

To

DR. F. CYRIL JAMES,  
PRINCIPAL AND VICE-CHANCELLOR,  
MCGILL UNIVERSITY,  
MONTREAL.

Sir,

On behalf of the Executive Committee I have the honour to submit the fourteenth annual report of the Montreal Neurological Institute. It includes a summary of the clinical work for the calendar year of 1948, together with the scientific and research record for the academic year of 1948-49, and the list of professional staff at the close of the academic year.

Respectfully submitted,

J. PRESTON ROBB, M.D.,

*Secretary-Registrar.*

*Executive Committee of the Montreal Neurological Institute:  
Wilder Penfield, Chairman. W. V. Cone, K. A. C. Elliott,  
A. R. Elvidge, H. H. Jasper, J. Kershman, D. S. McEachern,  
F. L. McNaughton, Donald McRae, A. Pasquet, J. P. Robb,  
C. K. Russel, A. W. Young.*



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## REPORT OF DIRECTOR

One might say that modern voluntary hospitals are like beggars; they proceed upon the principle that Society owes them a living.

Well, Society does owe them a living. The hospital represents the Good Samaritan of our day. It was the good Samaritan who came upon a man who had fallen among thieves, and he "bound up his wounds, pouring in oil and wine, and set him on his beast and brought him to an inn and took care of him."

The priest and the Levite, the publican and the businessman "passed by on the other side." Their descendants do the same but they must make their reckoning too if they would have regard for Christian ethics. They leave the wounded man by the roadside because their minds are busy with religion, philosophy, balance sheets and baseball. They don't see the look of despair in the eyes of the sufferer as we do, but they may share with us the satisfaction of his gratitude—if they will.

Two alternatives face us to-day: either the public must support voluntary hospitals voluntarily or medicine must be socialized. Most of us prefer our own way of life; we would not want to live in sovietized Russia. Some of us prefer our system to that of socialized England; but our system places upon us a real responsibility. Canadians, too, fall among thieves and suffer disablement and pain.

The problem of the Montreal Neurological Institute can be expressed in simple terms. Laboratory research and teaching have been adequately endowed or are receiving adequate assistance. Such activities are almost, not quite adequately housed. Because of this fact, there are experts working here in the Institute who are able to give patients a unique service. Microscopes, chemical apparatus, physical apparatus provide clinicians with clearer vision of some of the clinical problems of patients.

If the public of this Province and of Canada wish to take advantage of this scientific unit, radical action is necessary. For unless the writing on the wall is altered, the hospital activity must be radically curtailed or stopped.

There is nothing complicated about the hospital problem at the Montreal Neurological Institute. The requirements are:

1. The non-fireproof military annex must be torn down.
2. A new hospital wing must be constructed.
3. An endowment must be provided which will make possible the care of patients on an adequate level and provide for neurological study.

This scheme is not a rosy dream. If achieved, it would not saddle us with greater deficits. On the contrary, the new wing would make possible a readjustment of the proportion of public and private patients. It would make it possible for us to do, what all teaching hospitals have to do, namely, to derive some income from private patients and thus assist in the care of public patients. This is a form of indirect taxation. Sometimes it provides as much money for the care of the indigent sick as the Health Department. But it works both ways. Private patients get scientific care which no nursing home could provide.

No one who understands hospitalization believes that the Quebec Public Charities Act defrays the hospital cost of a charity patient; certainly not if modern treatment is required.

This is a day of relative prosperity. Those with adequate, or more than adequate, income are taxed heavily by the government, and yet the government exempts them to some extent for the purposes of charity. Within the limit of our exemptions we should all of us be vulnerable.

When a man looks over the field at a race-track he usually tries to put his money on a winner. It must be admitted that his information comes to him in the form of a tip; it is a rumour, and his chance of winning is obviously small.

Public hospitals are different. Some may go farther and faster than others, but all of them deserve backing. Indeed, they must have it. But the public has every right to look the horses over. To the superficial observer, some hospitals seem to resemble good hotels (others not so good). Some are attended by fashionable physicians and surgeons, who receive from their private patients considerable sums.

Now, that is probably all right, provided these busy men find time to put an equal amount of energy into the care of the sick poor who can pay nothing; provided also that these doctors spend an adequate amount of time in library and in laboratory and medical meeting so as to keep themselves efficient as well as fashionable.

This institute is a teaching hospital. As one looks about at the teaching hospitals in Canada and the United States, it is obvious that the completely voluntary hospital, whose care is reserved for public patients alone, does not exist. Each hospital has a private, and sometimes a semi-private, pavilion where their services are sold at a price that is "as high as the traffic will bear".

I am not speaking of Montreal. If we fix our attention upon the situation in other cities, we may discover that some hospitals are deficient in the very qualities which make them reasonable candidates for charity. In them emphasis seems to shift from the care of the sick poor to the care of the sick rich! Medical research and teaching are sometimes crowded into a corner and conducted by poorly paid individuals, while surgeons, and even, one must admit, physicians, become too busy with lucrative practices to pull their proper weight in the ward and the medical school. Private and semi-private patients even come to crowd the public patients out of the wards.

In order to combat this tendency, full-time medicine and full-time surgery have been introduced in some places with varying success—for example, at the Johns Hopkins, Yale, the University of Chicago. It is a very expensive system. In other places, half-time medicine is practised. Everywhere, however, the degree of success depends more upon the spirit that fires the medical men than it does upon the regulations of practice.

That does not necessarily mean that no safeguards should be created. It is my opinion that voluntary hospitals should establish ceilings upon the income of those in the senior medical and surgical positions. I would propose that professional fees above an arbitrary reasonable level should be turned over to teaching to support younger doctors for clinical investigation.

Yes, hospitals are beggars and Society does owe them a living; because, after all, it is really not the hospital that begs. It is the poor soul that lies by the roadside of life. He begs, holding out his arms in pain and despair.

Money, however, is not the only source of hospital support. This is something that those, who give, should not forget. We, who form the staff of many hospitals, also give something. It might be called the labour of love. Superintendents don't write it into the hospital ledger. If they did, it would rarely appear in red.

We undertake the care of the sick and we look after their comfort because we want to do it. It was the urge to do just that that led us to enter the professions of medicine and nursing and social service. And here in the Neurological Institute we give something more—days and nights of study and of experimentation.

This Institute might well have been built in a large city in the United States instead of Montreal. Plans were laid for that at one time. But the decision was made to build it here because the hospitality of the citizens of Montreal, the City Council, and the Provincial Government, seemed to promise adequate support for the care of the sick.

Montreal now has a Canadian Institute. Its organization seems to be such that it will go on increasing in strength when we who were here from the beginning drop out. It will go on—if the public want it to—if it is good enough.

We have worked hard. We have stated the case of the Montreal Neurological Institute. If there is no Canadian, or group of Canadians, ready to make permanent its organization—then let the doors of its hospital close.

## CLINICAL STAFF

### *Director*

WILDER PENFIELD, C.M.G., M.D., D.Sc., F.R.C.S. (C)  
Hon. F.R.C.S. (Eng.), F.R.S.C., F.R.S. (London)

### *Honorary Neurologists*

A. G. MORPHY, B.A., M.D.  
COLIN RUSSEL, B.A., M.D., F.R.C.P. (C)

### *Neurologist*

DONALD MCEACHERN, M.D.

### *Associate Neurologists*

JOHN KERSHMAN, B.Sc., M.D., C.M., M.Sc.  
FRANCIS MCNAUGHTON, B.A., M.Sc., M.D., C.M.  
PRESTON ROBB, B.Sc., M.D., C.M., M.Sc.  
ARTHUR YOUNG, M.D., C.M., F.R.C.P. (C)

### *Associate Consulting Neurologists*

ROMA AMYOT, B.A., M.D. (Montreal and Paris)  
EMILE LEGRAND, M.D., Médecin Légiste (Paris)  
JEAN SAUCIER, B.A., M.D. (Paris and Montreal)  
NORMAN VINER, B.A., M.D., C.M.

### *Clinical Assistant in Neurology*

MILLER FISHER, B.A., M.D., F.R.C.P. (C)

### *Neurosurgeon*

WILLIAM CONE, B.S., M.D., F.R.C.S. (C), F.R.S.C.

### *Associate Neurosurgeon*

ARTHUR ELVIDGE, M.Sc., M.D., C.M., Ph.D., F.R.C.S. (C)

### *Clinical Assistants in Neurosurgery*

O. W. STEWART, B.S., M.D.  
FRANCIS O'BRIEN, A.B., M.D.

### *Adjunct Neurosurgeons*

CLAUDE BERTRAND, B.A., M.D.  
HAROLD ELLIOTT, B.Sc., M.D., C.M.

### *Roentgenologist*

DONALD McRAE, M.D.

### *Consulting Roentgenologist*

CARLETON B. PEIRCE, A.B., M.Sc., M.D., F.A.C.P.

### *Physician in Charge of Electroencephalography*

HERBERT JASPER, Ph.D., D.ès.Sci. (Paris), M.D., C.M.

### *Anaesthetist*

ANDRE PASQUET, M.D., C.M.

### *Assistant Anaesthetist*

MAXWELL YATES, M.D.

### *Consulting Anaesthetist*

F. A. H. WILKINSON, M.D., C.M., F.A.C.A., F.I.C.A., D.A.  
(R.C.P. & S. Eng.)





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## TEACHING STAFF

### A. Department of Neurology and Neurosurgery, McGill University, Faculty of Medicine.

Professor of Neurology and Neurosurgery, Chairman of Department.....	WILDER PENFIELD
Associate Professor of Neurosurgery.....	WILLIAM CONE
Assistant Professors of Neurology.....	K. A. C. ELLIOTT DONALD McEACHERN FRANCIS McNAUGHTON ROY SWANK ARTHUR YOUNG
Assistant Professor of Neurosurgery.....	ARTHUR ELVIDGE
Assistant Professor of Neurological Radiology.....	DONALD McRAE
Assistant Professor of Neurophysiology.....	HERBERT JASPER
Assistant Professor of Neurological Anatomy.....	GEORG OLSZEWSKI
Lecturers in Neurology.....	JOHN KERSHMAN PRESTON ROBB
Lecturers in Neurosurgery.....	HAROLD ELLIOTT W. KEASLEY WELCH
Demonstrators in Neurology.....	C. MILLER FISHER D. LLOYD-SMITH G. M. SHY
Demonstrator in Neuropathology.....	ROBERT SEARS
Demonstrator in Neuroanatomy.....	C. L. LI
Demonstrator in Electroencephalography.....	LEWIS HENDERSON
Demonstrators in Neurosurgery.....	MAITLAND BALDWIN FRANCIS O'BRIEN

### B. Faculty of Medicine of the University of Montreal.

Professeur de Psychiatrie.....	EMILE LEGRAND
Professeur de Neurologie.....	JEAN SAUCIER
Professeurs Agrégés de Neurologie.....	ROMA AMYOT CLAUDE BERTRAND

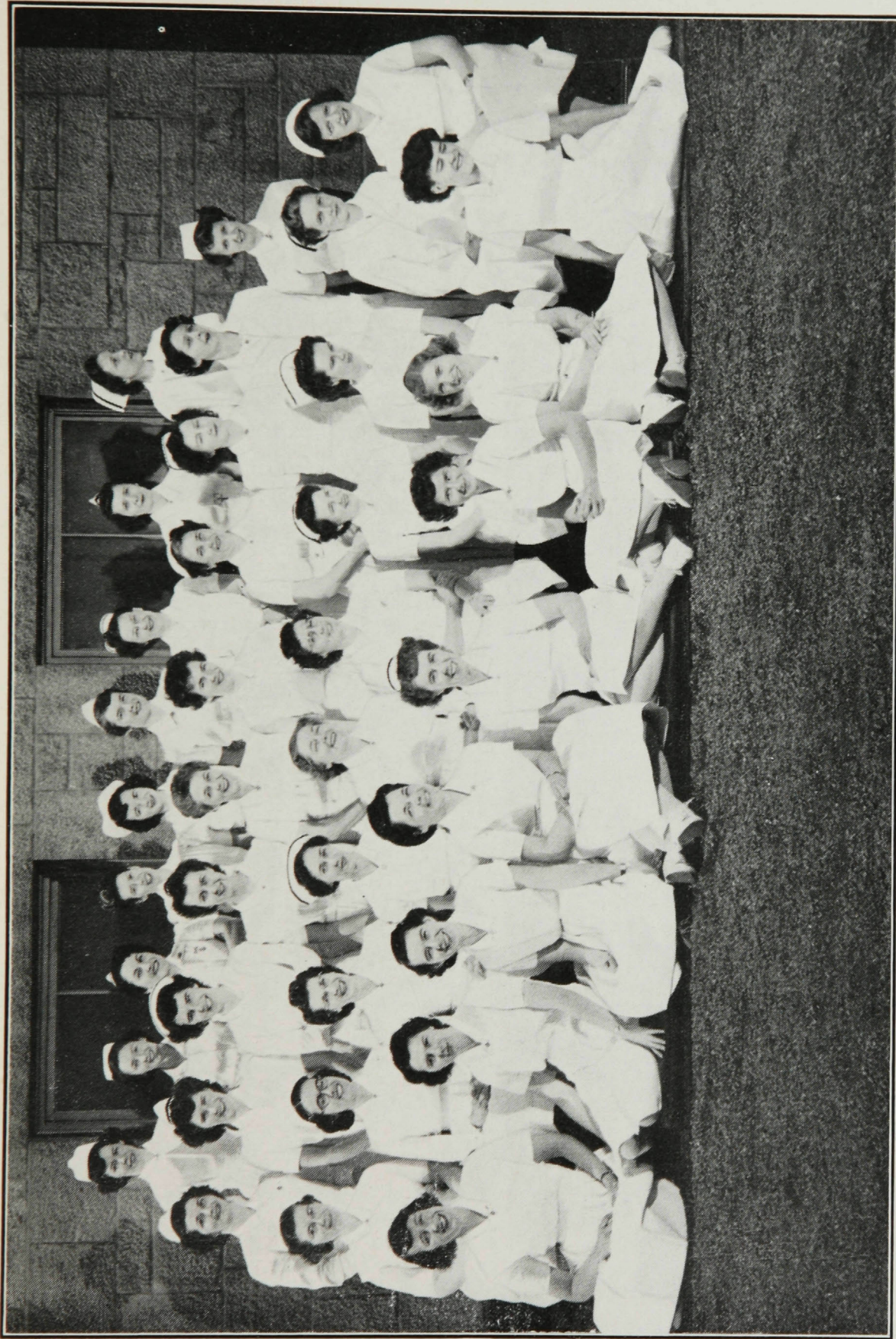
### C. Department of Neurology and Neurosurgery, McGill University, Faculty of Graduate Studies and Research.

Associate Professor (in charge of graduate studies).....	WILLIAM CONE
Professor.....	WILDER PENFIELD
Research Fellow of McGill University.....	BORIS BABKIN
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Executive Assistant.....	JOHN KERSHMAN
Building Administration Supervisor.....	MISS EILEEN FLANAGAN
Executive Secretary.....	MISS ANNE DAWSON





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Assistant Resident .....	WILLIAM GERBER, CHOH-LUH LI
Internes .....	ALAN BIRD, ROBERT SEARS, STUART COOPER,* WILFRED LEITH,* RONALD L. STANFORD*
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Assistant Resident .....	IRA JACKSON, REVIS LEWIS
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Assistant Resident .....	CHOH-LUH LI, THOMAS SPEAKMAN
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\*Assistant Resident in Medicine, Royal Victoria Hospital, on rotation to Neurology.

## RESEARCH FELLOWS OF

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<i>Assistant Director</i> .....	MRS. JOAN THOMAS
<i>Social Worker</i> .....	MRS. JEAN M. JONES
<i>Social Worker</i> .....	MRS. TERUKO HIDAKA
<i>Social Worker on Research Project</i> .....	MISS GABRIELLE BOURQUE
<i>Social Worker on Research Project</i> .....	MISS FRANCOISE BELANGER

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MISS CAROLINE CHIASSON, X-ray	MISS MONA LANDY, Neurochemistry
MISS ROMA COCKBURN, X-ray	WILLIAM NOEL, X-ray
LESLIE GEDDES, Electroencephalography	MISS LOIS ORR, Neurochemistry
JOHN GILBERT, Neuropathology	MISS LILI PRSKO, Electroencephalography
MISS AAGOT GRIMSGAARD, Neuropathology	MISS MARY ROACH, Neurophysiology
RONALD HARAM, Assistant Photographer	CHARLES STEVENS, Neurophysiology
MISS JEAN HARRIS, X-ray	MRS. ALICE SZCZENIEWSKA, Neuroanatomy
MRS. NORAH HENDERSON, Neurochemistry	MISS JEAN VAUGHAN, Neuropathology
LEWIS HENDERSON, Electroencephalography	MISS VALERIE WILMOT, Neuropathology

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MISS ELSIE ALLDER, Secretary to Registrar	MISS ANN GIBSON, Neuropathology
MISS MABEL BEIGHTON, X-ray	MRS. AUDREY McDADE, Social Service
MISS CAROLYN CHASE, Case Histories	MISS EDITH McWHIRTER, Operation Reports
MRS. ELINOR CHRISTIE, Manuscripts	MISS DIANA MEAKINS, Office Clerk, Social Service
MRS. MARIE CLARK, Neurochemistry	MISS INA PEAREN, Neurophysiology
MISS GWEN CLARKE, Office	MISS MONA RICE, Electroencephalography
MISS BARBARA DAVIS, Discharge Summaries	MISS EILEEN ROBINSON, Office
MISS DIANA DAVIS, Clinic Secretary	MISS LOIS WIGGETT, Case Histories
MRS. CORINNE DEGUISE, Office	

APPOINTMENTS HELD IN  
GENERAL HOSPITALS OF MONTREAL  
BY MEMBERS OF STAFF

ROYAL VICTORIA HOSPITAL

<i>Neurologist and Neurosurgeon-in-Chief</i> .....	WILDER PENFIELD
<i>Honorary Neurologist</i> .....	COLIN RUSSEL
<i>Neurologist</i> .....	DONALD McEACHERN
<i>Neurosurgeon</i> .....	WILLIAM CONE
<i>Associate Neurologists</i> .....	FRANCIS McNAUGHTON
	ARTHUR YOUNG
<i>Electroencephalographer</i> .....	HERBERT JASPER
<i>Associate Neurosurgeon</i> .....	ARTHUR ELVIDGE
<i>Clinical Assistants in Neurology</i> .....	JOHN KERSHMAN
	PRESTON ROBB
<i>Assistants in Out Door Clinics</i> .....	ROY SWANK
	KEASLEY WELCH

MONTREAL GENERAL HOSPITAL

<i>Associate Neurosurgeons</i> .....	ARTHUR ELVIDGE
	HAROLD ELLIOTT
<i>Consulting Neurosurgeons</i> .....	WILDER PENFIELD
	WILLIAM CONE
<i>Neurologist</i> .....	FRANCIS McNAUGHTON
<i>Associate Neurologists</i> .....	PRESTON ROBB
	NORMAN VINER

CHILDREN'S MEMORIAL HOSPITAL

<i>Honorary Consultant</i> .....	COLIN RUSSEL
<i>Consultant</i> .....	WILDER PENFIELD
<i>Neurologist</i> .....	ARTHUR YOUNG
<i>Associate Neurologist</i> .....	FRANCIS McNAUGHTON
<i>Assistant Neurologist</i> .....	PRESTON ROBB
<i>Neurosurgeon</i> .....	WILLIAM CONE
<i>Associate Neurosurgeon</i> .....	ARTHUR ELVIDGE
<i>Radiologist-in-Chief</i> .....	DONALD McRAE

HOTEL DIEU

<i>Chief of Neurological Service</i> .....	JEAN SAUCIER
<i>Consulting Neurologist</i> .....	EMILE LEGRAND

HOPITAL NOTRE DAME

<i>Neurologist-in-Chief</i> .....	ROMA AMYOT
<i>Physician-in-Charge, Department of Neurosurgery</i> .....	CLAUDE BERTRAND

HERBERT REDDY MEMORIAL HOSPITAL

<i>Consulting Neurosurgeon</i> .....	ARTHUR ELVIDGE
<i>Assistant Neurologist</i> .....	PRESTON ROBB
<i>Assistant Neuropsychiatrist</i> .....	JOHN KERSHMAN

JEWISH GENERAL HOSPITAL

<i>Chief of Department of Neuropsychiatry</i> .....	JOHN KERSHMAN
<i>Consultants</i> .....	WILDER PENFIELD
	NORMAN VINER

QUEEN MARY VETERANS' HOSPITAL

Chief Consultant of Neurology and Neurosurgery..... WILDER PENFIELD  
Consultant..... WILLIAM CONE  
Consultant..... ARTHUR ELVIDGE  
Director of Neurosurgery..... HAROLD ELLIOTT  
Consultants in Neurology..... MILLER FISHER  
..... DONALD MCEACHERN  
..... PRESTON ROBB  
Consultant in Electroencephalography..... JOHN KERSHMAN

ST. MARY'S HOSPITAL

Consultant in Neurology..... ARTHUR YOUNG  
Consultant in Neurosurgery..... ARTHUR ELVIDGE

VERDUN PROTESTANT HOSPITAL

Neurosurgery Consultant..... WILDER PENFIELD  
Neurosurgery Associate..... ARTHUR ELVIDGE  
Consulting Neurologists..... PRESTON ROBB  
..... NORMAN VINER

## REPORT OF THE NEUROLOGIST

DR. DONALD MCEACHERN

It is a strange experience to feel things growing underneath your feet. The Neurological Service has developed in an amazing way in the past few years. Our senior staff give of their time with teaching, ward rounds, Outpatient Department work and a variety of special projects. A resident staff of four men is kept unceasingly busy. Ward rounds have been well attended and we have had interesting visitors from many parts of the world. We are inspired by the attendance of the nursing staff and Social Service workers, who play a large part in the success of this institution.

In addition to the care of patients, which comes first, there has been an encouraging interest in clinical research. Dr. Bird has studied a family stricken by hereditary blindness, and the Dominion Government Department of Health and Welfare has agreed to take over the investigation of this condition on a broad and long-term basis. Another little understood condition is being attacked with the aid of the Multiple Sclerosis Society of Canada. Both clinical and laboratory aspects will be intensively studied. Work on neuromuscular diseases has continued, and a monograph will shortly appear giving our own experience.

One of the newer trends is the great elaboration of promising drugs and remedies. This is the natural and encouraging result of the efforts of biochemists and physicians everywhere, but spearheaded by the big pharmaceutical concerns. These products require accurate testing and we are proud to be asked to test them. We are asked to do so in order that a critical and authoritative opinion be given. This demands organization to meet the need, and that organization will be in operation this coming year. Already Dr. England has studied and reported upon the toxic effects of mesantoin. Dr. McNaughton, Dr. Robb and Dr. Markham have investigated some of the new drugs and will report their findings before the Canadian Neurological Association meeting in May.

The Treatment Clinic, directed by Dr. Young, needs a transfusion. The excellent set-up which he has developed requires more support in the way of referrals and patients. The opportunity is unique.

A reassessment should now be made of the philosophy and objectives of Outpatient Department work. This was originally a charitable enterprise for indigent patients and the physicians have always, and still do, give their time for this purpose with no payment. They always will. Nevertheless, a change has occurred. There are now referrals for expert opinion from industrial concerns, the McGill Students Health Service and Dominion Government agencies. These claims for free-consultant opinion were never meant to be a part of free clinical work.

Let me say directly that the working conditions in our Outpatient Department are archaic. The din and furor, the reverberations, lead to confusion. Valiant attempts are made to channel patients and work in an efficient way. I am aware that the walls of the citadel cannot be easily altered and that the long building perspective must be held. Nevertheless a degree of soundproofing, compartmentation to afford some privacy, and the simple decoration of walls could be achieved within a couple of weeks without great expense. It would transform the place for everyone.



The association with our neurosurgical colleagues is a close and pleasant one and we thank them for their help throughout the year. This goes, too, for the other departments of the Royal Victoria Hospital who give so much assistance to us.

In closing, may I pay tribute to all who have made our work possible and to all who have unselfishly joined in it.

## REPORT OF THE NEUROSURGEON

DR. WILLIAM CONE

The record of nine hundred and eighty-seven operations in 1948 deserves comment. This is the greatest number of operations performed in a single year since the Neurological Institute was opened. There were eighty-three more operations than in 1947. We on the Neurosurgical Service recognize the record was made because every department of the Institute helped us so freely. It is the result of cooperation. The record is the record of the Neurological Institute's family, a family affair. Especially we commend our house staff. They were persistent and loyal; we are grateful to them for their enthusiasm and their stimulation. The operating room organization worked smoothly. The supervision and care of patients on the floors was excellent. It was a pleasant year.

Many influences play on a hospital to affect its work and soul. Monday morning rounds continued to be one of our most beneficent influences. They were good for our souls and good for the patients. They made inter-departmental cooperation easy. They brought the skills of all departments into simultaneous focus on the diagnosis and treatment of patients with complicated problems. With the entire family of the Institute in conference it was obvious how much such cooperation benefitted the patients. The large number and wide variety of patients considered at rounds during the year made it seem that the entire field of neurosurgery and neurology had been discussed. Members of other departments of McGill and the Royal Victoria Hospital frequently joined us to discuss the related medical, surgical and psychiatric problems of the patients. The focus was always on the patient as a whole, the patient as a person. The rounds were of particular value to the resident staff, the nursing staff and the Fellows, both in what they gained from them and in what they contributed to them. Visitors were able to obtain a general impression of our work and our interests.

Action, as Dr. Walshe points out in his recent Harveian Oration, is easier than contemplation. The neurosurgical staff has not had much time for contemplation. Nevertheless, Dr. Penfield was able to weigh the most recent evidence he has collected on cerebral localization and function and present his conclusions in the Dunham Lectures at Harvard. To be asked to give the Dunham Lectures is one of Harvard's most significant scientific honors. Dr. Elvidge found time to prepare a series of lectures which he gave in Greece and Italy as a member of the Medical Mission of the Unitarian Service Committee. He returned with membership in the medical societies of Athens and Salonika. The members of this mission were granted an audience with Pope Pius XII. Dr. Ira Jackson and Dr. Elvidge completed the study of subdural haematoma in infants. Dr. Maitland Baldwin with Dr. Elvidge finished the review of the metastatic lesions of the brain.

We obtained a special camera for photographing operations. Mr. Dreisinger, whose work in the X-ray Department you will remember, aided Mr. Knebel, who developed the camera, to adapt it to our special needs. In discussing what the camera has added to our work in neurosurgery, it is best to ignore its effect on the budget of the Photography Department. It has given us regularly the clearest photographs of operative procedures we have ever had and have ever seen. The transparencies in color were of the greatest importance to our records, our conferences and our student teaching.

At last we have been able to discard electric motor driven tools in the operating room, with the explosion hazard and difficulties of sterilization.

Pneumatic tools have replaced the electric ones. Sterilization of these is easy. Professor Murray provided the know-how which made this possible by developing a filter which blocks the bacteria, and Mr. Jones, through his suggestion that compressed nitrogen be used and through his knowledge of reducing valves, has made them safe and controllable.

When we review the work and contributions from the neurosurgical service over the years, it is obvious progress has been steady and always forward. Lord Horder chose as his title for a recent publication "Whither Medicine?" and now we can ask "Whither Neurosurgery?" and quote his further questions to Medicine. "Why, whither else than straight ahead; forging still more weapons with which to conquer disease, taking still more toll of science in the interest of humanity, adding more and more culture to more and more learning, improving both the art and the craft". Our path must be straight ahead in our effort to make our contribution to the common health and happiness for individuals.

## REPORT ON HOSPITALIZATION

DR. JOHN KERSHMAN

*Executive Assistant*

During 1948, there was a further increase in the cost of hospital care. Since 1941, expenses have climbed with discouraging regularity and now stand at the unprecedented figure of \$15.11 per patient per day. This includes the maintenance of only the hospital part of the building and those laboratories or parts of them devoted to doing work directly for patients. It does not include any funds for reserves or new equipment but represents actual cash expenditure. It amounts to an increase of 19% over last year and is 146% more than the cost in 1941. The cause of the increase is almost equally divided between payrolls and supplies.

Inevitably, to keep up with this, it was necessary to increase some of the charges to patients, and as a result the income per patient per day was advanced over 1947. But there was still a deficit of \$32,466. for 1948.

One bright spot in this otherwise gloomy picture is that collections from patients have kept pace with the charges. A total of 94% of the amounts charged have been collected. This compares very favorably with 92% in 1941, though it is slightly less than the peak year of 1945, when 98% was collected.

The total accumulated deficit of the hospital as of December 31st, 1948 was \$223,015. This sum of nearly a quarter of a million dollars is owed by the Institute to McGill University. How long this annually increasing indebtedness will be allowed to continue it is impossible to say. If such a state of affairs had been

visualized at its inception, the University would probably never have granted permission for the Institute to be built, or to function as a hospital. How much this would have meant in terms of human suffering it is impossible to measure but a rough idea can be obtained from the fact that since the first full year of activity in 1935, the Institute has provided over 351,000 patient days of hospital care. In 1948 the daily occupancy was 130% more than in 1935, and there was approximately the same percentage increase in patient-days during the year. As previously indicated, over 85% of this increase has been for public patients. This, and the rising costs, explain the cause of the increasing deficits. During the past year alone, it has been conservatively estimated that Q.P.C.A. patients cost the hospital \$50,838 and the difference between the costs and income from public paying patients was roughly \$55,384. Together this amounts to a net cash deficit of \$106,222 from running the public wards: a sum that far exceeds the combined annual grants at present obtained from the Province and the City. It must be further pointed out that the \$30,000 supplementary grant from the Province expires next year, and the \$20,000 supplementary grant from the City must be asked for afresh every year. Even the original \$15,000 annual grant from the City expires in 1953. What will happen when these grants cease to be available is a constant source of deep concern.

The obvious remedies that might be applied to curb the present deficits would be to increase charges and cut costs. Careful consideration has been given to both these measures. It is doubtful if much further increase can be made in charges at the present time. There are two limiting factors, the rates which are current in this geographical area, and the ability of the patient to pay.

The possibility of economy is a matter which is constantly being explored. Economies have been and will be affected. However, the unique position of the Institute as a center for the treatment of conditions which are often desperate, requires the maintenance of an adequate nursing staff and similar supplementary services. Unless this hospital can continue to function in this particular way, and maintain its position as a unique teaching center for the care of the neurologically ill, it will not be fulfilling the promise of its formative years.

The Institute faces a serious dilemma. The hospital portion as now constituted is piling up deficits which threaten its continued existence. Under present conditions there is no short term solution. A decision must be made. Is it to curtail or abandon its function of caring for the sick, and especially the poor sick? To do so would undermine the central core of the whole idea of a clinical institute. Without the inspiration and partnership of a vigorous and financially stable hospital, the scientific laboratories, despite their present endowments, would soon become impotent and empty. The challenge of seeking new and better ways to alleviate human suffering is the driving incentive behind all research in an institute of this kind.

What must be done immediately is to find the means for carrying forward a far sighted programme to establish the hospital on a permanent and financially stable basis. This means the building of a new wing to improve the facilities for public patients and take many of them out of the non-fireproof Military Annex, and to provide more space for semi-private and private patients. It means also the creation of a hospitalization endowment to match the scientific one and make both parts of this Institute equally capable of marching forward.

## REPORT OF THE REGISTRAR

DR. J. PRESTON ROBB

Each year the Registrar's report sounds similar to the one the year before. There have been more patients admitted, more operations, more Fellows, and generally increased activity. We may soon, if we have not already, reach a maximum, but it is clear that the demand for beds will continue to increase. Patients continue to land on our doorstep hoping to benefit from the special services provided by this Institute.

During 1948, there were 1773 admissions and 75 transfers from other services, making a total of 1848 as compared to 1712 in 1947. The death rate was 5.7% and autopsy rate 94.4%. There were 987 operations performed, the greatest number ever performed in a single year.

The outpatient clinics continued to operate under great pressure. There were 949 new patients referred for neurological or neurosurgical consultation and there were 3792 revisits, making a total of 4741. In a recent seizure clinic, there were 56 patients seen in an afternoon.

As the Institute provides special facilities and services to patients, so it also provides special facilities for research and post-graduate education. The fame of this Institute has spread far and every day more visitors come. Some come for a day—others come to observe for a few weeks or months, while still others come for years. Applications from doctors hoping to do research or clinical work still far exceed the positions available.

As well as post-graduate teaching, members of the Staff carry a heavy load of undergraduate teaching both to nurses and medical students.

During the year 1948, two advances were made in the handling of the records. The first was the manner in which the epilepsies are classified and filed. In each case an attempt is made to index the site of the lesion in the brain, the cause of the lesion and the type of seizure produced. The second advance was the institution of a punch card system which is used in conjunction with the "Standard Classified Nomenclature of Disease". By this means, we can rapidly find any disease by its anatomical or etiological connotation.

We feel that there is something special about the records of the Institute. In its early days, Dr. Petersen set and demanded a very high standard. It is hoped that we all may continue to appreciate the importance of these records, and continue to maintain the high standards.

The annual figures since the opening of the Institute are as follows:—

	Patients cared for	Hos- pital days	Average stay	Death rate	Autopsy rate	Opera- tions
1934 (3 mos.)	190			5.21%	86.8%	92
1935	841	14928	17.8	6.29%	77.6%	348
1936	912	17667	19.4	5.18%	82.8%	456
1937	953	18315	19.2	5.18%	85.4%	508
1938	999	18856	18.9	4.95%	89.4%	608
1939	1079	19742	18.3	4.72%	72.1%	517
1940	1093	19428	17.8	6.79%	86.8%	600
1941	1179	20482	17.4	6.03%	88.5%	566
1942	1416	23939	16.9	4.53%	83.3%	700
1943	1623	29718	18.3	3.97%	77.0%	742
1944	1657	30501	18.4	5.1 %	65.0%	864
1945	1681	34223	21.4	4.28%	64.5%	955
1946	1871	35521	19.9	2.9 %	67.7%	864
1947	1752	34456	19.6	3.76%	88.2%	904
1948	1773	33366	19.1	5.7 %	94.4%	987

Outpatient Clinics are held five days of  
the week in the Royal Victoria Hospital

Monday	Neurology and Neuromuscular Diseases
Tuesday	Neurosurgery
Wednesday	Neurology (Epileptic)
Thursday	Neurology
Friday	Neurosurgery
Monday to Friday (daily)	Neurology Treatment Clinic

	Neu- rology	Neuro surgery	Totals
New cases	651	298	949
Revisits	3222	570	3792
	<hr/>	<hr/>	<hr/>
	3873	868	4741

## REPORT OF THE NURSING SUPERVISOR

MISS EILEEN C. FLANAGAN

The Nursing Department has continued to provide satisfactory service from the point of view of the patients, doctors and nurses. The staff has been fairly stable, but with sufficient turnover to keep ideas and interests fresh.

The Institute is staffed with several categories of nurses. For the most part they are graduates. These are supplemented by undergraduates from the Royal Victoria Hospital, who affiliate for two months' training, and by post graduates who come for a four to six months' course and spend half of their time on the wards. There are also twelve nurses' aides who assist the nurses.

The nursing requirements are heavy due to our large number of acutely ill, unconscious or paraplegic patients, the high occupancy of beds with a rapid turnover, and the care of a considerable number of patients on isolation technique. The number of operations has increased from 864 in 1946 to 987 in 1948—a fact which adds to the nursing load on the wards. However, all this tends to keep interest high and brains as well as feet active!

Our nursing time per patient, 3.4 hrs. in 24 hrs., is low for the kind of patient cared for; according to the latest analysis we have the amount considered proper for general services, but not for such highly specialized services as ours.

The compactness of the wards and the stability of the staff tends to offset this deficiency, but on the other hand the overcrowding on the wards, and the lack of sufficient recovery rooms, makes the care of the acutely ill patient a trying problem. The fact that our equipment is good and adequate in amount is a great asset to good nursing.

One of our staff, Miss Elizabeth Long, spent four months in England and Scotland observing in the Neurosurgical centres, and is now attending the McGill School for Graduate Nurses to complete work for her degree in nursing.

Miss Phoebe Stanley visited several operating rooms in the United States, and we in turn have had several nurses from England and the United States visiting us in return.

The number of special duty nurses in 1948 was 836 giving 6,607 nursing periods, an increase of 133 nurses and 940 periods over 1947.

We are always very grateful for all the teaching given by the Medical Staff and Fellows, and for their constant help in maintaining and improving the nursing service.

## DEPARTMENT OF SOCIAL SERVICE

### MRS. ELABEL DAVIDSON

An annual report represents much more than a year's work. Growth is a slow process, roots reach far back and those of us who can announce the completion of a given piece of work have a satisfaction that we would share with each person who has had a part in it. This applies to us as we tell you that the medical-social study of a group of epileptic patients, which has been carried on for the past three years, is finished. It is not a dry statistical thesis. It is a human document based on the lives of patients we meet day by day. It gives us a better understanding of what these patients face and will make us want to do what we can to improve their lot.

We are grateful to our Provincial Ministry of Health for their confidence and for making the study possible, to Dr. McNaughton for his guidance and leadership, and to Mrs. Laverty, Miss Bourque and Miss Belanger who gave so much in creativeness and hard work. To Mrs. Thomas, who organized the material and wrote the report, we are particularly indebted. It bears, indelibly, the imprint of her concept of human dignity.

In order that we may study in more detail the social difficulties of the epileptic, we have asked our Provincial Government to continue its grant of \$4,000 per year. This is a small sum, but perhaps it may some day lead to the realization of our hope to have in the Institute a permanent social research programme complementing for the epileptic its scientific research in epilepsy.

Meanwhile progress is being made. An organized province-wide programme of education is coming. The Metropolitan Life Insurance Company of Canada, as a part of its health programme, has published in French the best of our English

booklets on epilepsy. This marks the first general material for distribution in the French community. In the fields of education, employment and rehabilitation of the epileptic, we have met response from doctors in industry, placement officers, Workmens' Compensation officials, school authorities, social and health agencies.

A part of our effort to meet the needs of the working epileptic has been the experiment in holding a monthly night clinic. With the cooperation of the Royal Victoria Hospital, this has been so successful that we hope it will be continued.

In the present research on multiple sclerosis, we are glad to be a member of the clinical team. Since May 1st, a member of the staff has given full time to the social studies required in this project.

We played a small part in still a third piece of research, that of optic atrophy. It is gratifying to know that the federal department following through on this work is concerned that recognition of the social aspects be continued.

But what of our day by day job with its myriad problems? What, for example, did we do when confronted with the after-care of our chronically ill patients for whom community resources are so tragically lacking? A recent referral read: "Patient no longer manageable at home—refer to Social Service". For this patient, who is dying of a malignant tumour, as for many others with an equally grave prognosis, we were forced to accept a plan that is not only inadequate for the patient, but is actually harmful to family standards and relationships.

It is hopeful then, that such obvious needs are being attacked in a variety of ways and that we who are close to the patient are asked to help in the planning. All during the year, members of the staff have not only done what could be done for each individual patient, but have served on committees with and as consultants to special diagnostic groups who are organizing to meet their respective needs: the Cancer Society, the Multiple Sclerosis Association, the Cerebral Palsy Society, the Paraplegic Association among others.

Perhaps under present conditions, such groups are giving a leadership that can be had in no other way, but it is important that we all work toward a coordinated programme when we share a common goal, such as adequate care and rehabilitation of our chronically ill. The Executive Committee of the Health Section of the Council of Social Agencies is initiating such action in our community and the director of the department is serving on this committee.

We have continued to participate in the courses for the graduate nurses and in the training of student social workers. We have had one student from the School of Social Work of the University of Montreal this year. We would also report our efforts with neighboring provinces in behalf of the civilian paraplegics and the patients who needed assistance with medical costs. We would not magnify our part, but rather emphasize that in shared effort there is strength.

The year's work in retrospect again reminds us of our dual responsibility to our patient, for those who would help him meet his illness from his own inner strengths must also help to build a more accepting and understanding world in which he can live.

## DEPARTMENT OF RADIOLOGY

DR. DONALD McRAE

The neuroradiological colloquies were continued at the rate of three per week and the attendance has been greater than ever. It is difficult for observers in the back rows to see the films, even with opera glasses. Even if attendance were limited at these sittings, there would be some difficulty in seeing the films in detail. A method of projecting large size films has been developed and would be invaluable for these colloquies as well as for the pathological and electroencephalography conferences.

Dr. J. L. Leger completed a fellowship in neuro-radiology during this year and has returned to Notre Dame Hospital as Assistant Radiologist. He analyzed our material on the sphenoid wings and superior orbital fissures with reference to their appearance in health and disease. Dr. Leonard Ginsburg served a six months residency in neuroradiology during the same year. The correlation of the deformities of the cranium and the brain due to various contracting lesions was attempted and was the subject of a report to the Radiological Society of North America. Dr. Charles Robitaille served as externe in neuroradiology for part of the year.

No new methods of examination have been instituted but there was a definite increase in number of cerebral arteriograms and in laminograms and it is felt that they will increase every year from now on. The latter method of examination affords decisive information in many cases but is used infrequently because it is time-consuming and it over-exposes the technicians to roentgen rays. A satisfactory laminograph cannot be installed until a third radiographic room is available.

The resignation of Dr. D. G. Wollin has left a gap that will never be completely filled. The Department, therefore, has been short-staffed at a most critical time.

During the year 1948, 6973 roentgen examinations were performed using 33,728 films. There were 783 pneumograms, 438 myelograms, 46 arteriograms, 16 laminograms, these complex examinations accounting for about one-quarter of the work. This represents only a six percent increase over last year, but a three hundred percent increase in the past ten years. It represents saturation. We can do no more with present facilities unless we are willing to accept a definite reduction in quality of the work.

## DEPARTMENT OF NEUROCHEMISTRY

DR. DONALD McEACHERN

DR. K. A. C. ELLIOTT

Activities of the Laboratory cover two fields; routine clinical work and research activity. Both are exceedingly active although encompassed in small space. Some 9,470 chemical determinations were performed, including cerebrospinal fluid, blood and urine studies, gastric analyses and basal metabolic rates.

Research work has mainly been upon the biochemical mechanisms of epilepsy, under a grant from the Rockefeller Foundation.



Dr. Elliott has completed studies on the blood and spinal fluid guanidine in epilepsy, and on citric acid in focal epileptogenic brain tissue. With Dr. Roy Swank, he is now studying the effects of convulsants and anaesthetics on the total acetylcholine content of brain tissue and on the liberation of free acetylcholine. Dr. Elliott recently made "Problems in Neurochemistry" the subject of his presidential address to the Montreal Physiological Society.

Mr. James Webb is continuing his studies on the effects of potassium, drugs and other factors on brain metabolism. Mr. Hugh McLennan is studying the synthesis and liberation of acetylcholine by brain tissue, and the relation to potassium. Mr. Frank Moya has completed his study on aerobic glycolysis. Mrs. Nora Henderson has continued to render valuable technical and secretarial assistance.

Dr. Donald B. Tower and Dr. Andrew Kelen, working with Dr. McEachern, completed studies on acetylcholine and DFP. in relation to convulsive seizures. Miss Doris Brophy completed a study on the effect of hyperthyroidism on brain and other tissues and presented her findings before the Canadian Physiological Society.

Dr. Sean B. Murphy has been studying the cerebral vascular responses to acetylcholine. He is also investigating the effects of mechanical trauma and chemical stimulation upon acetylcholine and cholinesterase metabolism.

## DEPARTMENT OF ELECTROENCEPHALOGRAPHY

DR. HERBERT H. JASPER

This Department has become an active teaching Laboratory for Electroencephalographers and Technicians from various parts of Canada, and from other countries. There have been six Fellows and seven Technicians in training during the past year. In addition, numerous "visitors" from the far corners of the globe have come for a few days or a few weeks observation. This may be partly due to the International Journal, Electroencephalography and Clinical Neurophysiology, which is edited here and published in Montreal.

The total number of E.E.G. examinations during the past year, 2,144, has remained about the same as for the previous year. There were 39 Electrocorticrograms taken in the Operating Room. Electromyography in cases of nerve or cord lesion, and in the investigation of neuromuscular diseases has become an important additional activity of this Department.

About one half of the examinations of this Department were carried out on patients from the wards of the M.N.I. or Royal Victoria Hospital. There were nineteen percent from Outpatient Clinics, twenty-five percent from private offices and seven percent from other hospitals.

Much of the work of the Department has been efficiently accomplished during the past year by our Chief Technician, Mr. Lewis Henderson, with his Assistant, Miss Lili Prisko. Mr. Leslie Geddes, Electronics Engineer, has been of invaluable service to this Department, as well as to other Departments of the Institute where much complicated apparatus has been kept in running condition, and new and original equipment has been constructed.

## DEPARTMENT OF NEUROPATHOLOGY

DR. WILLIAM V. CONE

Dr. Maitland Baldwin followed Dr. Harry Steelman as Neuropathological Fellow. With the help of Dr. Ira Jackson and Dr. John Hanbery he has been responsible for reporting on five hundred and forty-nine neurosurgical specimens and one hundred and two postmortem examinations of the central nervous system. The volume of the routine work increased over that of last year.

Dr. Clarence Green continued the histological review of the astrocytomas and the tumors which are in the unclassified group of gliomas. He has also carried out a clinical follow-up survey in an attempt to determine morbidity and mortality data which will aid in the understanding of the behavior of these tumors.

The study of induced and transplanted tumors has been continued by Dr. Herman Flanigin. Dr. John Kershman some years ago began this work; he was one of the early experimenters to produce gliomas in the brain of rats by the implantation of methylcholanthrene pellets. Two years ago Dr. Keasley Welch using the technique of Greene transplanted the glioblastomas from humans to the anterior chamber of guinea pig's eyes and tumor growth resulted. Dr. John Bates produced tumors in the brain of the mouse by carcinogenic agents and stained them intravitaly with Nile Blue sulphate. Dr. Flanigin has kept strains of tumors growing which Dr. Bates was working with and is attempting to transplant tumors from mice to guinea pigs and back to mice. The strain of a glioblastoma of mice which grows in the subcutaneous tissues of the mouse was supplied by Dr. Zimmerman. Dr. Flanigin has kept this strain alive by multiple transplantations. The rate of tumor growth can readily be determined by inspection and palpation. Such animals may be of value in the study of anti-tumor agents.

Dr. Igor Klatzo is working on staining methods, the keys which have unlocked some of the secrets of the nervous system but are still so imperfect as to leave many histological questions unanswered. Dr. Ira Jackson has studied the tissue reactions to Portex tubing in both somatic and nervous tissue. Dr. Hanbery has studied the pathological alterations in the auditory pathways caused by streptomycin therapy.

The weekly neuropathological conferences have been continued. Dr. Baldwin and Dr. Hanbery conducted twelve neuropathological seminars for Fellows and members of the resident staff of the Institute. They consisted of didactic presentations and laboratory exercises.

## DEPARTMENT OF NEUROPHYSIOLOGY

DR. HERBERT JASPER, *Neurophysiologist*

PROFESSOR BORIS BABKIN, *Associate Neurophysiologist*

The activities of this Laboratory have shown a steady increase during the past year. There have been twenty research fellows and four members of the staff making active use of its facilities. There were 263 major procedures and 312 minor procedures. Some of this work was done by fellows whose major activity was in the Departments of Anatomy, Pathology or Neurochemistry, with portions of their research involving experimental surgery, tumour transplants, etc.,

as well as aspects of their particular problems, using techniques of neurophysiology or experimental neurosurgery. The principal neurophysiological studies were as follows:—

- Cortical representation of the autonomic nervous system.
- Studies of thalamo-cortical function by methods of local thalamic stimulation and destruction.
- Cortico-thalamic connections by electrographic neuronography .
- Local anodal block of cortical function.
- Acetylcholine and pH in experimental epilepsy.
- The measurement of local oxygen tension in the cortex.
- Studies of the form and mechanisms of spread of epileptiform discharge.
- Studies of denervation sensitization of the cortex.
- Comparative studies of suppression and spreading depression in the cerebral cortex with special reference to the anterior cingulate region.
- Experimental studies of the supplementary motor region in the monkey
- Mechanisms of brain oedema.

The enthusiasm with which research fellows have pursued the above problems in collaboration with members of the staff has been a constant source of satisfaction throughout the year. The supervision of this work, together with the regular course of lectures and demonstrations in Neurophysiology throughout the year, has provided an extremely active year for the staff, but one filled with some important developments in our knowledge of mechanisms of nervous action. The few morsels of new truths which we have received for our efforts have given us renewed energy for a more intense attack of some of the most baffling aspects of nerve and brain function.

## DEPARTMENT OF NEUROANATOMY

DR. FRANCIS MCNAUGHTON

The past year has seen the Laboratory of Neuroanatomy firmly established within the Institute. In June, 1948, we welcomed Dr. Georg Olszewski to the Department after some years of training with Professor Vogt in Germany. Since his arrival, he has continued his comparative studies of the reticular formation of the brain stem, and is now working on an atlas of the Macaque thalamus. Dr. J. Hanbery, during his term as Neuroanatomical Fellow, studied some aspects of the fifth nerve and its central connections and also the nerve cell changes following prolonged electrical stimulation.

Dr. A. V. Bird has started a detailed study of the sensory nerves of cerebral blood vessels, while Dr. William Feindel has just returned from two years of anatomical research at Oxford to continue his work with methylene blue under a grant from the National Research Council of Canada.

Teaching functions of the Department during the past year have included: (1) The Course for Medical Students in their Second Year (with the assistance of Drs. Olszewski, Hanbery and Fisher). (2) The Seminar in Neuroanatomy—arranged in collaboration with Dr. Herbert Jasper. (3) The Reconstruction Course in brain anatomy (“Brain modelling”) with 12 Fellows and graduate students enrolled.

Dr. H. W. Magoun of Northwestern University, Chicago, gave the Annual Neuroanatomy Lecture before the Montreal Neurological Society on May 4th. His visit and lecture were outstanding events of the Institute year.

## DEPARTMENT OF PHOTOGRAPHY

DR. JOHN KERSHMAN

There were several very important changes in this department during 1948. Much of the original equipment installed when the building opened had gradually deteriorated. With the aid of special funds, the entire installation of dark room equipment was changed and modernized. Special equipment for drying and washing prints, and improved lighting equipment and cameras were also obtained. A special camera with built-in stroboscopic light has been installed in the new operating room with the result that colour films have been obtained of operations showing much greater detail and depth than has ever been possible before.

The following work was done in 1948:

Total number of photographs .....	3,966
Operation photographs .....	1,283
Patient photographs .....	525
Photomicrographs .....	452
Miscellaneous .....	1,706

## FELLOWS' LIBRARY

DR. FRANCIS McNAUGHTON

As in past years, the Fellows' Library continues to be one of the most active “laboratories” of the Institute. It is rarely idle, day or night. Fifty-six new books have been purchased this year, while fifty-five additional volumes have been added through the services of the Medical Library Association Exchange.

The Library now receives 53 journals, dealing with Neurology or related subjects, including seven journals added during the past year.

We acknowledge gifts from Professor Penfield, Professor Jan Jansen, Dr. B. Cantlon, Mr. H. H. Bell, and the McGill Medical Library. We are grateful for the efficient help of Mrs. Elinor Christie, part-time Librarian, and for continuing advice and assistance from Miss Gordon and her Staff in the McGill Medical Library.

## THE FELLOWS' SOCIETY

DR. M. BALDWIN, *President*

DR. H. L. ROBERTS, *Vice-President*

DR. K. KRISTIANSEN, *Secretary-Treasurer*

During the past year the Society held twenty-six formal meetings. These were addressed by the Director of the Institute, members of the Staff and by visiting speakers from Belgium, France, Great Britain, India, Norway, Sweden and the United States. Members of the faculty of McGill University and the University of Montreal contributed generously of their time in order to address these gatherings. The MacDonal Professor of Physics in McGill University, Dr. J. S. Foster, and Dr. Andre Cipriani of the National Research Council at Chalk River, Ontario, spoke on the relationship of Nuclear Physics in Biology and Medicine. The other speakers presented a variety of topics in Neurology and Neurosurgery.

The Research Fellows participated in a joint discussion of their various scientific problems. This presented an opportunity for mutual understanding and constructive criticism of the several research projects in the Institute.

The informal activities of the year included several farewell gatherings for departing members and participation in the Society Ski Club. This subsidiary organization was under the administrative direction of Dr. William Gerber and Mss Aurelie Forbes. It was a real contribution to the happiness of many of the members and their families.

The speakers for the year were:

DR. GRAHAM WEDDELL, Oxford, England.

"The Peripheral Mechanism of Pain".

DR. WILLIAM FEINDEL, Oxford, England.

"Vital Staining of the Central Nervous System".

DR. OLLE HOOK, Stockholm, Sweden.

"Clinical Observations on Myoclonus Epilepsy and Hepato-lenticular Degeneration".

DR. ROY L. SWANK, Montreal.

"Physiology of Barbiturate Narcosis"

DR. ANDREW KELEN, Montreal.

The Effects of DFP and Fluoroacetate on the Central Nervous System"

DR. DANIEL PETIT-DUTAILLIS, Paris, France.

"Neuro-chirurgie en France".

DR. FREDERICK R. MILLER, London, Ontario.

"The Local Actions of Eserine and Acetylcholine on the Central Nervous System".

DR. REUBEN RABINOVITCH, Montreal.

"The Golden Muscle".

- DR. H. M. ZIMMERMAN, New York.  
"Induced and Transplanted Brain Tumors"
- DR. J. DEBUSSCHER, Ghent, Belgium.  
"Dr. Sherer's Views on the Classification of Gliomas".
- DR. BORIS BABKIN, Montreal.  
"Vagotomy".
- DR. LAMAR ROBERTS, Montreal.  
"Anatomy and Physiology of the Parietal Lobe".
- DR. JAMES ZIEGLER, Montreal.  
"Blocking in the Cerebral Cortex".
- DR. JOHN HUNTER and DR. JOHN MEYER, Montreal.  
"Diencephalic Function and Consciousness".
- DR. BERNARD GRAHAM, Montreal.  
"Report on the A.R.N.M.D. Meeting in New York, December 10 and 11, 1948".
- DR. KEASLEY WELCH, Montreal.  
"The Intermediate Precentral Region in Man".
- DR. HANS SELYE, Université de Montréal.  
"The General Adaptation Reaction".
- DR. J. S. FOSTER, McGill Radiation Laboratory.  
"Nuclear Physics".
- DR. LISA CHACKO, Vellore, India.  
"The Lateral Geniculate Body and the Visual Pathways".
- DR. WILDER PENFIELD, Montreal.  
"Brain Reactions and Atrophic Focal Lesions".
- DR. HOLGER HYDEN, Stockholm, Sweden.  
"The Activity of the Nerve Cells under Adequate Stimulation".
- DR. BIRGER KAADA, Oslo, Norway.  
"Responses to Electrical Stimulation of Cingulate, Orbital Surfaces, Anterior Insula and Temporal Pole in Monkeys".
- DR. PAUL FIRCKS, Allan Memorial Institute.  
"Phenomena of Hypnosis".
- DR. H. FISCHGOLD, Paris, France.  
"Présentation de la tomographie de la colonne vertébrale".
- DR. A. J. CIPRIANI, National Research Council.  
"Radio-isotopes in Medicine".
- DR. M. M. HOFFMAN, Montreal.  
"Disturbances of the Function of the Anterior Pituitary".

## MONTREAL NEUROLOGICAL SOCIETY

Chairman .....	DR. JOHN KERSHMAN
Vice-Chairman .....	DR. DONALD McRAE
Secretary-Treasurer .....	DR. PRESTON ROBB

Meetings of the Section of Neurology of the Montreal Medico-Chirurgical Society were held weekly from October 6th to the middle of May, inclusive. An interesting selection of clinical problems was presented at the Clinical Conferences which were held at the Montreal Neurological Institute, the Montreal General Hospital, the Hotel Dieu, and Notre Dame Hospital.

The following addresses were given before the Society during the year 1948-49

PROFESSOR PAUL DELMAS-MARSALET, University of Bordeaux.

“The Frontal Lobe and Equilibrium”

DR. JOHN BATES.

“The Induction of Brain Tumors in Mice and Their Staining During Life”.

DR. H. ZIMMERMAN, Montefiore Hospital.

“Experimental Brain Tumors”.

PROFESSOR R. W. GERARD, University of Chicago.

“Neural Metabolism in Relation to Function”.

DR. T. CASPERSSON, Karolinska Institute, Stockholm.

“Cell Function and Cell Growth in Normal and Pathological Conditions”.

DR. A. R. ELVIDGE.

“A Medical Mission to Greece”.

DR. ROY SWANK.

“Respiratory Changes in Paralyzed and Stuporous States”.

PROFESSOR G. MORUZZI, Northwestern University Medical School

“Physiological Mechanisms of Epilepsy”.

DR. FRANCIS SCHILLER.

“Crush Injuries of the Skull”.

DR. RAYMOND ADAMS, Harvard University and the Boston City Hospital.

“Hepatic Coma”.

DR. DAVID P. C. LLOYD, Rockefeller Institute for Medical Research.

“Mechanisms of Stretch Reflexes”.

DR. WILDER PENFIELD and DR. HERBERT JASPER.

“Diagnosis and Treatment of Cortical and Highest Level Seizures”.

DR. KRISTIAN KRISTIENSEN.

“Localization and Clinical Classification in Focal Epilepsy”.

PROFESSOR H. W. MAGOUN, Northwestern University Medical School

“Brain Stem Reticular Formation”.

A Combined Meeting of the Section of Neurology and the Montreal Physiological Society was held on December 8, 1948. The following address was given:

PROFESSOR F. C. MACINTOSH, National Institute for Medical Research, London.  
"Acetylcholine and Synaptic Transmission".

A Symposium was held at which "A Review of Prefrontal Lobotomy Cases" was presented, Drs. H. Elliott, J. Kershman, W. Bremner, D. McRae, and O. Dufresne participating.

## HUGHLINGS JACKSON MEMORIAL LECTURES OF THE MONTREAL NEUROLOGICAL INSTITUTE

In 1935, on the occasion of the 100th anniversary of Hughlings Jackson's birthday, the first Memorial Lecture was held. It was appropriate that the first lecturer was Dr. Penfield. Each Spring, since then, the Annual Hughlings Jackson Memorial Lecture has been given by someone who has made an outstanding contribution in the field of neurology. This lecture has come to be one of the outstanding events in the life of the Institute and for the second time in this report, we list these distinguished lecturers.

- 1935 DR. WILDER PENFIELD.  
"Epilepsy and Surgical Therapy".
- 1937 DR. KARL S. LASHLEY.  
"Factors Limiting Improvement after Central Nervous Injuries".
- 1938 DR. DETLEV W. BRONK.  
"Nerve Cells and Synapses in the Regulation of Organic Functions".
- 1939 DR. WALTER B. CANNON.  
"A Law of Denervation".
- 1940 DR. CHARLES H. BEST.  
"The Factors Affecting the Liberation of Insulin from the Pancreas".
- 1941 DR. STEPHEN WALTER RANSON.  
"Experimental Studies of the Corpus Striatum".
- 1942 DR. EDGAR DOUGLAS ADRIAN.  
"Sensory Areas of the Brain".
- 1943 DR. PHILIP BARD.  
"Re-representation as a Principle of Central Nervous Organization".
- 1944 DR. PERCIVAL BAILEY.  
"The Cortical Organization of the Chimpanzee's Brain".
- 1945 DR. STANLEY COBB.  
"Some Observations on Neurocirculatory Asthenia".



- 1946 DR. OTTO LOEWI.  
 "Problems Connected with the Effects of Nervous Impulse".
- 1947 SIR HENRY DALE.  
 "Chemical Transmission and Central Synapses".
- 1948 DR. DEREK DENNY-BROWN.  
 "Disorganization of Motor Function Resulting from Cerebral Lesions".
- 1949 DR. H. CUTHBERT BAZETT.  
 "Blood Temperature in Man and its Control".

## CLINICAL APPOINTMENTS AND FELLOWSHIPS

The following positions are available:\*

Interne or Assistant Resident in Neurosurgery — One year's duration — available January 1st and July 1st.

Resident in Neurosurgery — This position is of one or two years' duration and no candidate is considered unless he has had previous experience on the Neurosurgical Service and in the laboratory.

Interne in Neurology — Six to twelve months' duration — available January 1st and July 1st.

Resident in Neurology — This position is of six to twelve months' duration and no candidate is considered unless he has had previous experience on the Neurological Service.

Senior Fellowship in Neuropathology — Twelve months' duration — available July 1st.

Junior Fellowship in Neuropathology — Six months' duration — available July 1st and January 1st.

Senior Fellowship in Clinical Electroencephalography — Six months' duration — available January 1st and July 1st.

Junior Fellowship in Clinical Electroencephalography — Six months' duration — available January 1st and July 1st.

Fellowship in Neuroanatomy — Six months' duration — available January 1st and July 1st.

The Diploma in Neurosurgery, McGill University, requires at least four years of study including periods of investigative work and neurology.

The Diploma in Neurology, McGill University, requires at least three years of study including periods of investigative work, neurosurgery and psychiatry.

Applicants for Clinical Services are preferred who have a speaking knowledge of the French language.

\*Graduate physicians or surgeons who wish to be enrolled in clinical or scientific work as something more than an observer, must fill out application forms, obtainable from the Registrar, and provide names of reference. No research stipends are offered to graduate students during their first year of work in the Institute.

# COURSES OF INSTRUCTIONS

## UNDERGRADUATE

The Department of Neurology and Neurosurgery cooperates intimately with the Departments of Medicine, Surgery, Pathology and Radiology in their undergraduate teaching. Thus the teaching of neurology, neurosurgery, neuropathology and neurological radiology is carried out as part of the regular course planned by the Chairman of each of the above departments.

## GRADUATE

In the Faculty of Graduate Studies and Research, courses are offered leading to the degrees of Master of Science and Doctor of Philosophy. Throughout the year, the following elective courses are given for graduate students, fellows and members of the house staff, and are open to undergraduates by arrangement.

- A. SEMINAR IN NEUROANATOMY — 4 hours weekly (12 weeks).  
1. Lectures, demonstration and discussion.  
2. Construction of brain model by selected group.  
Two evenings, beginning in November.....Dr. McNaughton
- B. SEMINAR IN NEUROPHYSIOLOGY — 3 hours weekly (12 weeks).  
Laboratory demonstrations, lectures and discussions. Mondays, 5-6 and 8-10 p.m. Beginning in November.....Drs. Jasper and Babkin
- C. COLLOQUIUM IN CLINICAL NEUROLOGY — 2 hours weekly.  
Clinics and lectures. Wednesdays, 5 p.m.....Dr. McNaughton
- D. COLLOQUIUM IN NEUROSURGERY AND ELECTROENCEPHALOGRAPHY — 1 hour weekly.  
Fridays, 4 p.m..... Drs. Penfield and Jasper
- E. SEMINAR IN NEUROPATHOLOGY — 1 hour (52 weeks).  
Gross and microscopic demonstration to be supplemented by collateral work.  
Fridays, 5 p.m..... Drs. Cone and Penfield
- F. NEUROCHEMICAL BASIS OF NEUROLOGY AND PSYCHIATRY — 1 hour weekly.  
10 lectures — Allan Memorial Institute ..... Dr. K. A. C. Elliott  
5 laboratory exercises — Montreal Neurological Institute.....Dr. McEachern
- G. COLLOQUIUM IN EXPERIMENTAL AND CLINICAL NEUROLOGY — 1 hour.  
Discussions and lectures before Fellows' Society.....Dr. Robb
- H. COLLOQUIUM IN NEUROLOGICAL ROENTGENOLOGY — 1 hour weekly.  
Mondays, 9 a.m.....Dr. McRae

## DONATIONS

1948-49

Anonymous .....	\$25,000.00
From Mr. Samuel Cohen .....	25,000.00
To Jack Cohen Fund for Research in Neurological Disease.	
From Multiple Sclerosis Society of Canada .....	10,000.00
From Ministry of Health, Quebec .....	4,000.00
To Epileptic Study Fund.	
From Vio Bin Corporation .....	4,000.00
To Vio Bin Research Fund.	
Anonymous .....	1,000.00
From Rt. Rev. Msgr. Victor Primeau .....	1,000.00
To M.N.I. Miscellaneous Contributions Fund.	
From Mr. and Mrs. Winthrop Brainerd .....	500.00
To Clinical Relief Fund.	
From Mrs. H. A. Springle .....	400.00
To Hobart Anderson Springle Memorial Fund.	
From Dr. Lewis Reford .....	200.00
To M.N.I. Research Fellows' Fund.	
From Mr. and Mrs. S. Bloom .....	100.00
To Clinical Relief Fund.	
From Mrs. H. W. Davis .....	100.00
To Miscellaneous Contributions Fund.	
From Dr. Lyle Gage .....	100.00
To M.N.I. Research Fellows' Fund.	
From Mr. William Bloom .....	80.00
To Clinical Relief and Transfusion Fund.	
From Miss Josephine Lafleche and friends .....	65.00

## PUBLICATIONS

1948-49

### DR. ROMA AMYOT:

*Paralysie sympathico-sensitivo-motrice post-traumatique du membre supérieur droit.*  
L'Union Médicale du Canada, 77:288 (Mars) 1948.

*Faits instructifs concernant le cancer primitif du poumon.* L'Union Médicale du Canada, 77:461 (Avril) 1948.

*Un cas d'agensie du corps calleux; diagnostic par la pneumo-encéphalographie.*  
L'Union Médicale du Canada, 77:667 (Juin) 1948.

*Diagnostic topographique des paraplégies.* L'Union Médicale du Canada, 77:1227 (Octobre) 1948.

*Ptosis héréditaire familial et tardif des paupières supérieures.* L'Union Médicale du Canada, 77:1287 (Novembre) 1948.

*Hereditary, familial and acquired ptosis of late onset.* Canad. M.A.J. 59:434, 1948.

### DR. BORIS BABKIN:

*Origin of the Theory of Conditioned Reflexes.* Arch. Neurol. & Psychiat. 60:520-535, 1948.

### MISS DORIS BROPHY:

with DR. DONALD McEACHERN

*Varying Effect of Thyroxine on Oxygen Consumption of Different tissues.* Proc. Soc. Exper. Biol. & Med. 70:120-122, 1949.

### DR. WILLIAM CONE:

*See Dr. Donald Tower, Joint Author.*

### DR. HAROLD ELLIOTT:

*A Program for Prefrontal Lobotomy with Report of Effect on Intractable Pain.*  
D.V.A. Treatment Services Bulletin, 3:1926, 1948.

*Post-traumatic Granuloma of the Bony Orbit Simulating Tumor.* Canad. M.A.J. 59:206-211, 1948.

### DR. K. A. C. ELLIOTT:

*Biochemical Approaches in the Study of Epilepsy.* EEG Clin. Neurophysiol 1:29-31, 1949.

*Metabolism of Brain Tissue Slices and Suspensions from Various Mammals.* J. Neurophysiol. 11:473-484, 1948.

with MARION K. BIRMINGHAM

*The Effect of pH on the Respiration of Brain Tissue; the pH of Tissue Slices.*  
J. Biol. Chem. 177:51-58, 1949.

with H. H. JASPER

*Physiological Salt Solution for Brain Surgery. Studies of Local pH and Pial Vessel Reactions to Buffered and Unbuffered Isotonic Solutions.* J. Neurosurg. 6:140-152, 1949.

with R. L. NOBLE

*Control of Car Sickness in a Dog by V-12 (Mosidal).* Canad. M.A.J. 58:277, 1948.

with WILDER PENFIELD

*Respiration and Glycolysis of Focal Epileptogenic Human Brain Tissue.*  
J. Neurophysiol. 11:485-490, 1948.

with J. L. WEBB

*The Formation of Acetate in Brain Tissue Suspensions.* Canad. J. Research.,  
Sec. E 26:239-249, 1948.

DR. A. R. ELVIDGE:

with J. KERSHMAN

*A Reconsideration of "The Borderland of Epilepsy".* Tr. Am. Neurol. A.  
73:68-73, 1948.

DR. JOHN HUNTER:

with G. PHILLIPS, M.S., Sydney

*Penetrating Injury of the Cranial Vault.* Australian & New Zealand J. Surg.  
18:140-143, 1948.

with H. JASPER

*A Method of Analysis of Seizure Pattern and Electroencephalogram. A  
Cinematographic Technique.* EEG Clin. Neurophysiol. 1:113-114, 1949.

DR. IRA JACKSON:

with BRAM ROSE

*Observations on the Histamine Content in the Cerebrospinal Fluid in Man.* J. Lab.  
& Clin. Med. 34:250-254, 1949.

DR. HERBERT JASPER:

*Charting the Sea of Brain Waves.* Science, 108:343-347, 1948.  
*Electrical Signs of Epileptic Discharge.* EEG Clin. Neurophysiol. 1:11-18, 1949.

with CHARLES CURE and T. RASMUSSEN

*Activation of Seizures and Electroencephalographic Disturbances in Epileptic and  
in Control Subjects with "Metrazol"* Arch. Neurol. & Psychiat. 59:691-717,  
1948.

with A. GOLDBOOM and H. F. BRICKMAN

*Electroencephalographic Studies in Poliomyelitis.* J.A.M.A. 137:690-694, 1948.

See Dr. K. A. C. Elliott, Joint Author.

See Dr. John Hunter, Joint Author.

DR. ANDREW KELEN:

with DONALD McEACHERN

*Some Effects of Di-isopropyl Fluorophosphate (DFP) and Fluoroacetate on the  
Central Nervous System.* Canad. J. Research, Sec. E., 27:146-157, 1949.

DR. JOHN KERSHMAN:

*Syncope and Seizures.* J. Neurol. Neurosurg. & Psychiat. 12:25-33, 1949.

with E. PETERSEN

*Treatment of Pneumococcal Meningitis.* Canad. M.A.J. 59:527-531, 1948.

See Dr. A. R. Elvidge, Joint Author.

DR. DONALD McEACHERN:

with J. L. PARNELL

*The Relationship of Hyperthyroidism to Myasthenia Gravis.* J. Clin. Endocrinol.  
8:842-850, 1948.

with NELLES J. ENGLAND

*Acute Aplastic Anaemia during Mesantoin Therapy.* *Canad. M.A.J.* 60:173-175, 1949.

See Dr. Donald Tower, Joint Author.

See Dr. Andrew Kelen, Joint Author.

See Miss Doris Brophy, Joint Author.

DR. FRANCIS MCNAUGHTON:

*Nervous System.* In Meakins, J.C., *Symptoms in Diagnosis*, 2nd ed., 1949, chap. IX, pp. 411-462.

DR. DONALD McRAE:

*Focal Epilepsy: Correlation of the Pathological and Radiological Findings.* *Radiology*, 50:439-457, 1948.

DR. WILDER PENFIELD:

*Focal Epilepsy.* In *British Surgical Practice*, London, Butterworth & Co., 1948, vol. 4, pp. 114-131.

*Classification of the Epilepsies.* *Arch Neurol. & Psychiat.* 60:107-118, 1948.

*Bilateral Frontal Gyrectomy and Postoperative Intelligence.* *A. Research Nerv. & Ment. Dis., Proc.*, (1947). 27: 519-534, 1948.

*Late Spinal Paralysis after Avulsion of the Brachial Plexus.* *J. Bone and Joint Surg.* 31, B. No. 1 40-41, 1949.

*Neurosurgery Yesterday, Today and Tomorrow.* *J. Neurosurg.* 6:6-12, 1949.

*Epileptic Manifestations of Cortical and Supracortical Discharge.* *EEG Clin. Neurophysiol.* 1:3-10, 1949.

with ARTHUR WARD

*Calcifying Epileptogenic Lesions.* *Arch. Neurol. & Psychiat.* 60:20-36, 1948.

with THEODORE RASMUSSEN

*Vocalization and Arrest of Speech.* *Arch. Neurol. & Psychiat.* 61:21-27, 1949.

*Movement of the Head and Eyes from Stimulation of the Human Frontal Cortex.* *A. Research Nerv. & Ment. Dis., Proc.* (1947) 27:346-361, 1948.

See Dr. K. A. C. Elliott, Joint Author.

DR. J. PRESTON ROBB:

*Effect of Cortical Excision and Stimulation of the Frontal Lobe on Speech, with a Review of Aphasia and Cerebral Physiology Related to Speech.* *A Research Nerv. & Men. Dis., Proc.* (1947) 27:587-609, 1948.

DR. ROY SWANK:

with M. I. SMEDAL

*Pulmonary Atelectasis in Stuporous States: A Study of its Incidence and Mechanism in Sodium Amytal Narcosis.* *Am. J. Med.* 5:210-229, 1948.

with I. BERGNER

*A Study of the Human Myogram.* *J. Clin. Invest.* 27:24-33, 1948.

with J. M. Foley

*Respiratory, Electroencephalographic and Blood Gas Changes in Progressive Barbiturate Narcosis in Dogs.* *J. Pharmacol. Exper. Therap.* 92:381-396, 1948.

with R. D. ADAMS

*Experimental Pantothenic Acid and Pyridoxine Deficiency in Swine.* J. Neuro-  
path. Exper. Neurol. 7:274-286, 1948.

DR. DONALD TOWER:

*Preservation of Acetylcholine in Human Cerebrospinal Fluid. A Simple Method  
for Clinical Use.* Canad. J. Research, Sec. E., 27:20-23, 1949.

with DONALD McEACHERN

*Acetylcholine and Neuronal Activity I. Cholinesterase Patterns and Acetylcholine  
in the Cerebrospinal Fluids of Patients with Craniocerebral Trauma.* Canad.  
J. Research, Sec. E., 27:105-119, 1949.

*Acetylcholine and Neuronal Activity II. Acetylcholine and Cholinesterase  
Activity in the Cerebrospinal Fluids of Patients with Epilepsy.* Canad. J.  
Research, Sec. E., 27:120-131, 1949.

*The Content and Characterization of Cholinesterases in Human Cerebrospinal  
Fluids.* Canad. J. Research, Sec. E., 27:132-145, 1949.

with WILLIAM CONE and DONALD McEACHERN

*Acetylcholine and Neuronal Activity in Epilepsy.* Tr. Am. Neurol. A. 73:59-63,  
1948.

STATISTICAL DATA — 1948  
CLASSIFICATION OF DISEASES

*Nervous system generally:*

Neurosyphilis .....	32
Multiple sclerosis .....	51
Motor neurone disease .....	19
Myasthenia gravis .....	3

*Meninges:*

Meningocoele or myelomeningocoele .....	38
Chronic adhesive arachnoiditis .....	9
Acute purulent meningitis .....	6
Tuberculous meningitis .....	11
Acute aseptic meningitis .....	1
Spontaneous subarachnoid haemorrhage .....	6
Post-traumatic headache .....	13
Other headaches .....	30
Subdural haematoma .....	25
Epidural haematoma .....	9
Epidural or subdural abscess .....	3

*Brain:*

Congenital anomalies .....	17
Hydrocephalus .....	42
Birth injury of the brain .....	14
Brain abscess .....	5
Cerebral concussion .....	48
Cerebral contusion and/or laceration .....	46
Epilepsy .....	294
Migraine .....	20
Encephalopathy, chronic and of undetermined etiology .....	13
Paralysis agitans .....	7
Cerebral arteriosclerosis .....	17
Cerebral haemorrhage, thrombosis or embolism .....	42
Intracranial aneurysm .....	18
Cerebral atrophy .....	37
Encephalitis .....	4
Narcolepsy .....	1
Stenosis of aqueduct of Sylvius .....	4

*Tumours of the Nervous System:*

Glioma .....	78
Perineurial fibroblastoma .....	8
Meningeal fibroblastoma .....	29
Pituitary adenoma .....	12
Craniopharyngioma .....	6
Miscellaneous tumour .....	23
Unclassified tumour .....	15
Unverified tumour and tumour suspects .....	20
Secondary tumour of brain and spinal cord .....	12
Haemangioma .....	4



## Spinal Cord:

Chronic myelopathy .....	13
Dorsal lateral sclerosis .....	5
Compression of the spinal cord .....	11
Vascular lesion of the cord .....	3
Friedreich's Ataxia .....	3
Poliomyelitis .....	7

## Cranial and Peripheral Nerves:

Lesions of the optic nerves .....	14
Trigeminal neuralgia .....	40
Peripheral facial palsy .....	1
Menière's syndrome .....	20
Lesions of the brachial plexus and branches .....	5
Multiple neuritis .....	4
Other neuralgias .....	9
Traumatic peripheral nerve lesions .....	19
Neuropathy of undetermined etiology .....	6

## Mental Diseases:

Mental deficiency .....	8
Alcohol or drug addiction .....	6
Psychoneurosis .....	92
Miscellaneous .....	40

## Other Systems and Miscellaneous:

Skull defect .....	11
Herniation of the intervertebral disc (cervical) .....	4
Herniation of the intervertebral disc (lumbar) .....	173
Fracture of the skull .....	108
Fracture and/or dislocation of the vertebral column .....	30
Gunshot wound of the head .....	3
Gunshot wound of the spine .....	1
Lacerations, contusions, abrasions and/or haematomas .....	14
Intractable pain .....	13

## Diseases of the Body as a Whole:

Hypertension .....	29
Diseases of the cardiovascular system .....	9
Diseases of the respiratory system .....	6
Diseases of the gastro-intestinal system .....	4
Diseases of the genito-urinary system .....	3
Diseases of the endocrine system .....	6
Diseases of the locomotor and integumentary system .....	20
Diseases of the eyes, ears, nose and throat .....	10
Low back pain .....	46
Causalgia .....	6
Miscellaneous .....	31
Diagnosis deferred .....	6
Paget's disease .....	3
Muscular dystrophy .....	3

## CLASSIFICATION OF OPERATIONS

Craniotomy	
osteoplastic, miscellaneous .....	3
myoplastic, miscellaneous .....	1
and biopsy .....	4
and decompression .....	8
and drainage of abscess .....	6
and drainage of sub-dural haematoma .....	19

and drainage of extradural haematoma .....	2
and drainage of intracerebral haematoma .....	6
and excision of epileptogenic focus .....	49
and excision of aneurysm .....	3
and exploration .....	5
and gyrectomy, frontal postcentral .....	8
and incision and drainage of cyst .....	2
and obliteration of aneurysm .....	2
and obliteration of cyst .....	2
and plastic repair of dura .....	5
and removal of adhesions .....	4
and removal of tumour .....	129
and rhizotomy .....	24
and sinusotomy .....	1
Trepanations or Craniocentesis .....	15
and biopsy .....	8
and drainage of subdural space .....	8
and placement of electrodes .....	3
and subdural insufflation .....	6
and ventriculography .....	25
Elevation of depressed skull fracture .....	29
Plastic repair of skull defect, tantalum .....	4
Plastic repair of skull defect, bone .....	5
Suture of lacerated wound of scalp .....	14
Ventriculocisternostomy (Torkildsen) .....	7
Ventriculovenostomy .....	1
Ventriculostomy .....	4
Laminectomy or hemilaminectomy .....	
and anterolateral chordotomy .....	15
and decompression of spinal cord .....	8
and drainage of abscess .....	1
and exploration .....	9
and removal of adhesions .....	1
and removal of tumour .....	13
and rhizotomy .....	2
and spinal fusion (Hibbs) .....	1
and spinal fusion (bone graft) .....	24
and spinal fusion with No. 18 wire fusion .....	9
and disceidectomy .....	137
and cervical disceidectomy .....	15
Sympathectomy (Hypertension) .....	
supra and infradiaphragmatic ganglioneurectomy unilateral .....	17
supra and infradiaphragmatic ganglioneurectomy bilateral .....	7
Sympathetic ramisection cervical .....	2
Plastic repair of cranium bifida .....	4
Plastic repair of spina bifida .....	24
Incision of scalp and application of tongs .....	1
Cerebral arteriography .....	44
Ligation of artery .....	3
Exploration of nerve .....	5
Removal of neuroma .....	2
Nerve suture .....	4
Re-opening of wound, with exploration .....	11
Re-opening of wound, with evacuation .....	8
Re-opening of wound with drainage of infection .....	33
Section of scalenus anticus muscle .....	1
Costectomy .....	2
Miscellaneous .....	62
Plaster cast .....	92
Suturing of wound .....	1
Peritoneal shunt .....	18
TOTAL .....	987

## CHIEF DIAGNOSES IN FATAL CASES

Intracranial Tumour .....	28
Craniocerebral Injury .....	19
Ruptured Congenital Aneurysm .....	8
Tuberculous Meningitis .....	6
Congenital Abnormalities .....	7
Subdural Haematoma .....	4
Cerebral Thrombosis .....	3
Chronic Adhesive Arachnoiditis .....	3
Purulent Meningitis .....	3
Hypertensive Encephalopathy .....	3
Metastatic Tumours to Spinal Cord .....	2
Fracture Dislocation of Spine .....	2
Miscellaneous .....	9
TOTAL .....	97

## NOTES FROM THE REGISTRAR'S DIARY

The Dunham lectures at Harvard University were given this year by Dr. Wilder Penfield, a most significant scientific honour. He spoke on "The Cerebral Cortex of Man".

In the summer of 1948, Dr. Arthur Elvidge served as a member of the Medical Mission of the Unitarian Service Committee. His illustrated report on the trip, which he presented at the Montreal Neurological Society, was a colorful highlight in the year's program of meetings.

Miss Eileen Flanagan attended the International Council of Nurses' Conference in Stockholm, Sweden.

Dr. Boris Babkin was awarded the Julius Friedenwald Medal for 1949 by the American Gastro-Enterological Association for his contributions to physiology. The presentation took place in New York at a meeting of the Association.

It is with regret that the resignation of Mrs. Elabel Davidson has been announced. Mrs. Davidson has contributed greatly to the Institute and from her department have come many significant contributions to medical social work.

During the year, Dr. Roy Swank returned to Montreal to join the staff of the Institute. He is directing a five year project of research on Multiple Sclerosis. In keeping with the international atmosphere of the Institute, he has extended his research to the Scandinavian countries which he visited this Spring.

Dr. Herbert Jasper has become the first Editor-in-Chief of the newly created international journal of "Electroencephalography and Clinical Neurophysiology". The co-editor is Dr. W. Grey Walter of Bristol, England, and managing editor, Dr. Robert Schwab of Boston, Mass. The journal is published in Montreal.

Dr. Penfield served as the first President of the Canadian Neurological Society and Dr. Jean Saucier as the first Secretary. The inaugural meeting of the Society was held in Montreal in May of this year.

Dr. Miller Fisher is at present studying Neuropathology with Dr. Raymond Adams at the Mallory Institute of Pathology. He will be returning to Montreal at the end of the year.

Dr. William Feindel and Dr. John Bates have returned from their work in England, and will be resuming activities at the Institute.

Dr. William Gibson has returned from Australia. After delivering a series of lectures at the University of California, he will practice neurology in Vancouver and direct a neuropsychiatric research laboratory for the Province of British Columbia.

An outstanding item of the second Annual M.N.I. Winter Party was the rendition of songs (composed in Australia by Dr. Gibson), by the Neurological Quintet. This musical performance can only be compared to the colourful song and dance by the neurosurgeons.

In September, 1948, the American Academy of Neurosurgery met in Montreal. Dr. Arthur Elvidge acted as host.

Dr. Francis McNaughton finished his term of office as President of the American League against Epilepsy in June, 1949 .

Dr. Jacoby Chandy and Dr. Charles Cure are presently working with Dr. Theodore Ramussen at the University of Chicago.

Dr. Herbert Jasper is now President of the Eastern Association of Electroencephalographers.

Dr. Arthur Ward has been appointed Professor of Neurosurgery at the University of Washington.

During the year, we were pleased to welcome many former Fellows who visited the Institute. It is hoped that all Fellows and Associates of the past, present and future will feel the pull and return to renew acquaintances. The Registrar would welcome notes for his diary from those who cannot return.





