

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 eighth annual report of the Montreal Neurological Institute. It includes a summary of the clinical work for the calendar year of 1942, together with the scientific and research record for the academic year of 1942-43, 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, Arthur Elvidge, John
Kershman, Fred H. Mackay, C. K. Russel, Arthur Young, Norman
Petersen.*

EXECUTIVE AND CLINICAL STAFFS

Director

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

Secretary and Registrar

J. NORMAN PETERSEN, B.Sc., M.D., C.M.

Executive Assistant

JOHN KERSHMAN, B.Sc., M.D., C.M., M.Sc.

Neurologist and Neurosurgeon

WILDER PENFIELD

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

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

Associate Neurologists

*DONALD McEACHERN, M.D.

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 Légiste (Paris)

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

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

Clinical Assistants in Neurology

JOHN KERSHMAN, B.Sc., M.D., C.M., M.Sc.

⁽¹⁾FRANCIS L. McNAUGHTON, B.A., M.D., C.M.

Associate Neuropsychiatrist

MIGUEL PRADOS, M.D.

Clinical Assistant in Neuropsychiatry

KARL STERN, M.D.

Neurosurgeon

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

Associate Neurosurgeon

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

Clinical Assistant in Neurosurgery

MURTON R. SHAVER, B.A., M.D.,

Roentgenologist

ARTHUR CHILDE, M.D.

Consulting Roentgenologist

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



Back Row: A. R. ELVIDGE, A. E. CHILDE, K. STERN.
Third Row: A. W. YOUNG, H. H. JASPER, C. VILLAVICENCIO, M. PRADOS, N. VINER, A. A. WARD, F. L. MCNAUGHTON,
 E. PETERSON.
Second Row: J. SAUCIER, W. V. CONE, W. G. PENFIELD, C. K. RUSSEL, F. H. MACKAY, J. N. PETERSEN.
Front Row: J. L. SHUGAR, J. P. ROBB, G. K. MORTON, T. S. BENNETT, C. MUSHATT, E. S. LOTSPEICH,
 R. H. WHITING, J. J. MCCONNELL.

Clinical Electrographer
HERBERT JASPER, Ph.D. (Iowa), D. es Sci. (Paris)

Clinical Assistants in Electrography
JOHN KERSHMAN, B.Sc., M.D., C.M., M.Sc.
*ANDRÉ CIPRIANI, B.Sc., M.D., C.M.

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

RESIDENT STAFF

1st January, 1943

House Neurologists and Neurosurgeons

Resident: PETER LEHMANN, M.D.

Internes:

GUY MORTON, M.D.

H. C. MODLIN, A.B., M.D.

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

SURG.-LT. J. P. ROBB, B.Sc., M.D., C.M.

Appointments Effective 1st July, 1943

Resident: GUY MORTON, M.D.

Internes:

E. S. LOTSPEICH, A.B., M.D.,

T. S. BENNETT, A.B., M.D.,

B. SELVERSTONE, A.B., M.D.

SURG.-LT. J. P. ROBB, B.Sc., M.D., C.M.

Supervisor of Nurses

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

Social Service Supervisor

MILDRED A. LANTHIER

Fellows of the Montreal Neurological Institute

T. S. BENNETT, A.B., M.D.

EDGAR S. LOTSPEICH, A.B., M.D.

W. D. ROSS, M.D., B.Sc. (Mcd.)

* Active Military Service
(1) Assistant Secretary

NURSING STAFF

<i>Supervisor</i>	MISS EILEEN C. FLANAGAN, B.A., R.N.
<i>Assistant and Ward Teacher</i>	MISS BERTHA CAMERON, R.N.
<i>Night Supervisor</i>	MISS D. MAY COLLINS, R.N.
<i>Night Assistant</i>	MISS V. FLOYD, R.N.
<i>Operating Room Supervisor</i>	MISS RITA EDWARDS, R.N.

Assistant Operating Room Nurses:

MISS ELIZABETH McRAE, R.N. MISS M. McSEPHNEY, R.N.
MISS R. JOHNSTONE, R.N. MISS M. CURRIE, R.N.
MISS B. FREED, R.N. MRS. E. ATKINSON, R.N.

Head Nurses, Wards:

MISS MARION BARROWMAN, R.N. MISS BRENDA DAVIS, R.N.
MISS FLORENCE TAYLOR, R.N. MISS MARGARET CAVANAUGH, R.N.

General Staff Nurses:

MISS J. CHARRON, R.N. MISS A. CROFT, R.N.
MISS M. COMEAU, R.N. MISS E. SAWDON, R.N.
MISS A. JOHNSON, R.N. MISS F. ENGLISH, R.N.
MISS D. McBEATH, R.N. MISS M. HAWTHORNE, R.N.
MISS G. FRASER, R.N. MISS L. McAULEY, R.N.
MISS I. MILLER, R.N. MISS L. ROBICHAUD, R.N.
MISS F. AYMONG, R.N. MRS. D. ARMSTRONG, R.N.
MISS M. BEDARD, R.N. MRS. L. LUSSIER, R.N.
MISS M. MOLNAR, R.N. MRS. M. CLARKE, R.N.
MISS K. VEITCH, R.N. MRS. V. FROST, R.N.
MISS P. LANTEIGNE, R.N. MRS. W. BEAVIS, R.N.
MISS G. DINGMAN, R.N. MISS G. ROULEAU, R.N.
MISS J. HILL, R.N. MISS J. LAZECHK, R.N.
MISS J. SEWELL, R.N.

TECHNICIANS AND LABORATORY ASSISTANTS

MISS DORIS BROPHY, B.A. L.Sc., Chemistry MR. F. DREISINGER, Roentgenology
MRS. V. FRANKLIN, Neurophysiology MISS M. B. GOURLEY, R.T., Chemistry
MR. H. S. HAYDEN, F.R.P.S., Photography MR. L. HENDERSON, Electrophysiology
MRS. L. LAFORTUNE, Neuropathology MISS M. MATTHEWS, Electrophysiology
MR. G. PELADEAU, Neurophysiology MR. F. PUTT, Neuropathology

SECRETARIAL STAFF

MISS A. DAWSON, Departmental Secretary

MISS C. CHASE, Administration MISS E. FANNING, Manuscripts
MRS. I. McASEY, Roentgenology MISS M. A. NESBITT, Neuropathology
MRS. C. NEVITT, Electrophysiology MISS M. O'MARA, Case Records
MISS S. ROSENGARTEN, Roentgenology MISS P. SHEEHAN, Office

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

Honorary attending Neurologists A. G. MORPHY
COLIN K. RUSSEL
Neurologist and Neurosurgeon-in-Chief WILDER PENFIELD
Neuropsychiatrist J. NORMAN PETERSEN
Neurosurgeon WM. V. CONE
Associate Neurologists JOHN KERSHMAN
DONALD McEACHERN
FRANCIS L. McNAUGHTON
MIGUEL PRADOS
*ARTHUR W. YOUNG
Associate Neurosurgeon ARTHUR R. ELVIDGE
Clinical Assistant in Neurosurgery ROBERT PUDENZ

Resident Staff (January 1st, 1942)

Resident	PETER LEHMANN
Internes	W. H. BRIDGERS
	E. F. HURTEAU
	J. K. McCORKLE
	M. R. SHAVER

* Acting Psychiatrist-in-charge, Dept. of Medicine.

MONTREAL GENERAL HOSPITAL

DEPARTMENT OF NEUROLOGY

Neurologist	FRED H. MACKAY
Associates	ARTHUR R. ELVIDGE
	NORMAN VINER
Assistant	FRANCIS L. McNAUGHTON
Consulting Neurosurgeons	WM. V. CONE
	WILDER PENFIELD

HÔPITAL NOTRE DAME

DEPARTMENT OF NEUROLOGY

Neurologist-in-Chief	ROMA AMYOT
Assistant Neurologist	JEAN SAUCIER

HÔTEL DIEU

Consultant Neurologist	EMILE LEGRAND
Neurologist-in-charge	ANTONIO BARBEAU

CHILDREN'S MEMORIAL HOSPITAL

Consultants	FRED H. MACKAY
	WILDER PENFIELD
	COLIN K. RUSSEL
Neuropsychiatrist	ARTHUR W. YOUNG
Assistant Neuropsychiatrist	FRANCIS L. McNAUGHTON
Neurosurgeon	WM. V. CONE

ST. MARY'S HOSPITAL

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

JEWISH GENERAL HOSPITAL

DEPARTMENT OF NEUROPSYCHIATRY

Chief of Service	NORMAN VINER
Associate	JOHN KERSHMAN
Consultant	WILDER PENFIELD

WOMEN'S GENERAL HOSPITAL

Neurologist	JOHN KERSHMAN
Consulting Neurosurgeon	WM. V. CONE



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.

ADDRESS OF THE DIRECTOR

Read at the Annual Meeting of the Staff, September 20th, 1943

At the time of our annual meeting two years ago, the British Commonwealth stood alone against Germany and her allies. The U.S.S.R. and the U.S.A. were not as yet involved, and it seemed reasonable that in every institution there should be a stock-taking of all capacities and talents in order that each member of staff might orient his work to the problems and needs of our cause.

It was decided then that in this institution, 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 then were seasickness, psychoneurosis, aircraft acceleration and its effect upon personnel, wound healing, formation of adhesions, post-traumatic headache, brain oedema, the role of electroencephalography in the treatment of head injuries.

In the two years which 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, notably the work on acceleration and seasickness. Some of these tasks have been finished. Some problems remain, and other new studies have been undertaken. Dr. Cone has mentioned the work on tantalum, which was begun here and carried to Washington for completion; also new work on sulphonamides.

At the meeting last year the overcrowding of patients in the Institute seemed to call for urgent remedy, and the increasing demand for space for service patients and for those discharged from the services led us to make a specific proposal to the Department of Pensions and National Health that they should build an annex to the Institute so that we could contribute adequately to the care of service and ex-service patients. This proposal was refused. The crowding has continued, and if service patients are turned away it will be with great regret on our part.

As you know, I have just returned from a long trip undertaken for the Canadian National Research Council to Russia and China at war. On the way through England certain honours came to me, which the Registrar has kindly referred to. You must realize, as I do, that these honours are hardly to be considered personal ones; they are in recognition of work in which you have shared. I am glad to acknowledge my indebtedness to all of you, and to Dr. Cone in particular, for he and I have worked together now for nineteen years.

Distance and change of scene gives long perspective, and I seem to have been watching this institution from the interior of a kaleidoscope during my recent journey.

In Great Britain, the neurological and neurosurgical centres of the Emergency Medical Service are doing clinical work which corresponds with ours. These are civilian institutions which admit service patients, as we do. Neurological research of a similar type to our own is going on at Oxford, Cambridge and Edinburgh. During the campaign in North Africa, special hospitals have

been developed in the Egyptian area, and neurosurgical cases are being referred to No. 15 Scottish General Hospital in Cairo. Special neurosurgical teams were formed and operated successfully.

The policy of the American Army has so far been to attempt to select specialists for every general hospital, but they have opposed the formation of special hospitals. In doing this they fail to heed the warning of Weir Mitchell, who developed the first military neurological hospital during the Civil War, and of Harvey Cushing, who urged the necessity of such hospitals during the last war. However, great latitude is given to the Chief Surgeon in each American theatre of operations, and Colonel Edward Churchill has recently begun to develop special hospitals in the Algiers area during the campaign in Sicily.

In Russia, specialization has been pushed farther forward towards the front than ever before, even in the Sorting and Evacuation Hospitals of the front line. The next level of reception is made up of special hospitals, in which head cases, wounds of the chest and abdomen, and wounds of the extremities are segregated. In Russia at the present time there is little research in our field, although their excellent organization promises much for the peace-time future. In medical teaching, Russians tried, during the first year of the war, to accelerate courses of instruction, but this year they have returned to the regular routine of teaching, and during this year they have graduated 25,000 physicians.

Although Canada has led in an important way in developing No. 1 Neurological Hospital overseas, at the suggestion of Dr. Russel, they have so far failed to provide special hospitals for the returned soldiers, and we have now been at war for four years.

Here at this Institute our present effort must be directed toward teaching, clinical care and research. It is a source of satisfaction that medical officers from the R.C.A.F. and the Canadian Navy are with us to be trained in this special field.

Although McGill University undertakes the control and the financial risks of this Institution, I would not consider it as a local organization. Rather, in its clinical work, it is a national institution. We are bilingual in staff and patients. We give similar service to French and English hospitals in Montreal, and, as far as the handling of clinical cases is concerned, there is no preference when it comes to exchange between the Royal Victoria, Montreal General and the other city hospitals. In a larger sense, we serve as consultants for difficult cases for the hospitals throughout Canada.

But it is in our research work, more than in any other, that we should cast a long shadow. Indeed, it should be our aim, but not our claim, to make this the best neurological institute in the world.

ADDRESS OF THE NEUROSURGEON

Read at the Annual Meeting of the Staff September 20th, 1943.

Owing to the subsequent illness of Dr. W. V. Cone, this address was not prepared for publication.

ADDRESS OF THE NEUROLOGIST

Read at the Annual Meeting of the Staff, September 20th, 1943

COLIN K. RUSSEL

The neurological service in the past year has been as satisfactory as one could expect under the vicissitudes of war conditions. Colonel Russel returned to the service and Dr. McEachern joined the army where he is doing valuable research work.

It is fitting here to express very sincere appreciation of the work of our medical internes. Dr. Herbert Modlin and later Surg.-Lt. J. P. Robb have done good and conscientious work and are responsible, with the nursing staff, for the maintenance and continuation of the good atmosphere which pervades the public wards. Their work has been very satisfactory.

An important point which deserves more consideration than it is apt to get is the general acceleration of the service, both in its University relationship and as regards the turnover of clinical material. With regard to the first, I am sure the acceleration of the Medical course is not a thing which anyone desires and it is important to consider how soon circumstances will allow us to stop grinding out overstrained, relatively immature M.D.s who, one fears, will be a responsibility to the university and the country in after years.

Regarding the acceleration of turnover of clinical material. It is realized that what is considered a surgical emergency must always have precedence, but it should also be realized that a psychic trauma is often just as disabling as a cerebral trauma and moreover there is always the potentiality of a complete cure — the relief of the presenting symptoms may be a matter of a few minutes but the discovery, analysis and allaying of the etiological mental conflicts may take a great deal of intimate study, which necessitates time.

It should also be brought to the attention that, for the proper education and instruction of medical students, recognition of those not very uncommon familial and congenital diseases of the nervous system is necessary and we should be prepared to give up the occasional bed for a short time to these cases for educational purposes even though we cannot be expected to benefit them therapeutically in any great degree. The need for more beds is very obvious, and the acceleration of turnover to make up for the relative shortage of beds makes the work very heavy for one interne.

In previous annual reports it has been stated that the Institute was filled to capacity and it has been impossible to admit all patients who had been recommended, but in this past year there has been a still greater turnover of patients and while the average length of stay has been cut down the overcrowding has much increased. The need for an extension to the building is very obvious.

Consultations in neurological cases arising in the other services seem to have increased but unfortunately account of these requisitions are not available.

Two new hyperthermia cabinets should add efficiency to the treatment of cases of neurosyphilis. These are not yet permanently installed but are ready for use.

REPORT OF THE EXECUTIVE ASSISTANT

JOHN KERSHMAN

During 1942 an average of 10 patients per day more were cared for in the Institute than during 1941 and of the increase in patient days 90% were in the public wards. In all, the total public patient days rose from 15,258 to 18,363, an increase of 20%. This did not create the financial difficulty it might have because the general increase in employment and wage earning was reflected in the greater proportion of public paying patients and the smaller number of Quebec Public Charities Act patients. Another favorable change was the increase of the Q.P.C.A. allowance from \$2.00 to \$3.00 per day, and, although this is still far below the actual maintenance cost, the increase was a very welcome one. As a result of these factors and the increased bed occupancy, the financial status at the year's end was more satisfactory than last year.

The cost per patient per day in 1942 was \$6.53 as compared with \$6.50 in 1941. These figures do not include any provision for depreciation and renewals. Costs in 1942 would have been higher due to the increased cost of materials and labor, but this was offset by the increased bed occupancy.

During the year certain essential equipment was added at a total expense of over \$2000.00. This included 8 new beds and accessories and the replacement of the x-ray tube. Next year it will be necessary to obtain further materials, especially such as might be needed in the event of a major emergency, and it is hoped that they may be purchased from current income. It has not been possible to set aside any fund for renewals and depreciation. The danger of this deficiency is an obvious one.

A serious problem which merits consideration is what can be done for the indigent patient who arrives penniless at the doors of the Institute from outside the Province of Quebec. Many of them come hundreds of miles, using their last resources for railroad fare, arrive here and place themselves at our mercy. At the present time the Institute has 5 such patients under its care; it so happens that they are all from the Province of Ontario, but at other times they have arrived here from all parts of Canada. Three of these patients have brain tumors and two suffer from neurological illnesses as yet undiagnosed. It is impossible to turn these patients away, nor do we wish to. They are sick people who rightfully come to us for help. Certain provinces and townships have contributed generously to the care of such problems, others have left us to face the financial obligation alone. The lack of endowed beds makes this a serious burden. Patients should be warned before they leave home that we have no adequate facilities for free hospital care and some provision must be arranged with their local authorities for the cost of their hospitalization.

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

ITEMS OF INTEREST

During the past academic year, Dr. Wilder Penfield, Director of the Institute, received the high honours of the Fellowship in the Royal Society and Honorary Fellowship in the Royal College of Surgeons of England. These recognitions were followed by the bestowal in the King's Birthday Honours List of 1943 of Companionship in the Order of St. Michael and St. George. At the end

of the academic year Dr. Penfield left Canada for England whence he will depart to other countries on a medical mission of importance in these days of war.

In 1942, Colonel Colin K. Russel returned to Canada from R.C.A.M.C. Headquarters in England and resumed his duties as neurologist in charge of service in the Institute. Dr. Russel has been made an honorary Fellow of the Neurological Section of the Royal Society of Medicine. He had been an original member of that section. Late in the year Major O. W. Stewart returned from No. 1 Neurological Hospital overseas where he had done outstanding work and was assigned to duties in the Institute.

Numerous members of our staff have joined the armed services of the United Nations and more are destined to do so in the near future. Captain Donald McEachern and Lieut. André Cipriani have enlisted in the Royal Canadian Army Medical Corps and will probably be engaged in carrying on researches of national importance. Doctor Robert Pudenz has joined the United States Navy and Doctors Theodore Rasmussen, William Bridgers and Everett Hurteau are now in the Army of the United States. Dr. Murton R. Shaver has left our house service and has joined the Department of Pensions and National Health of Canada. He will continue to work in the Institute, the Royal Victoria Hospital and the Military Hospital of Ste. Anne de Bellevue and serve as liaison officer for service cases between these Institutions.

Among former internes and Fellows of the Institute occupying important parts in the armed services of the United States are Lieut.-Commanders Lyle Gage, Donald Coburn and Exum Walker and Lieut. Colonel David Reeves.

In recognition of his long and outstanding services to the department Doctor Arthur W. Young was promoted from the rank of Lecturer to that of Assistant Professor in the Department of Neurology and Neurosurgery of McGill University. During many months of 1942 he added to his other duties that of Acting Registrar during the illness of the Registrar of the Institute.

The calendar year of 1942 witnessed unprecedented crowding in our wards. Our original complement of forty-seven beds was exceeded several years ago and our daily average bed occupancy has risen year by year. References to the crowding and to the limitations of personnel and equipment will be found frequently throughout this report and the situation has been aggravated during the early months of 1943. It is difficult to see how this demand can continue to be met and the problem facing the Institute is an urgent one for which there is no easy nor apparent solution. Attempts which were made to arrange for enlargement of our present facilities were unsuccessful.

The crowding and increasing requests for the admission of patients have somewhat altered the nature of our work and have upset the balance which we had hoped to maintain between cases of various types of illness. The first demands which must be met are those of emergency cases and of patients from the armed services of the country. For long intervals these are the only types of patients which we can admit, and persons with other types of illness have to be content with having their names added to our constantly lengthening waiting list or to go elsewhere. This is an unfortunate situation from the standpoint of the patients and also from that of the students whose instruction is such an important part of our duties.

The Executive Assistant has referred in his report to the additional difficulty which is presented by patients who come from outside the province of Quebec and for whom no financial nor other arrangements are made before-

hand. We cannot turn these people back. They are sick and have often come a great distance at considerable jeopardy to their health. We have to accept them but we do so with the knowledge that their care is going to add to our hospital deficit, which in one way or another has to be met by the people of this province. Quebec looks after its indigent sick but usually other provinces refuse to do so unless the patient is hospitalized within their own confines. A hospital, as highly specialized as the Montreal Neurological Institute will always have referred to it patients from outside this province and even from outside this country. Endowed beds for the free care of patients would be a considerable help in this regard but we have none.

All this increase in the amount of work which we have been called upon to do has been possible only through the continued hard work and loyalty of all the members of our staff. Furthermore, as in the past, we have constantly received the help in many forms of the staff of the Royal Victoria Hospital and of Doctor G. F. Stephens its superintendent. Our calls on this hospital have necessarily been many because of our close physical association with it but no less pleasant and profitable has been our collaboration with the other hospitals of Montreal.

Our laboratories have continued to be busy and productive. Most of the researches carried out have been concerned with war medicine and surgery. These have been of a confidential nature and the results have not yet been published. Consideration of our list of publications for the year, however, indicates somewhat the variety of problems which have been studied.

Nearly all the employees on the staff of the Institute have joined the Quebec Hospital Service Association which provides, for a comparatively small cost, a certain measure of protection in case of illness requiring hospital care.

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>
1934 (from Sept. 27th)	190			5.21%	86.8%
1935	841	14928	17.8	6.29%	77.6%
1936	912	17667	19.4	5.18%	82.8%
1937	953	18315	19.2	5.18%	85.4%
1938	999	18856	18.9	4.95%	89.4%
1939	1079	19742	18.3	4.72%	72.1%
1940	1093	19428	17.8	6.79%	86.8%
1941	1179	20482	17.4	6.03%	88.5%
1942	1416	23939	16.9	4.53%	83.3%

The increase in the number of patients cared for in 1942 over those cared for in 1935, the first full year of operation of the Institute, was 68.4%. The increase of hospital days in 1942 over 1935 was 60.4%. The difference in these two figures is due to the constant effort that has been made to shorten the stay of each patient in hospital and is reflected in the progressively shorter average stay per patient.

ADMISSIONS TO HOSPITAL

	1942	1941
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	1437	1266
Admissions to the Montreal Neurological Institute	1341	1132

Admissions to the Department in the Royal Victoria Hospital	96	134
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	1416	1179
Daily average number of patients	65	56
Daily average % of capacity	100%	100%
Deaths	90	113
Deaths within 48 hours of admission	26	39
Death rate (on deaths after 48 hours)	4.53%	6.03%
Percentage of autopsies obtained	83.3%	88.5%

CHIEF DIAGNOSIS IN FATAL CASES

Congenital anomalies	2
Meningo-encephalocele	1
Hydrocephalus	2
Tuberculous meningitis	3
Streptococcus meningitis	1
Meningo-encephalitis	1
Acute anterior poliomyelitis	1
Neurosyphilis	3
Intracranial abscess	7
Trauma	29
Foreign body in the longitudinal sinus	1
Rupture of congenital aneurysm	3
Cerebral hemorrhage	3
Intracranial tumour	24
Subdural effusion	1
Epilepsy	1
Arteriosclerosis	1
Hypertensive vascular disease	2
Myelogenous leukaemia	1
Pulmonary oedema	1
Osteomyelitis of the skull	1
Tuberculosis of the spine	1
	90

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	524	186	710
Revisits	3100	807	3907
	<hr/>	<hr/>	<hr/>
Total outpatient visits ..	3624	993	4617

REPORTS OF SUBDEPARTMENTS

DEPARTMENT OF ROENTGENOLOGY

DR. A. E. CHILDE, *Roentgenologist*

DR. CARLETON PEIRCE, *Consulting Roentgenologist*

In the last report of the department it was stated that 1941 had been the most active year in our history and from the present summary it is apparent that the work in 1942 was greatly in excess of that in 1941. As a matter of fact it has become practically impossible to keep up with the necessary volume of work with the present equipment and staff.

Mr. Walter Whitehouse, who had been with us since the Institute opened, left our employ in August 1942 and was replaced by Mr. Frank Dreisinger who has maintained our high standard of work. Emergency calls have, for the most part, been taken by the interne staff of the Department of Radiology of the Royal Victoria Hospital. As in the past Dr. Peirce and his department have been most helpful and cooperative.

The increasing use of iodized oil in myelography during the past year has been striking. A small spot film device has been installed which enables us to inject and aspirate with one lumbar puncture so that the oil in most instances is not in the subarachnoid space for much over half an hour. The oil is injected under fluoroscopic control and epidural injection of any large quantity is no longer to be feared. This type of myelography has proven to be a very accurate diagnostic procedure and negative explorations have not occurred following a positive diagnosis. It is still felt that many herniated intervertebral discs can be diagnosed with oxygen myelography but this method has been dropped as it is never possible to exclude a herniated disc, and many individuals so examined have to be re-examined later with iodized oil.

During the past year we have adopted the taking of a routine postero-anterior film in our skull examination so that now five films are taken.

	1942	1941
Total examinations	2903	2352
Films used	15491	11851
Encephalograms	452	409
Ventriculograms	116	113
Miscellaneous contrast media	231	111

DEPARTMENT OF NEUROPATHOLOGY

DR. W. V. CONE, *Neuropathologist*
 DR. K. STERN, *Assistant Neuropathologist*
 DR. E. S. LOTSPEICH, *Neuropathological Fellow*

The laboratory has been very busy throughout the year and has cooperated with the other departments of the Institute in the research program. The routine neuropathological work has also been greater in view of the increased number of patients admitted and the increased number of operations carried out.

Neuropathological examinations	361
Autopsy examinations	79
Miscellaneous pathological examinations	21

DEPARTMENT OF BIOLOGICAL CHEMISTRY

DR. D. MCEACHERN, *Biological Chemist*
 DR. J. KERSHMAN, *Acting Biological Chemist*

The following determinations were carried out during the year 1942:

Cerebrospinal fluid:

Pandys	1363
Proteins	1363
Sugars	37
Chlorides	39
Langes	270
<i>Blood and spinal fluid bromides</i>	5
<i>Blood, spinal fluid and urine sulfonamides</i>	1407
<i>Basal metabolic determinations</i>	104
TOTAL	4588

Private and semi-private	861
Public	3727

1522 specimens were sent to the Provincial Laboratories for Wassermann tests, of which 392 were private or semi-private and 1130 were public.

In order to assist the internes and expedite the clinical work, Miss B. Gourley has been doing all the routine urinalyses and since October 1942 the routine blood studies as follows:

Blood Wassermanns taken	240
Red blood cell counts	25
White blood cell counts	116
Differential counts	31
Haemoglobins	123
Sedimentation rates	2
TOTAL	537

Methods for the determination of free and combined sulphone compounds in blood, spinal fluid and urine have been investigated and standardized by Miss D. Brophy and Miss B. Gourley. Calibration studies were made with the photo-electric colorimeter and this method is now used extensively in routine clinical work.

Clinical and experimental investigation with the sulphone compounds were carried out by Drs. Cone and Pudenz and are being continued by Dr. Cone.

With Prof. Smith of the Department of Bacteriology, Miss D. Brophy has been working on the development of culture media to determine the action of the sulphone compounds on bacteria.

Clinical experiments with wheat germ oil and alpha tocopherol have been continued.

DEPARTMENT OF ELECTRO-ENCEPHALOGRAPHY

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

The E.E.G. laboratories carried out 1,340 examinations on 1,240 patients during 1942. This represents a 40 per cent increase in the number of patients examined compared to the previous year, but only a 7 per cent increase in the number of examinations made. This is partly explained by the lack of extensive follow-up studies for research purposes during the past year as compared to the previous year when head injuries were being intensively investigated.

The epilepsies still form the largest single diagnostic group (47%) referred for electro-encephalographic examination, while the second largest single category during the past year consisted of patients with head injuries (13%). Only 4 per cent of the patients referred during the past year were cases of brain tumour, and these were most often those whose diagnosis was indefinite by pneumo-encephalographic and clinical examination.

The capacity of this laboratory seems at times to be almost reached with present staff and equipment. If the patients were somewhat more evenly distributed throughout the year, however, it is estimated that a maximum of about three hundred more examinations per year could be carried out with no additions to staff or equipment. In order that this might be accomplished all appointments would have to be kept promptly at scheduled times.

About 20 per cent of E.E.G. examinations are now being made on personnel of the Army, Navy and Air Force. Some increase in this service to our armed forces can be made with present facilities but any large increase will require additional equipment and personnel.

Clinical research in electro-encephalography has been continued with principal emphasis upon the use of this method in the management of head injuries (in collaboration with Drs. Kershman and Elvidge). The E.E.G. classification of the epilepsies is being revised in the light of further data. The form of electrographic disturbances in patients with epilepsy following head injuries is being studied in detail. Post-operative electrographic changes following different surgical procedures for the removal of focal epileptogenic lesions are being investigated. Other clinical electro-encephalographic investigations have been postponed until after the war.

DEPARTMENT OF NEUROANATOMY

DR. F. L. MCNAUGHTON, *Neuroanatomist*

While research in anatomical problems has been curtailed during the past year because of more pressing considerations, the course in Advanced Neuro-

anatomy was given two evenings a week during the Fall months of 1942 to a class of ten, made up mostly of undergraduates. The speed-up in the medical course, and military training, have not dulled in any way the enthusiasm of the undergraduates who apply for this elective course. It is felt that brain modelling is still one of the best methods on which to base the teaching of neuro-anatomy to advanced students.

A growing collection of normal anatomical material, both gross and microscopic, together with photographs and charts, is now kept for reference in Room 601, the Neuroanatomy Room. The specimens are for the use of students and nurses, and for consultation by staff members. There are countless opportunities in this Institute to apply the knowledge of structure and function of the nervous system to the understanding of clinical problems, and it is to be hoped that this laboratory can be of increasing usefulness to this and other departments of the Medical School.

DEPARTMENT OF NEUROPHYSIOLOGY

DR. H. H. JASPER, *Neurophysiologist*

DR. A. J. CIPRIANI, *Research Assistant in Neurophysiology*

The various researches in progress during the past year in these laboratories have been chiefly concerned with neurosurgical and neurophysiological problems of military medicine. They have been carried out by numerous fellows, members of the staff, and guests of the Institute.

The principal subjects investigated were as follows:

The Mechanism of Brain Oedema — Dr. Prados and Messrs. Strowger and Feindel.

Methods of Nerve Suture — Dr. Bertrand and Mr. Hurtz.

Cranioplasty with Tantalum — Dr. Pudenz.

Wound Reactions to Different Suture Materials — Dr. Lehmann.

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

The Estimation of the Depth of Skin Burns — Drs. Jasper and Vineberg.

The Effect of Epileptogenic Lesions in Puppies upon their Subsequent Behaviour — Drs. Hebb and Rasmussen.

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

The Effect of Sulphonamide Injection on the Reticuloendothelial System — Dr. Elvidge.

Experimental Investigation of Motion Sickness — Drs. Penfield, McEachern, McNally, Stewart, Surg.-Lt. Fields, Surg.-Lt. Campbell, Drs. Morton, Cipriani and Jasper.

Experimental Investigations on the Effects of Acceleration in Animals — Drs. Jasper, Cipriani, Lotspeich, Bennett, Thorn, Clinton, Past Assistant Surg. Jones, Dr. Chapman and Mr. Mitchell.

For the above studies a total of 778 procedures were carried out on animals (human subjects not included). This is over twice the total number of procedures carried out during the preceding year. There were 155 major aseptic surgical operations, 72 acute surgical procedures, and 551 chronic experiments involving only minor surgical procedures.

The greatest handicap to the work of the laboratory during the past year has been the difficulty in obtaining experimental animals. Important investigations have frequently been delayed for weeks due to the impossibility of obtaining cats or dogs. All attempts to remedy this situation have met with more or less complete failure and the situation is becoming more acute. Experimental investigation will be greatly hindered during the coming year unless some solution is forthcoming to the problem of an adequate supply of experimental animals.

REPORT OF NURSING SUPERVISOR

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

The Department of Nursing, like every other, has felt the increasing load due to a greater number of patients, the rapid turnover, and the frequent changes in personnel.

We have managed, however, to maintain adequate nursing service to the patients, and to carry on the graduate and under-graduate teaching which entails so much additional work on the part of the head nurses and supervisors.

There have been fourteen post-graduate students, four of whom took the combined clinical and theoretical course arranged by the school for graduate nurses. Seventy-five student nurses from the Royal Victoria Hospital were each given five weeks experience in the wards.

The regular staff consists of graduate nurses, both English and French speaking. In order to give hospital experience to the members of the Red Cross Corps, we have trained over twenty-five members of the Voluntary Air Detachment. This group was on duty in the evenings from 6 p.m. to 9 p.m., Saturday afternoons and Sundays in order to obtain their 250 hours experience. Many of these members have given us valuable help on completion of their course.

We would like to express our appreciation to the members of the medical staff who have so ably and willingly given many lectures and demonstrations necessary in our teaching programme.

DEPARTMENT OF SOCIAL WELFARE

MRS. M. A. LANTHIER, *Supervisor*

Number of cases opened	838
Number of cases closed	636
Number of patients placed for convalescent care	95
Number of patients placed for permanent care	44
Referrals to other medical or social agencies	21
Letters and reports sent out	634

The above figures indicate a great increase in the amount of work carried out by the department. The number of patients placed for convalescent care does not apply to members of the armed forces who are transferred to the care of the Department of Pensions and National Health. During 1942 convalescence care was not based as much on the social needs of the patient as in former years, but was also made necessary by the pressing need for beds in the Institute.

The department continued to control the financial arrangements for public patients, admitted to the wards, by social admitting as well as by following up all patients referred under the Quebec Public Charities Act. This arrangement has proved most satisfactory, both from a financial viewpoint and from the viewpoint of the patients.

The number of home visits was less during the year and while this is regrettable it is understandable in view of the increased pressure of work.

The Junior League of Montreal has continued to supply volunteer workers for routine clinic procedure and to assist in the follow-up of patients. These duties they have very faithfully carried out.

TEACHING

McGILL UNIVERSITY

DEPARTMENT OF NEUROLOGY AND NEUROSURGERY

<i>Professor and Chairman of Department</i>	WILDER PENFIELD
<i>Associate Professor</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 Neuropsychiatry</i>	MIGUEL PRADOS
<i>Assistant Professor of Neurosurgery</i>	ARTHUR ELVIDGE
<i>Assistant Professor of Radiology</i>	A. E. CHILDE
<i>Lecturer in Neurological Electrography</i>	HERBERT JASPER
	{ JOHN KERSHMAN
	{ F. L. MCNAUGHTON
<i>Lecturers in Neurology</i>	{ J. N. PETERSEN
	{ NORMAN VINER
<i>Lecturer in Neuropathology</i>	KARL STERN
	{ MURTON SHAVER
<i>Demonstrators in Neurosurgery</i>	{ O. W. STEWART
<i>Demonstrator in Neurological Electrography</i>	ANDRÉ CIPRIANI*
	{ G. K. MORTON
<i>Assistant Demonstrators in Neurosurgery</i>	{ PETER LEHMANN
	{ T. S. BENNETT
<i>Research Fellows</i>	{ E. S. LOFTSPEICH
	{ W. D. ROSS*

*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
DONAED MCEACHERN	HERBERT H. JASPER
J. NORMAN PETERSEN	FRANCIS MCNAUGHTON
KARL STERN	MIGUEL PRADOS

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.

A new elective course of five lectures entitled "Introduction to the Study of Psychological Medicine" will be given by Dr. Prados.

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

HERBERT H. JASPER, *Chairman*

The war has greatly affected the activities of this organization of research fellows and house officers. Most graduate research fellows are now in the armed services and house officers have been carrying such a heavy clinical load that they have not been able to contribute as much as is their custom to activities of the Fellows' Society. Also since the greater part of the research activities of the Institute have been devoted to war research of a confidential nature it has not been possible to hold the usual number of open meetings for the discussion of

research in progress. In spite of these limitations several interesting meetings were held, some for the discussion of current research in progress, others at which reports were given of papers presented at the various meetings of medical societies, and visiting speakers gave us informative and stimulating discussions of investigations in progress bearing upon neurological problems.

During the coming year this society expects to be more active than during the past year. Its meetings will be concerned chiefly with neurological problems arising out of the present war.

FELLOW'S LIBRARY

DR. F. L. MCNAUGHTON, *Librarian*

The Fellow's Library continues to serve as a reference centre for the Staff of the Institute, the McGill Medical Library, and for visitors from other parts of Canada. During the year ending May 31st, 1943, fifty-two books have been added to the library. These include new books, new editions of older texts, and a number of books of historical value in neurology. It is hoped that more of these older works, which form an important part of the tradition of neurology and neurosurgery, will be added gradually to the shelves.

A special library shelf is devoted to books and journals dealing with war medicine.

The problem of finding more space for an increasing number of books and journals will have to be faced within the next two years.

THE MONTREAL NEUROLOGICAL SOCIETY

OFFICERS FOR 1943-1944

DR. WILLIAM V. CONE, *President*

DR. COLIN K. RUSSEL, *Vice-President*

DR. FRANCIS L. MCNAUGHTON, *Secretary-Treasurer*.

Throughout the past year this section has had an active program, with consideration of a wide variety of subjects of neurological and neurosurgical interest. Frequent clinical meetings have been held at the Montreal Neurological Institute and the Montreal General Hospital, as well as at the Hopital Notre Dame and the Hotel Dieu for discussion of interesting cases.

The following visiting speakers appeared before the Society during the year:
Dr. Warren H. McCulloch, Chicago — The Functional Organization of the Primate Cortex.

Dr. A. E. Bennett, Omaha, Neb. — Myasthenia Gravis: Curare Sensitivity as a New Diagnostic Test and Approach to Etiology.

Surg. Lieut. B. A. Campbell, R.C.N. — The Medical Officer at Sea.

Fl. Lieut. A. J. Elliot, R.C.A.F. — The Clinical Significance of Aniseikonia.

Dr. J. E. Samson, Cartierville, Que. — Our Experiences with Low-back pain.

Dr. A. T. Rasmussen, Minneapolis — The Organization of the Trigeminal Nerve in the Light of Recent Developments in Electrophysiology and Neurosurgery.

- Dr. D. E. Cameron, Albany, N.Y. — Some Disorders of Remembering.
Prof. S. Howard Bartley, Dartmouth, N.S. — Pupillary Reflexes in Connection with Visual Sensation.
Dr. W. O. Gliddon, Ottawa, Ont. — Gunshot Wounds of the Head. A Review of the After-effects in 500 Pensioners from the Great War 1914-18.

At the time of the Fall Clinical Convention of the Montreal Medico-Chirurgical Society in 1942, the Montreal Neurological Society arranged a special neurological program for a visiting group of neuropsychiatrists from Eastern Ontario, which was considered successful. It is hoped that this meeting will become an annual event.

In addition to its regular weekly meetings, the Montreal Neurological Society held three joint meetings with other sections of the Montreal Medico-Chirurgical Society and with other societies. At a meeting held with the Biological Seminar of McGill, Dr. Louis Rapkine of New York and Dr. Johannes Holtfreter of McGill spoke on "Experimental Embryology". Dr. Miland E. Knapp of the University of Minneapolis was invited to Montreal by this Society, and the Pediatric Section of the Montreal Medico-Chirurgical Society to discuss the Kenny treatment of poliomyelitis. The Montreal Neurological Society also collaborated with the Montreal Physiological Society to arrange a meeting where Dr. A. C. Corcoran, a distinguished graduate of McGill University, now on the staff of the Indianapolis City Hospital spoke on "Renal Hypertension".

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 daily public ward rate of \$3.50 (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 it often is, 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 textbook, \$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. Lester Weider:

For the Neurological War Research Fund \$500.00

From Mrs. Hobart Springle:

For the Hobart Anderdon Springle Research Fund \$5,500.00

CLASSIFICATION OF DISEASES

Nervous System Generally:

Neurosyphilis	82
Multiple sclerosis	33
Neuromyelitis optica	2
Progressive muscular atrophy	3
Amyotrophic lateral sclerosis	2
Familial periodic paralysis	1
Myasthenia gravis	3
Myotonia atrophica	1
Friedreich's ataxia	2

Meninges:

Meningocele or myelomeningocele	17
Chronic adhesive arachnoiditis	6
Acute purulent meningitis	13
Tuberculous meningitis	6
Benign lymphocytic choriomeningitis	2
Subdural abscess	2
Extradural abscess	2
Spontaneous subarachnoid hemorrhage	9
Traumatic meningeal hemorrhage	81
Subdural effusion	10
Post-traumatic headache	25
Other headaches	30

Brain:

Congenital anomalies	12
Hydrocephalus	23
Birth injury of brain	12
Acute encephalitis	5
Schilder's disease	1
Chronic encephalopathy	17
Brain abscess	9
Cerebral concussion	127
Cerebral contusion and/or laceration	39
Meningocerebral or cerebral cicatrix	20
Cyst of brain	4
Epilepsy	222
Syncope	5
Migraine	13
Narcolepsy	1
Carotid sinus syndrome	3
Chronic encephalopathy	12
Bulbar palsy	1
Paralysis agitans	5
Chorea	1
Double athetosis	1
Cerebral arteriosclerosis	10
Cerebral hemorrhage, thrombosis or embolism	27
Intracranial aneurysm	9
Cerebral atrophy	61
Intracranial calcification	1

Tumours of the Nervous System:

Blood vessel tumour	14
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Glioma	63
Perineurial fibroblastoma	3
Meningeal fibroblastoma	12
Sarcoma	6
Carcinoma	8
Pituitary adenoma	8
Craniopharyngioma	8
Tuberculoma	3
Neurofibromatosis	3
Cholesteatoma	2
Miscellaneous tumour	4
Unclassified tumour	9
Unverified tumour and tumour suspect	28

Spinal Cord:

Congenital anomaly	3
Acute anterior poliomyelitis	6
Post-poliomyelitic paralysis	6
Motor neuronitis	5
Radiculitis	1
Chronic myelopathy	7
Compression of spinal cord	35
Concussion, contusion or laceration of cord	7
Vascular lesion of cord	4

Cranial and Peripheral Nerves:

Mixed cranial nerve palsies	2
Lesions of optic nerves	11
Ocular palsy	6
Trigeminal neuralgia	25
Trigeminal paralysis, total	1
Peripheral facial palsy	6
Nerve deafness	8
Meniere's syndrome	14
Lesions of brachial plexus or branches	25
Lesions of lumbo-sacral plexus or branches	2
Multiple neuritis	2
Sciatica	10
Other neuralgias	11
Raynaud's disease	1
Scleroderma	1
Spasmodic torticollis	4

Mental Diseases:

Mental deficiency	12
Alcohol or drug addiction	25
Psychoneurosis	82
Manic-depressive psychosis	16
Schizophrenia	3
Paranoid conditions	1
Miscellaneous	29

Other Systems and Miscellaneous:

Developmental cranial and spinal anomalies	12
Spina bifida and cranium bifidum	20
Herniation of intervertebral disc	115
Hypertrophy of ligamentum flavum	2
Fracture of skull	126
Fracture and/or dislocation of vertebral column	58
Gun shot wound of head	4
Other fractures and dislocations	46
Lacerations, contusions, abrasions and/or hematomas	93
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