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An Address

ON

CANADIAN MEDICINE*

LEONARD G. ROWNTREE, M.D.

*Division of Medicine, The Mayo Clinic and The Mayo Foundation,
Rochester, Minn.*

THE University of Western Ontario has earned our admiration and respect. For fifty years it has foreseen and met a growing need. On this, its fiftieth anniversary, we proudly offer our heartiest congratulations and with it our best wishes for future success. In passing, we pause to pay tribute to those earnest men who have made this success possible: to Bishop Hellmuth, a man of vision, and to the members, past and present, of its Board of Governors and its Faculty. They have created a University which adds distinction to the city of London.

This occasion celebrates the inauguration of a new president, William Sherwood Fox. In this new office we wish him success, contentment and happiness. Under his wise leadership may we see the University make progress unparalleled in its history. We should take this opportunity also to offer our gratitude to Colonel William Gartshore, who has done more perhaps than any other non-medical man in London for the Medical School. For years, in his quiet way, he has maintained friendly connections with the medical school through Victoria Hospital and has been largely responsible for providing clinical facilities for the school and also for providing medical equipment for carrying on the most advanced type of medical practice, in the hospital.

The task allotted me deals with the development of medicine in Canada. With an audience such as this it would be an impossible task to relate the part played by Canadian medicine unless, in the beginning, we can orient ourselves

to some extent with regard to medical history in general. I shall therefore attempt to portray a few glimpses of medicine in the making.

In the dim dark days of antiquity, before the dawn of history, medicine of a kind was practised. It had to do in most instances with the control of evil spirits and hence was in the hands of spiritual advisors, such as they were. On the whole, it was fanciful and ineffective, although it no doubt tended to relieve the sufferings of the mind, and it handed down certain empiric measures of relief and served to enrich folklore.

In the opening scene may be witnessed the beginning of real medicine in Greece in the golden days of Pericles. In that day the sick were brought to the Temples of Health (Asclepieia) of which there were about 300, many of them magnificent structures. "The sick person after sacrifice and purification lay down to sleep near the altar of the god and the mode of treatment was revealed to him either in a dream, or more directly by the priest himself, dressed so as to represent the deity." Into this environment came a man of wisdom, Hippocrates, "the Father of Medicine". He made the greatest contribution of all time to medicine, namely, common sense. He taught that diseases result from natural causes and are not the work of evil spirits, that observation of the sick is crucial to the understanding of the disease, that Nature is the great healer, that the physician must learn to foretell the outcome of disease, and that treatment should not be by rote but individualized to meet the need of every patient. He studied the sick and recorded their histories and his observations concerning them. In addition, he formulated

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the Hippocratic oath, which introduced a certain ethical element into medicine, elevating the profession and tending to make the physician at least a gentleman.

The next scene centres in Rome. For lack of time, I shall pass over the interesting developments in anatomy in the great medical centre in Alexandria, which is better known, perhaps, as the setting of the love scenes of Cæsar, Cleopatra and Mark Antony. In Rome, there was Asclepiades, a man of fine appearance, originally a poor native of Greece, who learned medicine at Alexandria and studied rhetoric in Athens. He came to Rome in Cæsar's day and gained the friendship of the great, including Crassus and Cicero. He was the physician of the patrician and the prototype of the fashionable physician of today. He advanced to popularity in part by proclaiming boldly that the physician should cure his patient "quickly, safely and pleasantly." He had further claims to fame, for he promulgated certain new doctrines, particularly insisting on the importance of diet, exercise and baths. Incidentally, he invented the shower bath. Next we meet a much greater man, Galen, the best known medical writer of ancient Rome and the medical dictator of the world for several centuries. Galen was a true investigator and made many valuable contributions to anatomy and physiology. He tried to convert the medical profession to the ways of science. Had medical men been willing to follow his lead in this direction, there probably would have been much greater progress during the centuries following. Galen had the idea of an investigative approach to medicine, but without appreciation or stimulation from his contemporaries his own attempts in this direction were unavailing. By many critics he is said to have hindered rather than advanced the cause of scientific medicine.

Again the scene shifts; this time to the Far East. In the seventh century the wild tribes of Arabia descended on Rome and stripped her of her most valued eastern provinces. Their terms of peace were peculiar. The right of the victors to collect and purchase Greek manuscripts was stipulated. Although wild and warlike, the Arabs were endowed by nature with a great love of learning. They translated these manuscripts, compiled books, and kept burning the torch of Greek medicine, handing it down to western civilization. They brought into existence great centres of learning, hospitals, scientific institutions and academies. Great libraries were built

at Bagdad, Cairo, Damascus, Cordova and Gondisapor. They also produced great physicians, such as Rhazes, who introduced many new drugs, and Avicenna, who revived the teachings of Galen and Aristotle, and who wrote a work on medicine which became the standard for the world throughout four centuries.

About the time that Columbus was discovering the new world, there came to the old world the Renaissance or revival of learning. So far as medicine is concerned, two figures were of particular interest, Paracelsus and Harvey. Paracelsus, bombastic, abusive, and somewhat of a charlatan, is one of the most interesting characters in the history of medicine. Justly or unjustly, he is credited with being the father of chemical medicine. To him disease was chemical in origin and he insisted that conceptions of treatment must involve chemical considerations. He was followed by the greatest man, barring Hippocrates, in the history of medicine, William Harvey, who first demonstrated the circulation of the blood and is considered the "Father of Modern Medicine." Harvey was born in England in the reign of Elizabeth and as a young man journeyed to Padua, the medical centre of the world, and there worked with the masters of medicine. On his return to London, he made his great discovery and forced it on an unreceptive world. By his methods of investigation, reasoning and demonstration, he upset the old philosophy of medicine and substituted in its stead the science of medicine.

We shall now journey with Jacques Cartier to the new world. On his second visit to Canada he landed his followers from three small vessels and established a colony at Stadacona, the present site of Quebec. He proceeded to Hochelaga (Montreal) and there met the paralyzed Indian chief, Agouhanna, who indicated that he expected restoration to health through the simple expedient of the laying on of hands. He gave to Jacques Cartier his friendship and his crown made of the skin of the hedgehog, and then presented for cure a motley crew, the aged, the maimed, the halt, and the blind. Cartier could give them little, but now McGill University, which stands on this historic spot, grants to all who seek it the best that the medicine of the world has to offer.

As is well known, medicine at this time was emerging from the darkness of the middle ages. Strange as it may seem, these representatives of the old civilization were more ignorant in

some respects than the aborigines of the new world and were enlightened as to the treatment of one of their most serious diseases by the ignorant and lowly Indian. Mal de terre, scurvy, the scourge of ships, the plague of the Indians and of the early settlers, laid hold of 90 per cent of Cartier's men. In desperation he spied on the red men and thus learned of the healing virtues of a certain spruce, "annedda," the tree of life. After losing a considerable proportion of his settlers, the remainder were miraculously restored to health within six days after consuming the bark and sap of a large hemlock which was supplied by the Indians. "For it profited so much that all those who would use it recovered health and soundness, thanks to God."

The first physicians among the French pioneers were ship surgeons, and as there were many ships coming and going the country was well supplied with surgeons. They often acted in the capacity of apothecaries. The most illustrious was Michel Sarrazin, a surgeon-major of the troops, physician to L'Hôpital Général and a student of natural history, who made many reports to the Royal Academy of Sciences on animals and plants found in the new world. He was supported by the King of France, but on so small a salary that he found it difficult to make both ends meet. He died in the Hôtel Dieu, Quebec, in 1702.

The Hôtel Dieu of Quebec, the first in Canada, started under the guidance of the Jesuits, has an interesting story of its own. In the early days of Quebec, three nursing sisters from Dieppe were being sent out by Richelieu's niece, the Duchess d'Aiguillon, in 1639 to found a hospital in the new world. They found inspiring ship companions, three Ursuline sisters who were to start a convent in Canada. "After a long and arduous voyage, they arrived in Quebec on the first of August, 1639. The entire city was at the quay to meet them, and they were received with open arms; all work ceased, shops were closed and a holiday was proclaimed. The Governor, M. de Montmagny, Chevalier de Malte, at the head of his troops, welcomed them on the quay. Cannons boomed, flags flew to the breeze and the whole town was en fête. A procession was formed and, amid the acclamations of the multitude the sisters were conducted to the church, where a Te Deum was chanted." As the chronicler tells us: "The sisters were so overjoyed that they felt like kissing the soil of this savage land which offered them only trials, tribulations

and a tomb."¹ Working under unbelievable handicaps, these sisters ministered to the sick of the colony and also to the Indians. In the first eight months more than 180 patients entered the hospital and more than 200 poor savages found relief there.

Following the British conquest of Canada, there was a falling off of the number of qualified physicians; most of the qualified pioneer English physicians were army surgeons. One of these, Latham, was one of the first to introduce inoculation into Canadian practice, inoculating some of the soldiers of the garrison in Quebec in 1785.

An interesting glimpse is afforded of the first physician licensed to practise in the upper part of Canada, John Gilchrist, of Hamilton. His life demonstrates that a physician can be a Jack-of-all-trades. He passed his examinations in 1819 and was gazetted military surgeon in 1822. Besides practising his profession, he was a farmer and conducted a sawmill and a gristmill. He was appointed a justice of the peace; he served in the legislative assembly and was district treasurer. But Satan finds some mischief still for idle hands to do, and along with several others he was arrested for complicity in the MacKenzie rebellion. In consequence he moved to Port Hope where he died in 1859.

The pioneer spirit is also exemplified in the life of John Rolph. He was a practitioner of medicine, politician, member of the bar, and the founder of the school which eventually became the medical department of Toronto University. He came to Canada from England in 1812 and on his way was detained by the Americans, who suspected him of being a spy. He returned to England and worked under Sir Astley Cooper at Guy's and St. Thomas' hospitals, and was a member of the Royal College of Surgeons. He returned to Canada in 1823. He then acted as school trustee, was a member of the board of education, and was elected to Parliament in 1824. He established the first hospital in Upper Canada at St. Thomas. Later he established a class in medicine. He participated in the rebellion of 1837 and had to flee to the United States, with a reward on his head of 500 pounds. After the amnesty, he returned in 1843 and started his school again in 1848, the Toronto School of Medicine, which later became the medical department of Victoria University and eventually was the nucleus for the present department of

medicine of the University of Toronto. He died at Mitchell in 1870.

Medical conditions were quite favourable in Canada in 1875. Medical schools, good for that day, were established in Montreal: (McGill in 1824; École de Médecine de Montreal in 1843); in Quebec (Laval in 1857); in Toronto (Toronto School of Medicine in 1848); in Kingston (Queen's College in 1854); and in Halifax (Dalhousie in 1870). The faculties in general were composed of outstanding practitioners of medicine, many of whom were most scholarly and who devoted time and energy to the work with little or no financial recompense. Clinical material in adequate amounts was furnished by associated hospitals. The students received excellent practical training which adequately equipped them for general practice, the type of work to which the majority of physicians devoted their efforts and their lives. Specialists often participated in the teaching of fundamental branches, such as biology, zoology, botany and chemistry. But in most fundamental branches, the burden of teaching was carried by practitioners who were specially interested in one or more of these branches.

The life of most of the practitioners was that of the pioneer. By this time the frontiers of Canada had been pushed forward to the Pacific coast, but the land was sparsely settled. Small settlements were scattered through the length and breadth of the land, but in general at great distances from each other. Transportation was difficult. The country physician carried on his profession in small centres but travelled with his saddle bags, on horseback, far and near in the care of the sick, —McLures—beloved physicians looking after Drumtochtys—"Nae new fangled ways"—a "blister for the ootside an' Epsom salts for the inside."

At this time Pasteur was beginning his work and the germ theory was unfolding. Infectious diseases were treated by the old methods, involving rest in bed, limitation of diet and the administration of certain drugs for the relief of outstanding symptoms. Prevention of infection through vaccination was unknown except in relation to smallpox; specific treatment by serum and vaccines also was unknown. Antiseptic and aseptic surgery had not yet come into existence; so in Canada, as elsewhere, surgical operations were attended by an appalling mortality. The glands of internal secretion were not understood and hence diseases of these organs were treated

in a most ineffective way. Dietary deficiencies, although rife, were not recognized. Anæsthetics, ether and chloroform, were administered, but because of inexperience and lack of proper control, fatal accidents were common. Preventive medicine of a kind was in the hands of local physicians, practised as a community measure, and without state or nation-wide control. Because the physician was ignorant of the nature of infectious disease, epidemics of typhoid fever flourished everywhere and often decimated the population. Diphtheria and scarlet fever carried off hundreds of children. Tuberculosis was treated in the home and whole families were exterminated. Expectant mothers were not seen by the physician until the time of delivery and death at childbirth was common. The people regarded hospitals with horror and as a place of last resort; hence many lives were uselessly sacrificed to ignorance and prejudice.

Nursing at this time was at a low ebb. Dr. F. J. Shepherd, in an address delivered to the Montreal General Hospital Nurses' Club, on December 6, 1905, described the wards and nurses of the Montreal General Hospital as they were in 1867 in the following words: "The wards were small and rather untidy; the nurses were Sarah Gamps; good creatures and motherly souls, some,—all uneducated. Many looked upon the wine (or brandy) when it was red. In those days it was with the greatest difficulty that patients could be induced to go into a hospital. It was the popular belief that if they went they would never come out alive. No records were kept. The clinical thermometer had not come into use; the patients had to look after themselves; fresh air was not thought necessary. Armies of rats disported themselves about the wards. Instruments were looked after by a man who assisted in the operating room, and at postmortems in the dead house. Nothing was known of sepsis or antiseptis. Surgeons operated with dirty instruments and septic hands and wore coats which had been baptized for years with the blood of victims."²

But now Canada has met and solved all these problems. Railroads have abolished frontier settlements. Good medical schools are found in most of the large cities. Medical journals, general and special, are in every physician's office. Medical meetings are numerous and frequent. Automobiles conserve time. Traveling clinics come to the physician who is isolated. Community hospitals are at hand, and the tele-

phone brings the consultant to the patient's bedside. Lectures on medicine are to be had by radio.

Pasteur has proved the germ theory of disease. Innumerable writers have established the laws of infection and of immunity. Specific remedies are at hand in the form of serums, vaccines, and drugs. Lister has taught us aseptic surgery and operations are relatively safe. Smallpox and typhoid fever are banished by preventive inoculations. Diphtheria and scarlet fever can be prevented, or cured, if contracted. Patients with tuberculosis are segregated in sanatoriums and a large proportion are cured. Childbed fever is a reflection on the physician. Glandular deficiencies are diagnosed and Nature's failures compensated for by substitution therapy. Dietary deficiencies are met by appropriate foods. Expectant mothers are observed through many months and are saved from death and the babies well started on the journey of life. Specialists abound; they make the diagnosis in difficult cases and outline the necessary treatment. Hospitals are accepted as providing the best environment for the sick, and hence daily restore thousands to health. Verily it sounds like a true Utopia!

In this great medical accomplishment, Canada and her physicians have played a great part. The profession has organized to meet these problems. In the early days our medicine was strictly utilitarian and practical, but in later years has become strongly tinctured with science. Canada may take just pride in her physicians. Schools of medicine have appeared and they teach excellent medicine that is practised from coast to coast. The Canadian Medical Association has about 4,000 members. The last census showed the population of Canada to be 8,775,853 with 8,706 physicians. Each year about 400 new physicians are graduated from the medical schools of Canada. The *Canadian Medical Journal* brings tidings of the new advances of medicine to every physician. National and state meetings are held in the larger cities, and meetings of county societies are held in every hamlet. The Canadian Health Association serves from within and protects from without. Public health institutes meet the needs of the community and of the physicians and educate the public in all matters vital to health. Physicians and nurses supervise the health of the children in the schools. Many special societies, such as the Tuberculosis League, the Red Cross, and the

Child Welfare League, help to meet special needs.

Canadian medicine has made great strides in the full-time teaching of medicine and in medical investigation. In days gone by, the fundamental sciences underlying medicine were taught by practitioners. Now in most Canadian schools, as in our own school, the faculty includes a group of men who devote their entire time and effort to the teaching and advancement of these branches. One of the pioneers in this field in this country is with us today, Dr. A. B. Macallum, brother of a former dean of our school and father of our present dean. Such men have done much for Canadian medicine and for medicine in general. The full time system is beginning now to be adopted in some schools, even for the clinical branches, and in this movement also Canada is taking an active part.

Canada's record in the war was superb, but no branch of the Canadian army surpassed her medical department. The excellence of this service was specially commended by the King himself. Nearly every medical student in Canada volunteered. Approximately 1,500 medical officers and 2,000 nurses, with a total personnel of 20,000, served overseas. The Canadian Medical Hospital beds abroad exceeded 35,000. The spirit of the Canadian Medical Service was unsurpassed. The inspired battle cry, "In Flanders Fields," of a Canadian medical army officer, Colonel John McCrae, electrified the Anglo-Saxon race in every corner of the world and was probably one of the determining factors in the outcome of the war.

In medical investigation Canada is more than holding her own. For years our profession has participated in researches of all kinds and some of Canada's contributions have claimed the attention of the entire world. Wherever medicine is practised, Banting's praise is sung.

But among Canada's greatest gifts to medicine must be considered those of her sons, Nature's noblemen, who enriched medicine by their lives and their work. We think naturally of such men as we Londoners have known in days gone by: Moorhouse, Buck, Wishart, Eacles, Moore, Meek, Hodge, Drake, Wilson, Ferguson and others. Of this older group, Dr. Waugh fortunately has been spared. Although there are many such men, three will suffice as illustrative examples. They stand as the type of men who have won for Canadian medicine the respect of the world.

The first is a man well known to most of you, the late Dr. H. A. Macallum, a big man, physically and mentally, genial, jovial and whimsical, one who radiated health and sunshine. He graduated from this school in 1886. He was a graduate student in Baltimore and abroad, and eventually settled down to the practice of medicine in London, Ontario. He was a master-clinician, an inspiring teacher, a friend and advisor to his patients and his students. He practised for the love of practice and taught for the love of teaching. He brought hope and sunshine into the lives of the sick. He elevated the standards of both practice and teaching. To me he was always an inspiring example affording an insight into the greater possibilities of medicine. He represents the highest type of Canadian physician. For years he was the central figure in the affairs of our Alma Mater.

The next picture deals with the scientific achievement of a young physician, once of this city, who at two in the morning was still struggling with a great problem which demanded solution. He was interested in the possibility of finding a substance which would cure diabetes. He had spent the evening reading an article which proved that when the ducts of the pancreas were tied, the gland itself atrophied, leaving intact the islets of Langerhans, the tissue supposed to be concerned in diabetes. He wondered if this was not a starting point for the discovery of a cure for diabetes and as he continued to study the problem he became convinced that he had arrived at the truth. In the morning he eagerly conferred with Dr. Miller and other men in the medical school and elicited their interest. They started him on his search. Realizing the greater facilities and opportunities of larger institutions, they referred him to the University of Toronto, where, with the aid of Dr. McLeod, Dr. Collip and Dr. Best, he produced "insulin," which has become a boon to patients with diabetes throughout the entire world. Banting, a Canadian, working in Canada, has made one of the greatest contributions to medicine, not only of the last fifty years, but of all time.

And finally, Canada has produced the greatest physician of the new world. A comprehensive panoramic view of the life of Osler, which is interesting and inspiring throughout, has been given by Cushing. Certain details stand out in bold relief. In his childhood we see him as one of a large family of children, in a Canadian

parish in the wilderness. From his parents he derived his personality, from his father the pioneer spirit, and from his mother his teaching capacity and his practical outlook on life and medicine. His mother especially merits consideration. In advising him as to a profession in life, she said, "Search your heart for the motive inducing your decision, for remember that God always judges us by our motives while man can only judge us by our actions, and in the Book of Proverbs you will find far better advice than I can give you." He grew up under the influence of three great men, Father Johnson, of Dundas, who created an interest in science; James Bovell, of Toronto, who taught him to browse in the library, and Palmer Howard, of Montreal, who opened to his vision the full possibilities of medicine. Of course, the figure which stands out most strikingly is Osler in his prime as professor of medicine at Johns Hopkins in Baltimore, scholar, teacher, physician, classicist, student of the humanities, reveller in medical lore of all ages, bibliophile, builder of libraries, maker of books, and inspiring teacher, to whom the development of young men was an absorbing passion. He was a keen observer, master clinician, clinical pathologist and clinical investigator, a consulting physician to whose doors came the sick from every part of the continent. In him were combined all the best attributes of a physician and in his day he made Johns Hopkins the Mecca of American Medicine. After leavening and moulding American medicine he was called to England as Regius Professor at Oxford, where he performed the same services for British medicine. In him Canadian medicine furnished the leaven which raised the standards of the profession throughout the world.

Such is the story of Canadian medicine; such, in general, the list of her accomplishments. Canada has received much help in medicine from the outside world, but this she has repaid and in full measure. The needs of the people of Canada, in my opinion, have been as well met by its medical profession as those of any country in the world. Canada has ample reason to be proud of her accomplishments in medicine.

For most of the historical references in this narrative, I am indebted to Dr. John J. Heagerty's interesting and extremely valuable work on "Four centuries of medical history in Canada."

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