

9th Report
1943-44

To

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

Sir:

On behalf of the Executive Committee I have the honour to submit the ninth annual report of the Montreal Neurological Institute. It includes a summary of the clinical work for the calendar year of 1943, together with the scientific and research record for the academic year of 1943-44, and the lists of professional staff at the close of the academic year.

Respectfully submitted,
J. NORMAN PETERSEN, M.D.
Secretary.

*Executive Committee of the Montreal Neurological Institute:
Wilder Penfield, Chairman, W. V. Cone, A. R. Elvidge, John
Kershman, Fred H. Mackay, F. L. McNaughton, C. K. Russel,
Arthur Young, Norman Petersen.*



DR. J. NORMAN PETERSEN

This annual report was collected and written by Dr. Petersen in bed in the Resident's suite at the Neurological Institute in this, the Institute's tenth, year of operation. He died "in harness", as he wished it, beloved by all, the first of our attending staff to go.

Dr. Russel has written the following obituary to his pupil:

Dr. James Norman Petersen, B.Sc., M.D., C.M., Neurologist and Registrar of the Montreal Neurological Institute, died after a lingering illness on July 18th, 1944.

After graduation from McGill University he served for two years as an interne in General Medicine and later in Neurology at the Royal Victoria Hospital, and then a year with the late McFie Campbell at the Boston Psychopathic, going from there to the Philadelphia Orthopedic and Infirmary for Nervous Diseases, where he served two years.

In later years he studied in London at the National Hospital, Queen Square under Gordon Holmes and Greenfield. In Germany under Spielmeyer, in Holland under Brouwer and in Paris under Guillain, at the Salpêtrière. He was a member of the American Neurological Association.

In spite of the handicap of his poor health which is said to have begun when he was twelve years of age, but which was recognized as gout only when as a student arthritic symptoms developed and tophi appeared, he carried on with admirable courage. His very superior intellectual gifts, combined with a spiritual equanimity, in spite of a very painful and crippling illness, his loyalty to his colleagues and patients have endeared him to his many friends.

His progressing physical incapacity, which at first necessitated the use of crutches and later a wheel chair, did not prevent him taking an active part in the teaching of Neurology, and his lectures to the students reflected his intellectual brilliance, good judgment and great experience. As has already been so well expressed, and I quote from the Editorial in the Montreal Gazette, "between him and his patients there was a singular bond of sympathy, for he was a man who was not only seeking to relieve suffering in others, but who knew suffering himself, and showed that it could be borne with dignity and courage."

COLIN RUSSEL, M.D.

CLINICAL STAFF

Director

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

Honorary Neurologist

A. G. MORPHY, B.A., M.D.

Neurologist

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

Consulting Neurologist

F. H. MACKAY, M.D., F.R.C.P.(C)

Associate Neurologists

*DONALD MCEACHERN, M.D.
FRANCIS L. MCNAUGHTON, B.A., M.D., C.M.
J. NORMAN PETERSEN, B.Sc., M.D., C.M.
ARTHUR W. YOUNG, M.D., C.M., F.R.C.P.(C)

Associate Consulting Neurologists

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

Clinical Assistants in Neurology

*JOHN KERSHMAN, B.Sc., M.D., C.M., M.Sc.
*W. DONALD ROSS, B.Sc., M.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)

Clinical Assistants in Neurosurgery

*CLAUCE BERTRAND, B.A., M.D.
GUY MORTON, M.D.
MURTON R. SHAVER, B.A., M.D.
*O. W. STEWART, B.S., M.D.

Roentgenologist

ARTHUR CHILDE, M.D.

Consulting Roentgenologist

CARLETON B. PEIRCE, B.A., M.Sc., M.D., F.A.P.C.
Physician in charge of Electroencephalography
*HERBERT JASPER, PH.D., D. ÈS SCI. (Paris), M.D., C.M.

Clinical Assistant in Electroencephalography

*ANDRÉ CIPRIANI, B.Sc., M.D., C.M.

Consulting Anaesthetist

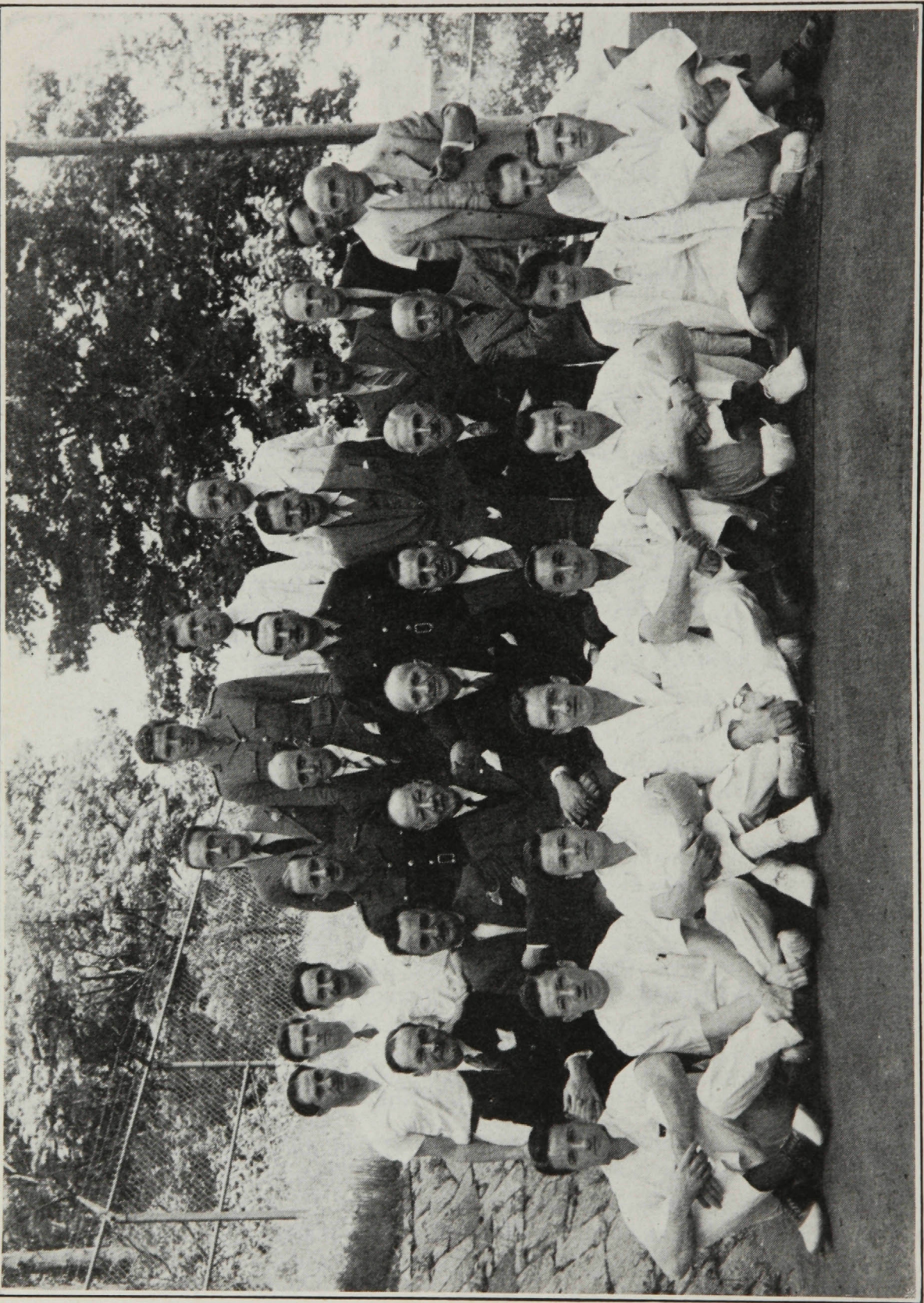
F. A. H. WILKINSON, M.D., D.A. (R.C.P. & S. Eng.)

Supervisor of Nurses

EILEEN FLANAGAN, B.A., R.N.

Social Service Supervisor

ELABEL MCL. DAVIDSON



Fourth Row: M. PRADOS, E. PETERSON, M. BORNSTEIN, C. VILLAVICENCIO.
Third Row: S. SPANNER, E. S. LOTSPEICH, W. HALL, H. H. JASPER, K. STERN, J. KERSHMAN, A. R. ELVIDGE,
 A. BARBEAU, F. L. MCNAUGHTON, E. HENNEMANN, N. VINER.
Second Row: A. W. YOUNG, J. SAUCIER, C. K. RUSSEL, W. PENFIELD, W. V. CONE, F. H. MACKAY, R. AMYOT.
Front Row: J. TARKINGTON, A. A. MORRIS, A. A. WARD, G. K. MORTON, C. MUSHATT, R. B. MACKENZIE,
 D. BENTLEY, V. PEPPER, T. S. BENNETT.

EXECUTIVE STAFF

Secretary and Registrar	J. NORMAN PETERSEN
Assistant Secretary and Registrar	ARTHUR W. YOUNG
Executive Assistant	*JOHN KERSHMAN

RESIDENT STAFF

January 1st to July 1st, 1944

Resident: GUY MORTON, M.D.

Internes:

SENIOR T. S. BENNETT, A.B., M.D.	CECIL MUSHATT, B.A., B.Sc.,
A. A. MORRIS, JR., A.B., M.D.	M.B., B.Ch., M.Sc., M.D.
***SURG.-LT.-CMDR. N. H. BOWERS, M.B.	**S/L L. E. C. D'EASUM, M.B.
**F/O J. G. PINCOCK, M.D.	**F/O W. J. SINCLAIR, M.D.
***SURG.-LT. R. B. MCKENZIE, B.Sc.,	**F/L W. PEPPER, B.Sc., M.D.
M.D., C.M.	**S/L SIDNEY SPANER, B.A., M.D.
**F/L C. W. HALL, M.D.	A. A. WARD, JR., A.B., M.D.

Appointments Effective 1st July, 1944

Resident: ARTHUR A. WARD, JR., A.B., M.D.

Internes:

SENIOR: A. A. MORRIS, JR., A.B., M.D.	J. A. TARKINGTON, JR., M.D.
***SURG.-LT. R. B. MCKENZIE, B.Sc., M.D., C.M.	J. LONDON, B.S., M.D.
**Three R.C.A.F. medical officers to be appointed.	

Fellows of the Montreal Neurological Institute

M. BORNSTEIN, B.A., M.Sc.
CHEN CHAO-JEN, M.D.
W. FEINDEL, B.A., M.Sc.
E. S. LOTSPEICH, A.B., M.D.
C. MUSHATT, B.A., B.Sc., M.B., B.Ch., M.Sc., M.D.
*ERIC PETERSON, B.Sc., M.D.
H. F. STEELMAN, B.S., M.D.
C. VILLAVICENCIO, M.D.

* On active military service.

** Seconded by the R.C.A.F. for three months service.

*** Seconded by the R.C.N. for six months service.

NURSING STAFF

Supervisor	MISS EILEEN C. FLANAGAN, B.A., R.N.
Assistant and Ward Teacher	MISS BERTHA CAMERON, R.N.
Night Supervisor	MISS MARION BARROWMAN, R.N.
Night Assistant	MISS LILLIAN MCAULEY, R.N.
Operating Room Supervisor	MISS RITA EDWARDS, R.N.

Assistant Operating Room Nurses

MISS ELIZABETH MCRAE, R.N.	MISS M. CURRIE, R.N.
MISS RAY JOHNSTONE, R.N.	MISS EVELYN ATKINSON, R.N.
MISS B. FREED, R.N.	MISS J. LAZECHEKO, R.N.
MISS FAITH LYMAN, R.N.	MISS K. DRISCOLL, R.N.

HEAD Nurses — Wards

MISS ELEANOR SAWDON, R.N.	MISS BRENDA DAVIS, R.N.
MISS MARGARET CAVANAUGH, R.N.	MISS ARLENE CROFT, R.N.

General Staff Nurses

MISS M. COMEAU, R.N.	MISS JEAN HILL, R.N.
MISS A. JOHNSON, R.N.	MRS. DOROTHY ARMSTRONG, R.N.
MISS G. FRASER, R.N.	MRS. M. CLARKE, R.N.
MISS L. ROBICHAUD, R.N.	MRS. L. LUSSIER, R.N.
MISS I. MILLER, R.N.	MRS. V. FROST, R.N.
MISS K. VEITCH, R.N.	MRS. E. GRIFFITHS, R.N.
MISS P. LANTEIGNE, R.N.	MISS C. MACINTOSH, R.N.
MISS D. McBEATH, R.N.	MISS F. ENGLISH, R.N.
MISS H. MARSHALL, R.N.	MISS C. MACDONALD, R.N.
MISS C. MILLER, R.N.	MISS E. MANSFIELD, R.N.
MISS A. WILLIAMS, R.N.	MISS J. SEWELL, R.N.
MISS B. THOMAS, R.N.	MISS V. YOUNG, R.N.
MISS M. GOODFELLOW, R.N.	MISS E. MILLER, R.N.
MISS C. LAMOUREUX, R.N.	MISS M. MACKENZIE, R.N.
MRS. J. HAMEL, R.N.	MISS P. NEVILLE, R.N.
MRS. W. MACLEAN, R.N.	MRS. M. LEONARD, R.N.
MISS EDITH GREEN, R.N.	

Post-Graduates

MISS DORIS BILOKRELY, R.N.	MISS BARBARA MOORS, R.N.
MISS JEAN LECKEY, R.N.	MISS K. DRISCOLL, R.N.
MISS ELIZABETH ROSS, R.N.	MISS M. BERMUDEZ, R.N.

TECHNICIANS AND LABORATORY ASSISTANTS

MISS DORIS BROPHY, B.A., L.Sc., <i>Chemistry</i>	MR. F. DREISINGER, <i>Roentgenology</i>
MISS BARBARA FOG, <i>Roentgenology</i>	MISS M. B. GOURLEY, R.T., <i>Chemistry</i>
MISS EDITH GREEN, R.N., <i>Neurophysiology</i>	MR. L. HENDERSON, <i>Electrophysiology</i>
MR. H. S. HAYDEN, F.R.P.S., <i>Photography</i>	MISS M. MATTHEWS, <i>Electrophysiology</i>
MRS. L. LAFORTUNE, <i>Neuropathology</i>	MR. F. PUTT, <i>Neuropathology</i>
MR. G. PELADEAU, <i>Neurophysiology</i>	

SECRETARIAL STAFF

MISS A. DWSON, *Departmental Secretary*

MISS C. CHASE, <i>Administration</i>	MRS. C. DEGUISE, <i>Office</i>
MISS E. FANNING, <i>Manuscripts</i>	MRS. C. DUGUID, <i>Office</i>
MISS A. FORBES, <i>Electrophysiology</i>	MISS M. A. NESBITT, <i>Neuropathology</i>
MISS M. MARSHALL, <i>Social Service</i>	MISS M. O'MARA, <i>Case Records</i>

Appointments held in General Hospitals of Montreal by Members of the Staff of the Montreal Neurological Institute.

ROYAL VICTORIA HOSPITAL

DEPARTMENT OF NEUROLOGY AND NEUROSURGERY

<i>Neurologist and Neurosurgeon-in-Chief</i>	WILDER PENFIELD
<i>Neurologist</i>	J. NORMAN PETERSEN
<i>Neurosurgeon</i>	WM. V. CONE
<i>Associate Neurologists</i>	JOHN KERSHMAN
	DONALD McEACHERN
	FRANCIS L. McNAUGHTON
	ARTHUR W. YOUNG
<i>Associate Neurosurgeon</i>	ARTHUR R. ELVIDGE
<i>Clinical Assistant in Neurosurgery</i>	MURTON SHAVER



Back Row: F. ENGLISH, J. LAZECHKO, M. COMEAU, P. LANTEIGNE.

Third Row: L. MCAULEY, M. CLARK, J. SEWELL, G. ROULEAU.

Second Row: A. CROFT, B. DAVIS, B. CAMERON, E. C. FLANAGAN, M. COLLINS, M. BARROWMAN, E. SAWDON.

Front Row: A. JOHNSON, D. ARMSTRONG, L. ROBICHAUD.

MONTREAL GENERAL HOSPITAL

DEPARTMENT OF NEUROLOGY

<i>Neurologist</i>	FRED H. MACKAY
<i>Associates</i>	ARTHUR R. ELVIDGE
	NORMAN VINER
<i>Assistant</i>	FRANCIS L. MCNAUGHTON
<i>Consulting Neurosurgeons</i>	WM. V. CONE
	WILDER PENFIELD

HÔPITAL NOTRE DAME

DEPARTMENT OF NEUROLOGY

<i>Neurologist-in-Chief</i>	ROMA AMYOT
<i>Assistant Neurologist</i>	JEAN SAUCIER

HÔTEL DIEU

<i>Consultant Neurologist</i>	EMILE LEGRAND
<i>Neurologist-in-charge</i>	ANTONIO BARBEAU

CHILDREN'S MEMORIAL HOSPITAL

<i>Consultants</i>	FRED H. MACKAY
	WILDER PENFIELD
	COLIN K. RUSSEL
<i>Neuropsychiatrist</i>	ARTHUR W. YOUNG
<i>Assistant Neuropsychiatrist</i>	FRANCIS L. MCNAUGHTON
<i>Neurosurgeon</i>	WM. V. CONE

ST. MARY'S HOSPITAL

<i>Physician in Neurology (in Chief)</i>	ARTHUR W. YOUNG
<i>Physician in Neurology</i>	NORMAN PETERSEN
<i>Consultant in Neurosurgery</i>	ARTHUR R. ELVIDGE

JEWISH GENERAL HOSPITAL

DEPARTMENT OF NEUROPSYCHIATRY

<i>Chief of Service</i>	NORMAN VINER
<i>Associate</i>	JOHN KERSHMAN
<i>Consultant</i>	WILDER PENFIELD

WOMEN'S GENERAL HOSPITAL

<i>Neurologist</i>	JOHN KERSHMAN
<i>Consulting Neurosurgeon</i>	WM. V. CONE

PROCEEDINGS OF THE ANNUAL MEETING OF THE STAFF

May 29th, 1944

ITEMS OF INTEREST

During the year several members of the staff joined the armed services of Canada and of the United States. John Kershman was appointed Squadron Leader and Consulting Neuropsychiatrist to No. 3 Training Command, R.C.A.F. He has been enabled, however, to carry on with some of the teaching in our department.

Major Donald McEachern and Captain André Cipriani have continued to direct researches in a special branch of the R.C.A.M.C. with headquarters in Ottawa. Since our last report Major McEachern visited England in connection with this work.

Herbert Jasper joined the R.C.A.M.C. and has been delegated for part time work in the Department of Electroencephalography, where a good deal of research has been in progress on subjects of importance to the medical services.

Drs. Donald Ross, Peter Lehmann and Claude Bertrand have also joined the R.C.A.M.C. and Herbert Modlin and Bertram Selverstone have joined the United States forces.

At various times information has reached us in regard to previous internes and fellows of the Institute. Dr. J. P. Evans is in charge of Neurosurgery at the University of Cincinnati and is handling an enormous clinic there.

Dr. T. C. Erickson has developed a large Neurosurgical Clinic at the University of Wisconsin Hospital.

On several occasions word has been received that Arne Torkildsen and his wife and daughter are safe in Oslo, Norway, and that he is continuing to do neurosurgery in spite of the German occupation. He has made a name for himself and the Torkildsen operation is being used in various clinics throughout

Unfortunately, we have heard that shortly after the occupation of Warsaw, George Chorobka was executed by the Germans. At the time of the German invasion, he had developed an excellent Neurosurgical Clinic at the University of Warsaw and was the leading neurosurgeon of Poland. We have had no word of the fate of Madame Chorobka.

George Stavrakys is second in the Department of Physiology in the University of Western Ontario, London, Ont.

Lyle Gage has temporarily given up his work as Chief of the Bluefield Sanitarium, Bluefield, West Virginia and has a commission as a Lieutenant Commander in the American Naval Medical Services. We last heard from him from North Africa.

Donald Coburn is a Lieutenant in this same service and was in the South West Pacific when we last heard from him.

Lister Reid has been doing a great deal of neurosurgery in Sydney, Australia, where he is a consulting surgeon to the Military Hospital with the rank of Major.

Edwin Boldrey is assistant to Dr. Howard Naffziger in the Neurosurgical Clinic of the University of California Hospital.

Webb Haymaker and Evelyn Anderson (Dr. and Mrs. Haymaker) are both members of the staff of the University of California Medical Department and have been doing outstanding research work. Dr. Haymaker has translated and become co-author of "Textbook on Nervous Diseases" and "Compendium of Regional Diagnosis" by Bing and Haymaker.

Isidor Tarlov has been doing work of considerable interest on peripheral nerve suture. He is a member of the staff of the neurosurgical service of the Jewish Hospital in Brooklyn.

Theodore Rasmussen holds the rank of Captain in the American Army Medical Service and when last heard of was acting as a neurosurgeon in a hospital in Assam, India.

Martin Nichols was captured by the Germans at the evacuation of Dunkirk. He had gone to Europe with a neurosurgical team. He has since been heard of periodically and it is understood that he has been very active in medicine among his fellow prisoners and has given a popular course in ancient history.

Robert Pudenz holds the rank of Lieutenant in the American Naval Medical Service and is stationed at Bethesda, Maryland, where his research work has attracted a good deal of attention, and where he is doing neurosurgery.

Storer Humphreys for several years was a member of the Neurosurgical Staff at No. 1 Neurological Hospital in England. He has joined the American forces and has been stationed in England.

Guy Odom was refused for service in the American Army and is now in charge of the Neurosurgical Service at Duke University.

Yi-cheng Chao is now in occupied China and it is thought is continuing to practise there. He and his wife were safe when last heard of.

Perry Hewitt is in the American Army Medical Service and is stationed in England.

John S. McCarter is in charge of the Department of Neurological Pathology at the University of Wisconsin.

William Stewart has been doing outstanding work as neurosurgeon at No. 1 Neurological Hospital with the rank of Major.

Wolf Klemperer is a neurosurgeon in the American Army Medical Service and when last heard from was stationed in Italy.

William Fields is a Surgeon Lieutenant in the Royal Canadian Naval Medical Services and has done valuable research on the subject of sea-sickness.

William Bridgers is somewhere overseas with the American Army Medical Services.

Thomas Hoen and David Reeves have given up practices to enter the American Army, the latter with the rank of Lieutenant Colonel.

Exum Walker has joined the American Navy.

William Gibson is in the Royal Canadian Air Force.

After six years of loyal and efficient service Mrs. Mildred A. Lanthier has resigned as supervisor of the Social Service Department and the position has been accepted by Mrs. Elabel Davidson. During her tenure Mrs. Lanthier developed social admitting of patients to the public wards to a high degree and the arrangements were very satisfactory from the standpoint of patients, hospital and municipal authorities.

Throughout the year medical personnel from the Royal Canadian Air Force and from the Royal Canadian Navy have been seconded to the Institute for refresher courses and clinical work in Neurology and Neurosurgery. Three officers from the Royal Canadian Air Force spend three months and one officer from the Royal Canadian Navy spends six months in this way.

In regard to the scientific work of the Staff, it was decided in 1941 that for the duration of the war research and clinical investigation should be directed as completely as possible to those problems which are involved in this world war. Among the subjects mentioned at that time were sea-sickness, psychoneurosis, aircraft acceleration and its effect upon personnel, wound healing, formation of adhesions, post-traumatic headache, brain oedema and the role of electroencephalography in the treatment of head injuries. In the two and a half years that have elapsed since that time, a good many contributions have been made. Some of them have been published, some contributed confidentially to the medical committees of the National Research Council, especially the work on acceleration and sea-sickness. Some of this work has been finished, some problems remain and other studies have been undertaken.

Captain Eric Peterson has been seconded by the army for work in the Institute under the supervision of Dr. Wm. Cone on the selection of cases for evacuation by air.

Dr. Penfield was given leave of absence for four months during the summer of 1943. As representative of the National Research Council of Canada, he joined a British-American-Canadian Surgical Mission to Russia. Following this visit he continued on into free China where he made a report on medical problems, particularly those of the medical service of the Chinese Army.

Dr. Fred Hanson, former member of the Staff of the Institute and of the Royal Victoria Hospital, and pupil of Dr. Colin Russel, has transferred from the No. 1 Neurological Hospital to the American Army Medical Service, and as Chief Neuropsychiatrist in the Mediterranean area, has accomplished outstanding work in the treatment of psychoneuroses in North Africa, Sicily and Italy.

On May 22nd, 1944, Percival Baily, Neurosurgeon and Neuropsychiatrist of the Illinois Neuropsychiatric Institute, Chicago, delivered the Ninth Annual Hughlings Jackson Memorial Lecture of the Montreal Neurological Institute. The subject of his address was "Cortical Organization of the Chimpanzee's Brain".

An event of outstanding importance to the University and to medicine in Montreal was the establishment, during the year, of the Allan Memorial Institute for Psychiatry. This fills a long felt want in Montreal and is being organized under the professorship and direction of Dr. D. Ewen Cameron. It is expected that the Institute will be open for patients within the next few months. With the establishment of this department Dr. Miguel Prados and Dr. Karl Stern are transferring their services from the Department of Neurology and Neurosurgery to that Psychiatry.

The final social event of interest during the academic year occurred on May 27th, 1944 when Capt. Peter Lehmann, R.C.A.M.C., former Resident of the Institute, and Miss Rita Edwards, R.N., operating room supervisor, were married in Montreal.

Earlier this year Dr. William V. Cone had bestowed on him the high honour of Fellowship in the Royal Society of Canada.

As in previous years we have received the utmost cooperation from the Staff of the Royal Victoria Hospital and we have been particularly appreciative of the continued interest and help of Dr. George F. Stephens.

FINANCIAL REPORT OF THE EXECUTIVE ASSISTANT ON HOSPITALIZATION

DR. JOHN KERSHMAN

The progressive increase in the number of patients cared for by the Institute was greater in 1943 than in any previous year. The average daily occupancy throughout 1943 was 81, as compared to 66 in 1942. This represents an increase of 16 patients per day, or 24% more than 1942. This increased utilization of our facilities is further emphasized by the fact that during the month of November 1943, the average daily occupancy reached the highest peak of 91 patients per day as compared to the high point of 70 in November 1942. It is a great tribute to the diligence and ingenuity of Miss Flanagan and her staff that it has been possible to maintain this high level of bed utilization.

A considerable proportion of this increase during the past year was due to the larger number of cases admitted from the Armed Services. These patients constantly represented between one-third and one-quarter of all the patients in the hospital, and there was more than a 100% increase in the number admitted compared to 1942. Despite the constant pressure from civilians for hospital care at the Institute, we have always given priority to members of the Armed Services, and will continue to do so as long as possible. However, the limited bed capacity and other facilities of the Institute are making this a graver problem from day to day.

The increase in the number of patients from the Services has occurred before the repatriation in any large numbers of Canadians who have seen active combat duty overseas. It is easy to foresee the much greater need when our Armies take a more active part in the battles to come. We have been giving considerable thought to this problem, and hope that some solution may be evolved.

A total of more than \$4,000 has been spent during the past year on the purchase of equipment and other essential replacements. Sixteen new beds and accessories are included in this outlay. This expense was absorbed by current income and has made an inroad into our balance sheet. This is inevitable, however, since there is no reserve fund upon which the hospital can draw for renewals and depreciation. Nor has it been possible, as it was hoped, to establish such a fund during the past year. The reason for this is the general increase in hospital expenses.

The cost per patient per day was \$6.82 as compared to \$6.52 in 1942. The overall hospital expenditure for the year increased by 31%, while the cash income increased by only 22%. The total financial situation at the year's end was less satisfactory than in 1942. A number of factors were responsible for this. There has been an increase in personnel, necessitated by the greatly increased number of patients, but there has been a disproportionate increase in the total salaries of these personnel. For example, the relative scarcity of post-graduate and student nurses has made it necessary to utilize a greater proportion of graduate nurses on the staff, many of whom are living outside the hospital. Exclusive of the operating room, the nursing strength has risen from 21 in 1935 to 35 in 1943, or

approximately 70%. The monthly cost of these nurses to the hospital has risen during the same period by 250%. Similarly, the recent establishment by the Province of minimum wage standards for hospital workers, while in itself a very equitable measure, has increased the cost of running the hospital. The greater cost of supplies, provisions and equipment have also added their share to the burden of increased expenditures.

The special departments of the hospital, such as the Electroencephalography Laboratory, the Biochemistry Laboratory, the X-ray Department and the Department of Neuropathology have all had a much busier year as a result of the increased bed occupancy, and there has been a comparable increase in their income. Part of this increase in income was due to an improvement in the manner of collecting accounts so that a greater proportion of outside patients paid for their examinations immediately after they were completed, rather than being billed subsequently for them.

Toward the end of the year, as a result of representations made to the Department of Pensions and National Health, a mutually satisfactory agreement was reached settling fixed daily inclusive charges for the care of officers and men in the Services. These rates were made retroactive to May 1st, 1943 and will be subject to revision in the light of future changes in costs.

An attempt was made during the year to work out a closer liaison between patients on admission and the Social Service Department. This was worked out to the mutual satisfaction of the patients and the hospital, from a personal as well as a financial point of view.

We gratefully acknowledge the continued financial support given us by the City of Montreal and the Province of Quebec.

REPORT OF THE NURSING SUPERVISOR

MISS EILEEN C. FLANAGAN, B.A., R.N.

The Nursing Department, like all others, has had to carry on under ever increasing difficulties due not only to a shortage of personnel, but also to a constantly changing one. This is a serious problem here, because all nurses require special training.

We have been able to provide a fairly adequate nursing service, however, because of the help given by the private duty nurses who have volunteered for periods of general staff duty, especially during the holiday season.

The constant overcrowding adds to the nursing problems, because of the greater difficulty in caring for patients.

Twelve graduate nurses have been given the course in neurosurgical and neurological nursing, seven of whom have remained on the staff.

Seventy-seven student nurses of the Royal Victoria Hospital have received six weeks experience each, in the wards. In the past year over fifty members of the Red Cross Voluntary Aid Attachment have been given their hospital experience, and these volunteers have given 6,000 hours service to the Institute.

During 1943—567 special duty nurses have been on duty, giving 4,844 nursing days.

Two matters deserve some consideration—one, the question of housing accommodation for the nursing staff. It is becoming very difficult to obtain living quarters in this neighbourhood, and this fact adds to the problem of obtaining suitable staff nurses. Secondly, there is a need for at least one bursary a year, to enable a member of the staff to obtain experience outside of Canada.

We again wish to thank the members of the Medical Teaching Staff for their willingness to devote considerable time to giving lectures and demonstrations

ADDRESS OF NEUROLOGIST

COLIN K. RUSSEL

In the year beginning January 1st, 1943 and ending December 31st, 1943 we have had 550 ward patients on the medical service of the Institute, besides 230 consultations in the wards of the Royal Victoria Hospital. It still seems to me that there are too many admitted to the neurosurgical service only to be transferred immediately. This throws unnecessary work on the already overburdened surgical internes and handicaps the medical interne's approach to a case.

The interne situation has been as satisfactory as one could expect in war conditions, thanks to the services, especially the Air Force and Navy posting officers for instruction. These men have been well chosen and it has been a pleasure to have them on the service—the only criticism suggested is that the term of instruction is too short. Six months would be better than three. It takes some time for a new interne to become familiar with the hospital routines and perhaps on this account, but I am convinced more on account of the changing orderly service, very annoying and serious lapses occur in getting material for study to the bacteriological and chemical laboratories quickly. The same is true in getting the report back to the wards and much time is lost, not to mention the serious loss of efficiency in the spoiling of bacteriological material.

The outpatient department continues to grow in numbers and the question of the development of additional junior staff is worthy of consideration. One must remember that some three members of the staff are on active service and will be returning. Also when the Psychiatric service becomes organized it should make a considerable diminution in our outpatients.

This year there have been 420 new neurological patients and 3,053 repeats in the outpatient department. This is to be compared to 272 new neurosurgical patients with 564 repeats.

With regard to the teaching of neurology: The material has been good and varied enough although from the neurological, as opposed to the neurosurgical interest, it would be better if we had more beds and could accept some of the more chronic disease entities to use for instruction purposes even if we cannot hold out dramatic hopes of cure. This is a serious lack from the University point of view.

I wish to take this opportunity of expressing a very deep appreciation of the work of our internes and also to Miss Flanagan and her staff of nurses. Their interest in the work and their efficiency make the service possible.

ADDRESS OF THE NEUROSURGEON

WILLIAM V. CONE

The past year has been a year of records on the neurosurgical service. More patients have been treated and more operations done than in any previous year. The facts and figures in the registrar's report and in the report of the executive secretary are difficult to believe for those of us who were here when the Institute opened and was running at what we considered full capacity. In spite of the overcrowding and the overworked staff, no emergency case has been refused admission whether from the civilian population or the armed forces. The way in which the entire staff has cooperated, has shouldered responsibility and has worked has been splendid. Sometimes it has not been without its humorous side. Dr. Elvidge's ability to get things done and make his appointments with reasonable promptness without carrying a watch, which he still insists would not help because he gets around as fast as he can anyway, continues to amaze us all. Miss Flanagan's shifting of patients and beds to squeeze in one more urgent case has made visits to patients a game of hide and seek. Dr. Childe needs a director of traffic in the x-ray department.

The nursing staff in the operating room and on the wards has been untiring, efficient and kindly in spite of the added responsibilities and added load. The nurses have recognized the importance of fear, anxiety and uncertainty as a factor in illness and have shown sympathy, understanding, dignity and courage in managing patients who have lacked faith and confidence. I mention this because with the rapid turnover and increased work, it might seem that there would be no time to consider the patient as a person. Somehow, however, they have made time to do so.

The investigative work carried out this last year has been on problems set by the National Research Council and the Army Medical Research division as important in our present war emergency. Members of the Department working in association with Dr. Herbert Jasper in Neurophysiology and Captain Eric Peterson studied some of the physiological problems, further understanding of which would aid in transporting wounded by air. Dr. Penfield and Dr. Morton, with others, reported on methods of controlling sea and air sickness. Regional and National Committees having to do with war medicine have claimed the attention of the staff. Dr. Penfield has served as chairman of the surgical committee and also of the neurosurgical committee of the Medical Division of the National Research Council.

Looking ahead to this next year causes anxiety. The demands from the civilian population and from the armed forces are already greater than we can meet safely.

ADDRESS OF THE DIRECTOR

WILDER PENFIELD

Once each year we, in this Institute, take stock of our record, looking forward with hope and backward with charity. Next October the Montreal Neurological Institute will have been in operation ten years; and five of those years will have been war years.

We began with ideal arrangements for exhaustive study, and for thoughtful care and treatment. We had additional beds, both public and private, in the Royal Victoria Hospital, operative work in the Montreal General and satisfactory arrangements for cooperative work with the French Hospitals.

Then came the war, with crowding of all the hospitals and decreased accommodation for our patients outside this building. We have carried out the urgent neurosurgery from Newfoundland and Halifax to Ottawa and further afield. We have more than doubled our beds, with no increase in space.

The crowding at the Montreal Neurological Institute has been due to the press of urgent "life and death" cases coming from such sources as airports, munition factories, Transport Command, Merchant Marine, as well as from the Canadian fighting services and the Department of Pensions and National Health. We have now reached the breaking point, before the flow of wounded from overseas has really begun.

The Canadian Army went to England and waited for battle. Believing we might be allowed to help salvage life and limb in the storms that lay ahead, we proposed to the Department of Pensions and National Health that if they desired to use this Institution as a treatment centre they should build an annex for service patients. This was refused. The reason for refusal was said to be fear of the establishment of an embarrassing precedent.

It is not for us to question this decision, but four and one half years of this war have now passed, and the Canadian Government has done practically nothing to establish special centres for the care of war injuries of the nervous system; nothing at all in Quebec and the Maritimes. It seems possible that returning service men with wounds of nerves and spine and head may think little of embarrassing precedents, and much of their chance to regain their health. There is a similar need for special treatment centres in orthopedics and plastic surgery.

The people of the world wait breathlessly for news of great new battles on the continent of Europe. The first returning wave of Canadian wounded may reach only as far as England. It will fill the beds of the Neurological and Plastic Hospital there. But later waves will sweep across the breadth of Canada.

In England there are twelve specialized neurological hospital units in the Emergency Medical Service system and other centres for the treatment of nerve injuries, as well as centres maintained by the Services. The R.C.A.M.C. has psychiatrists in large number to deal with functional disturbances in Canada, but strangely lacks provision to restore organic sufferers.

Nevertheless our role should not be to criticize, but to serve as opportunity presents. Indeed it is our duty to create such opportunity if possible. The roads

to Berlin and to Tokyo are long, and will be bloody. We have tried to contribute to the support of the general cause by research as best we could. The need for that is lessening, except in the practical surgical field. We have contributed men and nurses from our staff. We must now think of clinical needs, and must lay plans for the Institute's future, during remaining years of war, the period of post-war rehabilitation and after.

I conceive it now to be our duty to propose to enlarge the bed capacity of this Institute by rapidly building a permanent addition. This will depend, of course, upon whether we can secure public support through McGill University for this purpose, and I respectfully call this critical situation to the attention of the Principal. Only in this way will we be able to respond to the inevitably increasing demand to treat service patients during the next few years. At the same time, it is obvious that there is an eventual need to double our capacity on a permanent basis.

Ours is the smallest Neurological Institute in the world, in point of beds. Not a very striking claim to distinction! Such enlargement would require, as a prerequisite, the cooperation of the City of Montreal and the Province of Quebec. From the Government in Ottawa it would necessitate, at least, the provision of priorities for the purpose of building in these times.

An important event has transpired within the past year: the creation at McGill of a Department of Psychiatry under a distinguished Psychiatrist, Professor D. Ewen Cameron. We welcome him and hope that his establishment in a Psychiatric Institute at Ravenscrag is only a temporary expedient. We hope that his department may some day be established in a suitable building close to this Institute, for intimate cooperation must depend, in the last analysis, upon proximity.

Our Neurologists in public service and out-patient department will consider psychoses to lie in the field of the Department of Psychiatry, in spite of the fact of their previous interest and training in the field. Neuroses they will consider a common problem, and I should hope, as time passes, that the majority of the neurotics will be referred to those men, in either department, who get the best results.

Two men who have been associated with us and whose major training has been in the field of Psychiatry will leave us to join that department. This is as it should be but we see them go with deep regret. Dr. Miguel Prados distinguished neurohistologist, who has worked with us for five pleasant years, will always find a welcome here. Dr. Karl Stern brilliant neuropathologist, who spent such time as he could find in our laboratories, also leaves many friends in this Institute.

It is my belief that any Department of Psychiatry which loses contact with those who work primarily with brain lesions is weaker for that lack, and, conversely, any Department of Neurology (in which I include Neurosurgery) which has not close association with those who work in the field of psychiatry is the weaker for that lack.

The time will come when Neurologists will find in the brain the cause of many psychological disturbances, and psychiatrists will likewise find in that organ some of the things they are seeking. Thus, looking into the future, their fields must eventually merge to some extent, and far-seeing academic organization should provide for it.

Our Social Service has grown into a model department that has gradually extended its influence. Mrs. Mildred Lanthier, single handed, has built up this department and has opened our eyes to what social service can mean to patient, doctor and nurse. The news that she is about to leave is a sad blow to our staff. Well trained, tactful, kindly, efficient, and a friend to each of us, her place is hard to fill. But fortunately her friend, Mrs. Elabel Davidson who is an experienced social worker, is available to take charge of the Department.

CARE OF PATIENTS

The clinical services in the public wards of the Institute are subdivided into, (1) a neurological service which is under the immediate direction of Dr. Colin Russel, and (2) a neurosurgical service which is under the immediate direction of Dr. William V. Cone. The Director holds a supervisory control over both services while the Secretary and the Executive Assistant act as Executive Officers. All members of the medical staff share in the care of public patients and all are permitted to admit and care for private and semi-private patients. In addition to the patients hospitalized in the Montreal Neurological Institute the Department of Neurology and Neurosurgery also takes care of the neurological and neurosurgical patients in the Royal Victoria Hospital.

The clinical work in the Institute has increased year by year. While our original complement of beds was 47, at times we have had as many as 100 patients in the Institute. The progressive increase in the work done in the Institute is indicated by the following figures:

	<i>Patients cared for</i>	<i>Hospital days</i>	<i>Average stay</i>	<i>Death rate</i>	<i>Autopsy rate</i>	<i>Operations</i>
1934 (3 mos.)	190			5.21%	86.8%	92
1935	841	14928	17.8	6.29%	77.6%	348
1936	912	17667	19.4	5.18%	82.8%	456
1937	953	18315	19.2	5.18%	85.4%	508
1938	999	18856	18.9	4.95%	89.4%	608
1939	1079	19742	18.3	4.72%	72.1%	517
1940	1093	19428	17.8	6.79%	86.8%	600
1941	1179	20482	17.4	6.03%	88.5%	566
1942	1416	23939	16.9	4.53%	83.3%	700
1943	1623	29718	18.3	3.97%	77.0%	742

The increase in the number of patients cared for in 1943 over those cared for in 1935, the first full year of operation of the Institute, was 93%. The increase of hospital days in 1943 over 1935 was 98%. The increase in operations was 113%.

ADMISSIONS TO HOSPITAL

	1943	1942
Total admissions to the Montreal Neurological Institute and the Royal Victoria Hospital under the care of the Staff of the Montreal Neurological Institute and the Department of Neurology and Neurosurgery of the Royal Victoria Hospital	1713	1437
Admissions to the Montreal Neurological Institute	1569	1341

Admissions to the Department in the Royal Victoria Hospital	144	96
Because of the frequent transfer of patients between the Montreal Neurological Institute and the Royal Victoria Hospital the total number of patients cared for in the former was	1623	1416
Daily average number of patients	81	65
Deaths	96	90
Deaths within 48 hours of admission	29	26
Death rate (on deaths after 48 hours)	3.97%	4.53%
Percentage of autopsies obtained	77.0%	83.3%

CHIEF DIAGNOSIS IN FATAL CASES

Congenital anomalies	1
Hydrocephalus	1
Acute meningitis, tuberculous	6
" " influenzal	1
" " streptococcus	2
" " pneumococcus	1
Chronic adhesive arachnoiditis	2
Acute encephalomyelitis	1
Measles encephalitis	1
Acute cerebritis	1
Schilder's disease	1
Neurosyphilis	1
Intracranial abcess	4
Acute anterior poliomyelitis	1
Tetanus	1
Intracranial trauma	19
Spinal trauma	1
Intracranial tumor	23
Spinal tumor	1
Carcinomatosis	1
Sarcomatosis	1
Subarachnoid hemorrhage	11
Cerebral hemorrhage or thrombosis	9
Presenile sclerosis	1
Multiple sclerosis	1
Epilepsy	2
Undiagnosed	1
	96

OUTPATIENT DEPARTMENT

Outpatient clinics are held five days each week
in the Royal Victoria Hospital

Monday and Thursday.....	Neurology		
Wednesday	Neurology (Epileptic)		
Tuesday and Friday.....	Neurosurgery		
	<i>Neurology</i>	<i>Neurosurgery</i>	<i>Totals</i>
New cases	420	272	692
Revisits	3053	564	3617
	<hr style="width: 50%; margin: 0 auto;"/>	<hr style="width: 50%; margin: 0 auto;"/>	<hr style="width: 50%; margin: 0 auto;"/>
Total outpatient visits	3473	836	4309

REPORTS OF SUBDEPARTMENTS

DEPARTMENT OF ROENTGENOLOGY

DR. A. E. CHILDE, *Roentgenologist*

DR. CARLETON PEIRCE, *Consulting Roentgenologist*

A summary of the work done in this Department during 1943 shows that it is greatly in excess of any previous year. Over 3,000 more x-ray films have been exposed and the total number of examinations has increased by over 900. There have been some 278 pantopaque and lipiodol myelograms performed in contrast to 152 in 1942. Each of these examinations is time-consuming and takes at least an hour. Examinations of the spine have increased very considerably, chiefly due to the large number of cases of low back pain and sciatica.

The herniated intervertebral disc problem has been very much to the forefront and many of our patients have been referred from St. Anne's Military Hospital. While no definite figures are available, herniated intervertebral discs have been found in a very high percentage of such patients with low back pain and pain radiating down one or both legs. Operations for the removal of these discs have been performed with encouraging results. The frequency of multiple herniated intervertebral discs in the lower lumbar and lumbosacral regions has become more and more apparent. It has also been found that some herniated intervertebral discs which are producing symptoms cause only very minor deformity of the lipiodol column. The problem of herniated discs in the cervical region is even more interesting and it is felt that such diagnoses will become more frequent as time goes by. We are now able to visualize the cervical region much more completely than before.

Mr. Frank Dreisinger, who has been with us for the past 17 months, has been taking films of a very high technical quality. Recently, Miss Barbara Fog has been added to the staff as Assistant Technician to Mr. Dreisinger. The emergency calls and holiday requisitions during the year have been taken care of by members of the Staff of the Department of Radiology of the Royal Victoria Hospital and much thanks are due to Dr. Peirce for his cooperation in this respect. Miss Mabel Marshall is devoting part time secretarial service to the department in addition to her other work.

	1943	1942
	<hr/>	<hr/>
Total examinations	3824	2903
Films used	18870	15491
Encephalograms	435	452
Ventriculograms	134	116

DEPARTMENT OF NEUROPATHOLOGY

DR. W. V. CONE, *Neuropathologist*

DR. MURTON SHAVER, *Assistant Neuropathologist*

DR. E. S. LOTSPEICH, *Neuropathological Fellow*

Jan. 1st, 1944 - June 30th, 1944

MR. WM. FEINDEL, *Neuropathological Fellow*

Reflecting the increased activity of the other Departments of the Institute, the Laboratory of Neuropathology has been busier during 1943 than in previous years. In addition to the routine examination of surgical and autopsy material, the Laboratory has cooperated with the other departments in their experimental work.

Experimental work undertaken by the Department of Neuropathology has been limited by the decrease in number of Fellows. Dr. Cone has carried out some experimental work on the intervertebral disc in monkeys. Dr. Prados, assisted by Mr. William Feindel, has continued his work on brain edema. Dr. Arthur Ward made some observations of the perineural space and Dr. Lotspeich has been working with oxidized cellulose and human fibrinogen as membranes to be used over orain wounds. Mr. Ralph Hertz has investigated the tensile strength of nerves following suture and recently Mr. Feindel has been working with human fibrinogen, oxidized cellulose and tantalum tubes as artificial nerve sheats. Dr. Villavicencio has begun an investigation on the use of sulfonamides in the silver staining methods.

New apparatus acquired by the Department includes a 35 mm. projector for use in projecting Kodachrome transparencies and for low power projection of microscopic sections. The laboratory also has a new mechanical agitator for the facilitation of fixing, decalcifying and staining of specimens. A description of this machine is to be published shortly by Mr. Fred Putt.

The routine examinations were divided as follows:

Surgical specimens examined	398
Autopsies	76
Miscellaneous examinations	14
Experimental	23

DEPARTMENT OF BIOLOGICAL CHEMISTRY

DR. DONALD MCEACHERN, *Biological Chemist*

DR. JOHN KERSHMAN, *Acting Biological Chemist*

The following determinations were carried out during 1943:

Cerebrospinal Fluid:

Pandys	1726
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Proteins	1726
Sugars	160
Chlorides	168
Langes	287
Extras (pH determinations)	2
Blood, spinal fluid and urine sulfonamides	4244
BMRs	120
TOTAL	8433
Private and Semi-private	1720
Public	6713

Besides the routine urinalyses, the work done by Miss Beth Gourley in the Clinical Laboratory has been as follows:

Blood Wassermanns taken	681
Red Blood Cell Counts	166
White Blood Cell Counts	511
Differential Counts	43
Haemoglobins	565
Sedimentation rates	12
TOTAL	1978

This represents an increase of 100% over the number of determinations done in 1942.

Since January, 1943, thanks to the kind cooperation of Professor Murray, the blood and cerebrospinal fluid Wassermanns have been done by the Department of Bacteriology of the Royal Victoria Hospital and McGill University. These determinations had previously been sent to the Provincial Laboratories.

The method for the determination of proteins with the photo-electric colorimeter which was standardized by Miss Doris Brophy and Dr. André Cipriani has been published during the year.

Blood sulfonamide determinations on monkeys were carried out in connection with research done by Dr. Cone and Dr. Jasper.

DEPARTMENT OF ELECTRO-ENCEPHALOGRAPHY

DR. H. H. JASPER, *Electro-encephalographer*

The total number of clinical examinations carried out during this year was almost identical to that of the previous year. 1,345 examinations were performed on 1,230 patients. The fact that these figures for the last two years are so nearly identical probably indicates that the capacity of this laboratory has reached the saturation point with present staff, equipment and methods of examination. That this is true is further testified by the increasing difficulty we find in giving prompt service to physicans referring patients for this examination. We regret the inconvenience and delay that may have been caused during the past year, but in spite of the demand for more examinations than we carry out, we do not feel justified in attempting to handle more patients by decreasing the thoroughness with which each patient is examined.

The great majority of patients referred for electro-encephalographic examination are still those with the diagnosis of epilepsy. The other principal diagnoses were as follows:

Epilepsy	583
Cerebral neoplasm	86
Post-traumatic syndrome	75
Acute head injury	40
Migraine and headache	51
Subdural and epidural haematomata	13
Behaviour disorder	14
Chorea	6
Narcolepsy	12
Miscellaneous	117
Deferred	232
TOTAL	1,229

Clinical investigations have included studies in collaboration with Drs. Donald Ross and Francis McNaughton on post-traumatic headache, studies of narcolepsy in collaboration with Drs. Herbert Modlin and Donald Ross, and studies on the diagnostic value of the E.E.G. in epilepsy in collaboration with Squadron Leader John Kershman and Dr. C. Villavicencio.

The work of this department has been greatly assisted by Squadron Leader John Kershman, who has kindly substituted for Dr. Jasper during his period of induction into the Royal Canadian Army Medical Corps.

DEPARTMENT OF NEUROPHYSIOLOGY

DR. H. H. JASPER, *Neurophysiologist*

Research in these laboratories has continued during the past year, chiefly on neurosurgical and neurophysiological problems of military medicine. The principal new field of investigation entered during the past year has been surgical and medical problems associated with the transport of the sick and wounded by air. A small decompression chamber, equipped for the continuous recording of blood oxygen saturation in human subjects, as well as electro-cardiograms and electro-encephalograms during simulated altitudes up to 30,000 feet, has been installed in this department by the Associate Committee on Army Medical Research of the National Research Council of Canada.

The principal subjects of investigation were as follows:

The Mechanism and Control of Brain Oedema — Dr. Prados and Mr. Feindel.

The Effect of Acceleration on Nervous and Cardiovascular Systems in Monkeys — Dr. Jasper and Dr. Cipriani, with the aid of a grant from the Associate Committee on Aviation Medicine of the National Research Council.

Moving Picture Study of the Physiology of Acceleration in Animals for the R.C.A.F. Instructional Film "G-Hygiene" — Drs. Jasper,

Cipriani and Friedman, with the aid of a grant from the Associate Committee on Aviation Medicine of the National Research Council.

The Effect of Local Application and Intravenous Injection of Sulfonamides upon Cerebral Function — Drs. Cone, Jasper and Bennett.

Fusion of Vertebrae following the Removal of the Intervertebral Disc in Monkeys — Dr. Cone.

Study of Methods and Materials for Nerve Suture — Mr. Hertz.

The Effect of Decreased Atmospheric Pressure on Cerebro-Spinal Fluid Pressure in Animals — Drs. Jasper, Peterson and Mr. Bornstein.

The Effect of Decreased Atmospheric Pressure on Intra-thoracic and Intra-abdominal Pressures — Drs. Cone, Peterson and Mr. Bornstein.
Studies of the Perineural Space — Drs. Cone and Ward.

For the above studies there were a total of 446 procedures carried out on animals, 131 of which were major aseptic surgical procedures and 83 minor or acute surgical procedures. The continuation of certain problems is still handicapped by the lack of adequate numbers of experimental animals, although the situation improved slightly during the past year from that of the previous year. Any adequate solution to the problem of obtaining sufficient animals for physiological research would be most welcome to this department as well as to other departments of McGill University.

The complete facilities of these laboratories has been offered for the use of the Army Medical Research Directorate and they shall be used in the future by Officers posted here from the R.C.A.M.C.

DEPARTMENT OF NEUROANATOMY

DR. F. L. McNAUGHTON, *Neuroanatomist*

Activity in this department has been inevitably curtailed due to the lack of technical help and the pressure of clinical work. During February and March, 1944, a small group followed the course in Advanced Neuroanatomy and Brain Modelling. Instruction in Applied Neuroanatomy has been given throughout the year to internes from the R.C.N. and R.C.A.F. as part of their basic training at the Institute. A demonstration was prepared for anesthetists now undergoing training at McGill University.

It is hoped that the teaching and research in Neuroanatomy will be expanded in the near future.

SOCIAL SERVICE DEPARTMENT

MRS. ELABEL MCL. Davidson, *Supervisor*

Number of cases opened	1172
Number of cases closed	907
Number of patients placed for convalescent care	102
Number of patients placed for permanent care	35
Referrals to other medical or social agencies	42

The work of this department has increased greatly over that done in previous years. The figures in regard to the patients placed for convalescent care do not include those returned to the Department of Pensions & National Health. Since 1941, when social admitting was taken over by the Social Service Department, the work in the department has practically doubled. Very good relationship between the Municipal Authorities and the hospital has continued in relation to Quebec Public Charities Act applications. An effort is being made to find a more effective system of referring relatives to the Social Service Department and also of referring patients to the Outpatient Clinic for follow-up examinations.

We have been most fortunate in securing efficient and faithful volunteer help during the year. We are particularly indebted in this regard to Miss P. Hanson, Miss K. McConnell, Miss M. Roper, Miss A. St. Charles and Mrs. L. Levinson.

The Department has continued to assist in the follow-up of patients being studied in relation to various research projects. A summary and central index has been made of those cases followed up from the standpoint of the incidence of traumatic epilepsy and post-traumatic headache.

At the end of the academic year Mrs. M. A. Lanthier, who had been supervisor of the Social Service Department for six years, resigned from our staff.

TEACHING

MCGILL UNIVERSITY

DEPARTMENT OF NEUROLOGY AND NEUROSURGERY

<i>Professor of Neurology and Neurosurgery,</i>	
<i>Chairman of Department</i>	WILDER PENFIELD
<i>Associate Professor of Neurosurgery</i>	WILLIAM CONE
<i>Associate Professor of Neurology</i>	COLIN RUSSEL
<i>Clinical Professor of Neurology</i>	F. H. MACKAY
<i>Assistant Professors of Neurology</i>	{ DONALD McEACHERN*
	{ ARTHUR W. YOUNG
<i>Assistant Professor of Neurosurgery</i>	ARTHUR ELVIDGE
<i>Assistant Professor of Neurological Radiology</i>	ARTHUR E. CHILDE
<i>Assistant Professor of Neurophysiology</i>	HERBERT JASPER*
	{ JOHN KERSHMAN*
<i>Lecturers in Neurology</i>	{ I. N. PETERSEN
	{ F. L. McNAUGHTON
	{ W. D. ROSS*
	{ NORMAN VINER
<i>Lecturer in Neuropathology</i>	MURTON SHAVER
<i>Demonstrators in Neurosurgery</i>	{ GUY MORTON
	{ O. W. STEWART*
<i>Demonstrator in Neurophysiology</i>	ANDRE CIPRIANI*
<i>Assistant Demonstrator in Neurosurgery</i>	ARTHUR A. WARD, JR.
	{ CHEN CHAO-JEN
	{ M. BORNSTEIN
	{ W. FEINDEL
<i>M.N.I. Research Fellows</i>	{ C. MUSHATT
	{ ERIC PETERSON*
	{ H. F. STEELMAN
	{ C. VILLAVICENCIO

* On Military Service

The Department of Neurology and Neurosurgery cooperates intimately with the Departments of Medicine, Surgery, Pathology and Radiology in their regular teaching. Thus the teaching of neurology, neurosurgery, neuropathology and neurological radiology is carried out as part of the regular courses planned by the Chairmen of these other Departments.

FACULTY OF GRADUATE STUDIES AND RESEARCH

<i>Professor</i>	WILDER PENFIELD
<i>Associate Professor and Head of the Department</i>	WILLIAM V. CONE
<i>Associate Professor</i>	COLIN K. RUSSEL

Lecturers

ARTHUR ELVIDGE	ARTHUR E. CHILDE
DONALD McEACHERN	HERBERT H. JASPER
J. NORMAN PETERSEN	FRANCIS McNAUGHTON

COURSES OF INSTRUCTION

The lecture amphitheatre in the Institute, seating one hundred and twenty, is used not only by the Department of Neurology and Neurosurgery but also, on occasion, by all other teaching departments of the Royal Victoria Hospital,

and certain groups from the Montreal General Hospital. Teaching facilities for small groups are available also in the library and in special rooms on the public clinical floors.

Undergraduate teaching in Neurology and Neurosurgery is carried out in the third and fourth years of the medical course and consists of formal lectures, ward teaching, and case presentations to small groups in the outpatient department. In addition an elective course of weekly case presentations of diseases of the nervous system is given by Dr. Wilder Penfield. This is open to students and practitioners with whom physical signs, diagnosis and treatment are discussed. Throughout the academic year a special elective course, with weekly lectures is given in Neuroanatomy, Electrophysiology, Biological Chemistry and Roentgenology.

In the Faculty of Graduate Studies and Research, courses are offered for the degrees of Master of Science and Doctor of Philosophy. The series of lecture-demonstrations described above as elective for undergraduates forms part of the post-graduate teaching in the Department. In addition graduate students attend a weekly colloquium in neuropathology, conducted by Professors Cone and Penfield, weekly clinical seminars conducted by Professors Penfield, Russel and Cone, and weekly complete ward rounds. The remainder of the time of the graduate student is devoted to experimental research, the accomplishment of which, as embodied in a thesis, is the main consideration in recommending him for a degree.

In addition to the above formal courses the Department provides opportunity for advanced clinical study and laboratory research to properly qualified graduate students. Such opportunities are described elsewhere in this report.

The weekly meetings of the Montreal Neurological Society form part of the graduate teaching in the Department of Neurology and Neurosurgery. These meetings consist of clinical presentations and of scientific lectures, usually by guest speakers. The clinical meetings are held alternately at the Montreal Neurological Institute and the Montreal General Hospital, with occasional visits to other hospitals in Montreal.

UNIVERSITY OF MONTREAL

FACULTY OF MEDICINE

<i>Professeur de Psychiatrie</i>	EMILE LEGRAND
<i>Professeur de Neurologie</i>	ANTONIO BARBEAU
<i>Professeurs agrégés de Neurologie</i>	ROMA AMYOT
	JEAN SAUCIER

THE FELLOWS' SOCIETY

DR. E. S. LOTSPEICH, JR., *Chairman*

The activities of this group of research fellows and house officers have been somewhat limited because of the small number of Fellows and the increase in clinical work, making it difficult for the men on the service to attend the

meetings. To offset this, however, officers in the armed forces taking post-graduate training at the Institute have entered into the activities of the Society. Several interesting meetings have been held during the year.

Dr. Penfield, on his return to the Institute from his trip to Russia and China, talked informally to the group, giving some of the highlights of his travels. Dr. Claude Bertrand, at another interesting meeting, told of his visit to several of the Neurosurgical clinics in the United States.

Later in the year Dr. Earl Walker discussed the thalamus and some of its connections and at another meeting Dr. Paul Weiss described his work on peripheral nerves.

Recently the Society has held weekly meetings and hopes to continue this during the summer months. Dr. Villavicencio discussed some aspects of Neurosurgery as practised in Chile and Dr. Lotspeich and Mr. William Feindel gave progress reports on their experimental work with human fibrinogen and oxidized cellulose. Dr. Tom Bennett spoke on the neurophysiology of the hypothalamus and Dr. Arthur Morris gave a preliminary draft of a paper he is preparing for publication on "Herniation of Cervical Intervertebral Discs."

As the year ends plans are nearing completion for the organization of a weekly Journal Club to be undertaken by the Fellows' Society.

FELLOWS' LIBRARY

DR. F. L. McNAUGHTON, *Librarian*

The library continues to grow in value as a reference library in Neurology. During the past year it has added fifty-five new books to its shelves, and has subscribed to three new journals, the *Journal of Neurosurgery*, the *American Review of Soviet Medicine* and the *British Medical Bulletin*, bringing to 32 the total number of journals regularly received.

Our new books are catalogued in the file of the McGill Medical Library and are available for reference to users of the Medical Library, upon application to the Librarian.

In the coming year it is planned to enlarge the book shelves in the Library and to improve the system of lighting.

THE MONTREAL NEUROLOGICAL SOCIETY

OFFICERS FOR 1944-1945

DR. W. G. PENFIELD, *President*

DR. J. SAUCIER, *Vice-President*

DR. F. L. McNAUGHTON, *Secretary-Treasurer*

The society has had an active year, continuing its policy of regular weekly meetings from October to May. As in other years, the meetings have covered a wide range of topics related to Neurology and Neurosurgery, and have been planned with the aim of bringing these specialties into closer relationship with

the rest of medicine. Most of the scientific meetings have therefore been of interest to many outside of the special field of Neurology and have been well attended. Scientific meetings have alternated with clinical presentations at the Neurological Institute, Hotel Dieu, Notre Dame Hospital and the Montreal General Hospital.

The list of subjects and speakers for the past year is as follows:

- Dr. Victor E. Gonda, Chicago --- The Clinical Signs of Involvement of the Pyramidal Tract.
- Dr. Wilder Penfield, Montreal --- Notes on Surgery in Russia.
- Dr. J. P. S. Cathcart and Dr. W. S. Barnhart, Ottawa --- Rehabilitation.
- Dr. D. Ewen Cameron, Montreal --- Autonomy in Anxiety.
- Lt. R. H. Pudenz (M.C.) U.S.N.R., Bethesda, Md --- The Lucite Calvarium --- a new method for the Observation of Intracranial Phenomena. Experiments on cerebral concussion, illustrated by moving pictures.
- Lt.-Col. H. Botterell, R.C.A.M.C., Basingstoke --- Management of Acute Head Injuries in R.C.A.M.C. Overseas.
- Dr. Hans Selye, Montreal --- Diseases of Adaptation.
- Major Donald McEachern, R.C.A.M.C., Ottawa --- Training and Testing of Night Vision.
- Dr. Allen O. Whipple, New York --- An Evaluation of Penicillin in its Relation to Surgery.
- Dr. A. Earl Walker, Chicago --- The Pathogenesis of Cerebral Concussion.
- Dr. Bradley M. Patten, Ann Arbor --- Development Defects of the Nervous System.
- Dr. A. A. Ward, Montreal --- Effect of Cholinergic Drugs on Recovery of Function following Experimental Lesions of the Central Nervous System.
- Capt. Eric Peterson, R.C.A.M.C., Montreal --- Physiological Problems of Air Transport of Wounded.
- Dr. John Fulton, New Haven, --- Blast Injuries.

A very successful joint evening meeting was held with the Paediatric Section of the Montreal Medico-Chirurgical Society at which Dr. Hattie E. Alexander of the Babies' Hospital, New York, spoke on the Treatment of Meningitis. During the Medico-Chirurgical Clinical Convention in October 1943 the Society again entertained a group of Neuropsychiatrists from the Mental Hospitals of Ontario and organized a two-day post-graduate session in Neurology and Neurosurgery.

CLINICAL SERVICES AND FELLOWSHIPS

An internship of eighteen months' duration is available on January 1st and July 1st. The internes live in the Royal Victoria Hospital and have their meals there. Ordinarily the appointment consists of six months' service in neurology, six months in neurosurgery and six months as senior interne in neurosurgery with special supervision of the traumatic cases. Modifications in this routine are made, however, from time to time.

The appointment of neurological and neurosurgical Resident is of two years' duration. No candidates are considered unless they have had previous work on this service and in the laboratory. The Resident has his quarters in the Neurological Institute.

The appointment of Neuropathological Fellow is a yearly one open to men who have had previous work as interne or Laboratory Fellow. It carries with it residence in the Institute and a monthly stipend. The Neuropathological Fellow is responsible for pathological reports on autopsy and surgical specimens, under the supervision of the Neuropathologist.

Two Fellowships are available for research in neuropathology, neuroanatomy, neurophysiology or biological chemistry. These Fellowships carry with them residence in the Institute and a small stipend. Applicants for these appointments must have demonstrated the fact that they are capable of independent work.

There is opportunity for two or more voluntary Fellows to do fundamental work of the type described above. The qualifications for these appointments are similar to those of the other Fellows. An externship in either neurology or neurosurgery is available to men who are not in residence but who are qualified to play an active role in the service. No stipend is attached to these services. In neurosurgery the externe is expected to work up cases and to act as second assistant at operations, at the discretion and under the supervision of the Resident.

The Fellows and Externes are enabled to follow the progress of clinical problems by attending complete rounds once a week. A weekly pathological conference makes it possible for them to see the pathological material of the week, and weekly meetings of the Montreal Neurological Society are so planned that they may attend and take part in the discussions.

Applicants for Internships, Fellowships and Externships should send to the Registrar, with their applications, the names of three men as references, a careful description of their university, hospital and laboratory work up to the time of writing, an outline of future plans and a statement of age, nationality, religion, schooling, and if possible their rank in their final medical examinations.

Applicants for clinical services should have a speaking knowledge of the French language or should study it while awaiting their appointments. The City of Montreal and the Province of Quebec have a French speaking majority and many of our patients speak only that language. In our desire to render the best service possible to them we make every effort to have a bilingual staff.

THE NEEDS OF THE INSTITUTE

CLINICAL ACTIVITY

From the beginning the Neurological Institute has been filled with patients to its capacity. The Institute belongs to McGill University but the clinical unit is administered for the University by the Royal Victoria Hospital. The majority of the patients come under the heading of "public" and it is not considered to be the function of the University to undertake financial responsibility for the deficit which inevitably arises from the care of such patients. Hospitalization expense is quite properly covered by the contributions from the City of Montreal and the Province of Quebec, but there are crying needs not covered by the present generosity of the City and Province.

From other provinces and from the United States come sufferers who have raised enough money for the journey but who are unable to pay for a bed even at the public ward rate, which in reality is about one-half of the actual cost of maintaining that bed. Nevertheless, these patients come to our door in the desperate hope that they will be admitted. It is no doubt logical to suggest that they should be sent back, or that local subscription in their place of origin ought to have been made, as is often done, to cover all expenses of hospitalization. But as long as endowed research, as well as special equipment and training, make special forms of treatment available here, such patients will continue to throw themselves upon the mercy of the staff from time to time. To refuse help may mean suffering and perhaps death.

To meet such emergencies a "Transfusion and Clinical Relief Fund" has been created. As the title suggests, this fund is used for the cost of transfusions when needed urgently by indigent patients, as well as to pay hospitalization expenses when no other support is available. It serves another useful purpose, to defray the costs of occasional clinical studies which are required for scientific purposes rather than for the immediate therapeutic need of the patient. For example, additional x-rays of a rare bone condition may be of considerable value to the staff in the study of that disease although it would be unfair to burden the account of the patient with such charges.

SCIENTIFIC ACTIVITY

The second purpose of the Neurological Institute is the advancement of knowledge in a field which is in some ways the most obscure and yet filled with the greatest possibility of good to mankind. This scientific activity which includes pathological, physiological, anatomical and biochemical studies of the nervous system, is supported in part by the endowment given by the Rockefeller Foundation.

Because of decreased income from securities the funds derived from this endowment are annually ten thousand dollars less than the minimum which was estimated as necessary for this purpose. Consequently, the laboratory work has been handicapped and has fallen short of its full possible realization. Increased income is needed particularly for the endowment of Research Fellowships.

SPECIFIC NEEDS

For the information of those who might desire to help the work of the Institute a few specific examples of our needs are added below.

A.—Transfusion and Clinical Relief Fund. Donations of any size are welcome and may be addressed to the Montreal Neurological Institute and marked for this fund.

B.—Free Beds. The cost of endowing one public bed in perpetuity in the Institute, to be named by the donor and maintained free for indigent patients, is not less than \$25,000.00. There is a need for at least two such endowed beds in the public wards.

C.—Research Fellowships. The sum for such a Fellowship is \$1,200 annually or not less than \$30,000 as a permanent endowment. If desired by the donor these Fellowships may be named as a memorial and publications of work done during the tenure of such a grant would bear the name of the Fellowship, e.g., "John Smith Memorial Fellowship". Each of these would support a recent graduate in medicine while carrying out advanced study and research. At least four such Fellowships are urgently needed.

D.—The Fellows' Library. This library contains journals and special neurological books needed for the studies in progress both scientific and clinical. The books here supplement those in the University Medical Library without duplicating them. There is a waiting-list of books and journals which cannot be purchased without exceeding the library appropriation. Any donation to the library would bear the donor's name on the fly-leaf. Ten dollars will purchase a text-book, \$400.00 a many-volume handbook of neurology and \$900.00 the back file of a neurological journal.

FORM OF DONATION

I give and bequeath to McGill University, Montreal, for the Montreal Neurological Institute \$..... 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.

DONATIONS

From Mrs. Harvey Gordon, Merion, Pa.:

For Transfusion and Clinical Relief Fund	\$500.00
For Margaret Gordon Neurosurgical Fund	\$2,000.00

From Mrs. Hobart Springle, Oka, Que.:

For The Hobart Anderdon Springle Research Fund	\$500.00
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From Mrs. Lester Wieder, Milwaukee, Wis.:

For the Neurological War Research Fund	\$200.00
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CLASSIFICATION OF DISEASES

Nervous System Generally:

Neurosyphilis	89
Multiple sclerosis	28
Amyotrophic lateral sclerosis	1
Myasthenia gravis	3
Friedreich's ataxia	2
Encephalomyeloradiculitis	1
Schüller-Christian's disease	1

Meninges:

Meningocele or Myelomeningocele	20
Chronic adhesive arachnoiditis	10
Acute purulent meningitis	27
Meningitis, other types	2
Benign lymphocytic choriomeningitis	7
Meningoencephalitis	3
Extradural abscess	1
Spontaneous subarachnoid haemorrhage	12
Traumatic meningeal haemorrhage	32
Subdural effusion	7
Post-traumatic headache	27
Other headaches	37

Brain:

Congenital anomalies	10
Hydrocephalus	14
Birth injury of the brain	13
Acute encephalopathy	19
Brain abscess	19
Cerebral concussion	144
Cerebral contusion and/or laceration	59
Meningocerebral or cerebral cicatrix	10
Cyst of the brain	5
Epilepsy	181
Migraine	7
Narcolepsy	6
Chronic encephalopathy	9
Bulbar palsy	1
Paralysis agitans	4
Cerebral arteriosclerosis	10
Cerebral haemorrhage, thrombosis or embolism	66
Intracranial aneurysm	13
Cerebral atrophy	51
Intracranial calcification	5
Porencephaly	1
Herniation of cerebellum	2
Cerebellar atrophy	1

Tumours of the Nervous System:

Blood vessel tumour	2
Glioma	76
Perineurial fibroblastoma	7
Meningeal fibroblastoma	18
Sarcoma	1
Pituitary adenoma	5
Carcinoma	9
Craniopharyngioma	5

Tuberculoma	4
Neurofibromatosis	3
Cholesteatoma	1
Miscellaneous tumour	8
Unclassified tumour	8
Unverified tumour and tumour suspect	21

Spinal Cord:

Congenital anomaly	5
Acute anterior poliomyelitis	1
Post-poliomyelitic paralysis	3
Motor neuronitis	1
Radiculitis	8
Chronic myelopathy	10
Dorsal lateral sclerosis	2
Compression of the spinal cord	24
Concussion, contusion or laceration of cord	13
Vascular lesion of cord	3
Syringomyelia	3

Cranial and Peripheral Nerves:

Mixed cranial nerve palsies	1
Lesions of optic nerves	15
Ocular palsy	3
Trigeminal neuralgia	48
Peripheral facial palsy	4
Nerve deafness	1
Meniere's syndrome	10
Lesions of brachial plexus or branches	4
Lesions of lumbosacral plexus or branches	2
Multiple neuritis	5
Sciatica	17
Other neuralgias	17
Herpes zoster	1
Traumatic peripheral nerve lesions	8
Raynaud's disease	2
Spasmodic torticollis	1

Mental Diseases:

Mental deficiency	18
Alcohol or drug addiction	17
Psychoneurosis	88
Manic-depressive psychosis	10
Schizophrenia	6
Miscellaneous	40

Other Systems and Miscellaneous:

Developmental cranial and spinal anomalies	4
Spina bifida and cranium bifidum	14
Tumours of skull	5
Herniation of intervertebral disc	185
Fracture of the skull	109
Fracture and/or dislocation of vertebral column	61
Gun shot wound of head	5
Gun shot wound of spine	1
Other fractures and dislocations	33
Lacerations, contusions, abrasions and/or haematomas	182
Carcinoma	18
Diseases of the body as a whole	20
" " " cardio-vascular system	86
" " " respiratory system	61
" " " gastro-intestinal system	14
" " " genito-urinary system	18

“ “ “ hematopoietic system	7
“ “ “ endocrine system	27
“ “ “ locomotor and integumentary system	125
“ “ “ eyes, ears, nose and throat	57
Diagnosis deferred	44
Miscellaneous	22

CLASSIFICATION OF OPERATIONS

Craniotomy, miscellaneous	30
“ decompression	13
“ removal of tumour	77
“ removal of focus	1
“ drainage or removal of cyst	3
“ evacuation of cerebral haemorrhage	9
“ excision of cicatrix	5
“ lobectomy	4
“ drainage of abscess	11
“ drainage of subdural space	10
“ rhizotomy	16
“ removal of extradural haemorrhage	8
“ separation of adhesions	1
Craniectomy	16
Torkildsen's ventriculostomy	2
Laminectomy, miscellaneous	38
“ antero-lateral cordotomy	6
“ removal of tumour	15
“ rhizotomy	5
“ removal of herniated intervertebral disc	159
Spinal fusion	23
Application of skull traction	1
Plastic repair of spina bifida and meningocele or myelomeningocele	18
Plastic repair of wound	9
Tantalum repair of skull	8
Biopsy	19
Trepanation, miscellaneous	98
“ subdural insufflation	1
“ drainage of subdural space	10
“ drainage of abscess	3
“ drainage of cerebral haemorrhage	3
Cerebral arteriography	8
Elevation of depressed skull fracture	23
Application of skull traction	16
Debridement and suture of wound	39
Exploration of nerve and/or removal of neuroma and nerve suture	12
Neurolysis and neurectomy	4
Sympathectomy and ganglionectomy	23
Re-exploration of wound and/or re-elevation of bone flap	55
Ligation carotid artery	8
Miscellaneous	76

PUBLICATIONS OF THE STAFF

FOR THE YEAR 1943

DR. ROMA AMYOT:

- Ostéo-arthropathies tabétiques de la colonne vertébrale.* (En collaboration avec Julio Vasquez et Armand Genest), L'Union Médicale du Canada, 72:305 (mars) 1943.
La hernie du disque intervertébral. (Editorial), L'Union Médicale du Canada, 72:581 (mai) 1943.
Meningeal gliomatosis secondary to intramedullary glioma. Archives of Neurology & Psychiatry, 49:383 (mars) 1943.
Tuberculome intramédullaire. (En collaboration avec Julio Vasquez) L'Union Médicale du Canada, 72:652 (Juin) 1943.
L'Hypertension Artérielle dite Essentielle. (Editorial), L'Union Médicale du Canada, 72:910 (août) 1943.
Une Mission en Russie. L'Union Médicale du Canada, 72:1317 (novembre) 1943.

DR. ANTONIO BARBEAU:

- Sous le signe de Psyché.* Journal de l'Hôtel Dieu, No. 4, 1943.
Léo Pariseau, humaniste. Journal de l'Hôtel Dieu, No. 6, 1943.

DR. T. S. BENNETT:

- The electroencephalograms of monkeys following the application of microcrystalline sulfonamides to the brain.* Surg., Gynec. & Obst. 76:599-611, May 1943. (With H. H. Jasper, W. V. Cone and R. Pudenz).

DORIS BROPHY:

- A Method for Determining Cerebrospinal Fluid Protein by the Photo-electric Colorimeter.* J. Lab. & Clin. Med., 28:1269-1272, 1943. (With André Cipriani).

DR. ANDRÉ CIPRIANI:

- A Method for Determining Cerebrospinal Fluid Protein by the Photo-electric Colorimeter.* J. Lab. & Clin. Med., 28:1269-1272, 1943. (With Doris Brophy).

DR. W. V. CONE:

- Elementary principles of the treatment of head injuries.* Canad. M.A.J. 48:99-104, 1943. (With Wilder Penfield).
The special hospital in time of war. Arch. Neurol. & Psychiat. 50:193-196. August 1943.
Clinical points on ruptured intervertebral discs; low back pain and sciatica. Canad. M.A.J. 49:33-35, 1943. (With Donald McEachern).
The electroencephalograms of monkeys following the application of microcrystalline sulfonamides to the brain. Surg., Gynec. & Obst. 76:599-611, May 1943. (With H. H. Jasper, R. Pudenz and T. S. Bennett).
Physiological studies of the effects of sulfonamide compounds on the brain of macaca mulata. Trans. Am. Neurol. A. 109-112, 1943.

DR. A. R. ELVIDGE:

- The post-traumatic convulsive and allied states, in Injuries, of the Skull, Brain and Spinal Cord,* Ed. 2, edited by Samuel Brock, Baltimore, Williams & Wilkins, 1943.

DR. H. H. JASPER:

- Electroencephalograms in post-traumatic epilepsy.* Am. J. Psychiat. 100:365-377, November 1943. (With Wilder Penfield).
The electroencephalograms of monkeys following the application of microcrystalline sulfonamides to the brain. Surg., Gynec. & Obst. 76:599-611, May 1943. (With W. V. Cone, R. Pudenz and T. S. Bennett).

DR. DONALD McEACHERN:

- Clinical points on ruptured intervertebral discs; low back pain and sciatica.* Canad. M.A.J. 49:33-35, 1943. (With W. V. Cone).
Studies of neuromuscular disorders: The myogram, blood cholinesterase, and effect of prostigmine in myasthenia gravis and progressive muscular atrophy. Brain, 66:1-17, 1943. (With Guy Odom and Colin K. Russel).

DR. GUY ODOM:

- Studies of neuromuscular disorders: The myogram, blood cholinesterase, and effect of prostigmine in myasthenia gravis and progressive muscular atrophy.* Brain, 66: 1-17, 1943. (With Colin K. Russel and Donald McEachern).

DR. WILDER PENFIELD:

- Socialization, education and research.* Canad. M.A.J. 48:141-142, 1943.
The British-American-Canadian Surgical Mission to the U.S.S.R. Canad. M.A.J. 49:455-461, 1943.
Elementary principles of the treatment of head injuries. Canad. M.A.J. 48:99-104, 1943. (With W. V. Cone).
The special hospital in time of war. Arch. Neurol. & Psychiat. 50:193-196, August 1943.
Electroencephalograms in post-traumatic epilepsy. Am. J. Psychiat. 100:365-377, November 1943. (With H. H. Jasper).
Growth asymmetry due to lesions of the postcentral cerebral cortex. Arch. Neurol. & Psychiat. 50:405-430, October 1943. (With J. S. M. Robertson).

DR. ROBERT PUDENZ:

- The repair of cranial defects with tantalum.* J.A.M.A. 121:478-481, February 13, 1943.
The electroencephalograms of monkeys following the application of microcrystalline sulfonamides to the brain. Surg., Gynec. & Obst. 76:599-611, May 1943. (With H. H. Jasper, W. V. Cone and T. S. Bennett).

DR. COLIN RUSSEL:

- Studies of neuromuscular disorders: The myogram, blood cholinesterase, and effect of prostigmine in myasthenia gravis and progressive muscular atrophy.* Brain 66: 1-17, 1943. (With Guy Odom and Donald McEachern).

DR. LEA STEEVES:

- A simple method for the separation of blood serum.* J. Lab. & Clin. Med. 28:994-995, May 1943.

DR. JEAN SAUCIER:

- Le traitement actuel des méningites purulentes.* Ann. Med.-Chir. de l'Hop. Ste-Justine. 4:148-155, March 1943.

DR. K. STERN:

- Acute Psychosis Associated with Trichiniasis.* Canad. M.A.J. 48:235-237, 1943. (With T. E. Dancey).

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