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 honor to submit the seventeenth 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 1951, together with the scientific and research record for the academic year of 1951-52, and the list of professional staff at the close of the academic year.

Respectfully submitted,

J. PRESTON ROBB, M.D.,

Executive Assistant.
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REPORT OF THE DIRECTOR*

WILDER PENFIELD

It was the boom of dynamite, the drone of cement mixers, and the staccato excitement of hammers, that ushered in the Spring for us this year — welcome music to neurological ears. The McConnell wing is rising slowly, to the north of us, and our present hope of occupancy by this time next year makes crowding seem less important. The anxious period is past, the period of planning, of cutting plans and of re-planning, while costs went on rising till they threatened to block the whole project. Perhaps he thought us unaccountably slow during the architectural period, but nevertheless it was thanks to Mr. J. W. McConnell that the bids could be finally accepted and the contract let to J. L. E. Price Company on December 13th, 1951.

THE DONNER LABORATORY

It gives me great pleasure to be able to announce that the Donner Canadian Foundation has decided to provide $20,400 annually for research in Neurochemistry as long as such experimental work is carried out in the Montreal Neurological Institute.

Work in this field was begun here six years ago when we brought Dr. K. A. C. Elliott to Montreal to study the cause of epilepsy. This was made possible by a five year grant from the Rockefeller Foundation, matched by a grant of a similar amount from Mr. J. W. McConnell. Donald Tower, who has received the five year Markle Fellowship, has joined us on a permanent basis, and the work of these two men has already thrown brilliant light into the darkness that has shrouded the ultimate cause of epileptic seizures.

The laboratory where this work is going forward will henceforth be called The Donner Laboratory of Experimental Neurochemistry, and Professor Elliott, as Director of that work, will be given the title of Donner Fellow.

Since this yearly grant will continue as long as such work is carried out within these walls, I look upon it as a happy form of endowment, for this is one of the fields in which we may hope for analysis of the causes of insanity and certain brain degenerations as well as epilepsy. Think what it would mean to humanity if a chemical poison were discovered as the cause of mental disturbance.

STAFF NOTES

The past year has brought us heavy losses as well as reorganization and change.

Donald McEachern, Neurologist to the Montreal Neurological Institute and the Royal Victoria Hospital, and Associate Professor of Neurology, died suddenly at the age of forty-seven. He was pushing forward his clinical work, pursuing

*Read at the Annual Meeting of the Montreal Neurological Institute, May 29th, 1952, Principal James presiding. This report is for the 18th academic year.
his brilliant investigation of neuro-muscular diseases and directing the laboratory of Neurochemistry, as well as teaching in Neurology. He carried all this on undismayed even in the face of failing strength.

John Kershman, age forty-four, was Associate Neurologist and Executive Assistant to the Director in the Montreal Neurological Institute, Chief Neurologist to the Jewish Hospital and Assistant Professor of Neurology. He died following a coronary thrombosis which occurred as he finished the delivery of a scientific paper. He was an indefatigable worker who had achieved true distinction as clinician and electroencephalographer and who gave promise of greater things. Kindness, understanding, and humor came and went with Jack Kershman.

As a major move in our Reorganization Program, the new position of Business Manager has been created, and Mr. D. C. Bain now occupies this post. He is an experienced accountant and with wise counsel from Dr. Turner and his staff in the Royal Victoria, he is making an orderly reorganization of hospitalization accounting. Some of the administration is being transferred from the Royal Victoria to the Institute and the office at McGill.

The Director of Social Service, Mrs. Josephine Chaisson, resigned during the year to accept a teaching position at the University of Toronto. Miss Elizabeth DeBrisay has accepted the directorship. She is a Montrealer who has had a varied experience in Social Service, first at the Montreal General Hospital, then the Children’s Aid Society, and finally as Psychiatric Social Worker at the Maudsley Hospital, London. We hope she will remain with us always.

We take great pleasure in the fact that Dr. Harold R. Griffith, Chairman of the University Department of Anaesthesia, has accepted the position of Consulting Anaesthetist in the Montreal Neurological Institute. We hope he will make full use of our facilities, such as they are, for teaching and scientific work.

PROJECTS

Within these walls the year has seen new and exciting developments. I will mention only a few today, taking them almost at random.

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(1/2S) Half of the support from scientific funds.

Francis McNaughton has been appointed to fill the post of Chief of the Neurological Service. He is, as you know, a talented neuroanatomist as well as an astute, kindly clinician and popular teacher. The problem of relating anatomical structure to neurological disease has always been his professional motivation. Many years of leadership lie before Francis McNaughton, years in which to pursue his special interests, such as epilepsy and the cause and cure of headache. With the support of Robb, Young, Swank, Fisher, Lloyd-Smith, Tower,
Rabinovitch, and others to come, the prospect for Neurology during the next twenty years is bright indeed. I am sure that Professor Colin Russel will agree with me in this prediction.

Directing the sub-department of Neurosurgery, William Cone has extended his technique of treatment for hydrocephalus, or water in the brain, to the treatment of chronic subdural exudate, or water on the brain. These dangerous fluid collections affect infants particularly. The usual methods of removal deprive the child of so much protein that many transfusions may be necessary.

Dr. Cone passes a flexible polythene tube through a small cranial opening and leads it beneath the skin of neck and thorax down to the abdomen, and so drains the fluid, that collects continuously in the cranial cavity, down into the peritoneal cavity where it can be absorbed. In this way the fluid protein enters again into the infant's system, instead of being removed, as it is by other methods. The child's nourishment is preserved thus until the time comes when the fluid stops forming and the tube can be removed. This has been a cooperative project with the Children's Memorial Hospital.

Compassion in the heart of doctor and nurse, compassion for the suffering of men and women who seek their help — this is the important thing in any hospital. But in a clinical institute there must be something beyond compassion, something that leads to ever increasing insight into the mechanisms of mind and body.

For years it has been my lot to operate, under local anaesthesia, and to talk with men and women while various procedures were carried out upon the cerebral cortex of each. We have recorded and studied the action of the brain in and out of the operating room, as well as we could.

Gradually an inescapable hypothesis has presented itself. Simply expressed, it is as follows: There must be within the brain stem, the old brain, a humming mechanism composed of nerve cells and nerve fibres that is able to use the different areas of the cortex, the new brain, for all the purposes of voluntary action, for understanding, remembering, thinking. As a matter of convenience, we have eventually called this coordinating mechanism, deep in the old brain, the centrencephalic system.

During the past 5 years, in the Laboratory of Neurophysiology, Herbert Jasper and an enthusiastic group of graduate Fellows, drawn from many universities, have with the help of new electronic techniques shown that nerve pathways from brain stem to the cerebral cortex and back again do actually exist. The electrical impulses that pass over these pathways can be recorded, measured, timed. Thus, certain of the basic assumptions in the hypothesis have been verified.

We are beginning to surmise where and how memories are stored, where the nerve impulses originate that produce voluntary action. We can not analyze the spirit, the mind, the soul. But we can analyze the mechanisms of the brain which make understanding and initiative possible and without which these things vanish.

All this, of course, is no more than a beginning of understanding, but it is exciting and illuminating. Someday, I dare to predict, it will be recognized that
the effort and money that went into the creation of the Montreal Neurological Institute would have been well spent even if it resulted in nothing more than the contribution which this Institute has made to the evolution of this conception.

THE MASSEY REPORT

But this is enough of introspection. One of the important events in Canadian life this year was the publication of the Report of the Commission on National Development in the Arts and Sciences. It recommended that a Canada Council should be created to do for the arts and social sciences what the National Research Council has done for the natural sciences. This "Massey Report" is a magnificent study of culture, in the best sense of the term, and of scholarship in Canada today.

But, if the Federal Government intends to implement this report, they should stop to consider what they have actually done for the natural sciences through the National Research Council and what they have failed to do. In the broad field of medicine, the N.R.C. has set up an excellent system of scholarships. It acts through its Medical Advisory Committee to aid research projects in universities by means of annual grants to individuals. This has had a splendid stimulating effect throughout Canada in those institutions already capable of research. No group has reason to be more grateful for such help than we.

But it must be clear that grants-in-aid are useless to any university which has no men who want them or could use them. The university must have first a permanent fund for the development of a specific academic department. Then it can gather a basic group of experts through the years, men capable of using grants-in-aid, men who will attract to themselves younger and better men.

I have urged before and I urge again that the National Research Council, excellent as it is, is not enough. It should be supplemented by a Commission for Scientific Development empowered to make lump sum endowments. The same line of argument would apply, it seems to me, to the field of the humanities and the social sciences. Such a commission could make grants under a policy of national and provincial strategy. They would have to single out universities that can assemble workers capable of inaugurating the particular work in question and they might well demand evidence that the community in question desired the help and would presumably support the project in the years to come.

If Canada desires to develop new centres of intellectual activity in her universities, some means must be devised for the creation of specific endowments. Grants-in-aid of special studies are not enough.

CONCLUSION

In conclusion, long after we who stand here today have passed on, this institute will be a centre for neurological work of importance to mankind. How different it would have been if there had been no permanent foundation! Without the original million dollar endowment of research by the Rockefeller Foundation, no such centre would exist here. The Donner Canadian Foundation has now made a continuing provision for experimental neurochemistry which might be considered to correspond with a further endowment of one half million.
This is a most encouraging start toward the secondary objective of our Reorganization Campaign. That objective called for an increase in our scientific endowment which was proportional to the expansion in the scientific field, proportional to the primary objective for clinical reorganization. It called for one and a half million so that other new laboratories might be put on a permanent footing. This is needed to take full advantage of our enlarged opportunity.

Discovery of the secrets of man’s brain may yet help him to bring into human relationships a greater sanity.
IN MEMORIAM

JOHN KERSHMAN, B.Sc., M.D., C.M., M.Sc.
1906-1951

Montreal Neurological Institute 1934 — June 27, 1951
Executive Assistant to the Director
Assistant Professor of Neurology, McGill
Squadron Leader — R.C.A.F.
Chief of Neuropsychiatry, Jewish General Hospital
Director of E.E.G., Queen Mary Veterans Hospital

DONALD McEACHERN, M.D.
1904-1951

Montreal Neurological Institute 1934-1951
Chief of Neurology Service
Associate Professor of Neurology, McGill University
Lieutenant-Colonel Royal Canadian Army Medical Corps
Neurologist to Royal Victoria Hospital
Consultant Neurologist, Queen Mary Veterans Hospital
OFFICERS

Director ...................................................... WILDER PENFIELD
Assistant Director ........................................... FRANCIS MCNAUGHTON
Secretary-Registrar .......................................... DONALD LLOYD-SMITH
Executive Assistant—Hospitalization ..................... PRESTON ROBB
Business Manager ........................................... MR. DONALD C. BAIN
Building Administration ..................................... MISS EILEEN FLANAGAN
Executive Secretary ......................................... MISS ANNE DAWSON

CHIEFS OF SUB-DEPARTMENTS

A. Hospital

Neurologist .................................................... FRANCIS MCNAUGHTON
Neurosurgeon .................................................. WILLIAM CONE
Roentgenologist ............................................... DONALD MCRAE
Electroencephalographer .................................... HERBERT JASPER
Anaesthetist ................................................... ANDRÉ PASQUET

B. Laboratory

Neuroanatomy ................................................ FRANCIS MCNAUGHTON
Neurochemistry and Donner Laboratory .................. K. A. C. ELLIOTT
Neuropathology ............................................... WILLIAM CONE
Neurophotography .......................................... JERZY OLSZEWSKI
Neuropathology ............................................... HERBERT JASPER
Multiple Sclerosis ........................................... ROY SWANK
CLINICAL STAFF

Director

Honorary Neurologists
A. G. Morphy, B.A., M.D.
COLIN RUSSEL, B.A., M.D., F.R.C.P. (C)

Neurologist
FRANCIS MCNAUGHTON, B.A., M.Sc., M.D., C.M.

Associate Neurologists
DONALD LLOYD-SMITH, B.Sc., M.D., C.M., F.R.C.P. (C)
ROY SWANK, B.S., Ph.D., M.D.
PRESTON ROBB, B.Sc., M.Sc., M.D., C.M.
ARTHUR YOUNG, M.D., C.M., F.R.C.P. (C)

Clinical Assistants in Neurology
MILLER FISHER, B.A., M.D., F.R.C.P. (C)
DONALD TOWER, A.B., M.D., Ph.D.
REUBEN RABINOVITCH, B.A., M.D., M.Sc.

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

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

Clinical Assistants in Neurosurgery
MAITLAND BALDWIN, B.S., M.D., C.M.
JOHN HANBERY, A.B., M.D.
LAMAR ROBERTS, A.B., M.D., M.Sc.

Roentgenologist
DONALD MCRAE, M.D.

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

Assistant Electroencephalographer
COSIMO AJMONE-MARSAN, M.D.

Anaesthetist
ANDRÉ PASQUET, M.D., C.M.

Associate Anaesthetist

Neurochemist and Donner Fellow
K A. C. ELLIOTT, M.Sc., Ph.D., Sc.D.

Associate Neurochemist
DONALD TOWER, A.B., M.D., Ph.D.

Associate Neuroanatomist
JERZY OLSZEWSKI, Ph.D., M.D.

Associate Neuropathologist
ROY SWANK, B.S., Ph.D., M.D.
CONSULTING AND ADJUNCT CLINICAL STAFF

Consulting Neurologists .................................................. ROMAAMYOT, B.A., M.D., (Montreal and Paris)
SYLVIO CARON, M.D., F.R.C.P. (C)
JEAN SAUCIER, B.A., M.D. (Paris and Montreal)
NORMAN VINER, B.A., M.D., C.M.

Adjunct Neurosurgeons .................................................. CLAUDE BERTRAND, B.A., M.D.
HAROLD ELLIOTT, B.Sc., M.D., C.M.
JEAN SIROIS, B.A., M.D.

Consulting Anaesthetists ................................................ HAROLD R. GRIFFITH, M.D., M.M., B.A.,
M.D., C.M., F.A.C.A., F.I.C.A.,
F.F.A.R.C.S. (Eng.)
F. A. H. WILKINSON, M.D., C.M., F.A.C.A.
F.I.C.A.

Consulting Bacteriologist ................................................. E. G. D. MURRAY, O.B.E., M.A. (Cantab)
LM.S.S.A. (Lond.), F.R.S.C.

Consulting Pathologist ................................................... LYMAN DUFF, B.Sc., M.A., M.D., Ph.D.
(Tor.), F.R.S.C.

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

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 Professor of Neurology ........................................ FRANCIS McNAUGHTON

Associate Professor of Experimental Neurology ........................................ K. A. C. ELLIOTT

Assistant Professors of Neurology ........................................ PRESTON ROBB
ROY SWANK
ARTHUR YOUNG

Assistant Professors of Neurosurgery ........................................ HAROLD ELLIOTT
ARTHUR ELVIDGE

Assistant Professor of Neurological Radiology ........................................ DONALD MCRAE

Assistant Professor of Neuroanatomy ....................................... JERZY OLSZEWSKI

Lecturers in Neurology ..................................................... C. MILLER FISHER
BERNARD SMITH
DONALD LLOYD-SMITH

Lecturers in Experimental Neurology ....................................... C. AJMONE-MARSAN
DONALD TOWER

Demonstrators in Neurology .............................................. REUBEN RABINOVITCH

Demonstrators in Neurosurgery ........................................... MAITLAND BALDWIN
JOHN HANBERY
LAMAR ROBERTS

Demonstrator in Electroencephalography ................................ LEWIS HENDERSON
B. Department of Neurology and Neurosurgery, McGill University Faculty of Graduate Studies and Research.

Professors .................. W. Cone  
(Chairman) .................. H. Jasper  
W. Penfield

Associate Professors .................. F. McNaughton  
K. A. C. Elliott

Assistant Professors .................. A. Elvidge  
J. Olszewski  
R. Swank

RESIDENT STAFF — July 1951 - July 1952

Senior Resident .................. L. Roberts
Junior Neurosurgical Resident .................. H. Rosen*, J. Hanbery*
Junior Neurological Resident .................. A. Barnum*, L. Stewart*
Neurological Service  
Assistant Residents .................. J. Naiman, S. Smith**  
L. Stewart*, C. Stacey**  
T. Levac***, J. Morton**  
S. Dongier***, C. Comrie***

Neurosurgical Service  
Senior Assistant Resident .................. J. Stratford*, J. Lord*
Assistant Residents .................. G. Bertrand, J. Stoll  
J. Stratford*, K. Paine*  
J. Van Buren, A. Dekaban*

Residents in Anaesthesia .................. B. Grime  
A. Scott*, H. Szymonowicz*

Residents in Neuroradiology .................. R. Harcus†, J. Silny†  
J. B. Squire†, J. P. Dumouchel†

*Six months on this service.
**Assistant Resident in Medicine, Royal Victoria Hospital, on rotation to Neurology for four months.
***Externe.
†Four months on this service.
FELLOWS OF THE MONTREAL NEUROLOGICAL INSTITUTE

1951-1952

Neuropathological Fellow ................................. GORDON S. DUGGER, A.B., M.D. (Johns Hopkins)

Electroencephalographic Fellows ......................... CHOH-LUH LI*, B.A., M.D. (Shanghai)
                                                GUY COURTOIS*, B.A., M.D. (Montréal)

Neuroanatomical Fellows ................................. FUAD HADDAD*, B.Sc., B.A., M.D. (Beirut)
                                                ALAN ROTHBALLER*, M.D. (Pennsylvania)

Duggan Assistant Neuropathological Fellows  ALAN ROTHBALLER*
                                                FUAD HADDAD*

V. C. ANGULI**, B.S., M.B.B.S. (Madras)
MAITLAND BALDWIN, M.Sc., M.D., C.M. (Queen’s)
ALEC BARNUM, A.B., M.D. (Yale)
ANATOLE DEKABAN, M.D. (Warsaw)
WILLIAM FEINDEL, B.A., M.Sc., D.Phil., M.D., C.M. (McGill)
PIERRE GLOOR, M.D. (Basle)
JOHN HANBERY, A.B., M.D. (Stanford)
JOHN HUNTER†, M.Sc., M.B.B.S. (Sydney)
DAVID INGVAR, M.D. (Lund)

THÉRÈSE LEVAC, M.D. (Montréal)
DONALD LLOYD-SMITH††, B.Sc., M.D., C.M. (McGill)
ALBERTO MARTINEZ-COLL, M.D. (Venezuela)
DOROS OECONOMOS, B.S., M.D. (Paris)
HAROLD ROSEN, B.Sc., M.D., C.M. (McGill)
BERNARD SMITH, M.B.Ch.B. (Aberdeen)
MAIDE TUKEL, M.D. (Istanbul)
KENAN TUKEL, M.D. (Istanbul)

*Six months in this position
**Government of India Fellowship
***Markle Fellowship
†Abbott Laboratories Fellowship
††Borden Neurological Fellowship
NURSING STAFF

Director of Nursing ........................................ Miss Eileen C. Flanagan, B.A., R.N.
Assistant Director of Nursing ............................. Miss Bertha Cameron, R.N.
Instructor ...................................................... Mrs. E. McClintock, R.N.
Night Supervisor ............................................. Miss Elizabeth Barrowman, R.N.
Assistant Night Supervisor ................................. Miss Lillian McAuley, R.N.
Assistant Night Supervisor ................................. Miss D. McTavish, R.N.
Operating Room Supervisor ............................... Miss Margaret McAuley, R.N.
Assistant Operating Room Supervisor .................... Miss Phoebe Haggart, R.N.
Supervisor, Dressing Rooms ............................... Miss Joan Fraser, R.N.

HEAD NURSES

Miss M. MacKenzie, R.N.
Miss M. Cavanagh, R.N.
Miss J. Stanley, R.N.
Miss P. Murray, R.N.
Miss A. Johnson, R.N.
Miss I. Lindsay, R.N.

ASSISTANT HEAD NURSES

Mrs. N. Shielles, R.N.
Miss R. Dickson, R.N.
Miss A. Cameron, R.N.
Miss M. McAfee, R.N.
Miss J. McGregor, R.N.
Miss E. Lee, R.N.

OPERATING ROOM STAFF

Miss V. Merritt, R.N.
Miss S. Langevin, R.N.
Miss H. Callender, R.N.
Miss R. Bacal, R.N.
Miss J. MacMillan, R.N.

Mrs. M. Corrigan, R.N.
Miss D. McDonald, R.N.
Mrs. F. Graham, R.N.
Miss A. Milo, R.N.

DRESSING ROOM STAFF

Miss B. Fortier, R.N.
Miss M. Yeoman, R.N.
Miss G. Golden, R.N.
Mrs. E. Scholfield, R.N.
Mrs. F. Hamilton, R.N.
Miss E. Davidson, R.N.
Mrs. L. Thiessen, R.N.
Miss H. Marshall, R.N.
Miss R. Brown, R.N.
Miss A. Delsorte, R.N.
Mrs. E. Carmean, R.N.
Miss D. Blythe, R.N.
Miss I. Morris, R.N.

GENERAL STAFF

Miss N. Siddons-Grey, R.N.
Miss D. MacQuarrie, R.N.
Miss P. Rattray, R.N.
Miss K. Bramble, R.N.
Miss G. MacKay, R.N.
Miss R. Bissing, R.N.
Miss G. Jolicoeur, R.N.
Miss S. Petrie, R.N.
Mrs. G. Jotic, R.N.
Mrs. J. Mallory, R.N.
Miss J. Robertson, R.N.
Miss J. Hester, R.N.

SOCIAL SERVICE STAFF

Director ...................................................... Miss E. DeBrisay
Social Worker ............................................... Miss T. Hidaka
Social Worker ............................................... Mrs. G. M. Philips
Social Worker on Research Project ..................................... Miss M. Gosselin*
Social Worker on Research Project ..................................... Miss I. Mullaney**

*Supported by Federal Provincial Grant to study the social aspects of epilepsy.
**Supported by the Multiple Sclerosis Society of Canada to study the social aspects of Multiple Sclerosis.

TECHNICAL AND SECRETARIAL STAFF

TECHNICIANS

Mrs. Eva Baker, B.Sc., Neurochemistry
Miss Doris Brophy, B.A., Lic. ès Sci., Neurochemistry
Miss Caroline Chiasson, R.T., X-ray
Leslie Geddes, B.Eng., Electroencephalography
John Gilbert, Neuropathology
Miss Agnet Grimsgaard, Neuropathology
Ronald Haram, Assistant Photographer
Miss Jean Harris, R.T., X-ray
Lewis Henderson, Electroencephalography
Charles Hodge, Photographer

Miss Joan Knight, Neuropathology
Miss Marita Legewie, Neuroanatomy
Miss Mabel MacCallum, R.T., X-ray
Miss Muriel Marco, X-ray
Miss Émé Nanton, Neuropathology
Miss Lili Prisko, Electroencephalography
Miss Kathleen Ramsay, Neurochemistry
Miss Mary Roach, R.N., Neurophysiology
Mrs. Hazel Robinson, Neurochemistry
Charles Stevens, Neurophysiology
Mrs. Alice Szczeniowska, Neuroanatomy

SECRETARIES

Miss Mabel Beighton, X-ray
Miss Bernice Bulmer, Business Office
Mrs. Eleanor Christie, Manuscripts
Mrs. Iona Dolphin, Social Service
Mrs. Marguerite Duffie, Case Histories
Mrs. Eileen Hodge, Business Office
Mrs. Isabel Knott, B.A., S.B., Secretary to the Registrar
Miss Monique Lemieux, Business Office
Miss Mavis McCormack, Neuropathology

Miss Lois MacDonald, Discharge Summaries
Mrs. Kate McGuire, X-ray
Miss Diana Meakins, Office Clerk, Social Service
Mrs. Kay O'Sullivan, Operation Reports
Miss Ina Pearen, Neurophysiology
Miss Adulcie Robinson, Business Office
Miss Elizabeth Ross, Case Histories
Mrs. Marie Stewart, Clinic Secretary
Mrs. Maria von Nida, Follow-up Secretary

APPOINTMENTS HELD IN GENERAL HOSPITALS OF MONTREAL
BY MEMBERS OF STAFF

ROYAL VICTORIA HOSPITAL

Neurologist and Neurosurgeon-in-Chief ...................................................... Wilder Penfield
Honorary Neurologist ............................................................. Colin Russel
Neurologist ............................................................. Francis McNaughton
Neurosurgeon ............................................................. William Cone
Associate Neurologists ............................................................. Preston Robb
Associate Neurosurgeon ............................................................. Arthur Young
Electroencephalographer ............................................................. Herbert Jasper
Assistant Neurologists ............................................................. Donald Lloyd-Smith
Clinical Assistant in Neurology ............................................................. Roy Swank
Assistants in Outdoor Clinics ............................................................. Reuben Rabinovitch

MONTREAL GENERAL HOSPITAL

Neurosurgeon and Chairman ............................................................. Harold Elliott
Neurologist ............................................................. Preston Robb
Assistant ............................................................. Miller Fisher
Consulting Neurosurgeon ............................................................. William Cone
Consulting Neurologists ............................................................. Arthur Elvidge
Honorary Attending Staff ............................................................. Herbert Jasper
Honorary Attending Staff ............................................................. Francis McNaughton

MRS. MARGUERITE DUFFIE, Case Histories
Miss Diana Meakins, Office Clerk, Social Service
Mrs. Kay O'Sullivan, Operation Reports
Miss Ina Pearen, Neurophysiology
Miss Adulcie Robinson, Business Office
Miss Elizabeth Ross, Case Histories
Mrs. Marie Stewart, Clinic Secretary
Mrs. Maria von Nida, Follow-up Secretary

18
CHILDREN'S MEMORIAL HOSPITAL

Honorary Consultant .................................................. Colin Russell
Consultants .......................................................... William Cone, Arthur Elvidge, Donald McRae, Wilder Penfield

Director of the Department of Neurology .................................. Arthur Young
Neurologists .................................................................. Francis McNaughton, Preston Robb

QUEEN ELIZABETH HOSPITAL OF MONTREAL

Consultant in Neurosurgery ......................................................... William Cone

HOTEL DIEU

Chief of Neurological Service .................................................... Jean Saucier

HOPITAL NOTRE DAME

Neurologist-in-Chief ............................................................ Roma Amyot
In charge of Department of Neurosurgery ................................ Claude Bertrand

HERBERT REDDY MEMORIAL HOSPITAL

Consulting Neurosurgeon ...................................................... Arthur Elvidge
Assistant Neurologist ........................................................... Preston Robb

JEWISH GENERAL HOSPITAL

Consultants ................................................................. Wilder Penfield, Norman Viner
Senior Neurologist ............................................................. Reuben Rabinovitch

QUEEN MARY VETERANS' HOSPITAL

Chief Consultant in Neurosurgery .......................................... Wilder Penfield
Consultants in Neurosurgery ................................................... William Cone, Arthur Elvidge
Head of Neurosurgical Division ........................................... Harold Elliott
Chief Consultant in Neurology .............................................. Francis McNaughton
Head of Neurology Division ................................................ Preston Robb
Consultant in Neurology ...................................................... Miller Fisher
Consultant in Neuroradiology .............................................. Donald McRae
Head of Electroencephalography Division ............................ Donald Lloyd-Smith
Consultant in Electroencephalography ................................... Herbert Jasper

ST. MARY'S HOSPITAL

Consultant in Neurology .................................................. Arthur Young
Consultant in Neurosurgery ................................................... Arthur Elvidge

VERDUN PROTESTANT HOSPITAL

Neurosurgery Consultant ................................................... Wilder Penfield
Neurosurgery Associate .................................................... Arthur Elvidge
Consulting Neurologists .................................................... Preston Robb, Norman Viner

ALEXANDRA HOSPITAL

Consultant in Neurology .................................................. Colin Russell
Consultant in Neurosurgery ................................................... William Cone
REPORT OF THE NEUROLOGIST

DR. FRANCIS McNAUGHTON

Since our last Annual Meeting, only a year ago, the Institute and its Department of Neurology have lost two outstanding members, Donald McEachern and John Kershman. Each of these two gifted men created for himself a unique position in the life of the Institute which no one else can hope to fill. Their work, their scientific achievements, their personalities, are built into the very walls of this place, and their influence upon us continues in a thousand ways.

The work has gone on, but only through the loyal support and the hard work of our depleted Staff. Dr. Bernard Smith of Aberdeen, who joined us last September as teaching Fellow, has helped greatly with Teaching and Outpatient Clinics. He has also been carrying out a careful evaluation of new drugs in the treatment of epilepsy. In recent weeks we have welcomed a distinguished colleague from Paris, Dr. Henry Hécaen, who will assist in the work of the Department during the next six months.

Special mention should be made of the splendid work of the Resident Staff headed by Dr. Alec Barnum and Dr. Lever Stewart. I would also like to refer to the valuable help we receive continually from Miss DeBrisay and her staff of the Social Service Department. One of her staff attends each Outpatient Clinic, and visits with us regularly on Ward Rounds. Many an important clinical decision for the patient depends on the expert help we receive from the Social Worker with her careful evaluation of a complex family or economic situation. Sound planning of convalescent and long-term after-care is often as important for the patient as the expert treatment he or she receives in hospital.

Some of us feel that Neurology is just in its beginnings as a special branch of Medicine, and not near its end, as the baleful prophets have warned. It is fortunate that, in McGill, over the past twenty years, Neurology and Neurosurgery have developed side by side in a single department, under far-seeing leadership. It has been a happy and successful union of common interests, and one which other medical schools might well copy. Today, Neurology and Neurosurgery are more interdependent than ever, so that it is often difficult to draw a dividing line between the two branches. We want to continue this intimate relationship.

I feel certain that in the “new” Institute with its larger bed capacity and its increasing opportunities for basic studies, we will be in an unusually favourable position to train young men in Neurological Science and in the practice of Neurology and to influence its future development. At the same time, it will be essential to maintain and widen our relationship with the Departments of Psychiatry and Medicine, if Neurology is to achieve its full stature.

REPORT OF THE NEUROSURGEON

DR. WILLIAM V. CONE

The work accomplished on the Neurosurgical Service this past year may be regarded with pride. We recognize that the service is not self-sufficient and acknowledge with gratitude the aid of the entire staff of the Institute. We are grateful also to the members of the staff of the Royal Victoria Hospital and of
McGill University for their help in making the year an unusually active and successful one.

There were 1128 admissions to the service. There were 1029 operations carried out. The surgical treatment of trauma to the brain and spinal cord, of epilepsy, of tumours, of aneurysms, and of discogenic syndromes continued to predominate in the daily operations. Some of the less common procedures were pedunculotomy for uncontrollable movements, shunting of the ventricular fluid to the peritoneal cavity for congenital or acquired hydrocephalus, and arthrodesis of the articular facets between the axis and atlas and fusion for the treatment of either platybasia or fracture of the odontoid. The surgical service has been busy.

To two departments we are indeed grateful. In anaesthesia Dr. Pasquet, Dr. Gilbert and Dr. Davis have made it possible for us to accomplish readily and safely operations we had found to be hazardous and difficult in the past. But on this there hangs a tale. Their insistence on the necessity for transfusions on the slightest provocation makes our debt to the Blood Bank of the Royal Victoria Hospital, supervised by Dr. Paul Weil, great in theory and in fact. Bankruptcy proceedings sometimes are threatened, but always averted. The splendid control Dr. Weil provides has made transfusions safe and reactions extremely rare.

It is a pleasure to report accomplishments which have been of service to patients. Diagnoses have been made more quickly and with greater finesse. Operations have been made more effective and the morbidity has been lessened. There has been more expert nursing supervision and therefore greater protection from complications. We have had better equipment with which to work. Newer developments are constantly adding to understanding and better treatment. Periods of hospitalization have been shortened and more patients have had effective surgical treatment.

It is the patients we are unable to help who are bewildering. Their spectre breeds humility. They keep the need for further research constantly before us. They plead with us not to give up, but they cannot be kept indefinitely in an active treatment centre where their bed occupancy prevents treatment of patients who can be rehabilitated promptly.

I hope that some day arrangements can be made so that our staff can have a service in an institution for the care of the chronic or incurably ill, where our patients can be sent, where we can regularly supervise and study them and bring them back to the Institute for special investigations when indicated. Some of the patients would surely be salvaged and our understanding would always be increased.

REPORT OF THE REGISTRAR

DR. DONALD LLOYD-SMITH

In presenting an annual report of the clinical work of the Institute in the cold shorthand of figures, it is difficult to convey the amount of time and effort represented. Particularly was this true in 1951 when a volume of work was performed greater than that of previous years, in spite of a temporary reduction in accommodation, a situation calling for increased cooperation and improvisation.
When the statistics for 1951 are compared with those of the two previous years it is seen that the number of inpatients has, for the first time, exceeded 1900 with a total of 1,766 new admissions and 73 transfers from other services. The number of operations has, again for the first time, exceeded 1000.

The Outpatient Clinics continued to operate under high pressure with 665 new patients referred for neurological and neurosurgical consultations and 4,342 revisits, making a total of 5,007 patient appointments.

Special Clinics for neuromuscular disease, for seizures and multiple sclerosis continued to be very active. The neurology treatment clinic reports about 800 patient appointments in 1951 and this clinic and the multiple sclerosis physiotherapy centre have maintained their services daily.

The crowded teaching schedule of the Institute included courses for Fellows and medical students, and for nurses at both student and graduate levels.

A very active research programme was carried forward by a group of twenty-five Fellows enquiring into problems of the physiology and chemistry, the pathology and anatomy of the nervous system.

A large number of visiting clinical and research workers have called at the Institute in the past year indicating the world-wide interest in the work of our various departments. In the Visitors' Book are inscribed addresses from Tokyo to Rio de Janeiro and to Madras.

Every effort is being made to maintain the high quality of the Institute’s records. Diagnoses and coding are altered as required in keeping with the Standard Nomenclature revision, and with the special classification used for clinical research in epilepsy.

Some annual figures of the work of the Institute for the last ten years follow:

<table>
<thead>
<tr>
<th>Year</th>
<th>Patients cared for</th>
<th>Hospital Days</th>
<th>Average Stay</th>
<th>Death Rate</th>
<th>Autopsy Rate</th>
<th>Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1941</td>
<td>1179</td>
<td>20482</td>
<td>17.4</td>
<td>6.03%</td>
<td>88.5%</td>
<td>566</td>
</tr>
<tr>
<td>1942</td>
<td>1416</td>
<td>23939</td>
<td>16.9</td>
<td>4.53%</td>
<td>83.3%</td>
<td>700</td>
</tr>
<tr>
<td>1943</td>
<td>1623</td>
<td>29718</td>
<td>18.3</td>
<td>3.97%</td>
<td>77.0%</td>
<td>742</td>
</tr>
<tr>
<td>1944</td>
<td>1657</td>
<td>30501</td>
<td>18.4</td>
<td>5.1%</td>
<td>65.0%</td>
<td>864</td>
</tr>
<tr>
<td>1945</td>
<td>1681</td>
<td>34223</td>
<td>21.4</td>
<td>4.28%</td>
<td>64.5%</td>
<td>955</td>
</tr>
<tr>
<td>1946</td>
<td>1871</td>
<td>35521</td>
<td>19.9</td>
<td>2.9%</td>
<td>67.7%</td>
<td>864</td>
</tr>
<tr>
<td>1947</td>
<td>1752</td>
<td>34456</td>
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<td>3.76%</td>
<td>88.2%</td>
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</tr>
<tr>
<td>1948</td>
<td>1773</td>
<td>33366</td>
<td>19.1</td>
<td>5.7%</td>
<td>94.4%</td>
<td>987</td>
</tr>
<tr>
<td>1949</td>
<td>1831</td>
<td>32255</td>
<td>17.6</td>
<td>4.2%</td>
<td>73.8%</td>
<td>823</td>
</tr>
<tr>
<td>1950</td>
<td>1862</td>
<td>35434</td>
<td>19.0</td>
<td>4.99%</td>
<td>87.96%</td>
<td>926</td>
</tr>
<tr>
<td>1951</td>
<td>1921</td>
<td>33555</td>
<td>17.4</td>
<td>4.4%</td>
<td>68.9%</td>
<td>1029</td>
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</table>
Outpatient Clinics are held five days of the week in the Royal Victoria Hospital

<table>
<thead>
<tr>
<th>Day</th>
<th>Clinic Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>Neurology &amp; Neuromuscular Diseases</td>
</tr>
<tr>
<td>Tuesday</td>
<td>Neurosurgery</td>
</tr>
<tr>
<td>Wednesday</td>
<td>Neurology (Epileptic)</td>
</tr>
<tr>
<td>Thursday</td>
<td>Neurology</td>
</tr>
<tr>
<td>Friday</td>
<td>Neurosurgery</td>
</tr>
<tr>
<td>Monday to Friday</td>
<td>Neurology Treatment Clinic</td>
</tr>
<tr>
<td></td>
<td>Multiple Sclerosis Physiotherapy Centre</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>New Patients</th>
<th>Revisits</th>
<th>New Patients</th>
<th>Revisits</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>577</td>
<td>3430</td>
<td>219</td>
<td>695</td>
<td>4921</td>
</tr>
<tr>
<td>1951</td>
<td>543</td>
<td>3509</td>
<td>122</td>
<td>833</td>
<td>5007</td>
</tr>
</tbody>
</table>

REPORT OF THE BUSINESS MANAGER

D. C. BAIN

During the past year a change in the business arrangements of the Institute was effected.

In the past, patients' accounts were handled by the Royal Victoria Hospital, as was the maintenance of the appropriate accounting records, etc. This arrangement had always been quite satisfactory, but because of the large sums involved in recent years (over $1,000,000. per annum) it has been thought desirable for the Institute to set up its own business office.

As its name indicates, this office is concerned with the business of the Institute from the financial point of view. Amongst its functions is the maintenance of adequate records so that the Director and other officers may be kept informed of our position in the unceasing war for survival against that common enemy of hospitals, i.e., the Deficit.

Another aim is to establish a personal relationship with the patient. This aim is twofold:— to maintain the feeling of good-will toward the Institute, already engendered by the Clinical Staff, and to secure, as far as is possible, the payment of his hospital account, without on the one hand inflicting real hardship upon him, and on the other, securing as much of that to which we are justly entitled.

Accordingly, on November 1, 1951 the first step was made when the patients' ledgers were taken over from the Royal Victoria Hospital. Since then other services formerly handled by them have been taken on, and the change-over is not yet completed.

As was intimated by the late Dr. Kershman in his "Report on Hospitalization" last year, a slow but steady rise in costs has continued. As a result the cost per patient per day has reached the new high of $18.88, an increase of $2.03 over the previous year.
However, about $1.00 of this amount may be attributed to a decline in patient days, due to the loss of accommodation caused by the demolition of the Annex to make way for the new extension. An improvement in this respect may be expected when the new quarters are in operation. The rising cost of food and supplies being the other contributory factor.

A survey made late in the year produced such results that the Advisory Committee felt compelled to raise the rates for all types of accommodation, the increase to become effective on January 1, 1952.

The ratio of public patients to semi-private and private patients still remains high and of the year’s admissions, 63% were in the public category.

161 patients were cared for under the Quebec Public Charities Act for whom we received payment at the flat rate of $4.00 per day! These patients accounted for 17½% of all public patient days. However a letter has been received from the authorities at Quebec advising that the daily rate for indigents will be increased to $5.50 per day as from April 1, 1952.

There are still a number of problems to be settled before all the changes desired are brought about but it is hoped that this will be accomplished before the end of 1952.

The co-operation and help received from the staff of the Institute is greatly appreciated and it is a pleasure to acknowledge a similar debt to the Administrative Staff of the Royal Victoria Hospital, who have given most generously of their time and experience during this period.

REPORT OF THE DIRECTOR OF NURSING
Miss Eileen C. Flanagan

The Nursing Department has had a severe test of its efficiency, adaptability and sense of good humour, since the demolition of the Annex last September, and I feel, has measured up to the extraordinary demands made on these qualities. We have cared for almost the same number of patients, and in fact for a larger number of children than ever, without any untoward happenings owing to the congestion in the wards. The new wards will be a great joy to the nurses as well as to the patients.

We have just completed the second Post-Graduate Course of the year, and awarded certificates to twelve graduates from Canada, the United States and Norway. Fifty-six student nurses from the Royal Victoria Hospital School of Nursing have also each been given two months' experience, and teaching. We appreciate very much their good service and enthusiastic spirit among us.

We continue to nurse the great majority of the patients with our regular staff, using special nursing only in very critical cases.

The Nursing Staff is exceedingly grateful for the many pieces of new equipment obtained through the Government Grants, which help to make their nursing of patients easier and better.

We are indebted as always to the members of the Medical Staff for help and guidance day by day on the wards, and for the many hours of formal teaching which they give to the Staff.
During the year, the Social Service Department has gradually reduced to an absolute minimum statistical reporting of our work. Statistics are kept on file in the department.

As staff with different interests come and go, the functions of the department vary. The golden age here was probably when Mrs. Davidson and Mrs. Thomas were working on "The Social Problems of the Epileptic Patient", a study which is still in great demand. The past twelve months have been an era of consolidation, during which no major work was undertaken but the staff was built up, and certain administrative changes were put into effect.

The building of new offices is a tremendously important event for any social service department. When space has been designed specially for the purpose and furnished with care, as has happened here, one feels that some special piece of research should be started at once to commemorate it. Mere thanks are not enough.

The most important administrative change from our point of view has been the advent of the new business office. Let me say at once that Social Service is still interested in patients' finances, nor can we afford to be disinterested in how the hospital collects money, but aware as we are of the implications of this illness for a family, we are always likely to differ in outlook from any business offices worthy of the name, and are glad to be released from any responsibility for collections.

Work with Epileptics has continued to be one of the major parts of our programme. Thanks to the continued generosity of the Dominion and the Province we have been able to retain the services of Miss Gosselin and to carry the research project on Epileptics with automatic behaviour to a conclusion. A great deal of interpretive work remains to be done if the Epileptic is to be accepted in schools and employment. Research workers have established the problem. We need now to use our research workers in a slightly different way, freeing them for a continuing piece of work in the community, work which would still concern individual patients, but which would be carried on directly with schools, National Employment Service and employers. At the end of such a period, study of successful Epileptics might have more appeal to Education Authorities and Industry than any number of reports of hardship.

We are indebted to the Multiple Sclerosis Society of Canada for paying the salary of a full time Social Worker specializing in the study and treatment of Multiple Sclerosis. The study is important, and in addition it means a great deal to have a worker on the staff whose major responsibility is to work with Multiple Sclerosis patients.

During the past year the outstanding social problems have been the extreme difficulty in finding suitable employment for handicapped patients, and the universal shortage of accommodation for chronic patients. These problems although long term are not entirely hopeless. Both the Rehabilitation Society for Cripples,
and the Occupational Therapy and Rehabilitation Centre are developing services which open up a new future for the handicapped. It is our job to keep all agencies constantly aware of our needs, and to join with them in action when required.

The staff who have been with the department throughout the whole of this past year have reason to be very proud of the work done. The future should be very bright.

**DEPARTMENT OF ANAESTHESIA**

**Dr. André Pasquet**  
**Dr. Richard Gilbert**

This year the Department of Anaesthesia cannot report as dramatic changes as in the previous year. However, the highlight, from our point of view was the invitation given by Dr. Penfield to Dr. H. Griffith, Professor of Anaesthesia of McGill University, to join the Staff of the Montreal Neurological Institute in the capacity of consultant.

In conjunction with the Department of Anaesthesia of Notre Dame Hospital, this Department has assumed responsibility for the direction and operation of the Department of Anaesthesia of the Queen Mary Veterans’ Hospital. The increase of work thus incurred was met by the addition to our staff of Dr. John Davies.

The total number of anaesthetics given, has not changed materially for the last few years.

<table>
<thead>
<tr>
<th>Anaesthetics</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Anaesthetics</td>
<td>745</td>
</tr>
<tr>
<td>Regional and Spinal Anaesthetics</td>
<td>166</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>911</strong></td>
</tr>
</tbody>
</table>

Thanks to various grants, especially the Dominion-Provincial Grants, our department might well be considered the best equipped in Canada, both from the standpoint of research and of anaesthetic equipment specifically adapted to the needs of the work in a Neurological Institute. Work has begun and is progressing on several investigative projects.

The Block Clinic for regional anaesthesia has progressed, but it has not reached the dimensions initially hoped.

**DEPARTMENT OF RADIOLOGY**  

**Dr. Donald McRae**

During 1951 clinical activities made up the greatest part of the work of this department. The examination of sick patients by Roentgen methods has always been our major work; it rises and falls as the hospital population rises and falls. In all, 6870 examinations were carried out, slightly less than in 1949 and 1950. This parallels the drop in patients-in-hospital due to the closing of the Military Annex for part of the year. There were 643 encephalograms, 174 ventriculograms and 44 carotid arteriograms performed, an average of three of these complicated
procedures each working day. In addition 383 pantopaque myelograms were
carried out. It is necessary to point out that the nursing and orderly staff work
very closely with us. Without their valuable co-operation it would be impossible
to accomplish this much work.

Teaching activities have been the next most important part of our work.
The Neuroradiological Seminar for the interns and Fellows was given as usual.
Neuroradiological demonstrations of current case material were given three
times weekly. Post-graduate and undergraduate lectures in the Department of
Radiology of McGill University were continued as before. During the year
Drs. Dumouchel, Harcus, Silny and Squire each spent from four to six months
in the department. They come from the Diploma Courses of Radiology of
McGill University and the University of Montreal.

With Dr. Barnum we attempted to correlate the clinical and anatomical
findings in occipitalization of the atlas. A similar attempt to correlate the neuro­
logical and anatomical findings in syringomyelia and syringobulbia was made
with Dr. Dumouchel.

The constrictions of time and space are still upon us. They are lightly borne
as beneath our eyes the new wing unfolds.

**SUB-DEPARTMENT OF NEUROCHEMISTRY**

**DR. K. A. C. ELLIOTT**

**DR. D. B. TOWER**

The death of Dr. Donald McEachern was keenly felt by all in Neuro­
chemistry. He had been in charge of this sub-department since its inception in
1935.

For the first time the total routine work of the Main and Ward Laboratories
has not increased. This, however, is only a temporary levelling off connected
with the building program. The number of biochemical determinations in the
Main Laboratory was 6,185, and the number in the Ward Laboratories was 5,133,
making a total of 11,318. The laboratory has taken over the preparation of
operating room solutions. Approximately 150 litres of “Artificial Spinal Fluid”
and 4,000 litres of “Elliott’s A” solution were prepared.

Sodium and potassium determinations have been introduced as a routine
procedure during the past year, and a method for the determination of serum
bromide is being standardized and will soon be added to the list of routine
determinations. A new photoelectric colorimeter has been purchased, and all
routine procedures have been checked and standardized to the new machine.
Dr. Tower has made an exhaustive survey of all techniques done in this laboratory
and has compiled a Laboratory Manual which explains the work in detail and has
already proved an invaluable work of reference. Dr. Tower has introduced new
and more satisfactory requisition and report forms.
The work in experimental neurochemistry was initiated as a five year project by grants from the Rockefeller Foundation and from Mr. J. W. McConnell. With the provision of permanent support by the Donner Canadian Foundation, the Donner Laboratory of Experimental Neurochemistry is established as a separate subdepartment and this is the first report of that department. Activities consist of research in basic biochemical aspects of Neurology. This type of work was previously done within the Department of Neurochemistry and the two departments have continued to work in close conjunction, with considerable overlapping of personnel.

The space available to Experimental Neurochemistry has been severely limited, but this condition will be corrected in the new wing. A considerable amount of new equipment has been acquired through the Dominion-Provincial Public Health Grant, but most of this must remain in storage until the new laboratories are ready.

Dr. Donald Tower, Markle Scholar in Medical Science, has continued his studies on the biochemical abnormality in focal epileptogenic tissue, a failure to produce bound acetylcholine in vitro. He has found two methods for the experimental production of this defect, and has shown that narcotics and anti-convulsants produce an opposite effect. Further, the experimentally produced defect, and the defect in focal tissue, can be corrected in vitro by certain amino acid amides.

Mr. Elliott Brodkin, Dazian Research Fellow, has been studying the binding of acetylcholine in brain suspensions. His work indicates that this binding is not readily affected directly by agents other than potassium and pH, and the above-mentioned defect must be connected with alteration of the metabolism of the surviving tissue.

Before leaving the department, Dr. Hugh McLennan cleared up an old problem in the metabolism of acetylcholine and showed that the concentration of adenosinetriphosphate can exert a dominant control of the production of acetylcholine. With Mrs. Eva Baker, Dr. Elliott has been studying the activity of brain tissue in destroying adenosinetriphosphate. Dr. S. Yrarrazaval visited the laboratory part time for some weeks and demonstrated the first in vitro effect of cortisone. Swelling of brain and liver slices was increased in tissue from adrenalectomized animals but was returned to normal by the presence of cortisone.
During the past year clinical electroencephalographic examinations have been completed at about the same rate as during the last two years. There were a total of 2028 examinations carried out on 1486 patients. One half of these examinations were done on patients admitted to the Institute and to the Royal Victoria Hospital, the out patient department of this hospital accounting for another 15 percent. Thirty five percent of the examinations were carried out on patients referred from private offices or from other hospitals.

It is of interest to compare the number of examinations and patients examined now as compared to ten years ago when all of our work was done with a home made 4 channel machine with one technician and the electroencephalographer. We now have two 8 channel machines of latest design with three full time technicians, two EEG fellows and an electroencephalographer. There has been an increase of only 38 percent in the number of examinations carried out, and 67 percent in the number of patients examined. The discrepancy is largely accounted for by the increasing complexity of examination procedures now employed, with special techniques such as pharyngeal electrodes and studies taken during sleep, with Metrazol activation, photic stimulation, etc., which will often double the time required for a given examination. This increase in thoroughness of study has increased considerably the value of the EEG in the clinical management of a greater number of patients. During the coming year we hope to increase the efficiency of this department, which will be made possible by less crowded quarters, so that more patients can be accommodated without compromising the thoroughness of each examination.

Research and teaching still form a large part of the work of this department. There have been six technicians in training under the guidance of Mr. Lewis Henderson and Miss Lilli Prisko. There were five doctors taking electroencephalographic training in our laboratories during the past year.

We have undertaken the organization of a new department of electroencephalography at the Children's Memorial Hospital. This project got off to a good start with the excellent work of Drs. Kenan and Maida Tükel who have been studying with us on leave of absence from the University of Istanbul, Turkey. The opportunity thus afforded for studies of the EEG in various diseases of infancy and childhood is proving of great value in our attempt to understand disorders found in later life.

Research activities have included continued studies of the mechanism of hyperventilation in relation to petit mal epilepsy, EEG and electrocorticograms in patients with temporal lobe seizures, the effect of arousal upon various types of EEG abnormality, studies of electrographic suppressor responses in electrocorticograms and in the EEG in relation to certain types of epileptic seizures, and studies in electromyography.
In spite of the record number of fellows departing from the Institute at the end of last year, new fellows have taken their place, so that there were a total of 26 fellows working in this department during the past year, 2 more than during the previous year. Twelve of these were engaged in neurophysiological research, the remainder from other departments of the Institute.

In the laboratory journal of procedures carried out there were a total of 876 entries, 283 more than for the previous year, though there was not such a large proportion of major procedures. It is obvious that the enlarged quarters which we hope to obtain during the coming year are needed badly to take care of the continued growth of activities in this department.

The generous financial assistance from the Bronfman family has been of crucial value to the continuation of our work, especially by the establishment of a Bronfman research fellowship which has made it possible for us to bring Dr. Ajmone-Marsan back from Italy to join our staff.

Research has continued on the detailed analysis of the functional relationships between the cerebral cortex and the basal ganglia and higher brain stem. A new Atlas of the diencephalon of the cat has been completed for use with the stereotaxic instrument in these studies. Even before publication this Atlas has come into use in several laboratories throughout the world.

Progress is being made in our understanding of brain stem mechanisms underlying conscious processes, particularly in relation to petit mal epilepsy. The details of the functional anatomy of the thalamic reticular system and its separate pathways of projection to the cerebral cortex are becoming clarified with further study.

Further physiological studies of the mechanisms of temporal lobe seizures in relation to the reticular system of the brain stem are under way. A detailed study of motor functions of the temporal lobe and second sensory regions of the cortex is being undertaken.

Of particular interest are the microelectrode studies of the electrical activity of single cortical cells which opens up an entirely new field in the study of the electrical activity of the brain. Already we have been very much impressed with the fertility of this technique in revealing a hitherto unsuspected buzzing loom of activity which may go on within the depths of the cortex which would not be suspected from the usual gross records of the electrocorticogram taken with large electrodes applied to its surface.

Finally, we must remark upon the great improvement in instrumentation which has been made possible during the past year with the aid of the Dominion-Provincial grants, together with the electronic design and construction of Mr. Leslie Geddes. When we move into our new expanded laboratories they will be equipped in a manner hard to surpass.
DEPARTMENT OF NEUROANATOMY
AND
NEUROLOGICAL PATHOLOGY

DR. FRANCIS MCNAUGHTON
DR. JERZY OLSZEWSKI

Members of this Department collaborated with Dr. Jasper and Drs. Burns and Burgen of the McGill Department of Physiology, in giving a combined course to Second Year Medical students on “The Anatomy and Physiology of the Nervous System.” It was considered a successful experiment, and one to be continued and improved.

The Graduate Seminar was held throughout the winter months in close collaboration with Dr. Jasper and his associates.

The Brain Modelling Class had a successful and interesting winter session, with at least six nationalities represented in the group taking part.

The special lecture on Neuroanatomy was given this year by Dr. Gerhard von Bonin of Chicago who spoke on “The Motor Cortex.”

“The Thalamus of Macaca Mulatta. An Atlas for Use with the Stereotaxic Instrument” by Dr. Olszewski, has now been published by S. Karger with the aid of a special grant from the National Research Council of Canada. Dr. F. Haddad has begun an experimental study of the sensory components of the facial nerve. Dr. A. Rothballer is carrying on a series of experiments on hypothalamic neurosecretion in rats. Dr. Martinez-Coll is studying the early nerve cell changes in the region of experimental brain wounds.

Summer studentships were held in 1951 by Mr. Jack Harvey of McGill, and by Dr. Donald Baxter of Queens University.

LABORATORY OF MULTIPLE SCLEROSIS INVESTIGATION

DR. ROY SWANK

Epidemiological studies of the distribution of cases of multiple sclerosis and nutrition in Europe and particularly in Norway are now concluded. In Norway the incidence of multiple sclerosis is very low along the coast and very high inland in the farming and dairy areas. The fat intake, and in particular the butter and animal fat intake, is very high inland and relatively low along the coast. The low fat diet which we are now testing in the clinic was derived from these studies.

In the laboratory it has been shown that a high fat intake alters the suspension stability of the blood. In collaboration with Dr. Franklin and Dr. Quastel simultaneous significant alterations in the plasma proteins were demonstrated.

Miss Valerie Wilmot, a graduate student in the Department of Biochemistry and Sam W. Levy, a graduate student from the Department of Physiology have collaborated in studies which showed that the disappearance of the chylomicra from the blood which occurs when heparin is injected is due to dissolution of the chylomicra, and that this change is initiated in the leg and lungs but not in the circulation of the brain.
Dr. Raymond Hain and Dr. Peter Westhaysen collaborated in studies of the effects of occlusion of the middle cerebral artery, and of various sized emboli on the circulation and parenchyma of the brain. Small emboli produced lesions of a demyelinating character confined to the white matter and junction of the white and gray matter. Dr. Revis Lewis showed that these small emboli produce peri-capillary and peri-arteriolar gliosis.

With Dr. Franklin and Dr. Quastel, using a paper chromatography method developed by these workers, it was shown that patients with multiple sclerosis have an abnormal pattern of plasma proteins, particularly during activity of the disease. Much of our time during the past year has been spent in attempting to learn more about these plasma protein changes.

PHOTOGRAPHY

Dr. Jerzy Olszewski

The main fields of work in the department were operating room photography, clinical photography of patients, photographing pathological specimens, photomicrography and the preparations of lantern slides.

Thanks to the acquirement of new equipment the scope of work has been widely enlarged.

The new photomicrographic camera is adapted to cover all fields of low and high power photomicrography in transmitted or incident light, dark field illumination and later phase contrast.

The Kodak Cine Special Camera for motion pictures can also be used on this new photomicrographic set-up

The retinal camera proved to be of great value for fundus photography.

The new dryer, anhydrator, light and other smaller pieces of equipment made the work faster, easier and more efficient.

FELLOW’S LIBRARY

Dr. Francis McNaughton

During the past year, the library has discontinued 3 journals, and added 3 new ones to its subscription list, thus keeping the same total of 52 journals on Neurology, Neurosurgery and related subjects. One hundred and nineteen new books have been purchased, and back files of important journals acquired, with the aid of a Federal-Provincial Grant.

Books were given to the library by Dr. A. A. Bailey, Dr. W. Feindel, Dr. W. W. Francis, Dr. D. C. MacCallum, and Dr. W. Penfield, and by the McGill Medical Library. Particular mention should be made of an important group of books given by Dr. Colin Russel from his own library. Some of Dr. Kershman’s and Dr. McEachern’s books were also received by the library.

As in past years, we are grateful for the advice and assistance given by Dr. Stehle and Miss Gordon of the McGill Medical Library.

The library has long since overflowed its shelves, and we look forward to the extra space allotted in the enlarged Institute for book shelves and study tables.
The meetings of the section of Neurology of the Montreal Medico-Chirurgical Society were held weekly from September 12th to May 28th. The program was varied consisting of clinical programs which were a series of case presentations held in succession at the Montreal Neurological Institute, the Montreal General Hospital, the Hotel Dieu and the Notre Dame Hospital. In addition meetings were held at which papers were presented by distinguished visiting speakers in different fields ranging from tissue culture of the brain to psychology and psychiatry.

The variety of subjects considered before the Society is illustrated in the following list of addresses delivered during the year 1951-52.

PROFESSOR RAGNAR GRANIT, Nobel Institute for Neurophysiology. "Reflex Excitability of Motoneurones."

DR. MOLLY HARROWER, Consulting Psychologist. "Problems of Inter-Professional Communication."

DR. SEYMOUR S. KETY, National Institute of Mental Health and Neurological Diseases and Blindness. "Problems of Cerebral Circulation and Metabolism."

DR. GERHARDT VON BONIN, University of Illinois. "Problems of the Precentral Motor Cortex."

DR. BERTRAM SELVERSTONE, Tufts Medical School. "The Use of Radioactive Isotopes in the Localization of Brain Tumours."

DR. DONALD MCRAE and DR. ALEC BARNUM, "Occipitalization of the Atlas: Comparison of Anatomical and Clinical Findings."

DR. MURRAY BARR, University of Western Ontario. "Sex Chromosomes and the Neurone."

PROFESSOR J. C. ECCLES, National University of Canberra, Australia. "Brain-Mind Liaison."

DR. C. M. POMERAT, University of Texas. "Tissue Cultures of the Human Brain."


DR. DEREK DENNY-BROWN, Boston City Hospital. "Neuromuscular Disorders."

DR. JOSEPH P. EVANS, University of Cincinnati. "Intracranial Pressure: Normal and Abnormal."
DR. ROBERT CLEGHORN. “Problems of Adrenocortical Participation in Personality Disturbances.”

DR. WILLIAM H. SWEET, Harvard Medical School. “Rates of Entry of Sodium and Water into the Cerebrospinal Fluid” and “Potentialities of Treatment of Brain Tumors with Stable Isotopes which Capture Slow Neutrons.”

DR. ROTHBALLER and DR. SHELTON DUGGER. “A Study of Neurohypophysis” and “A Study of Melanin Producing Cells and their Affinities with Chromaffin Cells.”

DR. MORRIS BENDER, Bellevue Medical Centre and New York University. “Disturbances of Perception of Sensation with Particular Reference to Extinction and Displacement.”

DR. EWEN CAMERON. “Anxiety: Damage and Repair.”

DR. EARL WALKER, Johns Hopkins University. “Surgical Treatment of Involuntary Movements.”

PROFESSOR E. SPIEGEL, Temple University School of Medicine. “Recent Work on Stereoencephalotomy with Moving Picture on Use of Stereoecephalatome.”

DR. RAY S. SNIDER, Northwestern University. “Interrelationship of the Cerebellum and Cerebrum.”

DR. BRIAN McARDLE. “Metabolic Studies in a Case of Familial Periodic Paralysis.”

THE FELLOWS’ SOCIETY

DR. J. W. HANBERY, President

DR. D. LLOYD-SMITH, Vice-President

DR. G. S. DUGGER, Secretary-Treasurer

During the year the Fellow’s Society held an active program of scientific and social activities. Many distinguished visiting speakers addressed the Society and several Fellows of the Institute presented their work in a most interesting manner. As the activities and Fellows of the Institute have increased, it has become more difficult for Fellows of one department to keep up with the scientific work of another department. The Society provides a very useful meeting ground where all of the projects may be openly discussed.

GRADUATE STUDIES AND RESEARCH

DR. HERBERT JASPER

This has been a relatively lean year in some departments due to the extraordinarily large number of Fellows who completed their work and left the Institute at the end of the previous year. Gradually some of their places were filled during the year, some with only short term or part time students, the overall total (31) being 25% less than the previous year. The Department of Neurophysiology has been particularly active with several good men from abroad who have started work at different times during the year.
The number of graduate Fellows was about equally divided between those engaged in full time clinical training and those working in the laboratories. Such an estimate can only be approximate since many Fellows have shifted from clinical to laboratory work, and vice versa, with remarkable agility. This distinction is somewhat artificial anyway, since some of the most outstanding research achievements of the year have been made by careful studies of patients, and observations made on the human brain during operative procedures for the treatment of epilepsy.

Graduate teaching has been continued as before, mostly in the form of individual instruction on the wards, in operating theatres and weekly conferences, in laboratories, and in close daily contact between Fellows and staff. The most active organized course has been the Seminar in Neuroanatomy and Neurophysiology, enriched by the active participation of Professor MacIntosh and Doctor Burns of the Department of Physiology, and terminating with special lecture-discussion periods with Professor Penfield.

There were three graduate degrees and two diplomas awarded during the past year as follows:

**MASTER OF SCIENCE**

**ELLIOT BRODKIN**  
Acetylcholine Metabolism in Brain Suspensions

**MAITLAND BALDWIN**  
Functional Representation in the Temporal Lobe of Man

**VALERIE WILMOT**  
Blood Lipids in Relation to Diet

**DIPLOMAS**

**MAITLAND BALDWIN**  
Neurosurgery

**HAROLD ROSEN**  
Neurosurgery

**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 internships in Medicine or Surgery.

The posts of Senior Resident in Neurosurgery, Resident in Neurosurgery and Resident in Neurology are available only to men who have had previous clinical service in the Institute.

Assistant Resident in Neurosurgery — one year’s duration — available January 1st and July 1st.

Assistant Resident in Neurology — six to twelve month’s duration — available January 1st and July 1st.
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, M.N.I. 3 hours weekly (6 months)*

1. Lectures, demonstrations and discussion, correlated with Seminar in Neurophysiology (B), Mondays, 5 p.m., beginning in November.

2. Advanced Neuroanatomy for selected group; brain modelling, 2 laboratory periods weekly beginning in December, times to be arranged.

Professor McNaughton
Doctor Olszewski
**B. Seminar in Neurophysiology, M.N.I. 2 hours weekly (6 months)**
Lectures, demonstrations and discussions, correlated with Seminar in Neuroanatomy (A), Mondays, 8 p.m., beginning in November.

Professor Jasper  
Doctor Ajmone-Marsan

**C. Colloquium in Clinical Neurology, 1 hour weekly, Clinics and Lectures, Wednesdays, 5 p.m., M.N.I.**

Doctor Lloyd-Smith

**D. Seizure Mechanisms and Cerebral Localization; Neurosurgical, Electroencephalographic and Roentgenographic Conference.**
M.N.I., 2 hours weekly (9 months)

Professor Penfield  
Professor Jasper  
Doctor McRae

**E. Seminar in Neuropathology, 1 hour weekly (10 months)**
Gross and Microscopic demonstration to be supplemented by collateral work.
Fridays, 5 p.m.

Professor Cone  
Professor Penfield

**F. Outline of Neurochemistry, 1 hour weekly (11 weeks)**
Lectures and demonstrations, M.N.I., Mondays, 5 p.m. beginning in September.

Professor Elliott  
Doctor Tower

**G. Colloquium in Clinical Neurology, 1 hour weekly (8 months)**
Lectures, discussions, demonstrations, Thursdays, 5 p.m.

Professor McNaughton  
Doctor Lloyd-Smith

**H. Colloquium in Neurological Roentgenology, 1 hour weekly (9 months) Monday, 9 a.m.**

Professor McRae

**I. Colloquium in Experimental and Clinical Neurology, 1 hour weekly (9 months)**
Discussions and lectures before Fellows Society.

Professor Jasper  
Doctor Robb

*Acceptable for credits for M.Sc. and Ph.D.*
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<th>DONATIONS</th>
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**TO CLINICAL RELIEF FUND:**

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<tr>
<td>Mrs. Esther Bloom</td>
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<td>Miss Suzanne Cohen</td>
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**TO MISCELLANEOUS CONTRIBUTIONS:**

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<tr>
<td>Mrs. Jeanette Wieder</td>
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<td>Miss Ellie Watkins</td>
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**TO THE HOBART A. SPRINGLE MEMORIAL FUND:**

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<td>Miss Martha P. Hendrie</td>
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<td>Mr. K. B. Jenckes</td>
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<tr>
<td>Mr. Williard Mayo</td>
<td>25.00</td>
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<tr>
<td>Rabbi Albert Minda and family</td>
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<td>Mrs. A. W. Policoff</td>
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<td>Mrs. Lewis Reford</td>
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<td>Mr. T. H. Sharp</td>
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<tr>
<td>Mr. Percy R. Walters</td>
<td>5,000.00</td>
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PUBLICATIONS
1951-52

SIMO AJMONE-MARSAN:
See Herbert Jasper, Joint Author.
See Julius Stoll, Joint Author.

MA AMYOT:

RIS P. BABKIN:

AUDE BERTRAND:

NATOLE DEKABAN:

ENNETH EARLE:

VROLD ELLIOTT:
The Intelligence of Schizophrenic Patients following Lobotomy. D.V.A. Treatment Services Bulletin, 6: 553, 1951 (with Ruth Hoyt and D.O. Hebb).

A. C. ELLIOTT:


See Donald Tower, Joint Author.

ARTHUR ELVIDGE:


See Choh-Luh Li, Joint Author.

EILEEN FLANAGAN:


LESLIE GEDDES:


R. G. B. GILBERT:


RAYMOND HAIN:


HERBERT JASPER:


See Julius Stoll, Joint Author.

JOHN KERSHMAN:


REVIS LEWIS:

HOH-LUH LI:


DONALD MCEachern:


See Anatole Dekaban, Joint Author.

See G. Milton Shy, Joint Author.

JHN MEYER:


RANCIS O'BRIEN:


ERZY OLSZEWSKI:


WILDER PENFIELD:


MILTON SHY:


See Donald McEachern, Joint Author.
JEAN SIROIS:


JULIUS STOLL:


See Herbert Jasper, Joint Author.

See Cosimo Ajmone-Marsan, Joint Author.

ROY SWANK:


See Raymond Hain, Joint Author.

DONALD TOWER:


### Classification of Diseases

**Nervous System Generally:**

<table>
<thead>
<tr>
<th>Disease</th>
<th>Count</th>
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<tbody>
<tr>
<td>Neurosyphilis</td>
<td>10</td>
</tr>
<tr>
<td>Multiple Sclerosis</td>
<td>40</td>
</tr>
<tr>
<td>Motor neurone disease</td>
<td>16</td>
</tr>
<tr>
<td>Myasthenia gravis</td>
<td>4</td>
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**Meninges:**

<table>
<thead>
<tr>
<th>Disease</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meningocoele or myelomeningocoele</td>
<td>14</td>
</tr>
<tr>
<td>Acute purulent meningitis</td>
<td>10</td>
</tr>
<tr>
<td>Tuberculous meningitis</td>
<td>7</td>
</tr>
<tr>
<td>Spontaneous subarachnoid haemorrhage</td>
<td>14</td>
</tr>
<tr>
<td>Headaches</td>
<td>31</td>
</tr>
<tr>
<td>Subdural haematoma</td>
<td>24</td>
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<tr>
<td>Epidural haematoma</td>
<td>4</td>
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<tr>
<td>Cerebrospinal fluid rhinorrhea</td>
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<tr>
<td>Miscellaneous</td>
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**Brain:**

<table>
<thead>
<tr>
<th>Disease</th>
<th>Count</th>
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</thead>
<tbody>
<tr>
<td>Congenital anomalies</td>
<td>15</td>
</tr>
<tr>
<td>Hydrocephalus</td>
<td>21</td>
</tr>
<tr>
<td>Brain Abscess</td>
<td>3</td>
</tr>
<tr>
<td>Cerebral concussion</td>
<td>53</td>
</tr>
<tr>
<td>Cerebral contusion and/or laceration and encephalopathy</td>
<td>29</td>
</tr>
<tr>
<td>Epilepsy</td>
<td>294</td>
</tr>
<tr>
<td>Migraine</td>
<td>11</td>
</tr>
<tr>
<td>Hypertensive encephalopathy</td>
<td>7</td>
</tr>
<tr>
<td>Encephalopathy chronic and of undetermined etiology</td>
<td>10</td>
</tr>
<tr>
<td>Cerebral arteriosclerosis</td>
<td>10</td>
</tr>
<tr>
<td>Cerebral haemorrhage, thrombosis or embolism</td>
<td>64</td>
</tr>
<tr>
<td>Intracranial aneurysm</td>
<td>16</td>
</tr>
<tr>
<td>Cerebral atrophy</td>
<td>22</td>
</tr>
<tr>
<td>Narcolepsy</td>
<td>3</td>
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<tr>
<td>Encephalitis</td>
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<tr>
<td>Miscellaneous</td>
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**Tumours:**

<table>
<thead>
<tr>
<th>Disease</th>
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<tbody>
<tr>
<td>Glioma</td>
<td>77</td>
</tr>
<tr>
<td>Perineurial fibroblastoma</td>
<td>13</td>
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<tr>
<td>Meningeal fibroblastoma</td>
<td>17</td>
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<tr>
<td>Pituitary adenoma</td>
<td>6</td>
</tr>
<tr>
<td>Craniopharyngioma</td>
<td>7</td>
</tr>
<tr>
<td>Unclassified tumour</td>
<td>15</td>
</tr>
<tr>
<td>Unverified tumour and tumour suspects</td>
<td>16</td>
</tr>
<tr>
<td>Secondary tumour of brain and spinal cord</td>
<td>23</td>
</tr>
<tr>
<td>Haemangioma</td>
<td>4</td>
</tr>
<tr>
<td>Miscellaneous tumour C.N.S. and body generally</td>
<td>12</td>
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<tr>
<td>Third ventricle tumour</td>
<td>2</td>
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### Spinal Cord:

<table>
<thead>
<tr>
<th>Condition</th>
<th>Cases</th>
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<tbody>
<tr>
<td>Compression of the spinal cord</td>
<td>3</td>
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<tr>
<td>Acute myelitis</td>
<td>7</td>
</tr>
<tr>
<td>Subacute combined degeneration</td>
<td>6</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>4</td>
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### Cranial and Peripheral Nerves:

<table>
<thead>
<tr>
<th>Condition</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Papilledema, unknown cause</td>
<td>7</td>
</tr>
<tr>
<td>Trigeminal neuralgia</td>
<td>38</td>
</tr>
<tr>
<td>Menière's syndrome</td>
<td>7</td>
</tr>
<tr>
<td>Lesions of the brachial plexus and branches</td>
<td>13</td>
</tr>
<tr>
<td>Multiple neuritis</td>
<td>4</td>
</tr>
<tr>
<td>Other neuralgias</td>
<td>16</td>
</tr>
<tr>
<td>Traumatic peripheral nerve lesions</td>
<td>7</td>
</tr>
<tr>
<td>Neuropathy of undetermined etiology</td>
<td>10</td>
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<tr>
<td>Miscellaneous</td>
<td>13</td>
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### Mental Diseases:

<table>
<thead>
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<th>Condition</th>
<th>Cases</th>
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<tbody>
<tr>
<td>Mental deficiency</td>
<td>7</td>
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<tr>
<td>Psychoneurosis</td>
<td>56</td>
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<tr>
<td>Presenile dementia</td>
<td>4</td>
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<tr>
<td>Miscellaneous</td>
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### Other Systems:

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<th>Condition</th>
<th>Cases</th>
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<tr>
<td>Congenital anomalies of spine</td>
<td>10</td>
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<tr>
<td>Herniation of the intervertebral disc (cervical)</td>
<td>36</td>
</tr>
<tr>
<td>Herniation of the intervertebral disc (lumbar)</td>
<td>200</td>
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<tr>
<td>Discogenic disease</td>
<td>17</td>
</tr>
<tr>
<td>Fracture of the skull</td>
<td>96</td>
</tr>
<tr>
<td>Fracture and/or dislocation of the vertebral column</td>
<td>29</td>
</tr>
<tr>
<td>Lacerations, contusions, abrasions and/or haematomas</td>
<td>4</td>
</tr>
<tr>
<td>Intractable pain</td>
<td>12</td>
</tr>
<tr>
<td>Destructive lesion vertebrae and skull undetermined etiology</td>
<td>8</td>
</tr>
<tr>
<td>Muscular dystrophy</td>
<td>10</td>
</tr>
<tr>
<td>Essential hypertension</td>
<td>18</td>
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ITEMS OF INTEREST

At the biennial meeting of the Canadian Nurses Association, held in Quebec, a special demonstration of neurological and neurosurgical nursing procedures, as well as a demonstration of special equipment, was put on by the teaching staff of the Institute.

On December 4th, 1951, Dr. Wilder Penfield was granted an Honorary Doctorate degree from Laval University in recognition of outstanding work in the field of Neurology.

The Caldwell Lecture of the American Roentgen-Ray Society was given to Dr. Penfield. He spoke on "Cranial Clues to Intracranial Lesions."

During the year we were glad to welcome many old Fellows, such as Harry Steelman, now with the U.S. Army Walter Reed Hospital, Dr. Max Selverstone of Boston, Dr. Merton Shaver of Cincinnati, Dr. Gordon Thomas of Labrador. It is hoped that old Fellows will continue to feel at home and visit the Institute as often as possible.

Dr. K. A. C. Elliott is serving as Chairman of the Program and Publications committee for the 19th International Physiological Congress to be held in Montreal in 1953. He also is playing an important role in coordinating the work of the building program.

The Annual Hughlings Jackson Memorial Lecture of the Montreal Neurological Institute was given by Professor J. C. Eccles, Professor of Physiology, Australian University, Canberra, Australia, who spoke on "Electrophysiology of Neurone."

At the time of the annual meeting the addition to the Institute over the E.G. Department was completed and providing a home for the Social Service apartment. Work on the north extension is progressing rapidly and it should be ready for use in a year.

Notable among the events of the past year was the return of Dr. Guy Courtois from his studies in England and France with the newly acquired Dr. R. de Courtois from Marseilles, both of whom joined the E.E.G. Department.

Dr. Donald Lloyd-Smith has taken over the direction of the E.E.G. Department of the Queen Mary Veterans Hospital.

Mr. Charles Hodge participated in the meeting of the Biological Photographers Association in Boston and exhibited colour photomicrographs at the Professional Photographers Association of the Province of Quebec.
On May 21st, 1952, Dr. John Ingraham Bates, M.Sc., M.D., C.M., died in the New York Hospital where he was completing his training in Neurosurgery. Dr. Bates graduated in Medicine from McGill, interned at the Montreal General Hospital, and then served as a Surgeon-Lieutenant in the Royal Canadian Navy. He was associated with the Montreal Neurological Institute from 1947 to 1951 as a research fellow and on the house staff. His work was outstanding both on the wards and in tumour research. He had drive and ability that would have taken him a long way in his chosen field. He will long be remembered by the many friends that he made both here and abroad.