gifts. This should be our aim in the future. In the words of Holofernes in *Love's Labour's Lost*: "These are begot in the ventricle of memory, nourished in the womb of pia water, and delivered upon the mellowing of occasion." We are ever in search of the hidden mysteries of disease and calling upon it to reveal its laws. In the words of Pope we can say:

Happy the man, who, studying Nature's laws,
Through known effects can trace the secret cause.

We have worked through centuries to reach our present position. As Goethe in his Faust tells us :

'Tis thus at the roaring horn of time we ply,
And weave for things the Garment we see them by.

Yes, we are weaving at the roaring loom of time. What we do now shall throw its pendulum arc far into the future. Our subject is the study of man whom Hamlet speaks of in these words: "What a piece of work is man! How noble in reason! How infinite in faculty! in form and moving how express and admirable! in action: how like an angel! in apprehension, how life a god."

This, gentlemen, is our work and let us live up to it.

HOW SURGERY IS DONE IN A SMALL HOSPITAL.

By R. J. R. BRIGHT, M.B.

AFTER spending a few months at the Royal Alexandra Hospital, Fergus, I thought it might be of some interest and value to describe how the surgical work is done there. The results obtained are so remarkable that I doubt if they are excelled anywhere in operative work. The first thing that strikes an observer is the attention to asepsis. Soap and water are the chief agents depended upon. Before an operation, everyone who takes part must scrub his hands and arms under running sterile water for at least forty minutes. It is necessary also to scrub the arms thoroughly as the sleeves of the operating gowns never come below the elbows. The thorough cleaning of the hands renders the use of rubber gloves unnecessary, and this to some extent accounts of the great rapidity with which Dr. Groves operates.

The patient is prepared by applying tincture of iodine to the site of operation, which is allowed to remain for a length of time, depending on the urgency of the operation. The part is now thoroughly scrubbed with soap and water for twenty minutes and a bichloride pad applied and left until the patient is anaesthetized, when the skin is again painted with iodine which is washed off with soap and water.

At the operation itself several things impress one, first, perhaps, is the speed with which everything is done, and at the same time the absence of hurry as mechanics would say there is no lost motion, everything is done with absolute precision. To see Dr. Groves suture a wound is an education in surgery. He will begin and finish an appendectomy sometimes in less than five minutes. He continually insists that every moment a wound is kept open increases the danger.

Next, the attention of the onlooker is diverted to the simplicity of his methods and the few instruments he uses. To show you what simplicity means, you will not believe me when I tell you that I saw him remove an appendix, using no instrument other than a curved needle. The incision was made with the edge of the needle, the appendix was severed with the same needle. The stump stretched over and invaginated, and a purse string suture through the cœcum, applied all with the same needle. The deep and superficial suturing was done with this needle, sterilized silk for the deep and horse hair for the superficial. Two sponges only were used to stop the hæmorrhage, hæmostatic forceps being dispensed with altogether. Some valuable time was lost in rethreading the needle, but as it was the operation was completed in ten minutes. Needle-holding forceps are never used except in the cleft palate variety of operations, even in repair of cervix lacerations and perineal operations no needle is used except an ordinary curved one, the finger acting as a needle holder. Vaginal speculæ are also discarded. It would appear also that artery forceps play but a minor part compared with the practice of most operators, and the loss of blood is always trifling. He frequently remove goitres, using seldom more than two forceps.

The deepest and most difficult abdominal work is done without the use of retractors. No instrument is used where fingers can do the work, and it is surprising what trained fingers can do and how much better and quicker their work is than that of mechanical substitutes. Except normal saline, which is used in all operations to the exclusion of water, no other solution is employed. Dry sterile dressings of plain gauze are all that come in contact with the wound. Dusting powders are excluded wholly and stitch abscesses are practically unknown. After a sterile operation is completed and dressed it is not looked at again as a rule until the 6th or 7th day, when the skin stitches of horse hair are removed. After an operation the patient gets water to drink, and when vomiting ceases liquid nourishment is given, on the 3rd day light diet, and on the 6th day ordinary diet is given.

In the treatment of abscesses free escape of the discharges is provided for, but washing out is not done, and the results justify the treatment. The rules followed are these :

1. At an operation remove all obstructions to healing.
 2. Place the part in the best possible conditions for healing.
 3. Disturb it as little as possible after.
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CURRENT MEDICAL LITERATURE.

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MEDICINE.

Under the charge of A. J. MACKENZIE, B.A., M.B., Toronto.

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CLASSIFICATION OF VERTIGO.

1. Reflex—(a) gastric, (b) auditory, (c) ocular, (d) nasal obstruction.
2. Hæmic—(a) cerebral anæmia, (b) leukemia, to which I would add (e) arteriosclerosis.
3. Toxic—(a) drugs, (b) hepatic insufficiency, (c) renal insufficiency, (d) onset of acute infectious diseases.
4. Neuroses—(a) epilepsy, (b) neurasthenia, (c) hysteria, (d) psychic.
5. Organic diseases of (a) brain (cerebellum, pons), (b) spinal cord, (c) vestibular branch of acoustic nerve.
6. Mechanical.

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A CASE OF THEOCIN POISONING.

In the *California State Journal of Medicine*, Aug., there is the description of a case of poisoning by theocin, a congener of diuretin, which was used as a diuretic in a case of chronic nephritis. Some interesting conclusions are drawn.

To summarize; all the xanthin diuretics have a stimulating effect on the nervous system, the heart-muscle and the kidneys.

The nervous and cardiac effects are most pronounced with caffeine; the purely diuretic effect with theobromin, and a very intense diuretic action with irritation of the nervous system with theocin.

On account of the toxic properties of theocin, it should be given only in cases where there is immediate danger to life or where other diuretics have failed. A few words may be added as to the method of administering these drugs and their dosage.

Caffein should be given hypodermatically in doses of about 0.2 gm., repeated three or four times a day. Theobromin, which is insoluble, seems to be preferable to its soluble salts, diuretin and agurin. According to our experience it is better tolerated by the stomach and its action is as prompt as with the soluble salts. Its dosage should be 3 gm. to 4 gm. daily; of the soluble salts 4-6 gms.

Theocin is given in doses of 0.3 gm. three times a day. To avoid direct irritation of the stomach it may be given in suppositories or in

enemata. This works remarkably well in a majority of cases but sometimes no effect is obtained. Irritation of the rectum has been reported, but has never been observed by the writer. Its administration hypodermatically is often inefficacious and sloughing of the skin has followed its use by hypodermoclysis. Schlesinger and Romberg advise giving the drug on every second day to prevent stomach symptoms, but in the cases in which I tried this method the diuresis was missing as well as the stomach symptoms.

SURGERY.

Under the charge of H. A. BEATTY, M.B., M.R.C.S., Eng., and A. H. PERFECT, M.D., C.M.,
Surgeons to the Toronto Western Hospital.

REMARKS ON THE OPERATIVE TREATMENT OF HERNIA.

Frederic C. Paffard, M.D., Brooklyn, N.Y., in the June, 1910, *International Journal of Surgery* arrives at the following:

Conclusions.—Inguinal hernia between the ages of five and sixty should be operated on. If obstructed or strangulated, at any age.

Irreducible hernia, unless of the immense scrotal variety, also demands operation. If the inguinal canal is bulging and both rings are very large and a large amount of fat present, permanent cure is doubtful, and should a relapse occur the condition may be even worse than before operation.

If a truss has been worn, the operation will probably be made more difficult, the chances of hematoma and suppuration increased, and a permanent cure is not so certain as in patients who have not worn trusses.

Cure may be regarded as practically certain in cases of children and adolescents.

Diabetes and nephritis are not necessarily contra-indications to surgical treatment.

Bronchial and pulmonary diseases are not favorable conditions for operation.

Femoral hernia should be operated on, as it is much more liable to strangulation and good results may be expected.

Umbilical hernia in a child should not be operated on unless very large, irreducible, or strangulated; cure by truss is probable.

In adults under sixty, if the ring is of not more than moderate size, operation is advisable and success may be expected with fair certainty. When the ring is larger, the muscles more thinned out and separated, the possibilities of a recurrence are proportionately greater.

Strangulated umbilical hernia is a formidable condition, and, as in all cases of intestinal obstruction, early operation is a requisite to success.

Properitoneal lipoma should be operated on, as it is frequently a precursor of ventral hernia. If the ventral hernia follows severe sup-puration of the abdominal wall, with consequent sloughing and loss of tissue, an operation may not be advisable in the absence of urgent symptoms, as such operations are frequently prolonged and subject the patient to some danger without much hope of curing the condition.

Ventral hernia following an ordinary laparotomy is fairly certain of cure, and operation should be performed at an early date before the hernia has grown large.

SURGICAL HINTS.

Retention by a properly fitting truss usually effects a cure in umbilical hernia in children.

Prolonged scrubbing or drenching of the skin after the initiation of anesthesia should be avoided, as shock is thereby promoted.

Carious teeth, especially one of the lower molars, may give rise to earache, and this condition should always be looked for if an examination fails to disclose any aural inflammation.

Frequent changes of dressings in severe injuries of the hands interfere with the reparative process. If possible, the first dressing should be left in place for a number of days, and even a week.

In every case of fracture it is important to ascertain the condition of the pulse in the peripheral portion of the injured limb. Neglect of this precaution, especially after application of a circular bandage, may have the unpleasant sequel of gangrene.

Curettage is generally contraindicated in cases of chronic endometritis in which the uterus is displaced and bound down by adhesions, or in which pelvic exudates are present, as it might set up fresh inflammation.

OBSTETRICS AND DISEASES OF CHILDREN.

Under the charge of D. J. EVANS, M.D., C.M., Lecturer on Obstetrics, Medical Faculty
McGill University, Montreal.

SERUM TREATMENT OF HÆMORRHAGIC DISEASE OF THE NEW BORN.

Edward D. Bigelow, *Journal A. M. A.*, July 30, 1910, reports three cases of hæmorrhagic disease in the new born. The disease made its

appearance in each case within 36 hours of delivery. Two were males and one was a female. Syphilis and other disease could be excluded in the parents. Calcium lactate was tried in each case without effect. Fresh rabbit serum 5 c.c. was administered subcutaneously.

In the first case the dose was repeated in 12 hours. The second case had only one dose. In the third case the first and only dose of rabbit serum was given on the 5th day.

In each case it was noted that the hæmorrhage ceased at once. Two of the cases were almost moribund when the serum was administered.

The author states that about 25 per cent. of these cases are self-limited, and possibly any one of these patients might have recovered without the serum, but it is impressive that the hæmorrhage was almost immediately controlled after the administration of the serum.

The rabbit serum was injected immediately after procuring it from the animal. No untoward symptoms were produced.

Dr. Welsh records a series of successful cases treated with human serum in the same manner.

THE DIAGNOSIS OF INFANTILE PARALYSIS IN THE PRODROMAL AND EARLY ACUTE STAGE AS FOUND IN THE EXPERIMENT STUDY OF ACUTE POLIOMYELITIS IN MONKEYS, WITH REPORT OF FINDINGS IN FOUR HUMAN CASES.

William P. Lucan, *Boston M. and S. Journal*, Aug. 11, 1910, has attempted, in the study here reported, to discover diagnostic phenomena very early in the course of acute poliomyelitis before the onset of paralysis.

With regard to prodromal symptoms, restlessness and irritability appearing several days before the other symptoms, are characteristic, though in a few cases the contrary condition of apathy may be noted. In a few cases the symptoms come on with marked delirium or even convulsions simulating the onset of meningitis. Pain along the course of the spine and in the joints of the extremities may be noticed in some cases.

If with any of these nervous manifestations there should be any trouble in the upper air passages, as coryza, bronchitis or sore throat, suspicion should at once be aroused. The authors found in all their animals and in all four human cases some infection of the upper air passages associated with the nervous manifestations.

The material for the experimental work was obtained from Dr. Flexner, and they were able to produce in three monkeys paralysis.

Previous to carrying on the experiments a series of observations were made on normal animals using the same technique.

The study of the blood reveals several interesting facts. For instance, in the acute stage there was a moderate but constant lymphocytosis and parallel with this there was a marked and constant leukopenia. The white drop in the count lasts fairly well throughout the acute stage.

Before inoculation it was impossible even to get a drop of spinal fluid from a lumbar puncture, and even when a little fluid was obtained very few cells were found.

During the incubation period there is a very marked increase in the amount of fluid to be obtained through lumbar puncture, and the cells in the fluid are markedly and characteristically increased. These cells are mainly of the large mononuclear type.

In the prodromal stage there is even a more marked increase in the cells, they often ranging 1,000 per cubic millimeter. In the prodromal acute stage there was sometimes a fibrin clot which disappears early in the acute stage.

The children seen suffering with the disease came under observation between the second and fifth day of the onset. All of them had a slight temperature and paralysis was just beginning. In all, there was a quite marked white drop in the blood count.

The spinal fluid in two cases showed definite fibrin formation which was present early and disappeared rapidly in one, and more slowly in the other.

The type of cells found were practically parallel with the findings in the experimental fluids.

ANTERIOR POLIOMYELITIS.

The following articles give a number of recent opinions on this disease:

ACUTE ANTERIOR POLIOMYELITIS.

Acute Anterior Poliomyelitis at the present time occupies much the same position in current medical literature as cerebro-spinal meningitis did two or three years ago. In both cases the occurrence of epidemics has afforded opportunities for the study of the disease by modern methods, and, in addition to a fuller knowledge of the clinical features and varieties of anterior poliomyelitis, sufficient has been discovered concerning its nature to justify the belief that in future text-books of medicine it will find a definite place among the infectious diseases, as well as to lead to the hope that a specific curative or preventive treatment may one day become available.

The epidemiology and clinical features of anterior poliomyelitis were summarized (*Edinburgh Med. Jour.*, May, 1909), and to the description there given there is little to add. Epidemics have also been reported from Pomerania by Peiper—57 cases, with a mortality of 11.7 per cent.—and in Upminster by Treves. The general characteristics of the epidemic disease resemble those of epidemic meningitis, children are affected to a larger extent than adults; direct contagion can seldom, if ever, be proved; single cases, sometimes groups of two or three, occur in a home; the mode of spread is suggestive of the existence of healthy infection carriers; abortive and aberrant types are common. The chief difference is the seasonal one, meningitis being a disease of cold weather, poliomyelitis a disease of summer. In addition to these points of similarity to meningitis, anterior poliomyelitis, looked at from the pathological point of view, bears some resemblance to the disease hydrophobia.

Transmission of the Disease to Animals.—The experimental infection of lower animals has engaged the study of a number of workers, most prominent among whom are Flexner and Lewis, Levaditi and Landsteiner, Romer, Krause, and Meinicke, and Popper.

Nature of the Virus.—The infective agent used is an emulsion made from the spinal cord of an acute case of poliomyelitis, and the animal which is by far the most susceptible is the ape. Flexner failed to infect rabbits, guinea pigs, horses, calves, goats, pigs, sheep, rats, mice, dogs or cats, and although Krause and Meinicke appear to have carried on a successful series of subinoculations in rabbits, most workers have used only monkeys in their experiments. Krause and Meinicke, also, have obtained results with virus from a number of different tissues—spleen, liver, blood and lumbar puncture fluid, and in this respect seem to have been more fortunate than most other observers. In his earlier papers Flexner deals with the serial infection of apes. Using an emulsion of spinal cord, and injecting it into the subdural space, he easily transmitted the disease from monkey to monkey. He also succeeded in carrying out successful subinoculations into the sciatic nerve of a series of monkeys. A point of some interest in connection with the mode of infection is that the paralytic symptoms depend to a certain extent on the site of inoculation. Animals inoculated in the sciatic nerve become paralyzed in the hind legs. Intra-cerebral inoculation tends to cause paralysis of the anterior part of the body. In this respect the virus behaves like the poison of tetanus. Paralysis occurs in four or five days, or after a somewhat longer period up to seventeen, twenty, or even forty-six days after inoculation. The disease is fatal in about 40 per cent. of the animals; some recover with typical residual paralysis. It is agreed on all hands that the pathological changes are identical with those of human anterior poliomyelitis. One of the most important facts about the virus is that it

passes through a Berkfield filter, and is not, therefore, one of the ordinary micro-organisms. It resists glycerination, as does the virus of rabies, and retains its virulence unimpaired on being frozen at 4 degrees C. for four days, or at 4 degrees C. for fifty days. A spinal cord which was kept dry over caustic potash for a week also remained virulent. The possibility of a filtrate through a Berkfield filter being virulent on account of its containing soluble toxins rather than a living organism has been excluded by the transmission of the disease by the spinal cords of apes which had succumbed to inoculation with a filtrate. Flexner has made some experiments suggesting the possibility of cultivating the virus outside the body. He found that on inoculating bouillon containing rabbit serum or human ascitic fluid with portions of bacteria-free filtrate, turbidity developed. A monkey inoculated with the turbid fluid developed paralysis on the thirteenth day. None of the turbid fluids contained bacteria which could be detected by the microscope, or under the dark field microscope. The distribution of the virus in the body of patients dying of acute poliomyelitis is not known. It is not certain whether it is present in the blood in acute cases. The disease has been transmitted by using an emulsion of lymphatic glands from animals, and from a human case. The cerebro-spinal fluid of an acute case does not appear to contain the virus in an active state. (Cf. Meinicke's results, *supra*.)

While intra-cerebral and intra-neural injections are the most certain methods of inoculation, infection has been produced by various other channels—*injection into veins, into the anterior chamber of the eye, into the peritoneum and into the pleura.* Subcutaneous injection appears to succeed comparatively seldom.

Possible Paths of Infection.—The nasopharynx being probably the site of entry and escape of the diplococcus intracellularis, Flexner experimented on inoculation at this site. He found that an emulsion of spinal cord from a recently paralyzed monkey brought into contact with the scarified nasal mucous membrane of another monkey produced the disease. He also found that the mucous membrane of recently paralyzed monkeys, infected through other channels, contains the virus. It would, therefore, seem that the infective agent of anterior poliomyelitis may be eliminated by, and possibly enter through, the nasal mucous membrane. Leiner and Weisner have succeeded in transmitting the disease by feeding, and through the respiratory organs—by inhalation, by inunction of the nasal mucous membrane, and by intra-tracheal inoculation. Their results are so far an advance on Flexner's that they are at pains not to abrade the mucous membrane of the parts inoculated. They noted a relation between the site of inoculation and paralysis. The paralysis appears near the site chosen, whence it would appear that the virus reaches the cord by the shortest route, perhaps along the nerves. In

cases of intra-cerebral inoculations the paralysis often develops on the opposite side of the body.

Immunity.—In the human subject anterior poliomyelitis confers immunity. Wickmann, in his enormous experience of the disease in Sweden, never saw a second attack in the same person. In the same way, apes which have been inoculated and survive, exhibit in many cases immunity to reinoculation. Leiner and Wiesner noted this acquirement of active immunity as early as the second day after the onset of the paralysis. Flexner obtained it on the seventeenth day, and Levaditi from the twelfth to the twenty-fifth day. Romer and Joseph, however, think that a somewhat longer time is required for its development. Up to the seventeenth day they found evidence of hypersusceptibility, and only produced immunity after the twenty-fourth to the thirty-third day.

Analogies to Rabies.—1. The cord lesion because of the perivascular infiltration which is characteristic of rabies. 2. The filterability of the virus. 3. The greater certainty of intra-cerebral and intra-venous as compared with other methods of inoculation. 4. The course of the paralysis, suggesting a propagation of the virus in the nervous system. 5. Bonhoff regards as characteristic of anterior poliomyelitis small inclusions in the nuclei of the glial cells. These are surrounded by a clear zone, stain only by means of Mann's stain or Lentz's modification, and resemble the negri bodies of rabies. Important differences between the two infections exist: (1) Poliomyelitis is only transmissible to apes, rabies to all mammals. (2) Poliomyelitis virus can be cultivated in vitro (Flexner).

Changes in Cerebro-Spinal Fluid.—In the study of inoculation into the brain, Flexner investigated the changes which occur in the cerebro-spinal fluid during the incubation period. When a considerable dose of filtrate is injected, the cerebro-spinal fluid withdrawn at the end of twenty-four hours is normal in amount, but contains many small cells with polyform nuclei. In seventy-two hours mononuclear cells preponderate, and the fluid is opalescent. On the day of the paralysis the fluid is only slightly cloudy and contains a mixture of large and small lymphoid cells, and a few cells with polyform nuclei. These findings show that cellular changes began in the meninges immediately after injection of a filtrate, and these persist for several days before the onset of the paralysis. If these results were confirmed in human cases, we would have at our disposal a valuable means of diagnosing abortive and aberrant types of poliomyelitis. An abrupt change in the nature of the cerebro-spinal fluid, from being opalescent, rich in cells, and spontaneously coagulable just before, or at the time of the paralysis, to a more limpid fluid, poorer in cells, often occurs.

Attempts at Protective Immunisation.—Several workers have published accounts of attempts to produce immunity otherwise than by sub-

jecting animals to an attack of the disease. Levaditi failed with cords heated to 56 degrees C., and has employed dried cords, on the analogy of the Pasteur treatment of rabies, inoculating successively with tissue dried for 9, 6, 5, 4 and 3 days. Flexner's observation that virus resists drying for a week would seem to cast doubt on the feasibility of this method. Romer produced immunity by subcutaneous injection of virus, but the method is not free from danger, as it seems that in some cases, though rarely, the disease has been transmitted to apes by this channel. Romer and Joseph have failed to detect antibodies in the blood-serum or cerebro-spinal fluid of infected animals by the complement fixation method. They state, however, that the serum of immune apes neutralizes virus in vitro. Analogy with rabies, however, forbids our hoping much from this observation, for a serum which will neutralize rabies virus in vitro is useless curatively. Flexner found that the simultaneous subcutaneous inoculation of heated cord did not affect the course of events after an intra-cerebral inoculation of virus. Krause states that he has produced immunity by subcutaneous inoculations of virus containing 5 per cent. of carbolic acid.

In connection with the epidemicity of the disease, the question has arisen whether any similar disease affects domestic animals. Epidemics of paralysis among fowls have been reported by Starr and Wickmann in districts where anterior poliomyelitis was prevalent. The nature of this paralysis, however, is not known.—*Gaillard's Southern Medicine*.

POLIOMYELITIS.

Dr. C. A. Anderson, in *Western Medical Review*, reports his experience. From May 30 to July 4, 1909, there occurred in the Stromsburg territory (a place of residence) 30 cases, while from July 4 to August 3, there were 115 cases. The first case that is suspected of being infectious poliomyelitis in Polk County occurred about the middle of May, 1909. The patient was a child 5 or 6 years old who came from some distant part of the state, just after recovering from the acute stage. The first case that Anderson saw occurred 11 miles northwest of Stromsburg on May 30; the patient had been ill for one week and during that time had been under the care of a physician from the nearest town who had made a diagnosis of influenza. Of the 86 patients seen by Anderson, 84 per cent. were less than 10 years old. In 40 families of 150 children, 86, or 57 per cent., contracted the infection. Isolation of the sick was carried out so far as possible, and when many were sick in one family infection had usually occurred before medical aid was called.

The number of patients who recovered from the acute symptoms in less than a week was 32. Thirty of these showed no marked paralysis, except that a leg might suddenly give away while walking along, thus causing the little patient to fall oftener than usual. The spine was more or less spastic, especially in the cervical region and the gait commonly stiff and awkward. The remaining 2 were paralyzed as follows: left leg and right arm, recovery almost complete in 5 months; mental symptoms, recovered in 9 months. Seventeen recovered from acute symptoms at the end of a week; 8 had no well-defined paralyzes, and 9 were paralyzed. Three have not yet fully recovered; facial paralysis, one leg and back; both legs, subsequent history unknown. Seven recovered from the acute symptoms at the end of 2 weeks, one without paralysis and 6 paralyzed. Two recovered from paralysis as follows: one was affected mentally and recovered in one week; one eyelid paralyzed, recovered in 2 months; two paralyzed in one arm and two in one leg and were not completely recovered for 8 months.

Twelve patients recovered from the acute symptoms at the end of 3 weeks, and all were paralyzed. Six recovered from paralysis as follows: one leg recovered in 7 months; right arm recovered in 6 weeks; diffuse weakness, recovered in one week; both legs and back recovered in 2 months; both legs recovered in 5 months. Six patients have not yet (8 months) fully recovered from their paralysis: Right leg two patients; left leg, one; left leg and trunk, one; left leg, one; one arm and one leg, one. Seven patients recovered from the acute symptoms at the end of 4 weeks, and 3 recovered from the paralysis in 3 months: Both legs, 2 cases; one leg, one. Four have not yet (8 months) recovered from the paralysis: right leg; both arms; both legs and trunk. Of the 82 surviving patients, 48, or 60 per cent., were at first markedly paralyzed, and, of these, 27 have since functionally recovered, while 21 are yet more or less paralyzed, many of whom will need some orthopedic treatment to prevent deformity. Four patients in this series died, all of bulbar paralysis.

The treatment was eliminative and supportive with rest in bed in the lateral position. Cold was applied to the head and counter irritation used along the spine. Hot baths after the fever stage seemed to relieve the intensity of the neurotic pain somewhat. One patient improved remarkably during the night following the fumigation, while inhaling the formaldehyde fumes yet remaining in the bed clothing. The previous day the pain and the muscular contracture of the leg prevented extension of the knee to more than right angle, while the following day it could be extended completely, and even permitted some walking. No especial importance is attached to this, however, as improvements were frequently sudden.—*Jour. A. M. A.*

VARIETIES OF POLIOMYELITIS.

In McClanahan's opinion (*Western Medical Review*, August) all cases of poliomyelitis may be grouped under five heads, spinal, bulbar, meningeal, polyneuritic and abortive. His experience includes a study of 45 cases; about 15 of the patients he saw during the acute stage in consultation with other physicians, while the others were examined after recovery from the acute symptoms. In all cases he had a good, clear, clinical history, and many of the patients he has had opportunity of seeing a number of times. The ordinary or spinal type is the form of poliomyelitis as described by Charcot. In the bulbar type there is an involvement of the nuclear centres in the medulla oblongata. McClanahan saw 4 cases of this type, all being fatal. In one there was paralysis of the facial nerve and in another, paralysis of the motor nerves of the eye, without the face being involved. By the meningeal type is meant that in which the onset is characterized by meningeal symptoms, fever, pain, often headache, neck rigidity and more or less unconsciousness. Indeed, some of these cases in the beginning are so similar to epidemic cerebro-spinal meningitis, that the physician may easily make such a diagnosis. McClanahan saw one case that from the symptoms was typical of meningitis, and but for the presence of poliomyelitis in the vicinity he would have made this diagnosis. But in that case a lumbar puncture with a clear fluid, and the subsequent history, established the fact that it was not a true meningitis but a meningeal type of poliomyelitis.

In the polyneuritic type of cases there is generally hyperesthesia, with suffering and sometimes intense, agonizing pains, usually in the lower extremities or in the back. McClanahan saw one such case. The pains in the back and extending down the left leg were so intense that for several days it was necessary to keep the child under the influence of opiates. The subsequent history of the case was that the pains gradually subsided with loss of power in the leg and permanent paralysis of the anterior tibial group of muscles. Finally, in all epidemics of poliomyelitis, alongside of the true cases which have developed all the symptoms of paralysis, there are the abortive cases, in which there occur all the symptoms of the onset of the disease, but in which there is no paralysis, the patients being ill but a few days and making a complete recovery. In other words, there is some general infection, but no lasting symptoms. Except in the presence of an epidemic, McClanahan says the diagnosis of the abortive type could not be made, without the occurrence of the disease in other children, in the same household. In that case, if the child had all the symptoms, and recovered in a few days, without paralysis, then such a diagnosis would be justified.—*Jour. A. M. A.*

POLIOMYELITIS.

Malster (*Western Med. Review*) treated 54 cases of epidemic poliomyelitis occurring in 40 families. Four of these patients were adults: Children in families, 96; children that had it, 50; families in which all children had it, 21; families of only one child, 10; paralyzed (30.3 per cent.) 16; recovered from paralysis (66 2-3 per cent.) 11; left paralysis (33.3 per cent. or 10 per cent. of all) 5; deaths 1 per cent.; recurrences 2; paralyzed, able to walk (one not old enough) 3; paralyzed before called (these are the only ones that cannot walk), 2. Ages of patients 9 days to 37 years. Of the 50 children, the oldest two were 10 and 12 years, and the remainder under 10 years. Nearly every case could be traced to some other case or to a locality where the children played together. Quarantine checked it and caused fewer in the family to have the disease; and isolation, together with care in not allowing kissing of the sick, eating and drinking after the sick, etc., also helped to check it.—*Jour. A. M. A.*

THE POLIOMYELITIS SITUATION.

Evidence is rapidly accumulating, unwelcome as it may be, that poliomyelitis is becoming endemic in certain rather widely separated portions of the country, and also that it is increasingly appearing in epidemic form. Not many years ago the affection was little known by the profession at large, for the reason that it was rarely met and recognized by general practitioners: it should not, however, be supposed that its increase has been proportional to the general interest it has excited. Undoubtedly, many cases formerly ran their course undiagnosed, just as many now are diagnosed, which the sequel shows to be a totally different infection. From the most conservative standpoint, however, it cannot be denied that the disease, especially in its epidemic form, has increased within the past few years. Unfortunate as this may be, it has at least served to stimulate investigation, which has already proved fruitful and which is sure to lead to more definite results in the future.

We now know, through the researches of Flexner, Lewis and others, that the disease is due to an infection, and that it is presumably very mildly communicable. Nothing definite is known of its epidemiology, and the treatment as yet remains empirical. In view of these facts a very grave responsibility naturally rests upon all physicians and particularly upon those who are the appointed guardians of the public health. It is no doubt wiser to err on the side of safety than of laxity in the handling of epidemics, such, for example, as has recently visited Springfield in this

state. Physicians who are in contact with early cases of the disease should take certain precautions in regard to changes of clothes and disinfection. Certainly a modified quarantine should be enforced, and every possible means taken to trace the source of the disease in its inception and in its possible transmission from person to person. All of these things and others of similar sort should be done, in the hope that some added light may be thrown upon the obscure etiological problem. We, therefore, heartily commend the attitude of the committee to which we have referred, in promulgating a policy of investigation which will leave no stone unturned, in the effort to disclose the secret of this strange malady.

A word of warning, however, may not be out of place against permitting a feeling of panic to develop, which the facts do not in any way justify. Few situations have arisen in late years demanding so high a degree of judgment, on the one hand to provide for the utmost safety of the community, and on the other to prevent an undue anxiety always detrimental to the public health. We must await, with what patience is possible, the decision as to the degree of communicability of the disease. In the meantime there should be comfort in the fact that the evidence heretofore is largely against the theory of direct transmission, except under certain peculiarly favoring, but as yet unknown, conditions.—*Boston Med. and Surg. Journ.*

POLIOMYELITIS.

Reports indicate that poliomyelitis or infantile paralysis is quite prevalent in an epidemic form in many parts of the country. In some cases the true nature of the disease does not seem to have been appreciated until a considerable number of cases had occurred. This fact emphasizes the importance of physicians being on the lookout for the earlier cases, so that the disease can be controlled before it becomes epidemic. The conception of the disease has somewhat widened in consequence of recent investigations and experience. That it has the nature of a general infection is evident from the manner of onset in many instances. Symptoms referable to the general system or to the digestive tract are apt to precede those which indicate the seat of the principal lesions in the nervous system. The early symptoms may also indicate involvement of the cerebrum so that the incautious practitioner may be led to conclude that he is dealing with an acute local disease of the brain. The general character of the early symptoms and the known prevalence of the disease should lead the physician to suspect the occurrence of poliomyelitis in cases presenting obscure indications of general infection

with involvement of the nervous system. While the mode of transmission is not yet worked out it is evident that the disease is contagious, although there seems to be marked differences in susceptibility. The isolation of actual or even suspected cases is therefore important. Such isolation should be especially strict as regards young children. Unfortunately no curative or immunizing serum has yet been perfected, but with the activity of present bacteriologic research we may hope for an improved method of diagnosis and a specific treatment in the near future.—*Jour. A. M. A.*

ANTERIOR POLIOMYELITIS.

The Department of Health for Buffalo has sent out circulars to all physicians stating that with the increase in the number of cases of anterior poliomyelitis or infantile paralysis, the department deems it wise to take precautions to prevent its spread. Immediate report of all suspicious cases must therefore be made to the department from now on. Although such houses will not for the present be placarded, quarantine must be observed.—*Jour. A. M. A.*

PERSONAL AND NEWS ITEMS.

ONTARIO.

Dr. W. C. Herriman, assistant in the Toronto Asylum, has been transferred to the Asylum at Orillia.

Dr. MacCallum, of Penetang, has resigned, and leaves the public service of the province after a useful career.

Dr. Noher, of Brockville, is transferred to the Cobourg institution.

Dr. Forster is promoted to the position of Superintendent at Brockville.

Dr. Rollins is appointed to be assistant superintendent at Mimico, and Dr. Clare takes Dr. Herriman's place in the Toronto Asylum.

The Board of Health of Guelph, a short time ago, decided to adhere to the rule of compulsory vaccination before children could enter school.

Orono has had a typhoid fever scare. The authorities of the town asked Dr. McCullough, the Secretary of the Board of Health, visit the town and look into the sewage plant.

Dr. Hastings says that the best way to treat slums is to abolish them. This no doubt is a radical method, but may not be possible except in a few instances.

An action was brought against the Toronto General Hospital by Mr. Albert Booth. The action was dismissed by Chief Justice Falcon-

bridge. The treatment of the case by Mr. I. H. Cameron was completely vindicated.

The Annual meeting of the Alumni of the Medical department of the Western University, London, was held a short time ago. Dr. T. Futcher, of Johns Hopkins, and Dr. Crile, of Cleveland, gave addresses and held clinics. Dr. Futcher is an Elgin county boy.

Dr. Charles Sheard was presented with a gold watch. The presentation was made by Mr. Wilson, Chief Inspector of the Health Department. Dr. W. Harley Smith made a speech. The watch was suitably engraved.

Dr. Rowan and his wife, of Toronto, were severely injured as the result of collision between a street car and an automobile in which they were riding. They both received some bad cuts and the doctor was unconscious for some time.

The corner stone of the new public general hospital for Smiths' Falls was laid on the 2nd October. The building will cost \$29,000 and the site is worth \$10,000. The hospital will be known as the Chambers Memorial Hospital. It overlooks the Rideau River. The building will be 76 feet by 131 feet and consist of three stories.

Dr. J. E. Sawdon, of Listowel, died of smallpox on 30th August. The facts as given by Dr. Bard are that Dr. Sawdon had been vaccinated in 1900, and had looked after smallpox cases. He paid a visit to Blind River and came in contact with a case of smallpox. He returned to Listowel and fell ill on the 17th August. He was cared for in a pest-house, but the disease became confluent. All the expenses were paid out of the estate.

Work has commenced on the New General Hospital for Toronto. During the summer there has been some work done on the excavations for the foundations. The emergency section is to cost \$159,000. The tenders for the Medical building amounted to \$256,000. Mr. Mulock's subscription of \$100,000 goes into the emergency building for out door cases. Mr. Eaton will assume the entire cost of the Surgical building, which is to be \$280,000.

QUEBEC.

The Fifth Congress, of Physicians of the French language of America was held last August at Sherbrooke. There were present 250 doctors from all parts of Canada and the United States. Those who had the arrangements in hand deserve praise. The Sixth Congress will meet in Montreal in 1913. Dr. Hervieux, of Montreal, was elected president. The vice-presidents are, Dr. Rousseau, of Quebec, and Dr. Lédoux, of Sherbrooke. Dr. Bourgeois is secretary and Dr. Chaquon is treasurer, both of Montreal.

FROM ABROAD.

In Scotland last year the birth-rate was 27.22 per 1,000, and the death-rate was 16.13. The marriage-rate was very low.

Prof. Friedrich Von Recklinghausen died recently in his 77th year. He was noted as a distinguished physiologist.

Prof. Sir William Ramsay, the eminent chemist of London University, stated recently that radium now cost \$2,100,000 per ounce.

Sir Patrick Manson is retiring from the post of medical adviser to the Colonial Office. His work on tropical diseases have been of inestimable value.

Dr. Ely Van De Warker, of Syracuse, died 6th September, at the age of 69. He was a leading gynæcologist and in later years took much interest in general educational matters.

The subject of infant mortality continues to attract attention in Britain. In some counties the death-rate is as high as 151 per 1,000, in some others as low as 74. This points to a possibility.

Ankylostomiasis is very ripe in Ceylon. It is proposed by Sir A. Perry that employers of laborers be compelled to provide latrines for their coolies, as the only means of suppressing the disease.

Madame Pasteur, widow of Louis Paris, died recently at the age of 84. She took the deepest interest in her husband's work, and maintained her interest in all medical research till her death.

The Medical and Dental Defence Union of Scotland is making good progress. Last year was a very successful one. The union enters defence for its members in the event of suit being brought against them.

The St. John Ambulance Association which introduced into India in 1887, has since 1900 been making steady advances in all its efforts. It is doing much excellent work in India.

Mr. John Langton, the well-known surgeon of St. Bartholomew's Hospital, died 11th September. He retired in 1904 from the active to the consulting staff. He was in his 70th year.

Dr. Edouard Hensch, the eminent authority of children's diseases, died in Berlin in August. He was 90 years of age. His work on the children's diseases was translated into many languages.

It is estimated that there are about 350,000 to 400,000 persons in Britain suffering from tuberculosis, of whom about 60,000 die annually from pulmonary phthisis, and 30,000 from other forms of the disease.

Cholera in Russia is a serious matter at present. In one week in September there were 3,038 cases and 1,474 deaths. Up to a recent date there have been a total of 198,246 cases with 92,329 deaths.

There has been for some years a steady falling off in the number of medical students in the United States. The number last year was 20,551 as against 24,930 in 1903.

In Porto Rico a vigorous campaign has been carried on against the hook worm disease. At the dispensaries 49,407 cases have been treated, with cures in 19,423, and improvement in 6,966 others. The situation is much improved.

Rabies have recently appeared in several districts in the State of New York. Strict regulations have had to be imposed. It was an infected dog from the State of New York that introduced the disease into Ontario.

In a recent article by M. Carry, a noted French physician, all previous theories as to the cause of the illness and death of Pascal, the great mathematician, have been brushed aside; and the view advanced that he died of chronic lead poisoning, which was common at that period.

In a recent trial before a coroner in England the medical evidence stated that death was due to heart failure, following erysepelas, set up by an injury to the knee. In face of this evidence the jury found that "death was due to the medical evidence."

Dr. Lombe Atthill, of Dublin, the distinguished obstetrician, died suddenly in a railway station on 14th September. He was a well-known writer on obstetrical subjects, and was at one time master of the Rotunda. He was in his 83rd year.

Dr. James Nevins Hyde, the eminent dermatologist of Chicago, died recently at the age of 70. Dr. Emily Blackwell, of New York, and sister of the late Dr. Elizabeth Blackwell, died at the age of 84. She aided her sister in founding the Infirmary for Women and Children in New York.

Sir David Bruce and his co-workers in Uganda have proven by experiments that cattle may carry the trypanosomes of sleeping sickness. In this way the glossina palpalis may become infected and convey the disease to man.

In many cities in Britain the inspection of school children is carried on in a very thorough manner. The inspector visits the school and passes the pupils under a thorough review. Notice is sent to the parents of children who are found to be in bad health.

Dr. George L. Meylan, of Columbia University, has been making a careful study of the effects of smoking among students. He came to the conclusion that the non-smokers do better than the smokers. The use of tobacco is closely associated with idleness and lack of ambition.

The sanitary condition of the canal zone is in a very satisfactory condition. The death-rate during July was at the rate of 11.8 per 1,000 for the year. The deaths were from ordinary diseases. No case of yellow fever, smallpox, or plague was noted.

Dr. Robert P. Pule writing in the *J. A. M. A.* states that urotropine (hexamethylenamine) in large doses is a very valuable remedy in polio-

myelitis. He states that two cases so treated did not suffer much from paralysis and made good recoveries.

The Child is a new journal devoted to the interests of the child. It is to be published monthly and is to be edited by Dr. T. N. Kelynack. The publishers are, John Bale, Sons and Dawels, Son, of London. The journal should receive a generous support. The annual subscription is \$5.25.

Dr. Charles Jewett, of Brooklyn, died, August last. The day before his death he performed an operation at the Long Island Cottage Hospital. He was the editor of Jewett's System of Obstetrics, of three volumes. He was an extensive contributor to medical literature. He was in his 71st year.

It is likely that an effort will be put forward in Britain for the suppression of quackery. It is hoped that a Royal Commission may be appointed to take evidence, as a basis for legislation; and that powers may then be conferred upon the General Medical Council to deal effectively with quacks.

In Bombay marked improvements have been made to the medical school. At the end of the year there enrolled 518 medical students, of whom 68 were Christians, 291 Hindus, 135 Parses, 16 Mohammedans, and 8 Jews. In 1909, 593,164 antiplague vaccine doses were given out. The death-rate was 27.28 per 1,000.

The Antivaccination League in Britain looks as if it was dying out. Last year its income was £40 per month, while this year it is only £20. In 1908 it was £60, and in 1907 it was £80 per month. At this rate one more year will about see the end of the league. Leagues for the propagation of ignorance and disease cannot die too soon.

Mr. Robert Lindsay, in his address at the British Sanitary Association, pointed that during the past 50 years the general death-rate had fallen from 22 to 15.3 per 1,000, but that during the same period the death-rate among infants had not declined. This was no doubt due to bad housing.

The number of medical students in the 8 Austrian universities is given at 4,098. This is an increase of 14 per cent. as compared with last year. There are 229 women studying medicine. The final medical examinations must be passed within seven years from the date of the first examination.

Dr. O. W. Holmes proclaimed the infectious nature of puerperal fever in 1843. His most strenuous opponents were Drs. Meigs and Hodge. Ignaz Semmeweis fought for the same views in Austria in 1847. Neither got honor for their great work. Holmes's teachings attracted little attention, and the opposition to Semmelweis drove him insane.

The number of insane in Ireland last year was 24,144, an increase of 213 over the previous year. In 1880 the number of certified insane per 100,000 was 250, whereas in 1909 the number had risen to 552 per 100,000. Male far outnumber females in the rural districts, but in cities the reverse holds true. Take Ireland, however, as a whole, and the number of male and female insane are equal in number.

Professor Osler's *Principles and Practice of Medicine* has been translated in Chinese by Dr. Causland of the China Medical Missionary Association. This is the first work of authority to find its way into the Chinese language. Others are to follow, such as Heath's *Anatomy*, Stengel's *Pathology*, Ruch's *Ophthalmology*, Hutchinson and Rainy's *Clinical Methods*.

The British Medical Journal makes this statement: "It is generally admitted nowadays that fresh air, sunlight, and food are the most effective weapons to be used against the tubercle bacillus, and it is further believed by many observers that these natural forces can be materially assisted by the exhibition of antiseptics, tuberculin, cod-liver oil, and other aids."

The *Antiseptic* (India) has an article on exercise and exhaustion in a recent issue. Among other things it states that the ancients had powerful bodies with small brains, but that the tendency now is to have large brains with small limbs. To overcome this tendency modern exercise with dumb-bells and clubs has come into vogue by which a few groups of muscles are given some stimulation.

Dr. Cressy L. Wilbur, Chief Statistician of the Division of Vital Statistics, Washington, D.C., has a chapter in the census bureau's latest mortality report concerning the extreme age to which man may live. He contends that there are a few who attain the age of 100, but there is no reliable evidence that any reach the age of 110. This would seem to fix the extreme age of man as ranging between 100 and 110 years.

In Victoria, Australia, much has been done to lessen infant mortality by the supply of pure milk. Pure milk was supplied to 834 infants, and the death-rate was only 3.28 per cent. Among those fed on milk that did not receive this care, or reared on the bottle or some other food, the death-rate was 20 per cent. This is sufficient to convince the most skeptical.

OBITUARY.

WILLIAM CANNIFF, M.D., M.R.C.S., ENG.

Dr. Wm. Canniff passed away in Belleville on 18th of October. Deceased, who was 80 years of age and of U.E. loyalist descent, was born

near Belleville. Dr. Canniff was not only in his day well-known amongst the medical fraternity of Canada, but also as an able writer. He did duty in the Royal Artillery during the Crimean War, and was also with the American Army on the Potomac. He was also at the front during the Fenian raid in 1867. In 1867 he took part in the formation of the Canadian Medical Association at Quebec, and was at one time president of the association. He has filled during his life many honorable and prominent positions.

Dr. Canniff was one of the best known medical men of Toronto, having preceded Dr. Sneard as Medical Health Officer of the city. He studied medicine at the Toronto School of Medicine, and first practised in Belleville after completing his studies in the United States and England. After five years' practice in Belleville he was called to the chair of Pathology in the Medical Faculty of Victoria College, and was afterwards Professor of Surgery. Later he became Sub-dean of the Medical School, and was appointed on the staff of the Toronto General Hospital. He also had been president of the Medical and General Alumni Associations of Victoria and of the Medical Society of Toronto and president of the North-West Emigration Society. He was the originator of the U.E. Loyalist Centennial celebration held in Toronto in 1884, and occupied the chair at the meeting in the Horticultural Pavillion on the nomination of Lieut.-Governor Robinson. He contributed to the London Lancet as well as to the general press. He was also the author of "A History of the Early Settlement of Upper Canada," "Canadian Nationality," and "The Medical Profession in Upper Canada."

Canniff Surgery Phila 1866

Dr. Canniff was twice married, and had six sons and one daughter. His Toronto residence was 42 Grange Avenue. He was a Freemason, being a member of Ionic Lodge.

P. A. GASTONGUAY, M.D.

Dr. Gastonguay was drowned while canoeing on Jackes Cartier River at St. Catharine, County of Portneuf. He was a well-known practitioner of Quebec. The drowning occurred on the afternoon of 9th October. As he and two companions were going down the rapids the canoe suddenly capsized.

H. P. REYNOLDS, M.D.

Dr. H. P. Reynolds, physician, postmaster, and coroner at Lepreaux, N.B., and one of the best known men in the upper end of Charlotte and

the western end of St. John counties, was burned to death on Saturday, 9th October. He was alone in his home at the time, so that there is no absolute certainty as to how the tragedy occurred. The presumption is that the doctor was lighting a match and in some way set fire to his clothing, or else set fire to some of the fittings, and in endeavoring to put out the blaze fell a victim himself. He was seventy-one years old.

JEAN PHILIPPE ROTTOT, M.D.

The death on 28th September of Dr. Jean Philippe Rottot, Dean of the Medical Department of Laval University since its founding until two years ago, removes perhaps the oldest medical practitioner in Montreal. Dr. Rottot was a practising physician in the city for sixty-three years. In 1897, with Dr. Durocher and Sir William Hingston, he celebrated his golden jubilee as a physician. He was 85 years of age.

D. A. SINCLAIR, M.D.

News of the death in Pasadena, Cal., of Dr. Daniel A. Sinclair of Melbourne, Ont., son of Dr. D. A. Sinclair, 315 Spadina Avenue, was received in Toronto with a great deal of regret. Dr. Sinclair died just before his father reached his bedside. The remains were brought to Toronto for interment.

The young man, who followed his father in Melbourne, proved a worthy successor, having many fine qualities. Even after his removal from Toronto he continued to take a great interest in the affairs of the University of Toronto, of which he was a brilliant graduate. Some years ago he was engaged in newspaper work, being associated with *The Toronto World*. In his boyhood and student days he was a leader in sporting events. He went to California only last November in search of health. All his brothers entered professional life, and each one has distinguished himself in the same.

JOSEPH ADAMS, M.D.

Dr. Joseph Adams, for fifty-five years a medical practitioner in Toronto, died on Saturday morning, 26th September, at his residence, 12 St. Patrick Street, aged 86 years. He practised homœopathy all his life.

W. C. GILDAY, M.D., M.R.C.S.

The death occurred, 18th October, at the home of his father, Mr. Richard Gilday, 7 Moss Park Place, Toronto, of Dr. William C. Gilday, M.B., M.R.C.S., L.R.C.P., who had only a few months ago entered the practice of his profession. Born in Leeds county in 1882, he came with his parents to Toronto at the age of three years. He attended the Jarvis Street Collegiate Institute, and was a graduate of the University of Toronto and the Toronto Medical School. For two years he was on the house staff of St. Michael's Hospital, after which he pursued his studies in Europe, taking a post-graduate course in London, Birmingham and Vienna.

Dr. Gilday was a specialist in eye, ear, nose and throat diseases. Only last June he returned to Toronto, and established his surgery at 90 College Street. His illness was not of long duration. Dr. Gilday was Secretary of the Staff of St. Michael's Hospital.

BOOK REVIEWS.

ORTHOPEDIC SURGERY.

A Treatise on Orthopedic Surgery by Royal Whitman, M.D., Assistant Professor of Surgery in the College of Physicians and Surgeons in the University of Columbia, New York; Professor of Orthopedic Surgery in the New York Polyclinic Medical School and Hospital; Associate Surgeon to the Hospital for the Ruptured and Crippled; Orthopedic Surgeon the Hospital of St. John's Guild; Consulting Surgeon to St. Agnes Hospital for Crippled and Atypical Children, White Plains, and to the Home for Destitute Crippled Children. Member of the Royal College of Surgeons, England; Member and some time President of the American Orthopedic Association; Corresponding Member of the British Orthopedic Association; Member of the New York Surgical Society, etc. Fourth Edition. Revised and Enlarged. Illustrated with 601 engravings. Lea and Febiger, Philadelphia and New York, 1910.

This is a well-known book by a well-known author. For many years the teachings of Dr. Royal Whitman has stood for what is best in orthopedic surgery. He has well conceived methods of treatment and has a lucid style for the expression of his views. Next thing to the pleasure of hearing his lectures comes the pleasure of reading his book. This edition has been thoroughly revised, and new material and new illustrations added. The author has spared no effort to bring the contents of this work up to date. Step by step the whole field of orthopedics is covered. To the general practitioner this would make an excellent work of reference, while to the specialist on orthopedics it is almost indispensable. The publishers have maintained their reputation for good work in the matters of paper, binding, and press-work.

DISEASES OF THE EYE.

A Treatise on Diseases of the Eye, by John Elmer Weeks, M.D., Professor of Ophthalmology in the University and Bellevue Hospital Medical College; Surgeon to the New York Eye and Ear Infirmary; Member of the American Ophthalmological Society; Honorary Member of the Hungarian Medical Society of Budapest, etc. 528 engravings and 25 full-page plates in colors. Lea and Febiger, New York and Philadelphia, 1910.

This work appears for the first time. The author hopes that he has prepared a book "that will enable the undergraduate in medicine to obtain a sufficiently comprehensive and trustworthy knowledge of the subject, a book to which the practitioner of medicine may refer for information regarding questions concerning the eye, and also a book which may be of use to the specialist in ophthalmology." This is a high aim for any author to set before him in the preparation of a work on medicine or surgery. The subjects embraced under the general heading of diseases of the eye are taken up in regular order. From a very careful perusal of this book we feel that it can be safely recommended as well fitted to meet the conditions laid down by the author. The work is quite complete, as the author goes into the various topics with considerable fulness. The book is, therefore, one of nearly 950 pages. To any one who wishes a modern work on diseases of the eye we can very cordially advise this one. We feel that it will not be long ere further editions will be called for. The publishers have maintained the reputation of their house for good work. The volume is as attractive as it is useful.

 GLAUCOMA.

An Enquiry into the Physiology and Pathology of Intra-Ocular Pressure, by Thomson Henderson, M.D., Surgeon, Nottingham and Midland Eye Infirmary; Ophthalmic Surgeon, Midland Institute for the Blind; Dr. Vincentis, Gold Medalist, Eleventh International Ophthalmological Congress, Naples, 1909. London: Edward Arnold, 1910. Price, 10s. 6d.

The contents of this volume are discussed under the headings of anatomy, physiology, pathology, treatment, and the significance of equilibrium between intra-deular and extra-deular pressures. The influence of intra-ocular pressure in the causation of glaucoma is fully discussed by the author. "The aim of the present work is to bring forward sufficient cumulative evidence to establish the circulatory nature of the intra-ocular pressure, and thus to correlate the conditions in the eye with those already proved by Leonard Hill as existing in the brain." The book is well worth a careful perusal and will well repay the same. It definitely settles most of the doubtful points in glaucoma.

PROGRESSIVE MEDICINE.

A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by Hubart Amory Hare, M.D., and Leighton F. Appleman, M.D. Vol. III., September, 1910. Lea and Febiger, Philadelphia and New York.

This volume deals with diseases of the thorax, dermatology and syphilis, obstetrics, and diseases of the nervous system. The contributors are William Ewart, William C. Gottheil, Edward P. Davis, and William G. Spiller. This volume keeps up the high position attained by those of the series which have preceded it. As will be seen by the names of those who contribute sections to the volume, one would expect the best that could be said. This expectation is not disappointed by reading the pages which they contribute.

"WORLD CORPORATION."

By King C. Gillette, Discoverer of the Principles and Inventor of the System of "World Corporation," the New England News Company.

This is a book on social and labor problems. We have read it with the object of expressing our opinion upon it, as it has been sent to us for review, and many medical practitioners take a keen interest in all such questions. The draft of the argument is that as a corporation becomes large it is more easily managed, and any one person less missed if he drops out. By this process of reasoning a universal state of "world corporation" would lessen the friction of labor and capital and level down all national barriers. All would be equal. This might be very good if attainable; but it is utopian. Wholesome rivalry is worth a good deal, and nation-competing with nation is a cause of real progress.

THE SURGERY OF CHILDHOOD.

Including Orthopedic Surgery, by Dr. Forest Willard, A.M., M.D., Ph.D., Professor of Orthopedic Surgery, University of Pennsylvania; Surgeon to the Presbyterian Hospital; Surgeon-in-Chief, Widener Industrial School for Crippled Children; Ex-President American Surgical Association, American Orthopedic Association, Philadelphia Academy of Surgery, Philadelphia County Medical Association; Ex-Chairman Surgical Section American Medical Association; Fellow Philadelphia College of Physicians, etc., etc., with 712 illustrations, including 17 in colors. Philadelphia and London: J. B. Lippincott Company.

Dr. Willard has long been known as a clear writer on surgical topics. This is a new volume and gathers up the best of the author's long experience and extensive reading. The healing art has become such an extensive one that it is no longer possible for any one to cover the whole field. This has brought about the subdivision of the work of the doctor

into many departments. The department of the surgery of infancy is by no means an unimportant one. In the hands of Dr. Willard it assumes a real interest. Those who wish to keep themselves abreast of the times upon orthopedic surgery will do well to consult this volume. It may be trusted to give the latest and best methods of treatment. A careful examination of this work has impressed us with the immense amount of labor which the author must have given to it. The publishers have spared no pains to make their share do full justice to the contents of the book. Every phase of the book-making art is found here in such completeness as to claim the respect of the most critical. We can recommend this work as one of very marked excellence.

HAEMOGLOBINURIA.

By Ambrose E. L. Charpentier, M.D., L.R.C.P., D.P.H., R.C.P. & S.
 London: Baillière, Tindall & Cox, 8 Henrietta Street, Covent Garden,
 1910. Price, 3s. 6d.

This little book of 112 pages gives a very good account of what is known of this disease. It mentions the varieties and then discusses these under the headings of paroxysmal, fatigue, toxic, infantile and false haemoglobinurias. There is a full reference to the literature on each subject. The book will afford interesting and instructive reading to all who wish to acquire the latest views on this rare and interesting condition. The paroxysmal form is due to some toxine in the blood. This toxine becomes active on lowering of the body temperature, or chilling of the body.

MISCELLANEOUS.

ONTARIO MEDICAL COUNCIL EXAMINATIONS.

The results of the examinations of the College of Physicians and Surgeons of Ontario have been issued. Five of the students succeeded in passing the primary, intermediate and final examinations at the same time. They are: Lionel M. Dawson, Ottawa; Maxwell J. Fraser, Stratford; John C. Greenleese, Ottawa; Geo. C. Hale, London; W. L. C. MacBeth, Toronto.

The following candidates passed the final examination: Wm. E. Anderson, Kingston; Robert W. Davis, Staffa; W. M. Ecclestone, Toronto; John A. McInnes, Manilla; John H. McIntosh, Dominionville; Paul Poisson, Bell River; Jas. N. Richards, Warkworth; Roy H. Thomas, Barrie.

PRIMARY EXAMINATIONS.

H. W. Chamberlain, Aylmer; P. C. Doulombe, Montreal; W. E. Ferguson, Toronto; G. Linscott, Brantford; A. C. McGlennon, Colborne; J. T. Phair, Toronto; C. F. Riley, Avonbank; S. M. Smith, South Milwaukee, Wis.; H. A. Taylor, Wallaceburg; W. R. Young, Waterloo.

INTERMEDIATE EXAMINATION.

F. A. Brewster, Beeton; F. T. Campbell, Arkona; F. S. Harper, Hamilton; A. S. Lawson, Guelph; A. B. LeMesurier, Toronto; H. D. Livingstone, Listowel; R. A. McKay, Ingersoll; R. L. Morrison, Toronto; A. Pain, Hamilton; E. G. Vernon, St. Mary's.

INTERMEDIATE AND FINAL.

R. J. Bright, Warton; S. B. Casselman, Williamsburg; J. D. Christie, Toronto; D. A. Craig, Kemptville; W. E. Cruickshank, Chatham; N. E. Culbertson, Meaford; H. A. Culham, Toronto; C. S. Dunham, Frankville; H. H. Eedy, Harriston; N. George, London; G. L. Husband, Hamilton; J. B. Hutton, Kingston; L. F. Jamieson, Birmingham, Mich.; Wm. Jamieson, Wellandport; G. C. Kidd, Trenton; G. E. Kidd, Prospect; A. L. Kinsey, Bracebridge; W. E. Lake, Ridgetown; Wm. F. Luton, Mapleton; T. W. Peart, Freeman; Wm. C. Pedlar, Bonfield; C. H. Philp, Hamilton; Wm. D. Slater, Toronto; Jennie Smillie, Hensall; J. T. Thomas, Edgar; W. M. Thomas, Watford.

MEDICAL EXCHANGE.

The Canadian Medical Exchange conducted by Dr. Hamill, Medical Broker, 75 Yonge Street, Toronto, desires to say, that at no time of the year are there so many buyers looking for medical practices as now, and would advise those contemplating selling out to list their practices with him at once. He also, can give buyers without financial ability a list of villages without a doctor that desire one, and the territory in every case should warrant a practice of from \$2,000 to \$3,000 annually.

THE ONTARIO MEDICAL COUNCIL.

To The Editor of THE CANADA LANCET,—

I have read with much interest the various articles which you have published in your valuable journal on the Medical Council and think that it is high time for reform and for weeding out of the representatives of dead schools of medicine and of gentlemen who received remuneration for work which they did not do. There is another phase and that is the extreme inaccuracy of the Ontario Medical Register. I am well aware

that practitioners change their addresses without notifying the Registrar, that is not his fault, but the deaths of medical men whose names and addresses should be on the register reveal the fact that they were not so registered. This applies to the names of men of long practice as well as more recent graduates. How many hundreds of dollars must have been lost in the collection of the annual fee I am not in a position to state.

I ran over the fyle of the LANCET for eight months of this year and I find that the names of William Cockburn, J. K. Johnstone, J. T. Lewis, Wesley Robinson, J. A. Gray and Leslie Newell were entirely omitted as well as their addresses, while J. McCarter, W. A. Hackett, D. H. Hutchin-son and Solomon Secord were noted as address "unknown."

All these were well known practitioners, some of long standing. I have not had time to pursue the subject in former years' issues but an investigation of the fyle of a medical journal would no doubt add largely to the number of omissions.

Yours,
Practitioner.

This letter is only one of very many that we have received. The expression in all of them is that of disgust at the conduct of the medical council in the matter of the management of the funds of the College of Physicians and Surgeons of Ontario.—*Editor THE CANADA LANCET.*

THE AFTER-CARE OF "A BAD COLD."

The young virile, robust individual, who contracts what is commonly termed "a bad cold," rarely suffers long from such affection, as the superior resisting power of such persons soon overcomes the virulence of the infecting agent and recovery is rapid and complete. It is apt to be very different, however, with those whose circulation is less active and whose phagocytic activity is "below par," due to advancing years or general devitalization from whatever cause. For such patients something more than expectorants or respiratory sedatives is required. General nutritive and reconstituent measures are indicated and a quickly acting and substantial medicinal tonic almost always materially hastens recovery in such cases. Pepto-Mangan (Gude), with which is combined an appropriate dose of strychnia, is the ideal supportive treatment, as the combination not only tones the circulation and the nervous system, but also supplies in palatable, tolerable and immediately assimilable form the organic iron and manganese needed to revitalize the blood and infuse force and vigor. In the case of young children it is perhaps wise to depend upon Pepto-Mangan (Gude), without strychnia.