

THE SIGNIFICANCE
of the
MONTREAL NEUROLOGICAL
INSTITUTE

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NEUROLOGICAL BIOGRAPHIES
& ADDRESSES

THE FOUNDATION VOLUME WHICH
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THE SIGNIFICANCE OF THE MONTREAL NEUROLOGICAL INSTITUTE

WILDER PENFIELD

THE traveller to Granada is satisfied to find the Alhambra a thing of beauty. He is little concerned with its use. Its obvious failure to provide sanitation and comfort for its inmates detracts not at all from its present value. But an institute is quite another thing. One demands to know first its purpose, its background, its future.

The very intention of building an institute signifies a primary resolution to make a co-operative study of a specific group of problems. Such a resolution was made. If now we have built well, this Institute will suit its purpose, will indeed proclaim that purpose in its outward form with a due consideration for architectural beauty.

It is fitting for me at the outset to quote the words of our late Principal, Sir Arthur Currie. On the occasion of laying the corner-stone of this building Sir Arthur said:

'One more great co-operative effort has been launched in our City under happy auspices. The Montreal Neurological Institute will provide facilities which will enhance the usefulness and reputation of our hospitals and the medical schools not only of this city but of all Canada. Unfortunate men and women, suffering from the most delicate and most misunderstood of all human afflictions, will find this Institute a blessing.'

Alas for that prophecy! A few short weeks after Sir Arthur had uttered these words he was stricken with one of the human afflictions to which he referred, and we stood by his bedside helpless because of what he had justly termed misunderstanding.

The task to which this Institute is dedicated in all humbleness of spirit is the achievement of greater understanding of the neurological ills to which man is heir so that physicians may come to such a bedside with healing in their hands.

For years Dr. Cone and I have had a definite and no doubt

somewhat presumptuous determination to play a part in the development of an institute of this type somewhere. We found in Montreal that Dr. Colin Russel and Dr. F. H. Mackay with their staffs were of the same mind, for no one can treat disease of the nervous system to-day without longing for more adequate means of attack. No one could become familiar with neurological problems and with the handicaps imposed upon the workers in this field without concluding that adequate laboratories and some segregation of patients were essential to further progress.

For any constructive ideas that I may have contributed I have to thank the guiding influence of the men under whom it has been my good fortune to work. Most important was the initial influence of Sir Charles Sherrington. In his laboratory at Oxford to search for the hidden truths of neurology became a habit of mind, a colouring to all of one's thought. There was also the early influence of McGill's great teacher, Sir William Osler. Following him on the ward I discovered something of the human idealism and romance of medicine at the bedside. It is unnecessary to elaborate the importance of that contact. I see many others here to-day who also belong to the freemasonry of the Osler tradition.

It is a source of the greatest satisfaction to me to realize that two of the most distinguished of my teachers are doing us the great honour of delivering Foundation lectures to-day, Dr. Gordon Holmes and Professor Harvey Cushing. And they are not alone. There are others of my teachers, Professor Allen Whipple of New York and Dr. J. G. Greenfield of London, who have come to celebrate this inauguration. From London also has come our most distinguished pupil, if it shall not be thought vainglorious of Dr. Cone and me that she should be named thus, Dr. Dorothy Russell.

And further, I must acknowledge the splendid gesture of these other friends and associates of ours who come great distances in token of the friendship won in serving together a common cause with a common purpose. We have carved in stone on the outside of this building a simple declaration of that cause in the words

'Dedicated to the relief of sickness and pain and to the study of Neurology'.

In Montreal the growth of neurosurgical and neurological work has been spontaneous and easy because of the universal hospitality here, the generous co-operation from the start by the Royal Victoria and the Montreal General Hospitals, and the kindness of Professor Meakins in throwing open his laboratories to us, grasping amateur neuropathologists and neurophysiologists that we are. The whole undertaking, which was Professor Archibald's original conception backed by anonymous friends of his, now our friends as well, was forwarded by Dean Martin, who was able to interest the Rockefeller Foundation, the Province of Quebec and the City of Montreal in this Institute at a time when the present project seemed doomed to failure.

During the past six years we have come to know the French-speaking members of the medical profession in the Province of Quebec and to realize that there are among them distinguished leaders in the field of neurology. It gives me great pleasure to announce that three of them, Dr. Emile Legrand, Dr. Roma Amyot and Dr. Jean Saucier have joined our staff, bringing with them the high tradition of the French school of neurology. A further recent addition is Dr. Donald McEachern of Winnipeg, who comes to us as neurologist and to take charge of the laboratory of biological chemistry, for which position he is eminently fitted.

This Institute, like the National Hospital for Nervous Diseases in London, comes into close relation with other hospitals in this city without in any way competing with them. Thanks to the double allegiance of our staff we are closely connected with the Children's Memorial, the Hôtel Dieu, the Jewish General, the Montreal General, Notre Dame, Royal Victoria, St. Jean de Dieu, St. Mary's and the Verdun Protestant Hospitals. Thus within the Institute the neurologists of these institutions will gain greater experience and training for the neurological work which must be done in every general hospital and will be able to transfer cases with perfect freedom in either direction.

Building. The Montreal Neurological Institute contains eight floors, the space being about half devoted to patients and half to scientific activity. Time does not permit adequate acknowledgement of the work of the builder, Colonel E. G. M. Cape, nor of the contracting engineers, Messrs. MacDougall and Friedman, nor even of the architects, Messrs. Ross and MacDonald. Generous co-operation and unflagging interest we have had from all.

The general form of the building is determined by the requirements of the large wards on the lower floors—no windows being placed in the north and south ends of the lower four floors so that future building or addition would not interfere with these present rooms.

Mr. R. H. MacDonald is responsible for such virtue as may be found in the general conception of the building. He has allowed function to dictate form without loss of consideration for beauty. The Scotch baronial type of architecture of the Royal Victoria Hospital across the street determined the style which had to be adopted as well as the building material, which is Montreal limestone.

In the façade may be seen various significant symbols. There is, of course, the staff and serpent of Aesculapius, the Greek God of Medicine who became so proficient in the healing art that he was accused by Pluto of producing a shortage of shades in Hades. For this venture into 'state medicine' he was destroyed by a thunderbolt from the hand of Zeus. This emblem, together with the representation of the brain over the entrance, is intended to symbolize the field of neurology.

Elsewhere in positions where the architects called for ornamentation will be seen various forms of trephines, for it is our conception that neurosurgery is only a part of that larger branch of medicine, neurology. Curiously enough, operations upon the skull were the first to be recorded in history, and craniotomy was obviously in vogue among the most primitive tribes for the relief of headache and to allow the particular devils to escape which in those days seem to have produced epilepsy and madness. The



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trephines include primitive rod-like augers, more complicated augers caused to be rotated by the string of a bow, and the artistic bit and brace of the great sixteenth-century French military surgeon Ambroise Paré. It is interesting to remember that Paré was perhaps the first of the short-robed barber-surgeons to think for himself and to break away from the dictation of the long-robed and reputedly erudite physicians who prescribed but did not operate.

On the bridge that connects the Institute with the Royal Victoria Hospital the maple leaf of Canada and the crest of McGill University are found on one side and the crest of the Royal Victoria Hospital on the other.

Vestibule. The vestibule bears the plaque of acknowledgement to generous benefactors:

McGill University
acknowledges with gratitude generous
donations toward the erection and
maintenance of this building.

Rockefeller Foundation
Province of Quebec
City of Montreal
Sir Herbert Holt
J. W. McConnell
Walter Stewart
Four anonymous donors

The Rockefeller Foundation has given one-half of the money required to build the Institute, considered to be the scientific half, and has donated a permanent fund of one million dollars, the income of which is to be devoted toward the budget of the Department of Neurology and Neurosurgery for scientific work. The Foundation has therefore built and endowed the laboratories without undertaking any direct responsibility for the sick poor of our country.

The Province and the City, under the leadership of Premier Louis Alexandre Taschereau and Mayor Camillien Houde, have

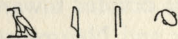
promised the yearly stipend necessary for the clinical upkeep, while the private individuals mentioned in the plaque have built the clinical half of the Institute.

Hall of Neurological Fame. The general reception hall contains the statue of a female figure by Barrias. On the base of this statue the words 'La Nature se dévoilant devant la Science' suggest that this figure embodies all the mysteries of nature, mysteries which only a scientist may hope to discover.

The original sculpture was done by Ernest Barrias in marble of variegated colours and now stands in the Louvre. It was copied in white marble for the Faculty of Medicine of Paris under the supervision of Barrias, who then added the carving of fern and snail on the base behind the figure to signify that the revelation was of nature's biological secrets. That copy now stands in the entrance of the École de Médecine. The Montreal copy was carved from a flawless block of Carrara marble by Adolphe Galli and donated to the Institute by Mr. and Mrs. A. A. Hodgson and Dr. and Mrs. Lewis Reford.

The reception hall in which the statue stands was decorated by Barnet Phillips. Frescoed upon the ceiling are the neuroglia cells in their proper layers within the cerebellum after a drawing by the great Italian neurologist Camillo Golgi. The cells themselves with their sprawling expansions stand out black as when impregnated by Golgi's silver method. The nerve-cells are seen only faintly as rounded disks, while the tiny blood-vessels and coloured background complete the picture.

In the centre of the ceiling is seen the head of Aries the Ram, which in astrological symbolism presides over the brain, and about the ram's head are four hieroglyphic figures:



In the Edwin Smith papyrus, which dates from 3000 B.C., these four symbols in combination represent the brain.

In regard to this word I quote from a letter from Dr. William Francis, whose erudition in the history of medicine in my opinion exceeds even that of his uncle and patron, Sir William Osler.



CEILING OF ENTRANCE HALL

'The word meaning brain', he writes, 'is of extraordinary interest, being the earliest reference to the brain anywhere in human records. In the known documents of ancient Egypt it occurs only eight times, seven of which are in the Smith papyrus. The eighth case is in the Ebers papyrus which commends the brain of many black fish as a recipe for preventing grey hair when rubbed upon the head.'

'There can be no doubt about the meaning brain,' writes Dr. Francis. 'The papyrus states that when the surgeon probes with the finger he feels "a throbbing and a fluttering . . . like the weak place of an infant's crown before it becomes whole".' When one thinks of the probably septic condition of the surgeon's finger three thousand years before Christ this digital exploration must send a chill down any neurosurgical spine.

In an outer circle surrounding the head of Aries and the hieroglyphics is the Greek legend *ἐγκέφαλον δὲ πρωθέντα εἶδομεν ἰαθέντα* quoted from Galen's commentaries on the Aphorisms of Hippocrates. Galen called no man master save only Hippocrates, but he took exception to the latter's statement that a wound involving the brain is invariably fatal in the above words which Dr. Francis has translated, 'But I have seen a severely wounded brain healed.'

Osler said of Galen, 'There is no ancient physician in whose writings are contained so many indications of modern methods of research.' It is pleasing to have from his pen, eighteen centuries old, the statement that the brain after all is a tissue like other tissues with capacity for healing; a promise that it too may yield to the physician and the surgeon who come to understand the principles involved.

In the border about the ceiling in a repeated pattern is to be seen the outline of the fluid-filled cavities within the brain, the cerebral ventricles. The iron gratings used over the radiators in the alcove are from a drawing of a nerve fibre by the French neuro-anatomist Nageotte. The axone is shown with the radiating structure within the nerve sheath about it.

Even in the furnishings of this room Mr. Phillips has introduced

meaning, for the segmental structure of the lamp-stands betrays his recent study of the anatomy of the spine and the inlay on the table the form of a cross-section of the human hemispheres.

In a frieze about this room are the names of those neurologists from all nations whom we have thought worthy of inclusion in a hall of neurological fame, going back to the beginnings of the specialty. The selection was discussed with neurologists in different capitals of the world. It was thus possible to discount local prejudices as well as local favouritism. Still, it is quite obvious that other names could well be added and that certain countries might well contribute a larger number than they have.

The list selected is headed by the name of Hughlings Jackson, dean of all neurologists, whose written surmise still runs before our laboured thought. With him are two other Englishmen, Sir Victor Horsley, father of neurological surgery, and Sir Charles Sherrington, greatest authority on the reflex action of the mammalian central nervous system, who is still hard at work at Oxford.

For France, the selection was difficult among many possibilities. But Charcot, neurological clinician, and Claude Bernard, neurophysiologist, who was the first to gain insight into the meaning of the autonomic nervous system, could not be denied a place. Cajal, master neurohistologist until lately, laboured in the Instituto Cajal which his native Spain built as a fitting tribute to their greatest scientist. Golgi, Italian neuro-anatomist, gave us the first clear picture of the details of nerve-cell structure.

Von Monakow, of Russian birth and Swiss adoption, has been included because of his varied neuro-anatomical discoveries and constructive hypotheses.

German selections were most difficult. Nissl and Alzheimer produced the first well co-ordinated, comprehensive study of neuropathology. The work of each is supplementary to that of the other, and taken together they well deserve a place in any hall of neurological fame. As they lived and worked together they are bracketed together in one panel. Erb was selected as

the representative of German clinical neurology, a school too important to overlook, although he embodied its modern virtues less completely than Foerster.

Pavlov, versatile Russian physiologist, whose insight into the mechanism of mammalian physiology is still guiding clinical thought to-day, worked on like Cajal until his eighties in an experimental institute which was named for him in Leningrad and which is supported by the Soviet Government.

Two Americans have been selected: Weir Mitchell, clinician, author and leader in the treatment of psychoneuroses, and Harvey Cushing, who has brought neurosurgery to its greatest height of perfection. Professor Cushing is the youngest member of this Hall of Fame.

Foundation Volume. The life of each of these men has been written by a different member of the staff during the past year. These are all completed and form part of a foundation volume, together with the addresses delivered here to-day.

Public Wards. The second floor (one flight up) and the third floor are devoted to public patients, being nearly identical in arrangement. The Sir Herbert Holt Ward on the third floor and the J. W. McConnell Ward on the second floor accommodate twelve beds¹ each. The lighting in these wards, as well as in the smaller wards, is entirely from windows at the ends of each ward, while the beds are placed crosswise to the long diameter of the room. With reflection from the cream-coloured ceiling the light falls evenly on every patient. This is a requirement demanded by every careful clinician but one which he can never satisfy with the usual arrangement of windows near each bed. Also the patient has no draught from any window and no direct glare in his eyes.

Nursing control is facilitated by placing a desk in a bay of glass which projects into the room in each case so that every bed may be seen by the nurse, even at night, when floor lights serve to outline the beds, without disturbing the patients. A common

¹ This number had to be increased to fourteen during the first year of operation.

dressings room is so arranged that patients may be easily moved into it in their beds for surgical dressings, examinations, or therapy.

There is a capacity of thirty-two public beds in the Institute for both neurological and neurosurgical cases (without counting the four beds added after the opening). At the same time, however, in the Royal Victoria Hospital up to ten beds will be available for neurosurgical cases in the surgical wards, and for neurological cases up to five beds in the medical wards and two beds in the paediatric ward. This makes the capacity for neurological and neurosurgical public patients only forty-nine even if all of these beds could be secured.

The general service and treatment rooms are quite large enough to permit the addition of another large ward on each floor. This would double the accommodation for patients without other alteration except to install a second elevator in the space already provided when and if occasion demands.

Private Floor. There are nine small rooms for private patients. There are also two small wards for semi-private patients to contain three beds each, so arranged that the nurse in charge can see through windows from her desk into each ward without any further loss of privacy for the patients.

The *clinical activity* as a whole is to be administered for McGill University by the Superintendent of the Royal Victoria Hospital as though it were a part of that hospital, and the nursing is under the supervision of its nurses' training school.

Operating Suite. The fifth floor separates the patients below from the laboratories above. Here are two operating-theatres with associated rooms. The main amphitheatre is provided with a viewing gallery which is entered by a narrow pair of stairs from the visiting physicians' room. Thus visitors or research fellows who come in to watch operations do not pass through the operating suite at all.

The viewing gallery is of such a height that those in the front row are quite close to the operator's shoulder and can look down over the operative field, being separated only by sloping plate

glass. It is expected that this use of plate glass will eliminate danger of contamination from spectators and give them a better opportunity to watch operations without their bothering to wear masks and gowns.

It is essential that each research fellow working in the laboratory may be able to get a clear view of every pathological condition exposed by the operator if he so desires and to return to his proper work without loss of time. For the purpose of notifying the fellows when a lesion is completely exposed a bell is installed in the operating-room to ring in the fellows' laboratory.

Beneath the viewing gallery is a small photographic cellar with a window that opens behind the operator's back. The photographer enters this cellar by a ladder from the viewing gallery and sets up his camera behind the window, which may be opened if desired. A photographic mirror is maintained over the operating-field and above the operator's head. In this mirror the photographer can see the field and can take photographs routinely of every operation without fear of contamination and without confusion. The angle of the mirror may be adjusted by the photographer by a distant control.

The temperature and moisture of the air in the operating-rooms are automatically controlled and the ventilation is carried out with thoroughly washed air, so that windows will never be opened in this suite and danger of wound contamination from the air is thereby reduced to a minimum.

Different forms of electrical current are made available in a block on one large cable, which may be moved over the floor to any desired position near the operating-table. Air suction and air pressure are, of course, available. The floor is black, the walls dark green and only the ceiling white. This, together with the use of dark sheets, a custom introduced by Dr. Cushing, relieves the eyes of the operators from glare during long-continued operations.

X-ray. The smaller operating-theatre is to be used chiefly for ventriculography and encephalography. It is connected with the X-ray room by large folding doors, so that a patient may be wheeled into that room for an X-ray after the introduction of

oxygen, lipiodol or other radiable substances into the cerebro-spinal spaces, and may be taken back for immediate operation if indicated.

Consulting-rooms. The custom of including private offices in a public hospital followed the development of 'full-time' university medicine in the United States, Canada and England. To maintain a truly full-time staff would require a departmental budget far beyond our capacity. But after all the essential requirement is that the professional staff shall practise 'university medicine', i.e. that they shall put in full-time caring for the sick in this Institution and studying the clinical problems which arise in connexion with that care. Consulting-rooms to accommodate three neurosurgeons are placed on the same floor as the operating-rooms, the fifth floor. Consulting-rooms for three neurologists are placed on the first floor, the ground floor.

Consulting-rooms in a clinic therefore make it possible for some members of the professional staff to limit their entire work to that clinic with only occasional consultations outside. This arrangement preserves all of the advantages of the full-time system for the clinic without too great expense and without great financial sacrifice on the part of the staff. Such a system to be successful demands that those who are granted consulting-rooms within the clinic shall place clinical research above the desire for private practice. They must give to the public and the private patient the same study and attention.

This creates two groups of clinicians, as there must always be those practising consultants who spend the major portion of their time outside of the clinic in closer touch with the practical aspects of the lives of the sick. Looking into the future it may happen that some of those who have offices in the Institute will from time to time come to spend the major portion of their time in the acquisition of private income, either because of failure of enthusiasm or because they are forced to yield to economic demands. In the first instance they should be dropped from the staff without hesitation. In the second instance they should be moved into the second group of consulting practitioners who

follow patients through the clinic but who spend only such time in scientific activity as their outside work allows.

This second professional group made up of consulting practitioners is of the greatest importance. In this group are invariably to be found some of the best clinical teachers, teachers who give what the average student needs most.

Out-patient. No provision is made for a separate out-patient clinic in the Institute. Neurological and neurosurgical clinics are conducted in the Out-patient Department of the Royal Victoria Hospital.

Laboratories. The sixth and seventh floors are given over to laboratories for pathology, chemistry and physiology. The laboratory research will be carried on in general by men who continue to maintain an active interest in clinical work. It may be objected that the 'pure' physiologist may be the most expert in mammalian experimentation and the neuropathologist who never leaves the laboratory may achieve a greater erudition. But something is lost in attempting to bridge the gap from the laboratory worker who is not a clinician to the clinician who is in no sense a laboratory man.

There is a distinct field for laboratory research by a man who can lead the double professional life; tend the sick with sympathy and control experiment with critical judgement. It may sometimes mean that that man is physician by day, scientist by night, but he has the joy of seeing his small discoveries metamorphosed into healing and the relief of pain.

Neuropathology. These laboratories occupy most of the sixth floor. They are equipped to meet the requirements of neuropathology as outlined by Dr. William Cone. The benches can be readily converted into standing tables and all units are interchangeable, as in the laboratories of Professor Joseph Wearn of Western Reserve University. A standard service shelf passes through each laboratory on every floor. This renders gas, water, air suction, air pressure and two kinds of electricity available at each individual bench in small space and without an undue amount of piping. This service shelf, which has been well

executed by the consulting engineers, MacDougall and Friedman, was originally designed by Professor Krogh of Copenhagen.

The fellows' laboratory, as well as the routine technicians' laboratory, has the large wall bench divided into numerous individual stalls by partial glass partitions and standing cupboards. This protects each worker against encroachments and yet provides for stimulating intercourse and economy of space.

The neuropathological laboratory is the direct continuation of the former Laboratory of Neurocytology at the Presbyterian Hospital of New York in the sense that the records, specimens and microscopical slides derived from cases in that hospital and from the New York Neurological Institute over a period of years were transferred and are to be found here. This material is indexed and co-ordinated with the specimens prepared during the past six years in the Royal Victoria Hospital.

No attempt will be made to create a separate neuropathological museum, but whenever possible additions will be made to the splendid neuropathological collection in the Pathological Institute which has been prepared under the direction of Professor Oertel.

Biological chemistry is also housed on the sixth floor, where studies of cerebrospinal fluid will be carried out routinely and where chemical research will be available for neurological problems under the direction of Dr. Donald McEachern.

Fellows' Library. This is placed on the sixth floor and contains current neurological journals as well as reference books which supplement those available in the library of the Medical School.

Neurophysiology. These laboratories occupy the seventh floor and are equipped for aseptic operating with the same care as ordinary clinical theatres. The quarters for animals are planned carefully so that any type of animal can be made comfortable, from rats to chimpanzees, and each room has an outdoor runway on the roof exposed to the sun.

A *Psychological Laboratory* is placed on the first floor for special sensory examinations of patients, a vibration-free steel girder being provided under the floor of this room for the attachment of instruments which must be kept perfectly still.

Photography. A studio for gross and microscopic photography is placed on the first floor, and space and lighting are available for moving-picture photography. Routine photographic records will be kept here of microscopic sections, patients and operations.

Fellows' quarters are placed on the small top floor. Here the chief resident and four or five research fellows can be accommodated. The important work of research is carried on by men who have finished all preliminary training and who have not yet undertaken positions of responsibility. Some of them are voluntary laboratory assistants, others are on a research stipend from the departmental budget. These men may be wandering students from any part of the world. If well chosen the research fellows are the most important part of the staff of an institute of this sort, and to provide them with living-quarters creates a monastic atmosphere important in their education. It further relieves the departmental budget of some drain for support of those men who have fellowships.

Adjacent to the quarters is a squash court, which space was originally intended for laboratories but which cannot be equipped for the time being. Possibly it may serve the young men of the staff to better purpose in its present form.

Teaching. A lecture amphitheatre occupies space in the ground floor and basement. This will serve as a much-needed addition to the clinical amphitheatres and will be available for other departments. The Fellows' Library is arranged for smaller conferences and lectures, while the waiting-rooms on the ward floors are intended for clinical teaching.

The bust of Hughlings Jackson in the amphitheatre is a bronze copy of the original bust by Hampton, done at the request of Jackson's associates at the National Hospital, London. The original stands in the entrance of that hospital, where neurological students from all the world pass in and out.

Psychiatry. Special provision has been made for the care of only the occasional 'mental case', and a continuous bath is installed on each of the three clinical floors for such cases. The laboratories of the Neurological Institute could easily serve a

small adjacent psychiatric institute as well. This is the normal arrangement and a crying need in Montreal, and I dare to make the prediction that at some time in the future much of the mental disease will be found to be due to true organic change primarily or secondarily within the brain. The time will come when some of the causes of mental disturbance may be seen with the microscope and visualized in the biochemist's flask.

General Considerations

In the building itself we have tried to express the best traditions of neurology, have tried to give to it such beauty and dignity as we could achieve. But the significance of the building lies in the thing which it houses. The building is only a shell. Within the shell should lie a living mollusc, a collective creature that is expected from time to time to form a pearl of great price. If this pearl can only be secreted within the protective covering of the shell and not without it, then the Institute achieves its purpose.

If I might be permitted to speak to-day for the creature concerning the shell which covers it, not blind to its advantages but conscious of its defects, I could point out certain respects in which this Institute falls short of its goal. Frank assessment may guide future growth. The scientific activities are well housed and provided for on a permanent, although not an adequate, basis¹ by the Rockefeller Foundation. Our shortcomings are chiefly clinical ones.

Needs. Most urgent of all, a direct passage from the bridge to the main corridor of the Royal Victoria Hospital, as originally promised, is essential to promote full co-operation both here and in the wards of medicine and surgery with the other departments of medicine. The practice of medicine to-day, because of its rapid enlargement, must be a collective undertaking. The bridge at present is more of a cul-de-sac than the main thoroughfare that was planned.

¹ In planning the scientific budget a 5 per cent. or better yield on the capital gift was anticipated. The yield obtainable proves to be only 4 per cent., which means a reduction in the annual income of over 20 per cent.

An emergency life-saving fund is needed to provide blood transfusions and occasional special nursing for indigent patients whose lives may hang in the balance. It has been true that following a desperate fight for a patient's life in the operating-room we call for emergency transfusions, and this is denied because the patient cannot pay the donor's fee. This may at times be provided from the surgeon's pocket, but that is unfortunately an unreliable source. An income of \$1,000 a year is needed to create this special clinical fund.

There is a crying need for four or five endowed beds. It is necessary to secure from each public bed such income as may be possible. If a patient of the Province of Quebec can obtain a card of public assistance he is cared for, but if a pauper wants to come to us from elsewhere in Canada he cannot be accommodated unless he can pay the (out-of-town) ward rates. For this reason sufferers are often denied entrance. And further, it is frequently necessary to let a patient from our own province go home too soon because he cannot continue to pay. To endow permanently an additional independent public bed would require, as estimated by the Hospital Superintendent, the income on \$25,000.

Installation of the second elevator had to be abandoned for lack of funds, so that the shaft is left vacant and an eight-storey building is inadequately served in this regard.

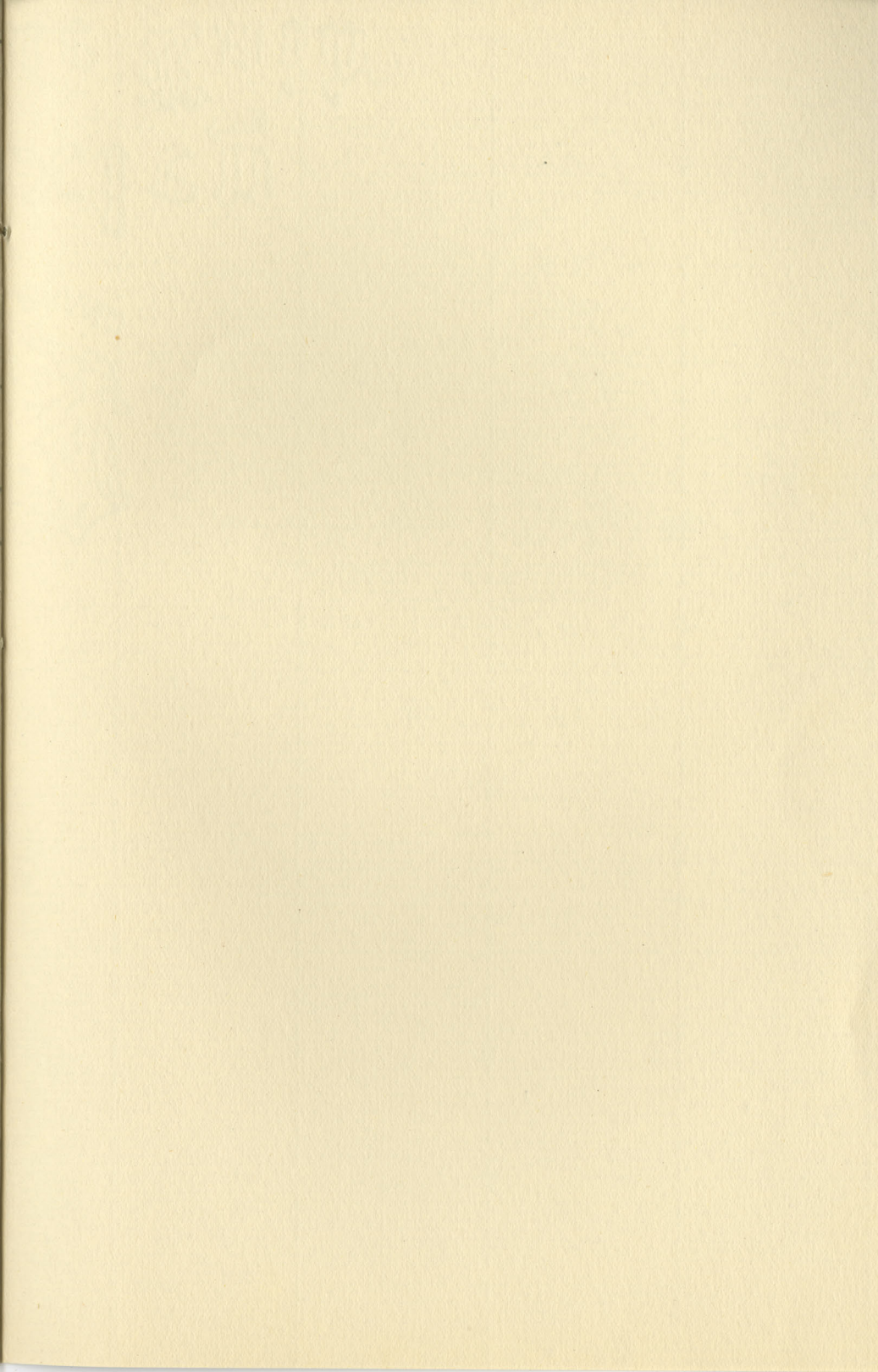
For both neurology and neurosurgery thirty-two public beds will prove too few. Similar institutes elsewhere, even in cities of this size, such as Madrid, Amsterdam and Hamburg, have a much greater bed capacity, and the National Hospital for Nervous Diseases in London has many times more beds, all completely free. The time will come before very long when greater accommodation in Montreal will be necessary. Bed space can be added without other enlargement or alteration. The present service rooms would suffice for an additional large ward which could be added to the north end of the building, according to plans already in existence. This would in no way disturb the laboratories or other clinical activities and would only demand the addition of the elevator, the space for which is prepared.

Future. Permanent support for scientific work in neurology has been provided. How can we provide for continuing productiveness on the part of the staff? Observation of clinics in different countries has led me to one conclusion—permanence requires that there shall be transmission, through a succession of native sons, of contagious scientific enthusiasm, fanned by local pride and fed by local support. To ensure a permanent growth there must be founded here a Canadian School by Canadians, with local encouragement and local backing.

Few cities are more truly cosmopolitan in life, in language and in loyalties than Montreal. We who would kindle a continuing fire must submerge personal, racial and professional prejudices in loyalty to a common ideal that this may be more completely a Canadian institution. In my own case it means a change of national allegiance.

It is true of Montreal more than of any other city on this continent that it is situated on a cross-roads of scientific medicine. Traditions from the English and Scottish schools reach us by one highroad. Along another thoroughfare comes an insistent influx of new American ideas, and from France is felt the penetrating influence of a very different school of medicine. The doors of the Montreal Neurological Institute are open to stimulation and guidance from all of these sources and on our staff are men trained in these older schools. We recognize the honour that the distinguished neurologists have done us who come to this inauguration from France, from England and from the United States.

And yet this inauguration is not of a colonial branch of London's National Hospital, not a lesser Salpêtrière springing up in the new world, not an upshoot from an aberrant American root which has tunnelled its devious way across the unguarded border. We dare to hope that this is the inauguration of an institute of medicine that is characteristically Canadian, the birth of a Canadian School of Neurology.



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