

1949-50

To

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

Dear Mr. Principal:

On behalf of the Director and Staff, I have the honour to submit the fifteenth Annual Report of the Montreal Neurological Institute and the Report of the Department of Neurology and Neurosurgery, McGill University, Faculty of Medicine.

This report includes a summary of the clinical work for the calendar year of 1949, together with the scientific and research record for the academic year of 1949-50, and the list of professional staff at the close of the academic year.

Respectfully submitted,

J. PRESTON ROBB, M.D.,

*Secretary-Registrar.*



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# REPORT OF THE DIRECTOR\*

WILDER PENFIELD

Our Annual Meeting is a time for us to look into the past and the future, a time to report our activities to the University through Principal James.

But it is also a time when we make report to a wider audience; to the City, the Province and the Nation, because this Institute is a complete hospital on the one hand and a scientific institute on the other. Our scientific support has come from national and international sources. Our hospital support is largely from within this Province.

Therefore in a very real sense we make direct report to the public from which our strength must come. Last year, at this time, I pointed out that, following five years of financial deterioration, hospitalization had reached an economic impasse. We were forced to paint a gloomy picture; the accumulated clinical deficit, the insuperable problem of balancing hospital books, the crowding everywhere, the menace of a non-fireproof annex. I closed my report with these words of desperation: "If there is no Canadian, or group of Canadians, ready to make permanent the hospital organization of this Institute — then let the doors of the hospital close."

During the past year, a wonderful thing has happened. Support has come which makes possible the clinical reorganization so desperately needed. The hospital doors do not need to close. The Montreal Neurological Institute may now fulfill its destiny as a provincial hospital and a national institute and its doors will never be closed.

This year I propose to make report under three headings:

- I. The activity of our four research laboratories and the endowment of Science;
- II. The organization of the hospital of the Montreal Neurological Institute,
- III. The results of our Campaign for Reorganization.

## I. RESEARCH LABORATORIES

From the scientific point of view, I should have preferred to work quietly in the original ideal Institute unit that was opened in 1934. There is no essential virtue in bigness of itself. It brings penalties, particularly to us on the executive staff — Dr. Kershman, Dr. Robb, Miss Flanagan, Miss Dawson, and myself.

But, actually, there is just as much pressure for expansion from the scientific side as there is from the clinical side. The whole horizon of science itself has enlarged, making possible new avenues of attack upon the problems of the nervous system. This brings in new types of investigators who call for more space and larger budgets.

\*Report read at the Fifteenth Annual Meeting, May 10, 1950, Principal James in the Chair.

Thus, the ideal unit for effective work has a pattern which is unavoidably larger in 1950 than it was in 1934. Sixteen years ago laboratories for neuropathology, neurophysiology and spinal fluid chemistry were quite enough.

Then, with the arrival of Herbert Jasper in 1938, *neurophysiology* was immediately expanded by new methods, and an additional clinical laboratory of electroencephalography was built. During the past year, 25 men have worked on different problems in neurophysiology alone, and 8 from our other sub-departments have done part-time work there. It is often impossible to distinguish work in one laboratory from that in another. This is the nature of physiology. It merges into anatomy, pathology and chemistry without obvious boundary.

The major preoccupation of the neurophysiology laboratory has been the interrelationships of the cerebral cortex and the higher brain stem. This is the neuronal mechanism that forms the basis of mental activity, the basis of consciousness. A new understanding of the mechanisms of epilepsy is slowly evolving with the elaboration of these interrelationships, and psychological advance should not be far off.

Into Dr. McEachern's laboratory of *neurochemistry* came a distinguished brain chemist, K. A. C. Elliott, in 1945. An addition was put up on the roof during the war to accommodate his apparatus and a few research fellows. The result is basic study of the chemistry of those focal areas of the brain that originate the electrical discharge which produces each epileptic fit. After the convulsions are removed in the operating room in order to cure the attacks, the removed tissue is taken, with only a few seconds delay, to this laboratory for analysis of the acetylcholine and other substances which seem to be of importance in the causal mechanism of epilepsy. In this laboratory, also, the uses of cortisone are being explored.

A new sub-department of *neuroanatomy*, to which has been added medical neuropathology, has been established by Francis McNaughton, and into this laboratory has come a skilled Polish anatomist, Jerzy Olszewski. Teaching and investigation go forward together here and an enquiry into the nature of the nerve pathways of headache.

Into William Cone's laboratory of *neuropathology*, has come an enthusiastic and experienced investigator, Roy Swank, to study multiple sclerosis there as well as in the clinic, and some exciting clues have been found to this baffling disease.

There is a larger number of investigators in the neuropathology laboratory than ever before, most of them young neurosurgeons working shoulder to shoulder with their microscopes, literally as well as figuratively. The subjects are related to the unsolved concerns of the neurosurgeon and questions of cytology and cancer.

### *Endowment of Science*

The laboratory work shows great promise of benefit to mankind. We must seek the truth. We must apply what we learn to the relief of sickness and suffering. We must orient our investigations wisely so that in distant perspective we work toward an understanding of the physical basis of the mind and those things which produce in man abnormal behaviour. Meantime, our findings may

apply to relief of pain, paralysis, epilepsy, anxiety, insanity. That is what a Brain Institute is and that is what it must continue to be.

Support for our scientific work is now derived as follows: Two fifths from endowment for science; two-fifths from a Federal grant for research made annually, not to the Institute, but to a member of our staff; (it is dependent, I am afraid, upon our good behaviour and upon political whim); one-fifth from research grants which definitely expire next year.

Our scientific work can be placed on a permanent basis, even at the present level of performance, only by an added endowment of one and one-half million dollars.

## II. ORGANIZATION OF THE HOSPITAL OF THE MONTREAL NEUROLOGICAL INSTITUTE

Reorganization calls for introspection and definition. There are many misconceptions of the Montreal Neurological Institute. Most frequent among them is the idea that it belongs to, or is an integral part of, the Royal Victoria Hospital.

Appointments to the Department of Neurology and Neurosurgery within the Royal Victoria, both in-patient and out-patient, are made by the Governors of that hospital on nomination by the Director of the Montreal Neurological Institute. Thus, some of the same names appear on the staffs of both hospitals. But the same is true of the Montreal General Hospital and the Children's Memorial Hospital, and on a consultative basis with the Hotel Dieu and the Notre Dame Hospitals.

Hospital administration is carried out for the Institute by the Superintendent of the Royal Victoria Hospital and his staff, but without the acceptance of intramural financial responsibility. This works very well because of the efficiency and understanding of the Superintendent, Dr. J. Gilbert Turner.

Teaching is carried out by McGill's Department of Neurology and Neurosurgery in the Neurological Institute and in other hospitals associated with McGill University, and those academic appointments are, of course, made by the Governors of the University.

Within the Montreal Neurological Institute, the Director is vested with authority by the University. He makes annual appointments to (a) the clinical staff, (b) the scientific staff, and (c) the executive staff of the Institute, and he administers the corresponding budgets for the university. He represents the Institute in its relationship with other hospitals and with the public. He appoints consultants to the M.N.I. from teaching hospitals associated with the University of Montreal, and those men are entitled to the privileges of the clinical services of the Institute.

The Montreal Neurological Institute is different. It is not a general hospital but cooperates with all general hospitals. From an administrative point of view, this cooperation is most intimate with the Royal Victoria, but from the professional point of view, the patient who enters the Montreal General, or the Hotel Dieu, or the Roy Rousseau Clinic of Quebec, can be transferred to the Institute and back again with equal freedom.

### III. REORGANIZATION CAMPAIGN

At last, after five years of waiting, it is my privilege to bring you good news. The primary objective of our *Reorganization Campaign* has been reached.

First of all, the economic slate is clean. Principal James informed us that the Governors of McGill University have authorized the payment of our accumulated clinical deficit of over a quarter of a million dollars.

Secondly, there is help at hand to meet future clinical deficits. Mr. Duplessis, Premier of the Province of Quebec, has notified us of the passage of an order-in-council providing \$90,000 annually to meet future hospitalization deficits.

The City of Montreal granted \$40,000 for the same purpose. We recognize the City's generosity in doing this, but we hope to deserve a more permanent plan of assistance instead of hand to mouth grants.

The interview with Mr. Duplessis was crucial in the history of this Institute. It demonstrated his penetrating interest in the welfare of the people and of the institutions of this Province. His words of encouragement, followed later by those of Dr. Paquette, Minister of Health, Mr. Gagnon, Provincial Treasurer, and of an old friend, Judge Thomas Tremblay, of Quebec, constitute for us an assurance that this Institute has served the people of Quebec well. It means that our future is linked indissolubly with the future of this Province.

And so, following the interview with Mr. Duplessis, we launched our Campaign of Reorganization which had (a) a primary and (b) a secondary objective.

(a) The primary objective was to secure funds for the construction of a new wing, funds to equip it and to alter roadways, funds to supplement the greatly depleted equipment of the existing Institute. In all, it became apparent that, as a primary objective, the clinical reorganization called for approximately \$1,500,000.

An old friend of this Institute, Mr. Raymond Atkin of New York, arranged to receive funds from American contributors and to forward them, to us, exempt from income tax.

Early in the proceedings, excellent cooperative assistance was given us by the Honorable Mr. Paul Martin and Dr. Albini Paquette. They arranged for a study of our needs for special equipment, and this was carried out efficiently by Dr. Fred Jackson of the Federal Department of Health and Welfare, with the cooperation of Dr. Jean Grégoire, Deputy Minister of the Provincial Department of Health. The result was a grant for the special equipment of \$173,535.

The members of our professional staff then approached friends and former patients of the Institute with as much optimism as we could muster. The response was sometimes large and sometimes small, but always it was friendly, heart-warming

I can mention only a few of the contributions here. Two old time friends of this Institute, who must be anonymous, led off with 50,000 each. Miss Olive Hosmer, a new friend, added \$100,000. Mr. William Birks, senior Governor of McGill University, arranged for a contribution of \$50,000 from Henry Birks and Sons and the J. H. Birks Foundation.



Many former patients and personal friends of the staff in Canada and the United States gave money, encouragement, advice. The neurologists and neurosurgeons of the staff also contributed to a staff fund themselves.

But one man must be mentioned especially, for he stepped in and changed what we must admit was threatening failure into present success. Like the late Dr. Lewis Reford and Mr. A. A. Hodgson, this man has stood back of the Institute from the very day of its conception. In this campaign, he has directed our efforts from behind the scenes.

I refer to Mr. J. W. McConnell, although I know it may be against his wishes. But he has helped us anonymously so many times in the past, when we met what seemed to be insuperable difficulties of development, that I can remain silent no longer, even at the risk of incurring his displeasure.

In addition to his labour, Mr. McConnell has contributed a lump sum sufficient to construct the projected wing. This is not a small thing, and he has given with the heart as well as the hand. We realize full well that the giver is more than the gift and we hope that the work that is to be carried out in the McConnell Wing will be worthy of this great Canadian citizen.

(b) The secondary objective of our Reorganization Campaign was, and is, the establishment of a Scientific Endowment. I have already pointed out that to establish the scientific work of this Institute on a permanent footing, even at the present level of performance, calls for an additional fund of \$1,500,000.

## CONCLUSION

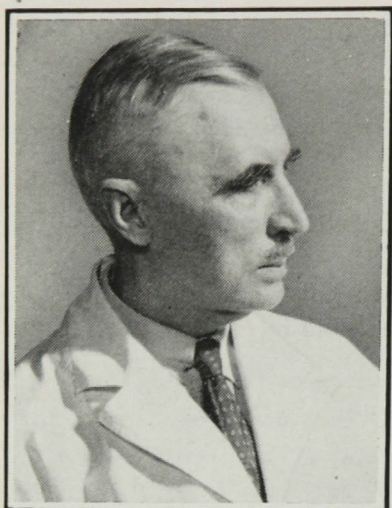
In conclusion, we have reached the Primary Objective of our campaign which was to consolidate and to make permanent the hospital activity of this Institute. For this we pay the highest tribute to the Government of the Province of Quebec and to the small group of generous friends in Montreal who have done so much for us.

It was the inescapable pressure of patients that forced us into clinical expansion. From 47 beds in the original Institute we were crowded up to 100 beds in the original Institute and the added wooden Annex, now to be torn down. With the building of the wing, there will be 130 beds in the Neurological Institute. At the same time, reorganization will increase efficiency, increase patient income, improve laboratory organization.

The Secondary Objective of our campaign was to secure permanent endowment of scientific work. This will be sought in the year to come and I hope, God willing, that I may bring you good news of this at the next Annual Meeting.

WILDER PENFIELD.

## In Memoriam



BORIS PETROVITCH BABKIN, M.D., St. Petersburg, D.Sc., London, L.L.D., Dalhousie, F.R.S.

For 11 years he was assistant to the great Russian Physiologist, Ivan Pavlov. Later he was successively Professor of Physiology at Odessa, Lecturer for the Medical Research Council, London, Professor of Physiology, Dalhousie University, Research Professor of Physiology, McGill, and finally Fellow of McGill University and Assistant Neurophysiologist in the Montreal Neurological Institute.

Professor Babkin's scientific achievement was recognized, shortly before his death, by his election to Fellowship in the Royal Society of London. As a scientist, musician, teacher and gentleman, he is saluted by his friends — the Staff and the Fellows of the Montreal Neurological Institute.



EMILE LEGRAND, M.D., Médecin Légiste (Paris), F.R.C.P. Canada. Professor of Psychiatry at the University of Montreal and Psychiatrist-in-Chief at the Hotel Dieu, Associate Consulting Neurologist at the Montreal Neurological Institute was taken from us by an aircraft accident.

He was distinguished clinician, gay, debonaire — a good friend. His associates on the staff of this Institute mourn his loss deeply.



DR. LEWIS REFORD. Although he was not a member of staff, the death of Dr. Lewis Reford was a sad blow to all of us in the Montreal Neurological Institute. He helped to make possible the development of this Institute and no one else took such a continued interest in the young men who are in training here for a life of service in neurology.

Dr. Reford was, himself, the first Canadian to make a special study of neurosurgery when he worked under Dr. Harvey Cushing at the Johns Hopkins Hospital. The establishment by Mrs. Reford of the Lewis L. Reford Fellowship, which will be awarded annually to a young Canadian or American neurosurgeon in training, and the establishment of the Lewis Reford Fellows Fund, the income of which is to be used each year for the needs of the Fellows' group, are projects that would have been dear to his heart.

# STAFF OF THE MONTREAL NEUROLOGICAL INSTITUTE

## OFFICERS

<i>Director</i> .....	WILDER PENFIELD
<i>Assistant Director</i> .....	FRANCIS MCNAUGHTON
<i>Secretary-Registrar</i> .....	PRESTON ROBB
<i>Executive Assistant—Hospitalization</i> .....	JOHN KERSHMAN
<i>Building Administration</i> .....	MISS EILEEN FLANAGAN
<i>Executive Secretary</i> .....	MISS ANNE DAWSON

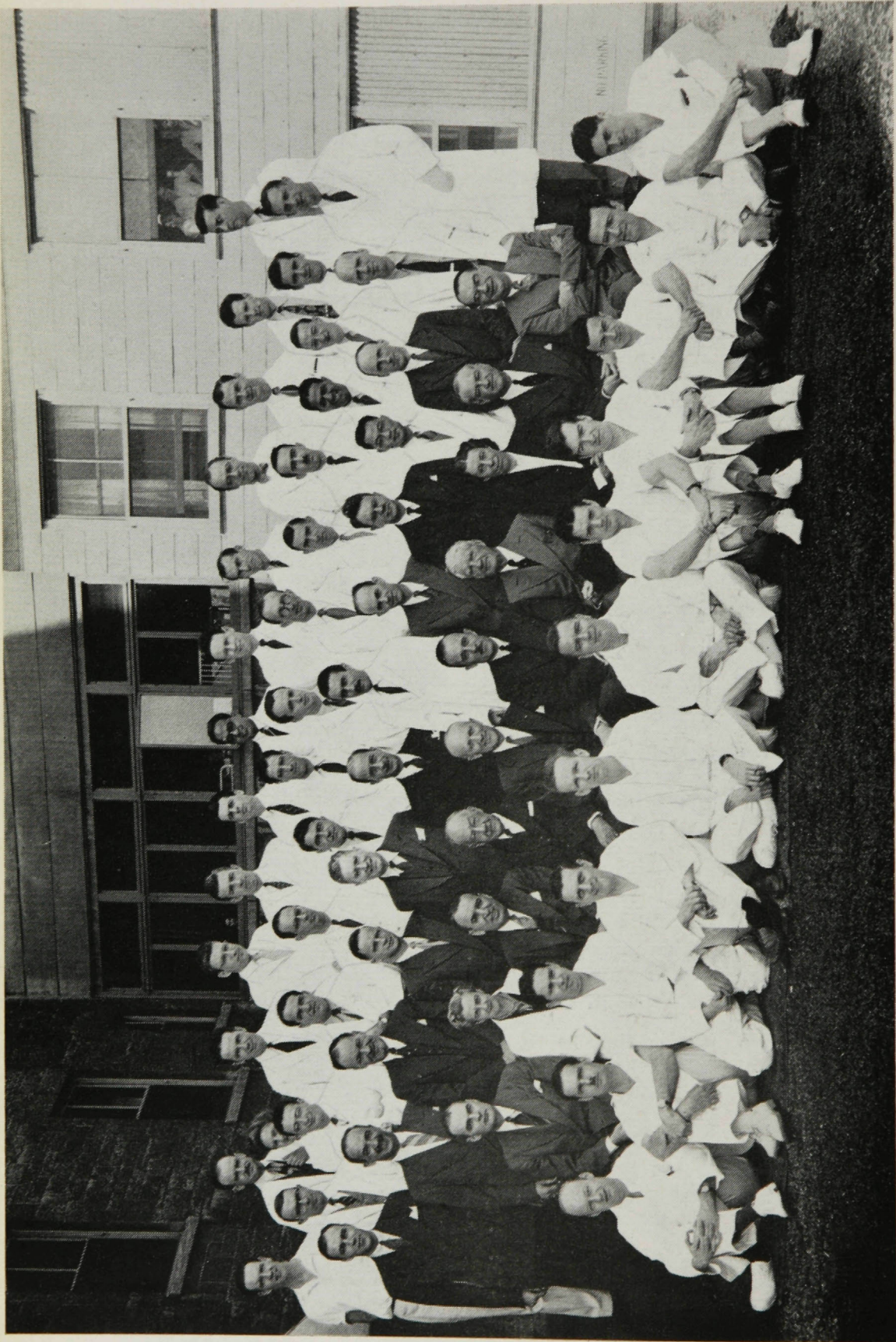
## CHIEFS OF SUB-DEPARTMENTS

### A. Hospital

<i>Neurologist</i> .....	DONALD McEACHERN
<i>Neurosurgeon</i> .....	WILLIAM CONE
<i>Roentgenologist</i> .....	DONALD McRAE
<i>Electroencephalographer</i> .....	HERBERT JASPER
<i>Anaesthetist</i> .....	ANDRÉ PASQUET

### B. Laboratory

<i>Neuroanatomist</i> .....	FRANCIS MCNAUGHTON
<i>Neurochemist</i> .....	DONALD McEACHERN
<i>Neuropathologist</i> .....	WILLIAM CONE
<i>Neurophotography</i> .....	JOHN KERSHMAN
<i>Neurophysiology</i> .....	HERBERT JASPER



Fifth Row: P. FLEMING, E. EVERITT, J. STOLL, J. CHURCHILL, G. AUSTIN, B. PERTUISSET, B. RAMAMURTHI, D. LLOYD-SMITH,  
 A. DEKABAN, J. VAN BUREN, H. ROSEN, G. HAINES, L. ROBERTS.  
 Fourth Row: R. FRASER, W. GERBER, R. LEVINS, R. SEARS, W. FEINDEL, J. OLSZEWSKI, R. AQUILINA, P. DE CASTRO, I. KLATZO,  
 D. TOWER, J. LORD, R. GINDÉ, J. WEBB, H. MCLENNAN, K. EARLE.  
 Third Row: J. P. ROBB, R. RABINOVITCH, A. YOUNG, A. PASQUET, A. R. ELVIDGE, H. JASPER, C. MARSAN, K. WELCH,  
 K. A. C. ELLIOTT, C. L. LI, F. L. MCNAUGHTON, F. O'BRIEN.  
 Second Row: D. McRAE, J. CHAISSON, W. V. CONE, C. K. RUSSEL, W. G. PENFIELD, F. CYRIL JAMES, J. W. MCCONNELL,  
 D. S. MCEACHERN, J. KERSHMAN.  
 First Row: A. BARNUM, J. HUNTER, J. HANBERRY, W. KITE, T. SPEAKMAN, M. BALDWIN, G. M. SHY, J. BATES, J. GOLDEN,  
 L. HORLICK, R. DRUCKMAN.

## 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)

JEAN SAUCIER, B.A., M.D. (Paris and Montreal)

NORMAN VINER, B.A., M.D., C.M.

### *Clinical Assistants in Neurology*

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

ROY SWANK, B.S., M.D., Ph.D.

### *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)

### *Adjunct Neurosurgeons*

CLAUDE BERTRAND, B.A., M.D.

HAROLD ELLIOTT, B.Sc., M.D., C.M.

### *Clinical Assistants in Neurosurgery*

MAITLAND BALDWIN, B.S., M.D., C.M.

REVIS LEWIS, M.D., C.M.

FRANCIS O'BRIEN, A.B., M.D.

### *Roentgenologist*

DONALD McRAE, M.D.

### *Associate Consulting Roentgenologist*

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

### *Electroencephalographer*

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

### *Anaesthetist*

ANDRÉ PASQUET, M.D., C.M.

### *Associate Anaesthetist*

R. G. B. GILBERT, M.B., B.S. (London), M.R.C.S., L.R.C.P., D.A.

### *Associate Consulting Anaesthetist*

F. A. H. WILKINSON, M.D., C.M., F.A.C.A., F.I.C.A.

### *Associate Neuroanatomist*

JERZY OLSZEWSKI,\* M.D.

### *Associate Neurochemist*

K. A. C. ELLIOTT, M.Sc., Ph.D.

### *Associate Neuropathologist*

ROY SWANK, B.S., M.D., Ph.D.

\*Lady Davis Fellow.

## TEACHING STAFF

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

Professor of Neurology and Neurosurgery, Chairman of Department .....	WILDER PENFIELD
Professor of Neurosurgery .....	WILLIAM CONE
Professor of Experimental Neurology .....	HERBERT JASPER
Associate Professors of Neurology .....	DONALD MCEACHERN FRANCIS MCNAUGHTON
Assistant Professors of Neurology .....	JOHN KERSHMAN ROY SWANK ARTHUR YOUNG
Assistant Professor of Neurosurgery .....	ARTHUR ELVIDGE
Assistant Professor of Neurological Radiology .....	DONALD MCRAE
Assistant Professor of Experimental Neurology .....	K. A. C. ELLIOTT
Assistant Professor of Neuroanatomy .....	JERZY OLSZEWSKI
Lecturer in Neurology .....	PRESTON ROBB
Lecturers in Neurosurgery .....	HAROLD ELLIOTT KEASLEY WELCH, B.S., M.D.
Demonstrators in Neurology .....	D. LLOYD-SMITH G. M. SHY, B.A., M.D., M.R.C.P.
Demonstrators in Neurosurgery .....	MAITLAND BALDWIN JOHN HANBERY, A.B., M.D. REVIS LEWIS ERIC PETERSON
Demonstrator in Neuropathology .....	IGOR KLATZO
Demonstrator in Electroencephalography .....	LEWIS HENDERSON

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

Professors .....	WILLIAM CONE
(in charge of graduate studies) .....	HERBERT JASPER WILDER PENFIELD
Associate Professors .....	DONALD MCEACHERN FRANCIS MCNAUGHTON
Assistant Professors .....	K. A. C. ELLIOTT ARTHUR ELVIDGE JOHN KERSHMAN JERZY OLSZEWSKI ROY SWANK

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

Professeur de Neurologie .....	JEAN SAUCIER
Professeur Agrégé de Neurologie .....	ROMA AMYOT

## RESIDENT STAFF July 1949 - July 1950

Senior Resident .....	MAITLAND BALDWIN
1. <i>Neurological Service</i>	
Neurological Resident .....	MILTON SHY
Assistant Residents .....	JAMES GOLDEN, RALPH DRUCKMAN, WILLIAM BARTON*, ROBERT LARIMER*, LOUIS HORLICK*.
2. <i>First Neurosurgical Service</i>	
Neurosurgical Resident .....	IRA JACKSON**, THOMAS SPEAKMAN**
Assistant Residents .....	GERALD HAINES**, WILLIAM KITE, JOHN HANBERY**
3. <i>Second Neurosurgical Service</i>	
Senior Assistant Resident .....	JOHN BATES.
Assistant Residents .....	JOHN LORD**, JOHN HANBERY**, ALEX BARNUM**, JOHN HUNTER**

\*Assistant Resident in Medicine, Royal Victoria Hospital, on rotation to Neurology for four months.

\*\*Six months on this service.

## FELLOWS OF THE MONTREAL NEUROLOGICAL INSTITUTE

1949 - 1950

Neuropathological Fellow .....	ROBERT SEARS. A.B., M.D. (Harvard)
Neuroanatomical Fellow.....	CHOH-LUH LI, B.A., M.D. (Shanghai)
Electroencephalographic Fellow.....	SAMUEL BRENDLER, A.B., M.D., (New York)
COSIMO AJEMONE MARSAN*, M.D. (Turin)	
ROBERT AQUILINA, M.D. (Paris)	REVIS LEWIS, M.D., C.M. (McGill)
GEORGE AUSTIN**, A.B., M.D. (Pennsylvania)	JOHN LORD, A.B., M.D., C.M. (McGill)
PEDRO DE CASTRO†, M.D. (Seville)	DONALD LLOYD-SMITH***, B.Sc., M.D., C.M. (McGill)
ANATOLE DEKABAN, M.D. (Warsaw)	FRANCIS O'BRIEN, A.B., M.D. (Columbia)
KENNETH EARLE, B.A., M.D. (Texas)	BERNARD PERTUISSET††, M.D. (Paris)
WILLIAM FEINDEL***, B.A., M.Sc., Ph.D., M.D., C.M. (McGill)	ERIC PETERSON, B.Sc., M.D., C.M. (McGill)
HERMAN FLANIGIN, M.D. (Oklahoma)	REUBEN RABINOVITCH, B.A., M.Sc., M.D. (Paris)
WILLIAM GERBER, A.B., M.D. (Arkansas)	LAMAR ROBERTS, A.B., M.D. (Duke)
RAMCHANDRA GINDÉ****, B.S., M.S., M.B. (Bombay)	HAROLD ROSEN, B.Sc., M.D., C.M. (McGill)
GERALD HAINES, B.S., M.D. (Vermont)	JULIUS STOLL, B.A., M.D. (Syracuse)
WILLIAM KITE, B.A., M.D. (Johns Hopkins)	DONALD TOWER, A.B., M.D. (Harvard)
IGOR KLATZO, M.D. (Freiburg)	JOHN VAN BUREN, A.B., M.D. (Columbia)
	KEASLEY WELCH, B.S., M.D. (Yale)

\*Rockefeller Fellowship.

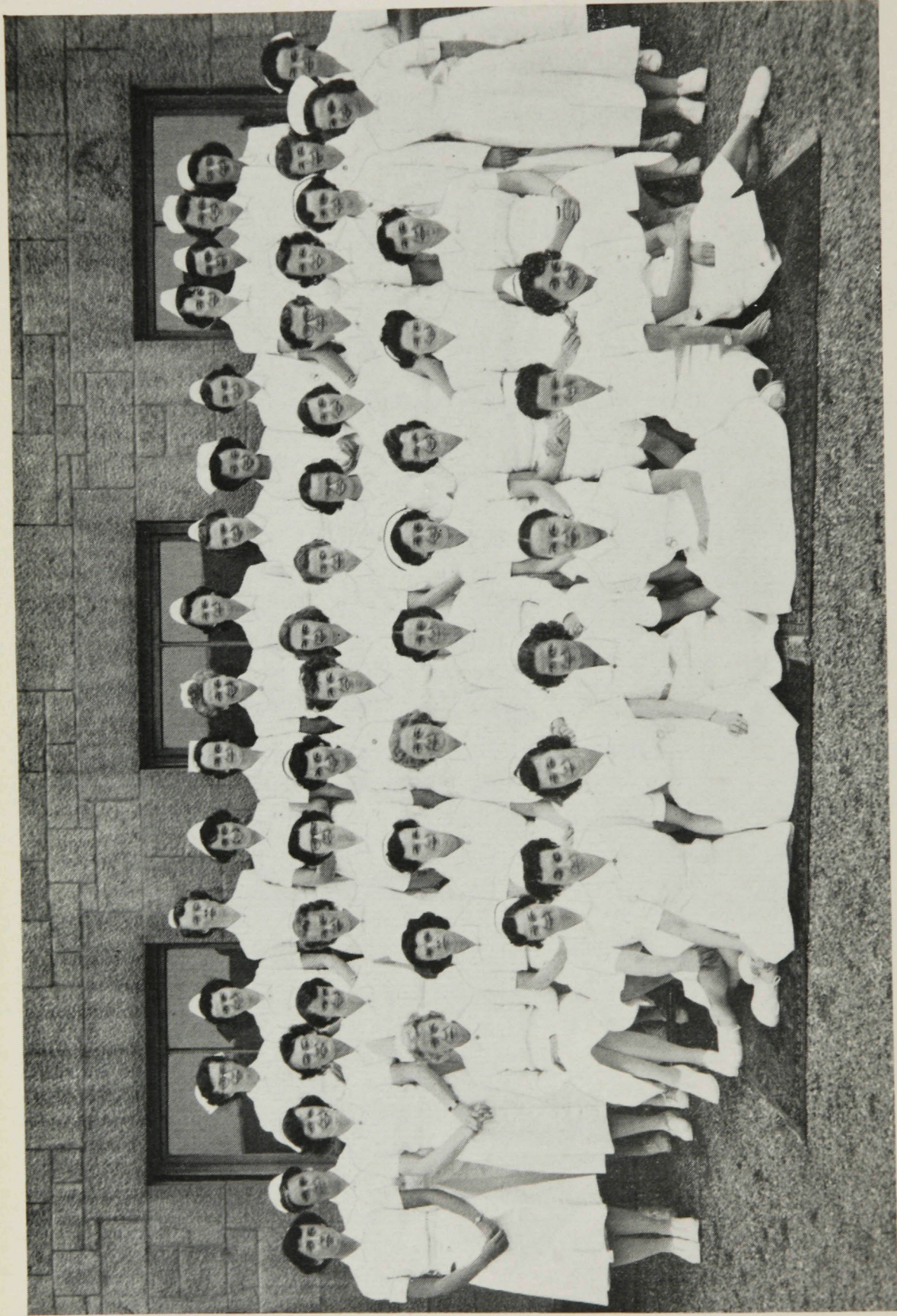
\*\*U.S. Public Health Fellowship.

\*\*\*National Research Council Fellowship.

\*\*\*\*Government of India Fellowship.

†University of Sevilla Fellowship.

††French Government Fellowship.



Back Row: I. HERDAN, V. MOSHER, E. ATKINSON, B. FORSYTHE, J. GERAGHTY, A. CAMERON, N. BROCK, I. LINDSAY, E. WONG,  
 P. MURRAY, J. MACMILLAN, M. FRASER, L. COX, B. INWOOD.  
 Third Row: B. SCOTT, M. CORRIGAN, J. OWENS, C. ROBERTSON, R. MACLEAN, H. COLE, P. RATTRAY, O. YACOVITCH, D. MAC-  
 DONALD, L. HALL, R. DICKSON, M. LACHARITE, J. MACGREGOR, I. MACMILLAN, J. PINDER, P. STANLEY, B. CALLAGHAN, A. MILO,  
 J. SPIERS.  
 Second Row: N. SHIELLS, M. ANGUS, A. MAJOR, B. CAMERON, E. FLANAGAN, M. COMEAU, M. MACKENZIE, M. CAVANAUGH,  
 A. JOHNSON.  
 Front Row: G. TRAFFORD, F. GRAHAM, C. LAWRENCE, A. TOWER, D. HOPE, E. ROTHWELL, C. WACOWICH.



## NURSING STAFF

<i>Director of Nursing</i> .....	MISS EILEEN C. FLANAGAN, B.A., R.N.
<i>Assistant Director of Nursing</i> .....	MISS BERTHA CAMERON, R.N.
<i>Instructor</i> .....	MISS ALICE MAJOR, B.N., M.A., R.N.
<i>Night Supervisor</i> .....	MISS ELIZABETH BARROWMAN, R.N.
<i>Assistant Night Supervisor</i> .....	MISS LILLIAN MCAULEY, R.N.
<i>Operating Room Supervisor</i> .....	MISS MARGARET HAGGART, R.N.
<i>Assistant Operating Room Supervisor and Instructor</i> .....	MISS ALVA PETERSON, B.N., R.N.
<i>Assistant Operating Room Supervisor</i> .....	MISS PHOEBE STANLEY, R.N.
<i>Supervisor, Dressing Rooms</i> .....	MISS MARIE COMEAU, R.N.

## HEAD FLOOR NURSES

MISS M. MACKENZIE, R.N.	MISS M. CAVANAGH, R.N.
MISS B. INWOOD, R.N.	MISS A. JOHNSON, R.N.

## ASSISTANT HEAD FLOOR NURSES

MRS. N. SHIELLS, R.N.	MISS C. LAWRENCE, R.N.
MISS J. SPIERS, R.N.	MISS G. TRAFFORD, R.N.

## OPERATING ROOM STAFF

MRS. EVA WONG, R.N.	MISS L. LAST, R.N.
MISS H. CALLANDER, R.N.	MISS S. LEWIS, R.N.
MRS. M. LACHARITÉ, R.N.	MRS. W. MCLEAN, R.N.
MISS E. SAWDON, R.N.	MRS. C. PHILIPS, R.N.

## DRESSING ROOM STAFF

MISS D. MACDONALD, R.N.	MRS. M. CORRIGAN, R.N.
MISS M. MCAFEE, R.N.	MISS A. CAMERON, R.N.
MISS B. FORSYTH, R.N.	MISS A. MACDONALD, R.N.
MISS P. MURRAY, R.N.	MISS J. MACMILLAN, R.N.

## GENERAL STAFF

MISS J. MACGREGOR, R.N.	MRS. V SWANEY, R.N.
MISS S. ANDERSON, R.N.	MISS J. NADEAU, R.N.
MISS E. TURNER, R.N.	MISS V. HOLLETT, R.N.
MISS H. COLE, R.N.	MISS N. BURROWS, R.N.
MISS B. RANKINE, R.N.	MISS P. RATTRAY, R.N.
MISS L. LINDSAY, R.N.	MISS C. WACOWICH, R.N.
MISS R. MACLEAN, R.N.	MISS M. FRASER, R.N.
MISS S. BROWN, R.N.	MISS L. HALL, R.N.
MISS M. BAIRD, R.N.	MRS. O. YACOWICH, R.N.
MISS J. PINDER, R.N.	MISS T. HERDAN, R.N.
MISS K. DEAN, R.N.	MISS I. MACMILLAN, R.N.
MISS L. COX, R.N.	MISS B. BROCK, R.N.
MISS E. ATKINSON, R.N.	MISS J. OWENS, R.N.
MRS. M. FITZGERALD, R.N.	MISS M. PATTERSON, R.N.
MISS M. ANGUS, R.N.	MISS J. FRASER, R.N.
MRS. V. BLYDE, R.N.	MISS R. DICKSON, R.N.
MISS H. ARSENAULT, R.N.	MRS. F. GRAHAM, R.N.
MISS C. ROBERTSON, R.N.	MRS. A. TOWER, R.N.
MISS D. DEXTER, R.N.	MISS A. MILO, R.N.

## SOCIAL SERVICE STAFF

<i>Director</i> .....	MRS. JOSEPHINE D. CHAISSON
<i>Social Worker</i> .....	MISS TERUKO HIDAKA
<i>Social Worker</i> .....	MISS ANDRÉE LARIVIERE

*Social Worker on Research Project* ..... MISS FRANCOISE BELANGER\*  
*Social Worker on Research Project* ..... MRS. JEAN M. JONES\*\*

\*Supported by Federal-Provincial Grant to study social aspects of epilepsy.

\*\*Supported by the Multiple Sclerosis Society of Canada to study social aspects of multiple sclerosis.

## TECHNICAL AND SECRETARIAL STAFF

### TECHNICIANS

MISS DORIS BROPHY, B.A., Lic. ès Sci., Neurochemistry	LEWIS HENDERSON, Electroencephalography
MISS CAROLINE CHIASSON, R.T., X-ray	CHARLES HODGE, Photographer
MISS ROMA COCKBURN, X-ray	MISS DARCY HUBBELL, X-ray
MRS. JEAN FAIRLIE, Neuropathology	MISS MONA LANDY, B.Sc., Neurochemistry
MISS DOROTHY FOSTER, Neuroanatomy	MISS LOIS ORR, Neurochemistry
LESLIE GEDDES, B.Eng., Electroencephalography	MISS LILI PRSKO, Electroencephalography
JOHN GILBERT, Neuropathology	MISS MARY ROACH, R.N., Neurophysiology
MISS AAGOT GRIMSGAARD, Neuropathology	CHARLES STEVENS, Neurophysiology
RONALD HARAM, Assistant Photographer	MRS. ALICE SZCZENIEWSKA, Neuroanatomy
MISS JEAN HARRIS, R.T., X-ray	MISS VALERIE WILMOT, B.A., M.Sc., Neuropathology
MRS. NORAH HENDERSON, B.Sc., Neurochemistry	

### SECRETARIES

MISS ELSIE ALLDER, R.N., Secretary to Registrar	MISS PAMELA MCCLOUGHRY, Follow-up Secretary
MISS MABEL BEIGHTON, X-ray	MISS EDITH MCWHIRTER, Case Histories
MRS. ELINOR CHRISTIE, Manuscripts	MISS DIANA MEAKINS, Office, Clerk, Social Service
MISS BARBARA DAVIS, Discharge Summaries	MISS INA PEAREN, Neurophysiology
MISS DIANA DAVIS, Clinic Secretary	MISS DULCIE ROBINSON, Office
MRS. CORINNE DEGUISE, Office	MISS EILEEN ROBINSON, Office
MISS EVA FEJERVARY, X-ray	MISS CYNTHIA ROSS, Electroencephalography
MISS ANN GIBSON, B.Sc., Neuropathology	MRS. STEPHANIE STEWART, Social Service
MRS. ISABEL KNOTT, B.A., S.B., Operation Reports	MISS LOIS WIGGETT, Case Histories

## 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> .....	REUBEN RABINOVITCH LAMAR ROBERTS ROY SWANK KEASLEY WELCH

## MONTREAL GENERAL HOSPITAL

Neurologist.....	FRANCIS MCNAUGHTON
Associate Neurologists.....	PRESTON ROBB
	NORMAN VINER
Neurosurgeon.....	HAROLD ELLIOTT
Consulting Neurosurgeons.....	WILLIAM CONE
	ARTHUR ELVIDGE
	WILDER PENFIELD

## CHILDREN'S MEMORIAL HOSPITAL

Honorary Consultant.....	COLIN RUSSEL
Consultant.....	WILDER PENFIELD
Director of the Department of Neurology.....	ARTHUR YOUNG
Neurologist.....	FRANCIS MCNAUGHTON
Associate Neurologist.....	PRESTON ROBB
Director of the Department of Neurosurgery.....	WILLIAM CONE
Associate Surgeon.....	ARTHUR ELVIDGE
Active Consultant.....	DONALD MCRAE

## HOMOEOPATHIC HOSPITAL

Consultant in Neurosurgery.....	WILLIAM CONE
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## HOTEL DIEU

Chief of Neurological Service.....	JEAN SAUCIER
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## HOPITAL NOTRE DAME

Neurologist-in-Chief.....	ROMA AMYOT
Physician-in-Charge, Department of Neurosurgery.....	CLAUDE BERTRAND

## HERBERT REDDY MEMORIAL HOSPITAL

Consulting Neurosurgeon.....	ARTHUR ELVIDGE
Assistant Neurologist.....	PRESTON ROBB
Assistant Neuropsychiatrist.....	JOHN KERSHMAN

## JEWISH GENERAL HOSPITAL

Chief of Department of Neuropsychiatry.....	JOHN KERSHMAN
Consultants.....	WILDER PENFIELD
	NORMAN VINER

## QUEEN MARY VETERANS' HOSPITAL

Chief Consultant in Neurosurgery.....	WILDER PENFIELD
Consultants in Neurosurgery.....	WILLIAM CONE
	ARTHUR ELVIDGE
Head of Neurosurgical Division.....	HAROLD ELLIOTT
Assistant in Neurosurgery.....	HAROLD ROSEN
Chief Consultant in Neurology.....	DONALD MCEACHERN
Consultant in Neurology.....	C. MILLER FISHER
Head of Neurology Division.....	PRESTON ROBB
Assistant in Neurology.....	ANATOLE DEKABAN
Consultant in Neuroradiology.....	DONALD MCRAE
Head of Electroencephalography Division.....	JOHN KERSHMAN

## ST. MARY'S HOSPITAL

Physician (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

The neurological service has grown, as it should do, into a lively counter-balance of the neurosurgical service. This growth has occurred within a few years' time, and makes for health in a great national institute of this character.

The indoor service has run at an average monthly admission rate of 60 patients, and this has kept the house staff of four full time men busy day and night. Our resident, Dr. Milton Shy, has directed the service with great capability. To him and to the senior interne staff great credit is due.

But this is only one facet of their work. The outpatient clinic runs to 55 new cases, and 260 revisits per month. I am informed, by one who should know, that these clinics are considered a model for the hospital. The staff men, too, have carried a large burden in consultations (419), in teaching, and with work in the wards and outpatient department. Dr. McNaughton, Dr. Kershman, Dr. Young, Dr. Robb and Dr. Swank have contributed in so many ways to the growth and efficiency of the department.

The Neurological Treatment Clinic has continued to serve an indispensable function. Patients, who would otherwise have had to come into hospital, have received difficult intravenous treatments daily, under the watchful eye of Miss Etter, R.N., and a senior interne. With the support of the Colin Russel Chapter of the Multiple Sclerosis Society of Canada, a new Clinic for Physiotherapy has been opened in the Royal Victoria Hospital. The clinic has been furnished and redecorated by this group of keen supporters, and it is under the direction of Dr. Young and Dr. Rabinovitch.

Our neurological rounds have been held regularly twice weekly, and have been well attended. We welcome the graduate nurses, physiotherapy workers, and members of the Social Service Department who frequently join us.

A series of advanced Seminars in Neurology has been conducted this year under the direction of Dr. McNaughton. These have been of great interest and value to both staff members and fellows.

All in all, it has been a good year, and a very busy one. But the care of sick people depends upon so much more than I have described above. The nursing care given to our patients is superb. The help given by our social service workers cannot be over-estimated. A multitude of special laboratories and services aid us every day. To all of these, and to our neurosurgical colleagues, we offer grateful thanks.

## REPORT OF THE NEUROSURGEON

DR. WILLIAM CONE

Figures show that the neurosurgical service had a busy year. One thousand and eighty-eight patients were admitted; eight hundred and twenty-three operations were done. The variety and urgency of the problems to be solved prevented dullness and provided incentive. The spirit of kindness and cooperation between the various departments was again the chief factor in making the work of the year pleasant.

The neurosurgical service is grateful for the sense of comradeship with medical neurology. There is no criticism or resentment when patients on the medical service are transferred for immediate surgical treatment and disrupt the planned routine. It is strange that so many medical and surgical emergencies must be taken care of in an Institute where it should be anticipated that unexpected stresses and strains might be fewer than in a general hospital. The fact that there are so many emergencies is an indication of the need for, and of the trust in the work of, the Institute.

The treatment of tumours of the central nervous system is one of the major responsibilities of the neurosurgical service. Under the chairmanship of Dr. Arthur Elvidge an organization has been set up to register and follow patients systematically. It is known as the Montreal Neurological Institute Neoplastic Registry, and is coordinated with the Central Tumour Registry of the Royal Victoria Hospital.

The analyses which will eventually be possible are certain to point the way to more effective therapy. The financial aid for the project has come from a Dominion-Provincial grant. It is hoped that this may be the forerunner of an organization for the more systematic registration of all patients. There is a need for such a department so that the results of treatment in both neurology and neurosurgery can be subjected to the same critical evaluation now provided for patients with tumours.

The work of a hospital particularly that of its surgical division, runs around the clock. Some day leading hospitals with the highly specialized and elaborate equipment which modern scientific medicine must use, may find it necessary to operate at full efficiency throughout the twenty-four hours to justify the equipment. When that day comes patients will not be penalized if they require treatment in the off hours, hospital days will be cut down, and the morbidity of illness reduced.

## REPORT OF THE REGISTRAR

DR. PRESTON ROBB

It is the function of the Registrar to present the actual figures of the work done during the past year in this Institute. One might divide this into three phases: clinical work, teaching of graduates and undergraduates, and research.

The clinical work consists of the ward service in the Institute, the daily Outpatient Clinics and consultations on other services of the Royal Victoria Hospital.

During 1949, there were 1778 admissions and 78 transfers from other services, making a total of 1856 as compared with the total 1848 in 1948. The death rate was 4.2% and the autopsy rate 73.8%. There were 823 operations performed. The average hospital stay was 17.6 days.

The Outpatient Clinics continued to operate under great pressure. There were 894 new patients referred for neurological or neurosurgical consultation and there were 3767 revisits, making a total of 4661. As well as the regular neurological and neurosurgical clinics, special clinics for epilepsy, neuromuscular

diseases and multiple sclerosis continue to operate. It is through these clinics that special medical and social research is being carried out in these diseases.

The second phase of our work is teaching. The undergraduates in their second year receive an extensive course from Dr. McNaughton and his staff in neuroanatomy. In the third year, the field of neurology and neurosurgery is covered in a series of didactic lectures given by Dr. Penfield and other members of the staff, while in the fourth undergraduate year, the teaching consists of bedside clinics and seminars.

Equally as important is the postgraduate training carried on in this Institute. As well as the training received on the wards by the house officers, advanced courses in neuroanatomy, neurochemistry, neurophysiology and neuropathology are conducted for the fellows. At the present time there are forty-three research fellows and house officers from Spain, India, France, Poland, Australia, China, Italy, Canada, the United States and England studying and carrying on research in this Institute. When one considers our alumnae spread all over the world, one cannot help but be impressed with the significance of this Institute as a teaching and research center.

We must also refer to the courses in neurological nursing given to undergraduates of the Royal Victoria and Montreal General Hospitals, as well as the special postgraduate course in neurological nursing conducted so ably by Miss Major and directed by Miss Flanagan.

Although the demand for more clinical and research facilities has increased again and again, the size of the building has not. We have truly reached the bursting point and the time has come when we must expand into larger quarters.

## REPORT ON HOSPITALIZATION

DR. JOHN KERSHMAN  
*Executive Assistant*

It is a pleasure that for the first time in many years, it is possible to start this report on an optimistic note. One of the greatest difficulties in hospital administration for the past 10 years has been the impossibility of planning caused by rapidly rising costs. During 1949, the increase in cost per patient day was less than 10% over the previous year and this is the smallest rise since 1941. Perhaps hospital costs are now reaching a stable level and we may be able to budget expenditures and keep them within reasonable limits of expectancy.

The total cost per patient per day in 1949 was \$16.66. This does not include any allowance for depreciation, replacement of equipment or the maintenance of research laboratories which are budgeted separately.

Contrary to what is generally supposed, this high cost and the resultant deficits arising from hospitalization are not caused by the operation of any extensive special services and laboratories. As a matter of fact, such special hospital departments as electroencephalography, neurochemistry, the X-ray department, operating room, etc., as a group, are self-supporting. By far the greatest portion of the daily expense is incurred in providing ward nursing, meals, building maintenance, administration, etc. These account for \$11.37 per patient per day

and are supposed to be covered by the income from ward and room rates. But with the latter at their present level, they do not begin to equal the cost of the services rendered. It is impossible to curtail these basic services, but they can only continue if either ward and room rates are raised considerably or if financial aid comes from government agencies or private sources.

It is doubtful if hospital charges can be much increased. The present cost of hospitalization is already a severe burden to the wage-earner. We must look for some method of reducing this burden, yet at the same time, it is our responsibility to make sure that this is done without in any way compromising the level of medical care. Most radical remedies take little account of this. The Canadian public will be poorly served if it can only afford minimal medical care. It is entitled to the best that progressive medical science can offer. This cannot be legislated into existence, but wise governments will recognize where the seeds for such growth have taken root and should nourish them generously.

## REPORT OF THE NURSING SUPERVISOR

MISS EILEEN C. FLANAGAN

The increasing interest in, and growth of neurological departments in Canada, the United States and other parts of the world, is reflected in the requests from nurses for postgraduate training here. Some of these graduates remain on our staff and the others return to the neurosurgical departments of their own hospitals. Two hundred and fifty postgraduates have taken the course in the past fifteen years.

Eight student nurses at a time, from the Royal Victoria Hospital, affiliate with us and are given two months' training. This number could be doubled now, with the larger number of patients available for clinical experience. Their interests, enquiring minds, and enthusiasm are a valuable means of keeping the rest of us from becoming too complacent!

As always, the nursing load has been heavy due to our large number of critically ill and helpless patients, but we have been well staffed for the first time since the War.

The general decrease in the use of special duty nurses by private and semi-private patients means that the Institute staff is carrying almost the entire care of the patients.

In 1945, there were 902 special nurses giving 8,470 nursing periods.

In 1947, there were 902 special nurses giving 6,965 periods.

In 1949, there were 527 nurses giving 3,989 periods — a drop of 375 nurses and 4,481 periods in the four years. This is reflected in the larger staff required and the consequent increase of costs.

## DEPARTMENT OF SOCIAL SERVICE

MRS. JOSEPHINE CHAISSON

Hospitals are no longer concerned solely with the management of the patient's disease. The very nature of the age and civilization we live in causes

internal stress and external strain which make it increasingly necessary to concern ourselves with the total care of the total person. The patient brings to the hospital much more than his disease; he brings his fears, his frustrations, his prejudices, his inner strengths or weaknesses, his hopes and his despair. His family may be a tower of strength or a millstone around his neck; they may fear his incapacity and see him as a potential liability or they may bring loyalty and devotion to support and encourage him.

Our direct contacts with patients and their families as well as with the medical, nursing and administrative staff, make up the bulk of our day to day tasks. During the past year, the Social Service staff had 2400 patient interviews and 1700 interviews with patients' families; when we add to this 1700 interviews with other interested persons, we get some idea of the department's partial work load. Five hundred and thirty-four reports made available to wards and clinics as well as to community agencies constitute another fact of the job.

In addition to direct and indirect service to patients, the department has continued to be an integral part of the Institute's teaching and research program. All staff members share in a program for the graduate nurses which is designed to give this group not only a picture of the social worker as she goes about her daily job, but also provides for case discussions, a review of suitable literature and a study of social records.

Social Service staff also presents case material chosen to demonstrate the social and emotional component in illness at the medical information seminars which our staff doctors give to first and second year students from the McGill School of Social Work.

The generosity and continued interest of the Federal and the Provincial Governments is greatly appreciated in our department. A Federal-Provincial Grant has made it possible to complete the first study on "Social Problems of the Epileptic Patient". This report, written by Mrs. Davidson, our former director, and Mrs. Thomas, has been very well received in Canada, the United States, and England, and we have received many requests for copies from universities, nursing, medical and welfare groups.

Federal-Provincial Grants are currently providing salaries for the further study of the epileptic patient. The present study emphasis has been placed on the exclusion of the epileptic child from school; the placement of epileptic children who cannot benefit from the elementary school program and on the training and employment facilities available for the adult epileptic.

The grant which the National Multiple Sclerosis Society has made to the Institute has made it possible for a social worker to participate in the clinical study of multiple sclerosis patients being carried on by our doctors and a dietician.

The Social Service Department of the Institute is a dynamic, growing department and its focus will continue to be service to the ill person to help him deal with the many and diverse problems associated with his illness or disease. No longer do social workers feel they must function as the doctor's "social conscience". We are proud that our doctors have such fine awareness and recognition of the social component in illness and we see this not as any threat to the social worker's usefulness, but as evidence of an inevitable broadening and deepening of the present concept of the patient's total care.



There is a constant call on the Social Service Department to meet special situations, such as taxi fares, meal tickets, etc. Donations to such a fund provide a practical means of helping patients and would be most gratefully received.

## DEPARTMENT OF RADIOLOGY

DR. DONALD McRAE

In the last annual report, it was noted that the work had increased three hundred per cent over the past ten years. In 1948, there were 6,900 examinations and 33,000 films were used. Yet, in 1949, 7,400 examinations were carried out using 35,000 films. This was done by keeping the department open for an extra five hours each day. We were able to keep pretty much abreast of the patients as they were admitted. More important, it took the pressure off the technician so that more careful, more thoughtful, and better technical work was done. It did increase the pressure on the professional staff and at the same time the teaching load was increased.

For the first half of the year, Dr. Dermot McCarthy acted as resident. Dr. Norman Brown, of the Montreal General Hospital, spent six months in the department and during this time reviewed our cases of craniolacunia and craniostenosis. Dr. C. F. Whitney and Dr. Marvin Loughheed, candidates for the Diploma in Radiology, were each resident for four month periods.

Our film collection is unique in Canada and could be duplicated in few places in the world. It is a mine of material, but is an unworked mine. A punch-card system is to be installed to allow analysis of our current records. It is hoped that we shall be able to go back over the film files so that the whole film collection will be indexed and analysed.

The activities of the department can be classed as clinical, research and teaching. Ideally, each should receive equal space and time. We have had to make the clinical activity our major concern. Teaching has taken second place and, unfortunately, research has had to come last. With more space and professional help, teaching facilities can be expanded and research can take its rightful place.

## DEPARTMENT OF NEUROCHEMISTRY

DR. DONALD McEACHERN

DR. K. A. C. ELLIOTT

The heavy load of routine work continues to increase. The total number of determinations done in the neurochemical laboratory in 1949 was 5,328 and in the ward laboratories was 4,853. The laboratory is now overcrowded and we could easily take on several additional graduate research students were there but room.

Under a grant from the Rockefeller Foundation, much of the investigative work of the laboratory has been devoted to a study of possible biochemical mechanisms in epilepsy. The role of acetylcholine, a powerful substance present in brain and capable of firing off nerve cells, is being explored. This is largely under the direction of Dr. Elliott.

Dr. Elliott completed a study, with Dr. Roy Swank, on the changes in total acetylcholine content of brain during anaesthesia and following administration of convulsants. He is now studying the factors which affect the free and bound acetylcholine found in brain tissue after excision.

Mr. James Webb is completing his study of the effects of narcotic and convulsant drugs on oxygen uptake and acid formation by brain tissue *in vitro*. Mr. Hugh McLennan has continued his studies on the effects of potassium, calcium, carbon dioxide, pH, and narcotic and convulsant drugs on the synthesis of acetylcholine by brain tissue. Dr. Donald Tower is making a comprehensive survey of the whole acetylcholine system in various animals, with special interest in normal and epileptogenic human brain tissue.

Dr. McEachern and Dr. Shy, along with others, are testing the effects of cortisone on certain muscular diseases. There have been encouraging results in some instances. Trials with wheat germ oil are continuing.

## DEPARTMENT OF ELECTROENCEPHALOGRAPHY

DR. HERBERT JASPER

The work of this department has become more and more that of applying various electrophysiological techniques and principles to aid in the diagnosis and understanding of diseases of the nervous system. Improved methods of EEG examination and the recording of electrocorticograms in conjunction with neurosurgical procedures have been developed. Studies of the effects of various forms of stimulation (Photic, Sonic, etc.) upon the EEG, studies of methods of activating epileptiform seizures (with cinematographic analysis), studies of the effects of drugs and anaesthetic agents have been carried out. Investigation of neuromuscular diseases and spinal reflexes have been studied by means of electromyography.

During the past year there have been 1,864 EEG examinations carried out on 1,594 patients, the majority of whom have been patients with epilepsy, as shown by the following list of principal diagnostic groups:

Epilepsy .....	805
Tumours .....	155
Head Injuries .....	148
Headache and Migraine .....	71
Vascular Diseases .....	63
Subdural Hematomas .....	11
Mental Disorders .....	59
Abscess .....	11
Miscellaneous .....	178
Deferred .....	93
<b>TOTAL .....</b>	<b>1,594</b>

In electromyography there have been 110 patients examined with peripheral nerve or cord injuries or with neuromuscular diseases. Electrocorticograms were carried out on 60 epileptic patients in conjunction with Dr. Penfield's operations. Analysis of the information gained by the results of these direct observations of

the electrical activity from the exposed human brain has been a rich source of information of value not only to the understanding of the extracranial EEG, but to the understanding of epilepsy itself.

## DEPARTMENT OF NEUROPATHOLOGY

DR. WILLIAM V. CONE

DR. ROY SWANK

Neuropathology has continued to occupy two full time fellows. Five hundred and twenty-three neurosurgical specimens and one hundred and one autopsy reports stand as a summary of their activities.

At the end of the year medical neuropathology was separated from surgical neuropathology and taken over by the Department of Neuroanatomy with Jerzy Olszewski in charge.

Dr. Igor Klatzo reviewed the material from one hundred and twenty-seven cases of abscess of the brain.

Dr. Harold Rosen has been carrying out a series of experiments on nerve regeneration to determine whether or not by massage he can make growth cones cross the line of suture more promptly and advance down the nerve trunk more rapidly.

Dr. Gerald Haines has been attempting to produce hydrocephalus in dogs so that a variety of cerebrospinal fluid shunts could be made.

Dr. Ramchandra Gindé's problem has had to do with a study of the retinae, geniculate bodies and visual cortex after section of one optic tract.

Dr. Revis Lewis has studied the reaction of oligodendroglia in Wallerian degeneration in the transected spinal cord.

This year there have been a number of changes in the equipment in the laboratory. An Autotechnicon has improved the quality of the histological preparations and helped to keep things up to date. A new and compact slide filing system has made all the microscopic material readily available for study and review.

## DEPARTMENT OF NEUROPHYSIOLOGY

DR. HERBERT JASPER

DR. BORIS BABKIN

The laboratory and surgical facilities of this department have been employed by 33 research fellows and 5 members of the staff during the past year. There were 22 research fellows and 3 staff members engaged in neurophysiological research, while the remaining fellows and 3 staff members were from the departments of neurochemistry, anatomy and neuropathology. With 25 men engaged in neurophysiological research (though not all throughout the entire year) performing a total of 542 major procedures, problems of direction, organization and

provision of materials and apparatus have represented a challenge to the staff of this department. Some conception of the range of problems under investigation is given by the following list of titles:

The response of unanaesthetised animals to local thalamic stimulation with special reference to petit mal epilepsy.

Analysis of cortical and thalamic responses to photic stimulation in relation to myoclonic epilepsy.

Electrographic analysis of retinal and cortical responses to photic stimulation.

The effect of section of the optic tract on one side upon the electrical responses of the occipital cortices to intermittent photic stimulation.

Electrophysiological studies of the interconnections and subcortical connections with the tip of the temporal lobe.

Analysis of the responses of the supplementary motor area in monkeys.

Studies of spreading depression and suppression in the cerebral cortex and thalamus.

Effects of electrical stimulation of the fornix, hippocampus, and anterior limbic cortex.

The effects of anaesthesia upon the electrical activity of the cerebral and cerebellar cortex.

The local arrest of cortical function by means of polarizing electrical currents.

The location and action of cortical centres for the integration of somatic and autonomic functions of the nervous system.

Studies of denervation sensitization of the cerebral cortex.

Electrographic studies of the thalamic projections of first and second sensory cortex, and of the frontal lobes.

Measurements of local oxygen tension in the cerebral cortex.

Further analysis of the specific and diffuse thalamocortical projection systems.

The effects of electrical stimulation of diencephalic structures and basal ganglia upon cortically induced movements and upon spinal reflexes.

It is apparent from the above titles that our work has combined basic neurophysiological research with investigations more directly related to clinical problems.

## DEPARTMENT OF NEUROANATOMY

DR. FRANCIS MCNAUGHTON

DR. JERZY OLSZEWSKI

The anatomy of the nervous system is, with neurophysiology, of basic importance for the understanding of the problems of clinical neurology, and a "keystone" in the training of young neurologists and neurosurgeons. One main purpose of this department is to provide this training in neuroanatomy for the fellows and interne staff of the Institute.

Under the title of "Seminar in Neuroanatomy" a series of lectures, demonstrations and discussion periods has been held during the winter months, covering the main problems in the field of neuroanatomy. As in the past, this Seminar has been closely integrated with Dr. Jasper's lectures and demonstrations in neurophysiology. Some 15 graduates took part in the course in brain modelling, a more intensive study of neuroanatomy.

The undergraduate course for students of the second year was given in the Department of Anatomy at McGill University during the Fall Semester. As far as possible, the clinical application of neuroanatomy is stressed.

Further new equipment has been added this year, including a research microscope, a Leica camera, and a new microtome. The technical staff has been increased to two, in order to handle the experimental material of fellows in the Department of Neurophysiology, and it will soon be necessary to add a third technician. Dr. Olszewski has ably supervised the technical work, in addition to his own studies in preparing a detailed atlas of the Macaque thalamus. He has also assumed responsibility for medical neuropathology at the Institute.

Four fellows carried on research work in the department during the past year. Dr. Sean Murphy made an intensive review of the neurology of the eye and the visual system. He also began a histological study of the nerve supply of retinal arteries. Dr. William Feindel is completing a year's work on the origin and distribution of nerves in the dura mater, under a National Research Council Grant. Dr. Choh-luh Li has made preliminary studies of the connections of the temporal lobe in cat and monkey, using Marchi and silver techniques. Dr. Kenneth Earle is engaged in an intensive study of the pain pathways of the spinal cord, including Lissauer's tract.

## DEPARTMENT OF PHOTOGRAPHY

DR. JOHN KERSHMAN

The following work was done during 1949:

Total number of photographs of operations .....	4,436
Total number of photographs of patients .....	372
Photomicrographs .....	420
Miscellaneous, including X-rays, slides, etc. ....	1,864
	<hr/>
Total number of photographs .....	7,092

The greatest increase has been in the number of operation photographs taken in the new operating room. The stroboscopic light equipment has provided much better pictures than could be taken before and it has been used very extensively. The original photographic equipment in the first operating room is now gradually being replaced by a more modern and flexible camera and improved lighting, which will give greater detail of the exposed cortical surface.

## FELLOWS' LIBRARY

DR. FRANCIS MCNAUGHTON

The Library is as busy and useful as ever, as a reference library on neurological subjects, but it is becoming more and more crowded, for lack of shelf and reading space. We now possess some 2,700 books and bound journals; 93 new books were added to the Library during the past year, of which 43 were personal gifts, or were obtained through the Medical Library Association Exchange. We subscribed to 51 journals from all parts of the world.

We are grateful for books donated to the Library during the past year by Dr. W. V. Cone, Dr. K. A. C. Elliott, Dr. Bernard Harries, Dr. C. P. Martin, Dr. W. Penfield, Dr. M. Prados, Dr. A. T. Rasmussen, Dr. Swank, and the McGill Medical Library

## THE FELLOWS' SOCIETY

DR. LAMAR ROBERTS, *President*

DR. REVIS LEWIS, *Vice-President*

DR. CHOH-LUH LI, *Secretary-Treasurer*

The Fellows' Society was officially started in 1938-39 under the presidency of Dr. Theodore Erickson. There was a total of 17 Fellows. The Presidents of this Society during the next ten years were Guy Odom, Everett Hurteau, Theodore Rasmussen, Herbert Jasper, Edward Lotspeich, William Feindel, Arthur Morris, Keasley Welch, Harry Steelman and Maitland Baldwin. During the past year, the total number of fellows has reached the all time high of 47.

The Fellows' Society has continued to benefit by its meetings with distinguished visitors among whom were the former fellows Dr. Hoen and Dr. Knighton.

The speakers for the year were:

DR. MARCEL MONNIER, Geneva, Switzerland. "Reticular Formation".

DR. MARTHE VOGT, Edinburgh, Scotland. "Control of the Rate of Secretion of the Adrenal Cortex"

DR. JOHN KERSHMAN, Montreal. "Impressions of Israel".

DR. ALLAN BIRD, Johannesburg, South Africa. "South Africa".

- DR. ABNER WOLF, New York, New York. "Experimental Allergic Encephalitis".
- DR. CLINTON N. WOOLSEY, Madison, Wisconsin. "Sensory Cortex of Different Animals"
- DR. WYLIE MCKISSOCK, London, England. "Intracranial angiomas".
- DR. RAMCHANDRA GINDE, Bombay, India. "High Lights of India".
- DR. GORDON PETRIE, Montreal. "Fracture and Dislocation of the Spine".
- DR. J. A. V. BATES, London, England. "Electric Activity of Cortex Accompanying Voluntary Movements".
- MR. HUGH MCLENNAN, Montreal. "Acetylcholine Metabolism in Brain Tissue Preparations".
- DR. HERBERT JASPER, Montreal. "Recent Development in Electroencephalography, as reported at the Paris Meeting".
- DR. DONALD MCEACHERN, Montreal. "Recent Activities in the Neurological Field in Europe"
- DR. ROBERT KNIGHTON, Detroit, Michigan. "Some Observations on Beck's A-V Shunt"
- DR. C. R. SKOGLUND, Stockholm, Sweden. "Reciprocal Excitation in the Spinal Cord".
- DR. FRANCIS SCHILLER, Oxford, England. "Amnesia — Some Observations and Speculations".
- THE RT. HON. FRANCIS FORD, Australia. "High Lights of Australia".
- DR. THOMAS I. HOEN, New York, N.Y. "Intervertebral Disc Disease".
- DR. WILLIAM FEINDEL, Montreal. "Anatomical Mechanisms of Referred Pain".
- DR. IGOR KLATZO, Montreal. "Brain Reaction to Infection".
- DR. GEORGE AUSTIN, Montreal. "Excitatory and Inhibitory Mechanism of the Central Nervous System"
- DR. ROY SWANK, Montreal. "Blood Changes on Fat Meals".
- DR. PAUL C. BUCY, Chicago, Illinois. "Some Observations on Temporal Lobectomy in Monkeys"
- DR. JAMES WHITE, Boston, Mass. "The Mechanism of Visceral Pain".
- DR. HAROLD ROSEN, Montreal. "Regeneration in Peripheral Nerves".

# MONTREAL NEUROLOGICAL SOCIETY

1949-50

DR. DONALD MCRAE, *Chairman*

DR. CLAUDE BERTRAND, *Vice-Chairman*

DR. PRESTON ROBB, *Secretary-Treasurer*

Meetings of the Section of Neurology of the Montreal Medico-Chirurgical Society were held weekly from October 12th to May 10th, inclusive. Clinical Conferences were held at the Montreal Neurological Institute, the Montreal General Hospital, the Hotel Dieu, and Notre Dame Hospital, at which an interesting selection of clinical problems was presented.

The following addresses were given before the Society during the year 1949-50:

DR. ABNER WOLF, Columbia University. "Experimental Allergic Encephalomyelitis".

DR. BORIS BARKIN. "I. V. Pavlov, 1849-1949".

PROFESSOR CLINTON WOOLSEY, University of Wisconsin. "Comparative Studies of the Patterns of Localization in Central Motor Areas".

DR. FRED HODGES, University of Michigan. "Cerebral Angiography".

DR.: DONALD MCRAE, CLAUDE BERTRAND, and JOHN HUNTER. "Report on International Neurological Congress and the Symposium Neuroradiologicum held in Europe, 1949".

DR. ROY SWANK, "Nutrition and Multiple Sclerosis".

DR. HENRI GASTAUT, University of Marseilles. "Effect of Photic Stimulation on the E.E.G.".

DR. ROBERT KNIGHTON, Henry Ford Hospital, Detroit. "Thalamo-cortical Mechanisms".

DR. JERZY OLSZEWSKY. "Oscar and Cecile Vogt".

DR. PAUL BUCY, University of Illinois. "The Surgical Treatment of Abnormal Involuntary Movement".

DR. JAMES C. WHITE, Massachusetts General Hospital. "Operations for the relief of pain".



SIR HENRY DALE, London, England. "Chemotherapy — Its Origin and Current Developments".

A Combined Meeting of the Section of Neurology and the Section of Paediatrics of the Montreal Medico-Chirurgical Society was held on April 11, 1950. The following address was given:

DR. CHARLES MCKHANN, Cleveland. "Cervical Arterio-venous Anastomosis in the Treatment of Cerebral Disturbances".

A symposium was held on "Subdural Haematomas in Infancy", Drs. Alan Ross, Donald McRae and Arthur Elvidge 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. Again, we list these distinguished lecturers in this report.

- 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".
- 1950 DR. J. GODWIN GREENFIELD.  
 "The Pathology of the Cerebellum and Related Motor Pathways".

### CLINICAL APPOINTMENTS AND FELLOWSHIPS\*

Appointments to the Resident Staff in Neurology or Neurosurgery are made for July 1 or January 1. All candidates are expected to have had previous hospital internships in Medicine or Surgery.

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.

Appointments for periods of research and training in one of the laboratories are made by the Director and the Chief of the laboratory in question. It is a general rule that no research stipends are available to a graduate student during his first year of research unless he is appointed to one of the following fellowships:

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.

## COURSES OF INSTRUCTION

### 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 — 3 hours weekly (12 weeks).

1. Lectures, demonstrations and discussions.
2. Construction of brain model by selected group.

Two evenings, beginning in November . . . Associate Professor McNaughton

B. SEMINAR IN NEUROPHYSIOLOGY — 4 hours weekly (12 weeks)

Laboratory demonstrations, lectures and discussions. Mondays, 5-6 and 8-10 p.m., beginning in November . . . . . Professor Jasper and Dr. Babkin

C. CONFERENCE IN CLINICAL NEUROLOGY — 1 hour weekly.

Clinics and Lectures. Wednesdays, 5 p.m. . . . . Assistant Professor McRae

D. COLLOQUIUM IN NEUROSURGERY AND ELECTROENCEPHALOGRAPHY — 1 hour weekly. Fridays, 4 p.m. . . . . Professor Penfield and Professor Jasper

- E. SEMINAR IN NEUROPATHOLOGY — 1 hour weekly (52 weeks).  
Gross and microscopic demonstration to be supplemented by collateral work.  
Fridays, 5 p.m. . . . . Professor Penfield and Professor Cone
- F. SEMINAR IN NEUROCHEMISTRY.
  - 1. Fundamental — 11 hours. Lectures and discussions.  
Assistant Professor K. A. C. Elliott
  - 2. Applied — 4 hours. Demonstrations . . . . Associate Professor McEachern
- G. COLLOQUIUM IN CLINICAL NEUROLOGY, 1 hour weekly.  
Discussions. Saturdays, 12 noon . . . . . Associate Professor McNaughton
- H. COLLOQUIUM IN NEUROLOGICAL ROENTGENOLOGY, 1 hour weekly.  
Mondays, 9 a.m. . . . . Assistant Professor McRae
- I. COLLOQUIUM IN EXPERIMENTAL AND CLINICAL NEUROLOGY, 1 hour.  
Discussions and lectures before Fellows' Society . . . . . Dr. J. Preston Robb

## DONATIONS

The contributions to the Reorganization Fund are referred to in the Director's Report, and more details of these gifts, which total nearly one and a half million dollars, will be given when plans for building are completed.

The following donations have been received:

### TO THE BRAIN TUMOUR RESEARCH FUND:

Cancer Research Society .....	\$3,500.00
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### TO THE CLINICAL RELIEF FUND:

Mrs. Esther Bloom .....	100.00
Miss Lillian Charles .....	25.00
Miss Suzan Cohan .....	16.00
Dr. George D. Robbins .....	50.00

### TO THE CONE RESEACH FUND:

Mr. & Mrs. J. Aaron .....	50.00
Anonymous .....	2,400.00
Dr. Hector Cyphiot .....	500.00
Mr. & Mrs. S. Lupovitch .....	100.00
Mrs. Sara Policoff .....	1,000.00

### TO M. N. I. MISCELLANEOUS CONTRIBUTIONS FUND:

Miss Isabella McLennan .....	2,000.00
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### TO M. N. I. STAFF FUND:\*

Members of Staff .....	1,200.00
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### TO THE NEUROANATOMY RESEARCH FUND:

Anonymous Donation .....	500.00
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### TO THE HOBART ANDERDON SPRINGLE MEMORIAL FUND:

Mrs. H. A. Springle .....	1,400.00
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### TO THE VIOBIN RESEARCH FUND (Dr. McEachern):

The Viobin Corporation .....	2,550.00
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### FOR THE INVESTIGATION OF MULTIPLE SCLEROSIS:

The Multiple Sclerosis Society of Canada .....	10,000.00
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### TO ESTABLISH THE BORDEN FELLOWSHIP:

The Borden Company Foundation, Inc. (to be paid in 3 annual instalments) .....	4,800.00
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### TO ESTABLISH THE LEWIS REFORD FELLOWS FUND:

Estate of the late Dr. Lewis Reford .....	10,000.00
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TO ESTABLISH THE LEWIS L. REFORD FELLOWSHIP:

Mrs. Lewis Reford ..... 50,000.00

TO THE EPILEPSY FUND:

Anonymous ..... 2,986.87

TO THE EPILEPSY AND BRAIN CHEMISTRY PROJECT:

Rockefeller Foundation ..... 10,000.00

Mr. J. W. McConnell ..... 10,000.00

FORM OF DONATION

I give and bequeath to the Montreal Neurological Institute of McGill University \$..... the same to be and become a part of the general endowment fund of the said Institute and to be known as the (here insert name of testator or a name selected by him) ..... Endowment Fund the income only to be used for the furtherance of (the charitable) (the scientific) (the charitable and scientific) work of the Montreal Neurological Institute.

\*This fund has been established to make possible loans, without interest, to Fellows during their training period. It is understood that they will repay these loans when they are able to do so at a later stage in their careers. It is hoped that former Fellows may be moved to contribute to this fund. Those in the United States can charge such gifts off of their income tax by sending cheques to the Friends of McGill University, Inc., c/o Mr. I. C. R. Atkin, Treasurer, 23 Wall Street, New York 5, N.Y. They should indicate in an accompanying letter that the gift is intended for the M. N. I. Staff Loan Fund.

## PUBLICATIONS

1949-50

### ROMA AMYOT:

*Principales complications cérébro-méningées des affections cardio-vasculaires.* L'Union Médicale du Canada, 78:559 (Mai) 1949).

*L'Association Américaine de Neurologie.* L'Union Médicale du Canada, 78:994 (Août) 1949.

*Comment craindre la poliomyélite.* L'Union Médicale du Canada, 78:1043 (Septembre) 1949.

*Syndrome de Pancoast — carcinome bronchique de l'apex pulmonaire.* L'Union Médicale du Canada, 78:1311 (Novembre) 1949.

*Etiologie et aspect social de l'épilepsie.* L'Union Médicale du Canada, 78:1425 (Décembre) 1949.

### GEORGE AUSTIN:

*Diencephalic Mechanisms for Facilitation and Inhibition.* Federation Proc. 9:6, 1950 (with H. H. Jasper).

### BORIS BABKIN:

*Pavlov. A Biography.* University of Chicago Press, 1949.

*Cerebral Cortex and Gastric Motility.* Gastroenterology, 14:479-484, 1950.

*Cortical Inhibition of Gastric Motility.* J. Neurophysiol. 13: 55-63, 1950 (with T. J. Speakman).

*Central Nervous Control of Rhythmic Variations of Blood Pressure.* Am. J. Physiol. 161:92-100, 1950 (with W. C. Kite).

*See Thomas Speakman, Joint Author.*

### JOHN BATES:

*Selective Staining of Experimental Brain Tumors During Life.* J. Neuropath. & Exper. Neurol. 8:411-418, 1949 (with J. Kershman).

### CLAUDE BERTRAND:

*Le traitement d'urgence des traumatismes crâniens.* L'Union Médicale du Canada, 78: 1298-1302, 1949.

*Le traitement chirurgical de l'épilepsie.* L'Union Médicale du Canada, 78:1432-1433, 1949.

### ALLAN BIRD:

*Leber's Hereditary Optic Atrophy.* Canad. M.A.J. 61: 376-383, 1949 (with D. McEachern).

### WILLIAM CONE:

*Medulloblastoma: Non-operative Management with Roentgen Therapy after Aspiration Biopsy.* Radiology, 52: 621-632, 1949 (with C. B. Peirce, J. Bouchard, and R. C. Lewis).

### HAROLD ELLIOTT:

*Head Wounds — Canadian Army World War II.* D.V.A. Treatment Services Bulletin, August, 1949.

*Spinal Cord Injuries, Accidentally Produced or Due to Missiles.* D.V.A. Treatment Services Bulletin, February, 1950.

K. A. C. ELLIOTT:

*Removal of Traces of Oxygen from Gases.* *Canad. J. Research*, F. 27:299-300, 1949.

*Problems in Neurochemistry.* *Canad. M.A.J.* 61:348-356, 1949.

*Blood and Spinal Fluid Guanidine in Epilepsy.* *Canad. J. Research*, E. 27:211-213, 1949 (with Nora Henderson).

*Measurement of Experimentally Induced Brain Swelling and Shrinkage.* *Am. J. Physiol.* 177:122-129, 1949 (with H. Jasper).

*Experimental Observations on the so-called Senile Changes of Intracellular Neurofibrils.* *Am. J. Psychiat.* 106:190-194, 1949 (with K. Stern).

See Revis Lewis, Joint Author.

ARTHUR ELVIDGE:

*Summary Report Medical Mission to Greece and Italy, April 15-June 7, 1948.* Unitarian Service Committee, Inc., 1949.

*Clinical Analysis of Eighty-eight Cases of Metastatic Carcinoma Involving the Central Nervous System with an Outline of Therapeutic Principles.* *J. Neurosurg.* 6:495-502, 1949 (with M. Baldwin).

*Surgical Treatment of Aneurysm of the Anterior Cerebral and of the Anterior Communicating Arteries Diagnosed by Angiography and Electroencephalography.* *J. Neurosurg.* 7:13-32, 1950 (with W. Feindel).

*Subdural Hematoma and Effusion in Infants.* *Am. J. Dis. Child.* 78:635-658, 1949 (with I. Jackson).

*Central Protrusion of Cervical Intervertebral Disc Involving Descending Trigeminal Tract; Report of a Case.* *Arch. Neurol. & Psychiat.* 63:455-466, 1950 (with Choh-luh Li).

*Effects of Ultraviolet Radiation on the Exposed Brain.* *Arch. Neurol. & Psychiat.* 62:127-149, 1949 (with A. Morris).

JOHN HUNTER

*Some Thoughts on Canada and Mental Health Problems.* *The Medical Journal of Australia*, 1:396-397, 1950.

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

*Effects of Thalamic Stimulation in Unanesthetized Animals.* *EEG Clin. Neurophysiol.* 1:305-324, 1949 (with H. Jasper).

IRA JACKSON:

*Aseptic Hemogenic Meningitis: An Experimental Study of Aseptic Meningeal Reactions Due to Blood and Its Breakdown Products.* *Arch. Neurol. & Psychiat.* 62:572-589, 1949.

See Arthur Elvidge, Joint Author.

HERBERT JASPER:

*Electroencephalography in Child Neurology and Psychiatry.* *Pediat.* 3:783-800, 1949.

*The Electroencephalography in Neurosurgery.* IVe Congres Neurologique International, Masson et Cie, Paris, 1949, vol. 1, pp. 21-26.



*Diffuse Projection Systems: The Integrative Action of the Thalamic Reticular System.* EEG Clin. Neurophysiol. 1:405-420, 1949.

*Unipolar Electromyograms of Normal and Denervated Human Muscle.* (J. Neurophysiol. 12:231-244, 1949 (with Gwen Ballem).

*Electrocorticograms in Man: Effect of Voluntary Movement upon the Electrical Activity of the Precentral Gyrus.* Arch. f. Psychiat. u. Ztschr. Neurol. 183:163-174, 1949 (with W. Penfield).

See George Austin, Joint Author.

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

See John Hunter, Joint Author.

See Wilder Penfield, Joint Author.

See Norman Sloan, Joint Author.

#### JOHN KERSHMAN:

*The Borderland of Epilepsy. A Reconsideration.* Arch. Neurol. & Psychiat. 62:551-559, 1949.

*Treatment of Epilepsy.* In Conn, H.F., Current Therapy, W. B. Saunders & Co., Philadelphia, 1950, pp. 555-559.

*Electroencephalography in Differential Diagnosis of Supratentorial Tumors.* Arch. Neurol. & Psychiat. 62:255-268, 1949 (with A. Conde and W. C. Gibson).

See John Bates, Joint Author.

#### KRISTIAN KRISTIANSEN:

*Rhythmic Electrical Activity from Isolated Cerebral Cortex.* EEG Clin. Neurophysiol. 1:265-271, 1949 (with G. Courtois).

#### REVIS LEWIS:

*Clinical Uses of an Artificial Cerebrospinal Fluid.* J. Neurosurg. 7:256-260, 1950 (with K. A. C. Elliott).

See William Cone, Joint Author.

#### DONALD LLOYD-SMITH:

*Phenurone and Hepatitis — A Case History.* Canad. M.A.J. 62:493-495, 1950.

#### DONALD MCEACHERN:

*New Knowledge of Neuromuscular Disorders.* Modern Medicine of Canada, 4:23 (October) 1949 (with R. Rabinovitch).

*Sympathicorticotropic (Leydig) Cell Tumor of the Ovary with Virilism.* J. Clin. Endocrinology, 9:486-496, 1949 (with D. Waugh and E. H. Venning).

See Allan Bird, Joint Author.

#### JERZY OLSZEWSKI:

*Cytoarchitektonischer Atlas des Rautenhirns des Kaninchens.* S. Karger, Basel and New York, 1949 (with H. Meessen).

#### WILDER PENFIELD:

*Neurology in Canada and the Osler Centennial.* Canad. M.A.J. 61:69-73, 1949.

*Hero Worship.* Arch. Int. Med. 84:104-109, 1949.

*William Osler's 100th Birthday.* McGill News, Autumn, 1949.

*Focal Epilepsy, Sensory Precipitation and Evoked Cortical Potentials.* EEG Clin. Neurophysiol. 1:349-356, 1949 (with F. M. Forster, H. Jasper and L. Madow).

*Birth Injury, Focal Epilepsy and Cortical Excision.* Pediatrics, 4:157-162, 1949 (with S. Livingston).

*Instability of Response to Stimulation of the Sensorimotor Cortex of Man.* J. Physiol. 109:358-365, 1949 (with K. Welch).

See Herbert Jasper, Joint Author.

**NORMAN SLOAN:**

*The Identity of Spreading Depression and "Suppression"* EEG Clin. Neurophysiol. 2:59-78, 1950 (with H. Jasper).

**THOMAS SPEAKMAN:**

*Effect of Cortical Stimulation on Respiratory Rate.* Am. J. Physiol. 159:230-246, 1949 (with B. P. Babkin).

*Changes in Behavior Following Frontal Lobectomy in Dogs and Cats.* Arch Neurol. & Psychiat. 63:433-443, 1950 (with B. P. Babkin).

See Boris Babkin, Joint Author.

**HARRY STEELMAN:**

*Technic of Cortical Excision. An Experimental Study of Postoperative Cicatrization.* Arch. Neurol. & Psychiat. 62:479-492, 1949.

**NORMAN VINER:**

*Intensive Vitamine Treatment in Some Neuritides and Some Psychoses.* Canad. M.A.J. 62:162-164, 1950.

## CLASSIFICATION OF DISEASES

### *Nervous System Generally:*

Neurosyphilis .....	6
Multiple sclerosis .....	64
Motor neurone disease .....	16
Myasthenia gravis .....	9

### *Meninges:*

Meningocele or myelomeningocele .....	26
Chronic adhesive arachnoiditis .....	6
Acute purulent meningitis .....	10
Tuberculous meningitis .....	5
Acute aseptic meningitis .....	4
Spontaneous subarachnoid haemorrhage .....	14
Subarachnoid haemorrhage due to trauma .....	3
Post-traumatic headache .....	9
Other headaches .....	28
Subdural haematoma .....	8
Epidural haematoma .....	4
Epidural or subdural abscess .....	4

### *Brain:*

Congenital anomalies .....	5
Hydrocephalus .....	34
Birth injury of the brain .....	4
Brain abscess .....	11
Cerebral concussion .....	46
Cerebral contusion and/or laceration and encephalopathy .....	22
Epilepsy .....	296
Migraine .....	21
Hypertensive encephalopathy .....	15
Encephalopathy due to anoxemia .....	2
Encephalopathy, chronic and of undetermined etiology .....	8
Paralysis agitans .....	4
Cerebral arteriosclerosis .....	7
Cerebral haemorrhage, thrombosis or embolism .....	56
Intracranial aneurysm .....	13
Cerebral atrophy .....	29
Encephalitis .....	11
Narcolepsy and cataplexy .....	2
Stenosis of aqueduct of Sylvius .....	3

### *Tumours:*

Glioma .....	79
Perineurial fibroblastoma .....	9
Meningeal fibroblastoma .....	10
Pituitary adenoma .....	14
Craniopharyngioma .....	2
Unclassified tumour .....	20
Unverified tumour and tumour suspects .....	24
Secondary tumour of brain and spinal cord .....	16
Haemangioma .....	3
Miscellaneous tumour C.N.S. and body generally .....	45

### *Spinal Cord:*

Chronic myelopathy .....	17
Dorsal lateral sclerosis .....	6
Compression of the spinal cord .....	8
Vascular lesion of the cord .....	2
Friedreich's Ataxia .....	2
Poliomyelitis .....	2

### *Cranial and Peripheral Nerves:*

Lesions of the optic nerves .....	8
Trigeminal neuralgia .....	56
Peripheral facial palsy .....	7
Menière's syndrome .....	15
Lesions of the brachial plexus and branches .....	10
Multiple neuritis .....	10
Other neuralgias .....	14
Traumatic peripheral nerve lesions .....	8
Neuropathy of undetermined aetiology .....	11
Compression of nerve roots, miscellaneous causes .....	5

### *Mental Diseases:*

Mental deficiency .....	4
Alcohol or drug addiction .....	3
Psychoneurosis .....	79
Miscellaneous .....	12

### *Other Systems and Miscellaneous:*

Congenital anomalies of spine .....	14
Skull defect .....	9
Osteomyelitis of skull .....	3
Herniation of the intervertebral disc (cervical) .....	26
Herniation of the intervertebral disc (lumbar) .....	217
Discogenic disease .....	16
Dorsal intervertebral disc protrusion .....	2
Tuberculosis of spine .....	1
Fracture of the skull .....	79
Fracture and/or dislocation of the vertebral column .....	28
Fracture of the facial bones .....	4
Lacerations contusions, abrasions and/or haematomas .....	14
Intractable pain .....	5

### *Diseases of the Body as a Whole:*

Hypertension .....	17
Diseases of the cardiovascular system .....	13
Diseases of the respiratory system .....	3
Diseases of the gastro-intestinal system .....	1
Diseases of the endocrine system .....	5
Diseases of the locomotor and integumentary system .....	14
Diseases of the eyes, ears, nose and throat .....	18
Low back pain .....	19
Causalgia .....	6
Miscellaneous .....	25
Diagnosis deferred .....	22
Paget's disease .....	1
Muscular dystrophy .....	15
Drug intoxications .....	4
Autonomic dysfunction of unknown cause .....	3
Phantom limb .....	1

## CLASSIFICATION OF OPERATIONS

Craniotomy	4
osteoplastic .....	4
and biopsy .....	3
and decompression .....	2
and drainage of abscess .....	9
and drainage of cyst .....	2
and drainage of subdural haematoma .....	11
and drainage of intracerebral haematoma .....	8
and drainage of extradural haematoma .....	2
and excision of epileptogenic focus .....	50
and excision of aneurysm .....	3
and exploration .....	5
and gyrectomy .....	10
and obliteration of aneurysm .....	1
and plastic repair of dura .....	2
and plastic repair of skull .....	3
and removal of tumour .....	88
and rhizotomy (of 5th nerve, 7; of 8th nerve, 5) .....	12
and sinusectomy .....	4
Trepanations .....	13
and aspiration of cyst .....	1
and biopsy .....	7
and drainage of subdural space .....	6
and ventriculography .....	9
Elevation depressed skull fracture .....	30
Plastic repair of skull defect, tantalum .....	2
Plastic repair of skull defect, bone .....	3
Suture of lacerated wound of scalp .....	9
Ventriculocisternostomy (Torkildsen) .....	8
Discoidectomy: Lumbar .....	136
Cervical .....	7
Laminectomy or Hemilaminectomy	
and anterolateral chordotomy .....	8
and decompression of spinal cord .....	4
and drainage of abscess .....	2
and exploration .....	16
and incision and drainage intramedullary cyst .....	3
and removal of adhesions .....	1
and removal of tumour .....	8
and rhizotomy .....	11
and spinal fusion with 18 wire .....	30
and spinal fusion with bone graft .....	13
Sympathectomy (Hypertension)	
supradiaphragmatic ganglioneurectomy unilateral .....	11
supradiaphragmatic ganglioneurectomy bilateral .....	6
Sympathetic ramisection cervical .....	3
Sympathetic ganglioneurectomy .....	3
Plastic repair of cranium bifidum .....	7
Plastic repair of spina bifida .....	19
Incision of scalp and application of tongs .....	1
Cerebral arteriography, by exposure .....	26
Cerebral arteriography, percutaneous .....	35
Ligation of artery .....	1
Exploration of nerve .....	6
Removal of neuroma .....	2
Nerve suture .....	2
Re-opening of wound with exploration .....	8
Re-opening of wound with removal of bone flap .....	1
Re-opening of wound with evacuation of blood clot .....	1
Re-opening of wound with drainage of abscess .....	35

Section of scalenus anticus muscle .....	1
Miscellaneous .....	45
Plaster Cast .....	32
Ventriculo-peritoneal shunt .....	31
TOTAL .....	<u>823</u>

## CHIEF DIAGNOSES IN FATAL CASES

Intracranial Tumour .....	26
Craniocerebral Injury .....	15
Ruptured Congenital Aneurysm .....	2
Tuberculous Meningitis .....	3
Congenital Abnormalities .....	6
Cerebral Thrombosis .....	2
Purulent Meningitis .....	2
Metastatic Tumours to Spinal Cord .....	1
Fracture Dislocation of Spine .....	1
Periarteritis nodosa of cerebral vessels .....	1
Acute multiple neuritis of unknown cause .....	1
Vertebral artery thrombosis .....	1
Cerebral haemorrhage .....	3
Myasthenia gravis .....	1
Encephalopathy of undetermined cause .....	1
Cerebral embolism .....	1
Encephalitis, acute, unknown cause .....	1
Carcinoma of stomach, metastatic to left adrenal gland .....	1
Brain abscess due to staphylococcus pyogenes .....	1
Encephalomacia due to cardiac arrest .....	1
Epilepsy .....	1
Cause unspecified .....	1
Ruptured aneurysm of internal carotid, type unspecified .....	1
TOTAL .....	<u>74</u>

## ITEMS OF INTEREST

At the Annual Meeting, Principal James announced that Dr. William Cone was to be elevated to the rank of Professor of Neurosurgery and Dr. Herbert Jasper to be elevated to the rank of Professor of Experimental Neurology.

We are happy to be able to report that Dr. Penfield has been created an Honorary Fellow of the Royal Society of Medicine and a Foreign Honorary Member of the American Academy of Arts and Sciences, also the American Philosophical Society.

The first Annual Art Exhibition of the M. N. I. was sponsored by Dr. and Mrs. Kershman and was held in their house. There were over fifty entries. The excellence of the paintings had to be seen to be believed. The refreshments were of equally high calibre. It is hoped that it will really be an annual affair.

The Eastern Society of Electroencephalographers held their Laurentian Meeting at Chalet Cochand at St. Margaret's. Sports and science were well blended in an excellent weekend, thanks to the efforts of Dr. Herbert Jasper. The Savoy Trophy was won by Dr. William Feindel.

The Montreal Neurological Institute Women's Social Auxiliary continues to function actively. The executive for the past year includes: Mrs. Penfield as Honorary President; Mrs. Maitland Baldwin, President; Mrs. William Feindel, Vice-President; Mrs. William Kite, Secretary and Mrs. Donald Lloyd-Smith, Treasurer. They have had many meetings and been very helpful in welcoming and helping new Fellows and their families to settle.

The Thayer Lectures at Johns Hopkins University in March, 1950, were given by Dr. Wilder Penfield.

Dr. Penfield has been made an Honorary Fellow of Merton College, Oxford.

A demonstration of neurosurgical nursing procedures was given by Miss Flanagan and her staff at the Meeting of the Provincial Nurses' Association in May, and at the National Association Meeting held in Vancouver.

The Annual Winter Party took the form of a masquerade. Thanks to Miss Lamont, we were able to hold the party in the Nurses' Residence of the R.V.H. Costumes were many and varied. From the Arab in his long gown, to the Spanish lady. From the Old Man of the Mountain to the Babes in the Wood.

One of the outstanding meetings of the Montreal Neurological Society was that at which Sir Henry Dale spoke to a combined meeting with the Montreal Physiological Society. At this meeting, the portrait of Professor Boris Babkin was presented to the University. The portrait is now hanging in the Medical Building.

During the past year, many of our old fellows left us. DR. IRA JACKSON has left the Institute to take up the practice of neurosurgery in Galveston, Texas.

DR. ALAN BIRD has returned to Johannesburg, South Africa. However, rumor has it that he may be returning to take a position in America.

DR. HERMAN FLANIGIN has started practicing neurosurgery in Oklahoma City, Oklahoma.

DR. CLARENCE GREENE has returned to Howard University, Washington.

DR. WILLIAM KITE is continuing his neurosurgical training in Albany, New York.

DR. WILLIAM MAGNUS returned to Holland. However, we hope that it will not be too long before we see him again.

DR. KRISTIAN KRISTIENSEN has returned to Norway and is working at the Ullevaal Hospital, Oslo.

DR. RONALD STEPHEN has accepted the post of Professor of Anaesthesia at Duke University.

We were happy to see DR. ROBERT KNIGHTON during the winter, when he came to speak to the Neurological Society. He is at present at the Henry Ford Hospital in Detroit. DR. THOMAS HOEN, now in New York, also paid a special visit to the Institute.

DR. MILLER FISHER has returned from a year's absence in the laboratory of Dr. Raymond Adams of Boston. He is now doing the neuropathology at the Montreal General Hospital.

We are pleased to report the recent marriage of DR. SEAN MURPHY. He is at present engaged in the study of Ophthalmology in New York.

DR. JOSEPH STRATFORD is at present training in London, England. It is expected that he will return to continue his studies at the Institute.

DR. VICTOR REYES is at present at Temple University Hospital, Philadelphia, continuing his work in neurosurgery.

We hear that MRS. ELABEL DAVIDSON is well and is deeply engaged in Social Service work in Florida.

DR. JACOB CHANDY has returned to India after a tour with Dr. Theodore Rasmussen. He is at present at Vellore Medical College, Madras, India.

DR. BIRGER KAADA has returned to Oslo, Norway, where he is carrying on his work with Dr. Arne Torkildsen.

DR. RAMCHANDRA GINDÉ is at present visiting various neurosurgical clinics in America. He will shortly be returning to Bombay, India.