

MONTREAL NEUROLOGICAL INSTITUTE

ANNUAL REPORTS

EIGHTEENTH TO TWENTY-FIFTH

1952-53 - 1959-60

MONTREAL NEUROLOGICAL INSTITUTE



McGILL UNIVERSITY
EIGHTEENTH ANNUAL REPORT

1952-53

Eighteenth Annual Report

of the

MONTREAL NEUROLOGICAL INSTITUTE

and the

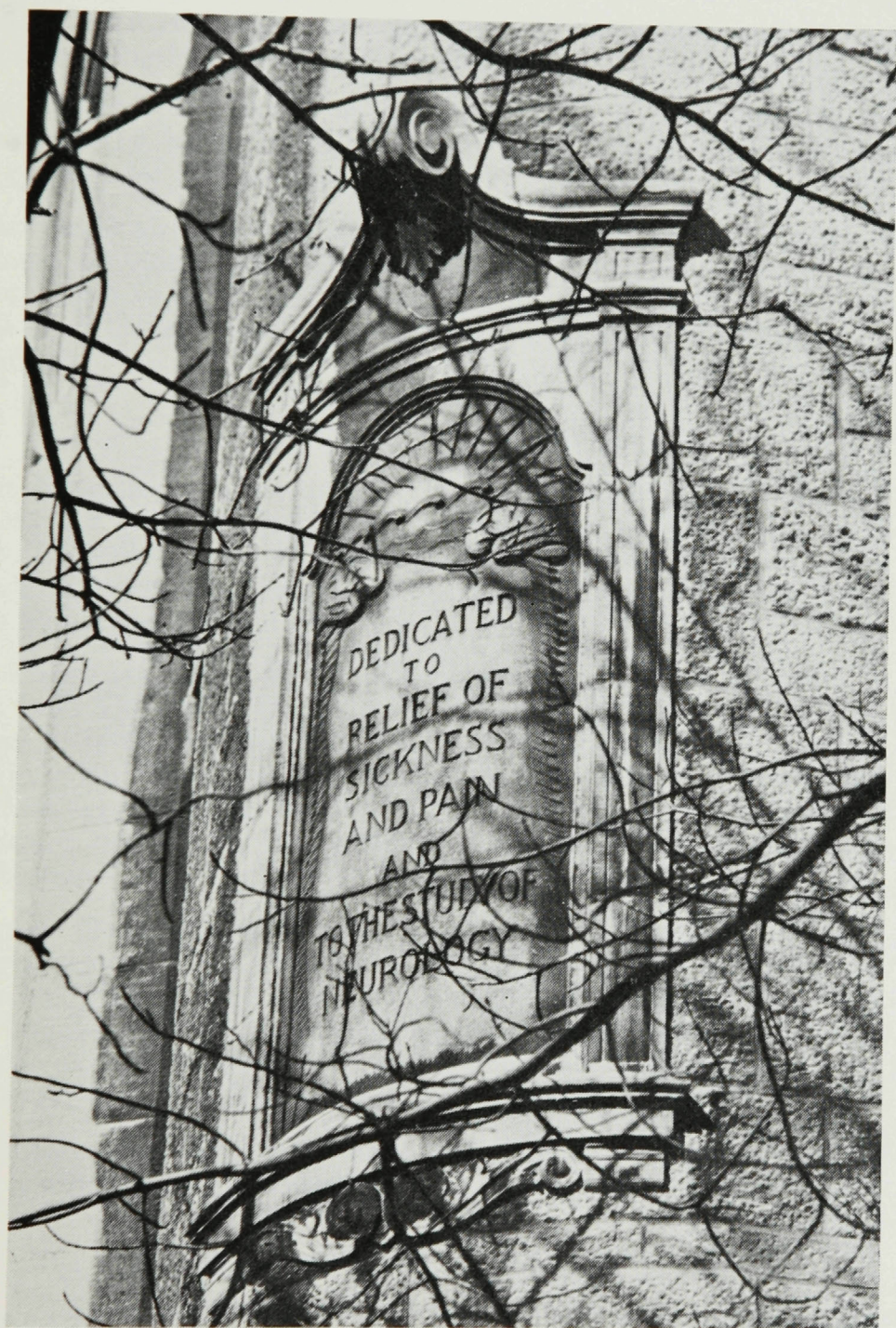
DEPARTMENT OF NEUROLOGY
AND NEUROSURGERY

MCGILL UNIVERSITY

1952-53

CONTENTS

Report of the Director	5
Clinical Staff	11
Consulting and Adjunct Clinical Staff	12
Teaching Staff	12
Staff of the Montreal Neurological Institute — Officers	14
Resident Staff	14
Fellows of the Montreal Neurological Institute	15
Nursing Staff	16
Appointments in other Teaching Hospitals	16
Report of the Neurologist	19
Report of the Neurosurgeon	20
Report of the Registrar	22
Report of the Business Manager	24
Report of the Director of Nursing	24
Department of Social Service	25
Department of Anaesthesia	26
Department of Radiology	27
Department of Neurochemistry	28
Donner Laboratory of Experimental Neurochemistry	29
Department of Electroencephalography	30
Department of Neurophysiology	31
Department of Neuroanatomy and Neurological Pathology	32
Laboratory of Multiple Sclerosis Investigation	33
Department of Neurosurgical Pathology	33
Photography	34
Fellows' Library	35
The Fellows' Society	35
Montreal Neurological Society	36
Graduate Studies and Research	37
Clinical Appointments and Fellowships	38
Courses of Instruction	39
Donations	41
Publications	42
Classification of Diseases	45
Classification of Operations	47
Items of Interest	49



REPORT OF THE DIRECTOR

WILDER PENFIELD

Mr. Principal: I am grateful for your remarks! But I realize very well that my own reputation, such as it is, in surgery, in science, in writing, is derived in no small measure from the achievements of William Cone and Herbert Jasper and the discriminating labour of Anne Dawson.

The duty of the Director in this Institute, as in other institutions, is to do those things which he cannot induce others to do. My associates have made brief reports of different departments.

Like the Walrus to the Carpenter, I shall speak of many things — of the professional activities housed here — of building construction. Finally, I shall bring you news — news that will make you glad that our Institute was built where it is, in Canada, and particularly in the Province of Quebec and the City of Montreal.

THE McCONNELL WING

The boom of dynamite and the drone of cement mixers formed the background to our Annual Meeting a year ago. This year the McConnell Wing, which is, in itself, a beautiful building of Montreal stone, stands complete. We still work on in cramped but happy quarters, hearing no more than the hum of the final manoeuvres within its interior.

The work is directed ably by the bilingual foreman, Stanley Cannon, of the J. L. E. Price Company. Details are being checked and rechecked now, as they have been from the beginning, by Dr. McNaughton, and Miss Flanagan. Meanwhile, Dr. Alan Elliott, at great sacrifice of time, which he should be spending in his chemical laboratory, follows every step in building and equipment with his colleagues on the job, Mr. Defries, acting for McGill, and Mr. Nesbitt for the architects.

During the coming summer, one after another of our activities will be transferred into the wing while essential supplementary alterations are made here in the main building. This will be carried out according to the dictates of Miss Eileen Flanagan. She has a genius for administration in the nursing field, but in other fields as well we know that, had she been a man, she would have made an able general. We are indebted to her for many things.

In the autumn all of the changes will have been completed, and the formal opening is scheduled for November.

HOSPITAL AND RESEARCH INSTITUTE

Within the Montreal Neurological Institute, there are two separable activities: a Neurological Hospital and a Brain Research Institute. Their functions differ
een separate.

The first is a public hospital, built and run for the relief of sickness and pain. It is a clearing house for desperate cases of nervous system disease drawn from

all the general hospitals. It is a source of consultation and leadership to physicians, neurologists and neurosurgeons elsewhere.

The second entity is a university research institute, supported by scientific endowments and grants. It is an institute in which basic research and applied research into the nature of diseases go hand in hand. It is an institute in which scientific neurology and scientific psychiatry must eventually meet in the long range study of the functions of the brain.

The Montreal Neurological Hospital, without the Brain Research Institute, would be a small special hospital without its consulting experts and without leadership. The Brain Research Institute, without its associated hospital, would lose its inspiration and much of its meaning. For each there is strength in union and cooperation.

PROFESSIONAL DEPARTMENTS

I have outlined the professional activities of this Institute in the following table which shows a sharp separation of hospitalization support from research support.

MONTREAL NEUROLOGICAL INSTITUTE

Hospitalization Budget THE MONTREAL NEUROLOGICAL HOSPITAL		Research & Teaching Budget THE BRAIN RESEARCH INSTITUTE
Clinical Services		Scientific Laboratories
Neurology	Combined Laboratories	Neurophysiology
Neurosurgery	Clinico-Scientific	Neuroanatomy
Nursing Service	Neuropathology*	Donner Laboratory of
Neuroradiology	Neurochemistry*	Exper. Neurochemistry
Electroencephalography	Neurophotography*	Brain Sclerosis
Anaesthesia		
Social Service		

*Support from Hospitalization Budget and Research Budget combined.

In spite of this cleavage, clinical research is carried out on the wards as well as in the laboratories and thus budgetary support does cross from the research side to the hospitalization side.

Dr. Cone has long urged the importance of this and he has set us a splendid example of how it should be done. He has set an example too of selfless service and of kindness to the sick, an example that has left its mark on every doctor and nurse who has been trained in this institution.

I shall make brief comments, almost at random, on certain professional departments.

In clinical neurology and in neurosurgery our aim is to provide for the closest association between the Institute and the other teaching hospitals of McGill. The coordination of instruction of medical students is only one of the reasons for this.

Dr. Preston Robb is developing pediatric neurology and has done splendid work in coordinating our clinical work with that of the Children's Memorial Hospital and also the Montreal General Hospital.

Dr. Harold Elliott, our long-time associate, has been appointed Chief of the Department of Neurology and Neurosurgery in the Montreal General Hospital. Dr. W. F. T. Tatlow of London has brought strength to his department and these men with Dr. Robb carry on the splendid tradition of service and cooperation between the General and the Institute that began with our former colleague Fred MacKay.

The passage of time has in no way lessened our feeling of loss in the death last year of Donald McEachern and John Kershman. Dr. Lloyd-Smith is following Kershman's example of a combined interest in electroencephalography and clinical neurology and reinforces our association with the Queen Mary Veterans' Hospital. But we feel the need of a neurologist who can work in biochemistry as McEachern did, although Donald Tower has handled his laboratory well.

The Department of Radiology, in cramped quarters that are used day and night, has had a very busy year with an increased number of graduate fellows and the beginning of long range research in radioactive materials. Dr. Doubleday of Sydney, Australia, has acted as assistant, and Dr. Laberge of the University of Montreal has carried on a research project.

Dr. Donald McRae has raised graduate teaching in neuroradiology to a high level. His influence on our clinical work is rapidly increasing. We hope to modify, in a reasonable manner, the full-time practice of radiology so that radiologists share more directly in the income of the department.

Electroencephalography, like neuroradiology, pays its own way. Unlike radiology it is a new discipline and Dr. Jasper is one of its pioneers, although he seems to me quite a young man. Thus, even the routine operation of this laboratory may be considered research. This fact is reflected in the enthusiasm of its many workers, from the technicians led by Lewis Henderson and Lilli Prisco to Jasper's able assistant, Dr. Ajmone Marsan.

In the Laboratory of *Neuroanatomy* where Dr. McNaughton holds his gentle sway, Dr. Jerzy Olszewski has prepared a monograph, with his assistant Dr. Baxter from Queen's University, a monograph on the Microscopic Structure of the Human Brain Stem. The publication of this scholarly study will be subsidized by the Canadian National Research Council like his preceding monograph on the brain stem of the monkey.

In the Donner Laboratory of *Experimental Neurochemistry*, Dr. K. A. C. Elliott and Dr. Donald Tower have continued their researches on brain metabolism and worked in excellent cooperation with other departments.

Brain Sclerosis. Dr. Roy Swank and his assistants have completed the fourth year of full-time research on the disease called multiple sclerosis and a large group of sufferers from this disease have shown very promising results during a 3½ year period.

ROYAL VICTORIA HOSPITAL

the terms of cooperation between the Royal Victoria Hospital and Montreal Neurological Institute has been drawn up and was duly signed by Governors of Hospital and University.

The new contract changes our relationship little. It defines more clearly the scale of charges made to the Institute by the Hospital for hospitalization services. At the same time the accounting of our clinical costs is transferred to the Institute where it is supervised by the Business Manager, Mr. D. C. Bain. He, in turn, renders statements to McGill University.

Dr. Gilbert Turner has accepted the position of Consultant in Hospitalization to the Institute, in addition to his responsibility as Executive Director to the Royal Victoria Hospital.

The professional organization is not altered. Some members of staff of the Institute are likewise members of staff of the Royal Victoria Hospital. Others are members of staff of the Montreal General and the Children's Memorial Hospitals. Some are members of staff of non-teaching hospitals of Montreal. Still others, like Dr. Saucier at the Hôtel Dieu and Dr. Amyot at Notre Dame, are members of staff of the French-speaking hospitals associated with the University of Montreal. Dr. Caron and Dr. Jean Sirois, whose first allegiance is to the Quebec teaching hospitals of the University of Laval, are also on our consulting staff.

But our relationship to the Royal Victoria is closest of all. It might be said that the Neurological Institute lives on in the Royal Victoria family like a son, who earns his own living. He may build himself a cottage, next door. But he is bound to his parent by many ties of affection and of mutual service and understanding.

CITIZENSHIP

The Montreal Neurological Institute has a function which the casual observer would not suspect. It serves as a melting pot for Canadian citizenship.

Herbert Jasper, Professor of Experimental Neurology, who was born in the United States and whose university education was carried out in Washington, Iowa, Paris and McGill, became a Canadian citizen during the past year. Alan Elliott, who was born in South Africa and who completed his education at Cambridge, England, has done the same. Jerzy Olszewski, born in Poland, is in the process of Canadian naturalization, and Choh Luh Li, born in China, likewise.

Canadians may take reasonable pride in these acts, for these men are outstanding scientists. They have all of them refused flattering offers from universities elsewhere. But they have chosen to cast in their lot, once and for all, with us and to accept the full responsibilities of citizenship.

REORGANIZATION

In 1949, we were forced by rising postwar costs, by increased demand for our hospital beds and the expanding opportunity for productive research, to face *reorganization* or *failure*. The fourteenth Annual Report, which the Director read that year, closed with something like a cry of despair in these words:

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

The plan of reorganization was directed toward three objectives:

1. To put an end to mounting hospitalization deficits—Annual grants were sought from Province and City.
2. The building of a wing to provide enlarged accommodation for patients so that we could satisfy the demands from Province and City for the specialized service which only a neurological institute can render.*
3. For adequate evolution of scientific research — Increased endowment.

When I began to write this report, the second objective, the building of the wing, was assured. But the first and the third objectives were only partly realized, and the anxiety which I had felt for four years, ever since we faced the necessity of reorganization at the Annual Meeting of 1949 was still present.

There was some consolation in the fact that a generous American, Mr. Wm. H. Donner, had endowed experimental neurochemistry through the Donner Canadian Foundation last year.

It was reassuring to recall that the Province of Quebec promised an annual grant of \$90,000 for public patient deficits, more than two years ago. Indeed, we would never have proceeded with the campaign for building-funds at all, if we had not had this assurance from Mr. Duplessis and if we had not had what we thought was a reasonable hope of continued help from the City.

We had not asked the City for assistance with the costs of building the original Institute nor the costs for building the present wing. That was done largely by generous citizens of Montreal aided by the Federal and Provincial contribution for new bed construction. But we had asked the City for the promise of an annual grant for public patient deficits, and without it failure was inevitable.

Now I may give you good news! Some two months ago, one of our original benefactors offered to set up a fund of one million dollars, to be known as the Lily Griffith McConnell Foundation for Neurological Research. This was intended to complete the financial objectives of the Montreal Neurological Institute.

Furthermore, I am happy to announce that, through the good offices of the Executive Committee and of his Worship, the Mayor of Montreal, who is, fortunately, with us today, that the necessary finances for the care of public patients have been made secure, thanks to the generous contribution by the City of Montreal of the sum of \$67,500.00 annually for twenty years. This recommendation will come before the Council, I am told, in June.

I hope His Worship will bring to his colleagues in the City Hall our personal thanks as well as the gratitude of the University and of all our friends. Future patients may well be grateful to them and to the Government of the Province of Quebec.

Thus, our first objective has been reached after all. The neurological hospital can now be operated successfully. I think we can assure the University, Mr. Principal, that with due care for economy and efficiency it will be operated without deficit. We had no hospitalization deficits during the first 10 years of this Institute and we have never had deficits of our scientific budget.

*Dr. Lloyd-Smith points out in the Registrar's report that 28% of our patients during the past year came from the City of Montreal, 26% from the rest of the Province, 31% from the rest of Canada, 13% from the United States, and 2% from other countries.

There is little more to say, and if there were, my heart is too full for me to say it properly.

History has repeated itself. Twenty years ago, the Rockefeller Foundation of New York offered one million dollars to endow brain research in a neurological institute here, provided there was evidence that the associated neurological hospital would be supported locally in this province.

The City of Montreal, through Mr. Houde, who was then Mayor, promptly offered to make a twenty-year contract for hospital support, and the Province followed suit. The result of that action was the birth of this Institute.

But birth was not possible at once. First, it was necessary to find public-spirited citizens who would join the Rockefeller Foundation in building the Institute. Even at that time, it was Mr. J. W. McConnell who came forward, and with Sir Herbert Holt, Mr. Walter Stewart, Dr. and Mrs. Lewis Reford, and Mr. and Mrs. A. A. Hodgson, provided the needed building funds.

Twenty years later, the Province and City have increased their support of hospitalization in equal proportion. This action has been followed by the private contributions which built the McConnell Wing. And finally, after all these steps, the original research endowment has been doubled.

Good buildings are excellent. They are a prerequisite to the nursing and treatment of the sick according to the way of life in Canada, which is so much more elaborate than in many parts of the world. They are prerequisite to efficient laboratory work. But buildings are not enough.

Balanced hospital budgets are excellent. They are evidence of economy and efficiency of operation and, in our case, an evidence that Province and City have given us their approval of the medical work carried out within these walls for the sick of this Province. But a balanced hospital budget is not enough.

After all these things do the general hospitals seek, and rightly so.

But for the workers in a research institute there is something more. Before us lie the unsolved problems of the nervous system, problems that have to do with the secrets of body and mind, and perhaps some day and in some way we may discover that solution of these problems may throw a little light on the nature of the soul.

With the use of the income from the Lily Griffith McConnell Foundation for Neurological Research, the work of the Brain Research Institute can be established now on a firm and permanent footing.

We are indeed grateful that this Institute was situated, and has been allowed to develop, in this bilingual city in the heart of what has sometimes been called French Canada.

We are proud of the heritage of this Province, which is now our heritage also; proud of the culture and sagacity that comes to us through our French ancestors, and the traditions of democracy and freedom that come to us from Great Britain. We are proud of the position of this Institute in the British Commonwealth of Nations. In this year of the Coronation, we are proud to own allegiance to our gracious Queen, Elizabeth the Second.

CLINICAL STAFF

Director

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

Honorary Neurologist

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

Neurologist

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

Associate Neurologists

DONALD LLOYD-SMITH, B.Sc., M.D., C.M., F.R.C.P.(C)

PRESTON ROBB, B.Sc., M.Sc., M.D., C.M.

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

ARTHUR YOUNG, M.D., C.M., F.R.C.P.(C)

Clinical Assistants in Neurology

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

REUBEN RABINOVITCH, B.A., M.D., M.Sc.

BERNARD GRAHAM, B.A., B.Sc., M.D., C.M.

BERNARD SMITH, M.B., Ch.B.

WILLIAM TATLOW, M.D., M.R.C.P.

DONALD TOWER, A.B., M.Sc., Ph.D., M.D.

Neurosurgeon

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

Associate Neurosurgeon

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

Clinical Assistants in Neurosurgery

JOHN HANBERY, A.B., M.D.

LAMAR ROBERTS, A.B., M.D., M.Sc., Ph.D.

WILLIAM FEINDEL, B.A., M.Sc., D.Phil., M.D., C.M.

Roentgenologist

DONALD McRAE, M.D.

Assistant Roentgenologist

LEONARD DOUBLEDAY, M.D., D.D.R.

Electroencephalographer

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

Assistant Electroencephalographer

COSIMO AJMONE-MARSAN, M.D.

Anaesthetist

ANDRÉ PASQUET, B.A., M.D., C.M.

Associate Anaesthetist

R. G. B. Gilbert, M.B., B.S., M.R.C.S., L.R.C.P., D.A., F.R.C.P.(C), F.A.C.A.

Assistant Anaesthetist

JOHN DAVIES, M.R.C.S., L.R.C.P., D.A., R.C.S.

Neurochemist and Donner Fellow

K. A. C. ELLIOT, MSc., Ph.D., Sc.D.

Associate Neurochemist

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

Associate Neuroanatomist

JERZY OLSZEWSKI, Ph.D., M.D.

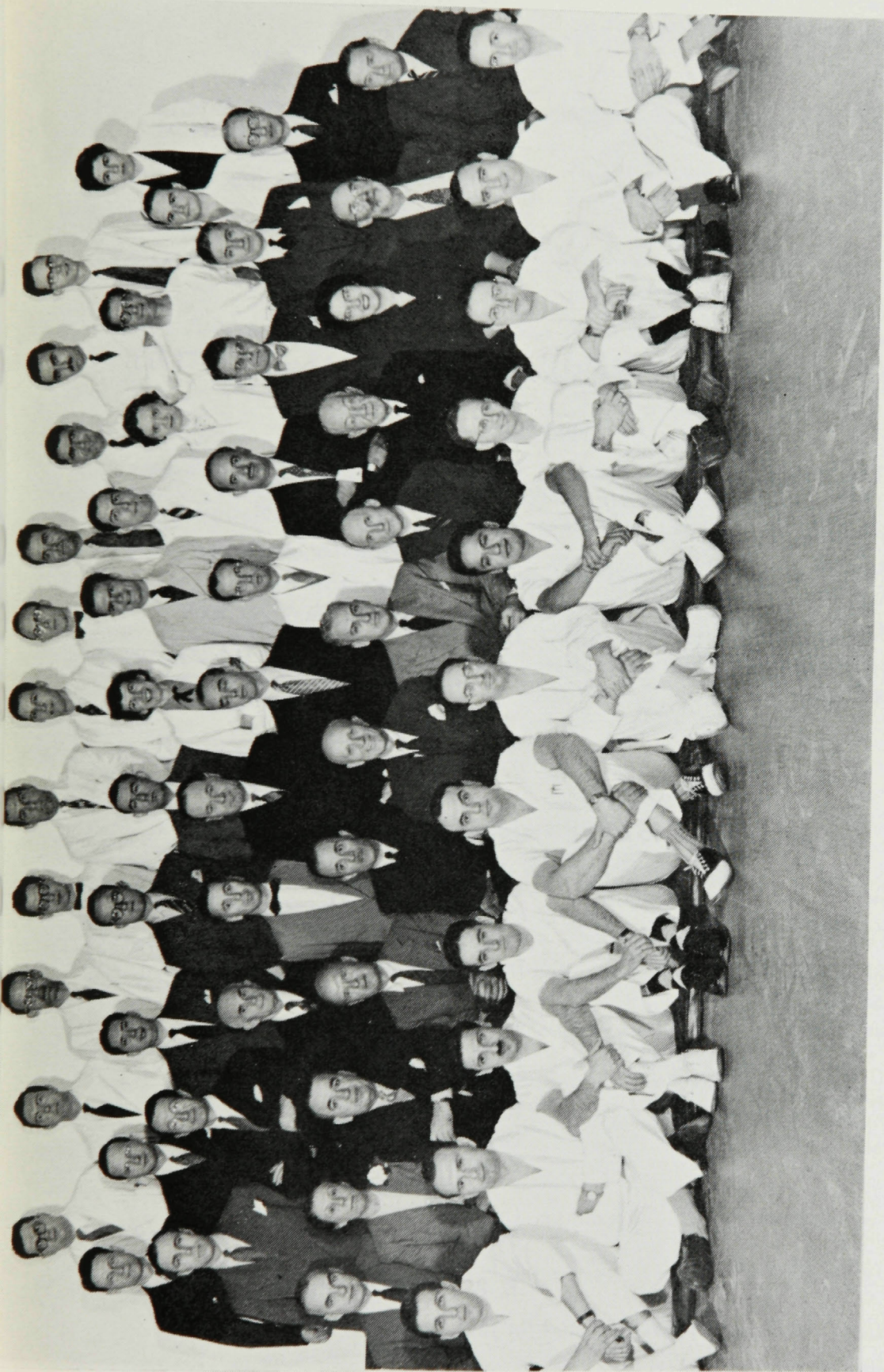
CONSULTING AND ADJUNCT CLINICAL STAFF

Consulting Neurologists	ROMA AMYOT, B.A., M.D., (Montreal and Paris) SYLVIO CARON, M.D., F.R.C.P.(C) JEAN SAUCIER, B.A., M.D., (Paris and Montreal) NORMAN VINER B.A., M.D., C.M.
Adjunct Neurosurgeons	CLAUDE BERTRAND, B.A., M.D., F.R.C.S. HAROLD ELLIOT, B.Sc., M.D., C.M. JEAN SIROIS, B.A., M.D.
Consulting Anaesthetists.....	HAROLD R. GRIFFITH, M.M., B.A., M.D., C.M., F.A.C.A., F.I.C.A. F.F.A.R.C.S. (Eng.), F.R.C.P.(C) F. A. H. WILKINSON, M.D., C.M., F.A.C.A., F.I.C.A.
Consulting Bacteriologist	E. G. D. MURRAY, O.B.E., M.A. (Cantab), L.M.S.S.A. (Lond.), F.R.C.S.
Consulting Pathologist.....	LYMAN DUFF, B.Sc., M.A., M.D., Ph.D. (Tor.), F.R.C.S.
Consulting Roentgenologist	CARLETON PIERCE, A.B., M.Sc., M.D., F.R.C.P.

TEACHING STAFF

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

Professor of Neurology and Neurosurgery, Chairman of Department	WILDER PENFIELD
Professor of Neurosurgery	WILLIAM CONE
Professor of Experimental Neurology	HERBERT JASPER
Associate Professor of Neurology.....	FRANCIS MCNAUGHTON
Associate Professor of Experimental Neurology	K. A. C. ELLIOTT
Assistant Professors of Neurology	PRESTON ROBB ARTHUR YOUNG
Assistant Professors of Neurosurgery.....	HAROLD ELLIOTT ARTHUR ELVIDGE
Assistant Professors of Experimental Neurology	DONALD TOWER ROY SWANK
Assistant Professor of Neurological Radiology.....	DONALD McRAE
Assistant Professor of Neuroanatomy	JERZY OLSZEWSKI
Lecturers in Neurology	C. MILLER FISHER BERNARD SMITH DONALD LLOYD-SMITH
Lecturers in Neurosurgery	WILLIAM FEINDEL JOHN HANBERY LAMAR ROBERTS
Lecturer in Experimental Neurology.....	C. AJMONE MARSAN
Demonstrators in Neurology.....	BERNARD GRAHAM REUBEN RABINOVITCH
Demonstrator in Neuropathology	JOSEPH STRATFORD
Demonstrator in Electroencephalography	LEWIS HENDERSON



Fifth Row: J. ROTH, L. DOUBLEDAY, D. INGVAR, C. CULLEN, F. MCCONNELL, G. BERTRAND, J. STEVENSON, P. GLOOR, G. OLSZEWSKI, C. A. MARSAN, D. BAXTER, S. KARAGULLA
 Fourth Row: D. LLOYD-SMITH, A. PASQUET, J. HANBERRY, W. TATLOW, D. TOWER, M. DILWORTH, H. MILLER, J. STRATFORD, H. PAPIUS, R. AQUILINA, R. BOURNE.
 Third Row: P. ROBB, R. GILBERT, N. VINEY, R. SWANK, A. YOUNG, D. BAIN, B. GRAHAM, R. RABINOVITCH, K. A. C. ELLIOTT, A. ELVIDGE, H. JASPER.
 Second Row: D. McRAE, E. FLANAGAN, W. CONE, J. WHITE, PRINCIPAL C. JAMES, W. PENFIELD, J. G. TURNER, F. McNAUGHTON, C. RUSSEL, J. BEATTY, E. G. D. MURRAY, J. D. JOHNSON.
 Front Row: I. HELLER, L. ANTONIK, F. HADDAD, A. MARTINEZ-COLL, G. DUGGER, W. FEINDEL, A. ORTIZ, D. HUBEL, A. ROTHBALLER, D. POWER, W. WIELHORSKI.

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

Professors	WILLIAM CONE
(Chairman)	HERBERT JASPER
	WILDER PENFIELD
Associate Professors	FRANCIS MCNAUGHTON
	K. A. C. ELLIOTT
Assistant Professors	ARTHUR ELVIDGE
	JERZY OLSZEWSKI
	ROY SWANK

STAFF OF THE MONTREAL NEUROLOGICAL INSTITUTE

OFFICERS

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

RESIDENT STAFF — July 1952 - July 1953

Senior Resident	WILLIAM FEINDEL
Neurosurgical Residents	GORDON DUGGER**
	JOHN HANBERY**
Neurological Resident	IRVING HELLER
Neurological Service	
Assistant Residents	DAVID HUBEL, L. ANTONIK,
	D. L. WILANSKY*, M. R. DUFRESNE*,
	JAMES GIBBONS*, R. BOURNE*.
Neurosurgical Service	
Senior Assistant Resident	ROBERT AQUILINA
Assistant Residents	GORDON DUGGER**, ALAN ROTHBALLER,
	FUAD HADDAD, ARMANDO ORTIZ,
	F. L. MCCONNELL
Residents in Anaesthesia	J. T. BELDAVS**, I. AAVIK**,
	W. A. WIELHORSKI**, DAVID POWER**
Residents in Neuroradiology	J. L. STEVENSON†, J. LABERGE†,
	B. B. HALE†, B. MCPHILLIPS†

*On rotation from Royal Victoria Hospital for four months.

**Six months on this service.

†Four months on this service.

FELLOWS OF THE MONTREAL NEUROLOGICAL INSTITUTE

1952-1953

<i>Neuropathological Fellow</i>	JOSEPH STRATFORD, B.Sc., M.Sc., M.D., C.M. (McGill)
<i>Electroencephalographic Fellows</i>	GUY COURTOIS, B.A., M.D. (Montreal) JOHN VAN BUREN, A.B., M.D. (Columbia), M.Sc. (McGill)
<i>Neuroanatomical Fellows</i>	CLAUDE BÉLANGER, B.A., M.D. (Laval) JOHN ROTH, A.B., M.D. (Kansas)
<i>Duggan Assistant Neuropathological Fellows</i>	JOHN ROTH, A.B., M.D. (Kansas) LAMAR ROBERTS, A.B., M.D. (Duke), M.Sc., Ph.D. (McGill)
DONALD BAXTER*, M.D., C.M. (Queens)	SHAFICA KARAGULLA, B.A., M.D. (Beirut)
GILLES BERTRAND, B.A., M.D. (Montréal)	CHOH-LUH LI***, B.A., M.D. (Shanghai)
CHESTER CULLEN, B.S., M.D. (Jefferson)	DONALD LLOYD-SMITH†, B.Sc., M.D., C.M. (McGill)
MARGARET DILWORTH**, B.S., M.D. (Pennsylvania)	ALBERTO MARTINEZ-COLL, M.D. (Venezuela)
PIERRE GLOOR, M.D. (Basle)	KENNETH PAINE††, M.B., B.S. (London)
JOHN HANBERY, A.B., M.D. (Stamford)	BERNARD SMITH, M.B., Ch.B. (Aberdeen)
DAVID INGVAR, M.D. (Lund)	DONALD TOWER†††, A.B., M.Sc., Ph.D., M.D. (Harvard)

*N. R. C. Fellowship.

**U.S. Public Health Research Fellowship.

***Canadian Foundation for Poliomyelitis Research Fellowship.

†Borden Neurological Fellowship.

††Lewis Reford Fellowship

†††Markle Fellowship.

NURSING STAFF

<i>Director of Nursing</i>	MISS EILEEN C. FLANAGAN, B.A., R.N.
<i>Assistant Directors of Nursing</i>	MISS BERTHA CAMERON, R.N.
	MISS RUTH A. MACDONALD, B.N., R.N.
<i>Instructor</i>	MISS C. WACOWICH, B.N., R.N.
<i>Night Supervisor</i>	MISS ELIZABETH BARROWMAN, R.N.
<i>Assistant Night Supervisor</i>	MISS R. BROWN, R.N.
<i>Operating Room Supervisor</i>	MISS MARGARET HAGGART, R.N.
<i>Assistant Operating Room Supervisor</i>	MISS PHOEBE STANLEY, R.N.
<i>Supervisor, Dressing Rooms</i>	MISS I. HERDAN, B.N., R.N.

HEAD NURSES

MISS I. MACMILLAN, R.N.	MISS P. MURRAY, R.N.
MISS M. CAVANAUGH, R.N.	MISS A. JOHNSON, R.N.
MISS J. STANLEY, R.N.	MISS J. FRASER, R.N.

APPOINTMENTS HELD IN TEACHING HOSPITALS OF MONTREAL BY MEMBERS OF STAFF

ROYAL VICTORIA HOSPITAL

<i>Neurologist and Neurosurgeon-in-chief</i>	WILDER PENFIELD
<i>Honorary Neurologist</i>	COLIN RUSSEL
<i>Neurologist</i>	FRANCIS McNAUGHTON
<i>Neurosurgeon</i>	WILLIAM CONE
<i>Associate Neurologists</i>	PRESTON ROBB
	ARTHUR YOUNG
<i>Associate Neurosurgeon</i>	ARTHUR ELVIDGE
<i>Electroencephalographer</i>	HERBERT JASPER
<i>Assistant Neurologists</i>	DONALD LLOYD-SMITH
	ROY SWANK
<i>Clinical Assistant in Neurology</i>	REUBEN RABINOVITCH
<i>Assistants in Outdoor Clinics</i>	BERNARD SMITH

MONTREAL GENERAL HOSPITAL

<i>Neurosurgeon and Chairman</i>	HAROLD ELLIOTT
<i>Neurologist</i>	PRESTON ROBB
<i>Associate Neurologist</i>	MILLER FISHER
<i>Clinical Assistant in Neurology</i>	BERNARD GRAHAM
<i>Clinical Assistant in Neurology and</i>	
<i>Electroencephalographer</i>	WILLIAM TATLOW
<i>Consulting Neurosurgeons</i>	WILLIAM CONE
	ARTHUR ELVIDGE
	WILDER PENFIELD
<i>Consulting Neurologists</i>	HERBERT JASPER
	FRANCIS McNAUGHTON
<i>Honorary Attending Staff</i>	NORMAN VINER



Front Row: E. SCHOFIELD, P. STANLEY, C. WACHOWICH, A. EAGLES, K. MANN, V. STORLE, J. RANGER.
 Second Row: I. HERDAN, I. MACMILLAN, R. A. McDONALD, E. FLANAGAN, B. CAMERON, C. WACOWICH, E. BARROWMAN,
 M. CAVANAUGH, M. HAGGART.
 Third Row: G. GOLDEN, P. RATTRAY, M. KLUYTMANS, S. PETRIE, J. FRASER, M. WHEATLEY, M. CALLAGHAN, G. JOTIC,
 M. CORRIGAN, D. MACDONALD, K. GRIER, K. AINGER, D. MILLER.
 Top Row: C. LAWRENCE, R. BROWN, R. DICKSON, G. MARCOTTE, A. CAMERON, R. BEVAN, N. SIDDONS-GRAY, M. LAROSE,
 R. CHOQUETTE, P. PERRON.

CHILDREN'S MEMORIAL HOSPITAL

<i>Honorary Consultant</i>	COLIN RUSSEL
<i>Consultants</i>	WILLIAM CONE
	ARTHUR ELVIDGE
	DONALD McRAE
	WILDER PENFIELD
	FRANCIS McNAUGHTON
<i>Director of the Department of Neurology</i>	ARTHUR YOUNG
<i>Neurologist</i>	PRESTON ROBB

HOTEL DIEU

<i>Chief of Neurological Service</i>	JEAN SAUCIER
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HÔPITAL NOTRE DAME

<i>Neurologist-in-Chief</i>	ROMA AMYOT
<i>In charge of Department of Neurosurgery</i>	CLAUDE BERTRAND

REPORT OF THE NEUROLOGIST

DR. FRANCIS McNAUGHTON

The Department of Neurology has completed a busy and satisfactory year, thanks to the steady work and the good will of every staff member. I would like to give particular praise to the house staff, and the Neurological Resident, Dr. Irving Heller, for their devoted work on the wards and in the Outpatient Clinics. I would also make special mention of the men who rotate to the Neurological Department every three months from the Royal Victoria Hospital. All have shown a genuine interest in the work, and contributed much. They help to link us in a very personal way with the Department of Medicine.

We have developed another valuable affiliation with the Children's Memorial Hospital which we hope to maintain and develop. Each week, one of our house staff has assisted Dr. Robb with his Neurological Outpatient Clinic and it has proved a happy arrangement for both departments.

Dr. Bernard Smith continued with us as Teaching Fellow until April 1953, when he accepted an important teaching post at the University of Buffalo. We regret his leaving us. With the aid of a Federal-Provincial Public Health Grant, he has completed trials of a promising new anticonvulsant drug (Mysoline) and is finishing a broad study of temporal lobe epilepsy. With the assistance of Mrs. von Nida, he has improved the organization of the Seizure Clinic. His weekly clinical demonstrations for the house staff were very popular, and we hope that it will be possible to continue similar teaching demonstrations next year.

Another satisfactory development this year has been the weekly clinico-pathological conference conducted for the neurological staff by Drs. Olszewski and Fisher. We expect it to continue as a regular event and it should be a valuable addition to the teaching program.

Our relationship with the Social Service Department is a close one and we were sorry to see Miss DeBrisay leave the Institute, but rejoice in the appointment of Miss Joyce Beatty as her successor. We look forward to her help in many ways, and particularly in relation to the social problems of our many epileptic patients.

There has been no change in the organization of outpatient services this year. Special clinics for neuromuscular diseases, epilepsy and multiple sclerosis are being maintained.

From its nature, clinical neurology must be in large part a diagnostic specialty, and much of a neurologist's time is spent in consultation in other hospital departments, for the nervous system has an interesting way of getting intertwined with every other system in the human body.

On the other hand, the neurologist has more and more to offer in the way of medical therapy and each year brings new advances though his results are often less spectacular than those of the neurosurgeon. Both neurology and neurosurgery have a vital interest in the field of rehabilitation and we welcome new developments in which we may play a part.

The prospect of more hospital beds in the McConnell Wing is a heartening one. It will now be possible, we hope, to keep our patients in hospital for more adequate periods of observation and treatment, but it also offers new and challenging opportunities to broaden the field of neurology.

REPORT OF THE NEUROSURGEON

DR. WILLIAM CONE

Time passes very quickly when urgent, interesting and vitally significant work is always at hand. This year has rushed by. It had seemed that beds lost when the annex was torn down to make way for the new building would slow the tempo and decrease the volume of the work of the Neurosurgical Department for the year. Statistics prove otherwise. We were unceasingly busy, and somehow managed to admit 1,206 patients to the service and carry out 944 operations. It was not easy to do this. Overcrowding was a hazard. Nevertheless, standards of diagnosis, treatment and care were not lowered.

The event of the year which gives us most pride is the honour bestowed on Dr. Penfield. Her Gracious Majesty, Queen Elizabeth II, awarded him the Order of Merit.

The entire staff has been grateful for the equipment the government grant enabled us to get. The new cribs for young children, with their wind-down head ends, make dressings easier and safer. The little patients are much more accessible for neurological examination and treatment. The new adult beds can still be improved on though they have many advantages for patients and staff; not the least of which are their lightness and the ease with which they can be moved.

The cervical traction frame, which the late Mr. G. E. Duggan designed for us years ago and made himself in the workshop at the Dominion Bridge, has been simplified and lightened. It can be easily fitted to any of the beds in the Institute and provides the same safe and smooth adjustment as the original. The first model still hangs on the wall of the storage room. It is kept there both for sentimental reasons and because there are occasionally so many patients in the Institute with fractures of the cervical spine requiring traction that it still must be used.

The 1952 model of the frame used to turn patients who have fractures of the thoracic or lumbar spine can also be attached to any of the beds simply and quickly. It is light and its component parts require little space for storage. The original model developed for us by Simmons Limited proved its worth, but had limitations which have been overcome in this latest model. No matter how heavy the patient is, turning can be painlessly accomplished and without danger of movement to the injured part. The entire management of the patient is safer and more satisfactory. For example, the rectangular frame with the patient on it can be readily lifted from the sockets in which it turns, serving as a stretcher. The patient can be transferred on it from the bed to the x-ray table without causing movements of the spine and pain. Only the patient who is too tall to fit the bed is too big for the turning frame.

The operating room has benefitted too by the government grant. Old equipment has been modified and brought up to date. Replacement of worn instruments has been possible. Entirely new instruments have been obtained to help perfect the execution of many of the operative procedures.

A new operating table of unique design, complete with accessories, has been delivered and claimed by Dr. Elvidge. Both the table and its accessories are made largely of dural. The table weighs little for an operating table — much less than Dr. Elvidge weighs. It can be lifted by one man; two nurses could load it onto a truck. The table was evolved from one made by Simmons Limited for No. 1 Canadian Neurological Hospital in late 1939. All of the standard postures required in neurosurgical operating, including sitting position, are obtainable. In general, orthopaedic, and otolaryngological surgery it could be used advantageously too. Though the table is light, stability has not been sacrificed. It is well balanced and easily moved. Perhaps authorities in Ottawa can be interested in the new table for military purposes.

In 1936, the late Dr. Lyman Barton, Sr., of Plattsburgh designed for us tongs that could be applied to the skull below and slightly in front of the parietal eminences and so provide for traction on the cervical spine to reduce a fracture dislocation. Heavy traction on such tongs properly placed was theoretically sound and was soon proven to be safe and comfortable. It is fitting that the tongs have been improved at the same time that the newest Duggan cervical traction frame has become available, for the two are complementary. Mr. Duggan was interested in the complete unit for personal reasons. He was the first patient on whom the Barton tongs were used.

We are apt to take equipment for granted. It is because I have wanted you to be familiar with the history of the origin and developmental evolution of equipment originating here that I have told you about some of it in this detail.

You are all aware of the important part Stanley Ellis played in the development of new equipment. The void left by his sudden death is made obvious daily when equipment he watched through developmental stages needs servicing.

I should like to thank Mr. Henry Beaudet, of the Central Machine Works, for his sincere interest and cooperation in the development of our ideas. With rare understanding of the problems which we have presented him, and with ready sound practical answers to them, he has delivered the new models I have described.

There have, of course, been other very significant additions to equipment, among which are an adult size and infant size Emerson Respirator and an Emerson Rocking Bed. They are valuable additions which would certainly have been described in detail had they been developed here.

This year was a good one. To the other members of the Institute's family, we of the Neurosurgical Department express our respects and thanks for their cooperation in a year of worthwhile and happy work.

REPORT OF THE REGISTRAR

DR. DONALD LLOYD-SMITH

This year's work was accomplished under an unprecedented shortage of accommodation in relation to the demands made upon it. It is a tribute to the patience and perseverance of all members of the staff, particularly the nursing staff, that our year's record shows no significant reduction in the number of patients admitted and treated. In 1952, a total of 1,836 patients were admitted to the Institute as compared with a total of 1,839 admitted in 1951. In addition, a further 27 patients were admitted to the neurological and neurosurgical services, but accommodated in the Royal Victoria Hospital.

Other aspects of clinical work also kept pace with previous years. Surgical operations totalled 944, exceeding the number in most previous years. The death rate for admissions was 3.9%, a reduction of 0.5% as compared with 1951. The autopsy rate continued at the high level required of a teaching hospital, namely 92%. The duration of the average admission to the Institute was 17.3 days while the total number of patient days reached 31,725.

The special departments carried an increased load, the Department of Radiology making 6,928 examinations and the Department of Electroencephalography 2,199 examinations, both figures exceeding previous years.

The neurology and neurosurgery outpatient clinics continued their intensive activities with heavy demands being made for their services. In the neurology clinics, 487 new patients were examined, and there were 3,266 revisits, while in the neurosurgery clinics 206 new patients were examined with 627 revisits, making a combined total for both clinics of 4,586 patient appointments.

In addition to the regular neurological clinics, special clinics for epilepsy, for multiple sclerosis, as well as the special treatment clinic, continued their activities. The Neurology Treatment Clinic had 439 patient appointments which included trials of newer methods of treatment. The Multiple Sclerosis Physiotherapy Center had 822 individual patient treatment appointments.

A second aspect of the work of the Institute includes the very active research program carried forward by a group of approximately 20 research fellows. Their studies included problems in the field of multiple sclerosis and epilepsy, as well as fundamental problems of the physiology and chemistry, the pathology and anatomy of the nervous system. The crowded teaching schedule of the Institute included courses for fellows and medical students, and for nurses at both student and graduate levels.

Much of the work of the Registrar's office is concerned with maintaining the high standard of the Institute's records in an attempt to keep them second to none. The case history is typewritten in its entirety and upon discharge from hospital, a typewritten discharge summary of all relative findings is prepared for records and for use of referring doctors. Diagnoses are made to conform with the Standard Nomenclature, then coded and transferred to a punch card system. A special classification of seizure cases is used to assist clinical research in epilepsy.

A large number of visiting clinical and research workers have called at the Institute in the past year and have visited the various departments in which they were interested. Such visits are always stimulating and welcome. Our Visitors' Register records names from many widely separated regions of the globe.

Much of the work in the past has been hampered by crowding and lack of adequate facilities. However, with increased accommodation and improved facilities now in sight we anticipate that future reports will be able to record further achievements.

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

Year	Patients cared for	Hos- pital Days	Average Stay	Death Rate	Autopsy Rate	Opera- tions
1943	1623	29718	18.3	3.97%	77.0%	742
1944	1657	30501	18.4	5.1%	65.0%	864
1945	1681	34223	21.4	4.28%	64.5%	955
1946	1871	35521	19.9	2.9%	67.7%	864
1947	1752	34456	19.6	3.76%	88.2%	904
1948	1773	33366	19.1	5.7%	94.4%	987
1949	1831	32255	17.6	4.2%	73.8%	823
1950	1862	35434	19.0	4.99%	87.96%	926
1951	1839	33555	17.4	4.4%	68.9%	1029
1952	1863	31725	17.3	3.9%	92%	944

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

Monday.....	Neurology & Neuromuscular Diseases
Tuesday.....	Neurosurgery
Wednesday	Neurology (Epileptic)
Thursday.....	Neurology
Friday	Neurosurgery
Monday to Friday (daily)	Neurology Treatment Clinic
	Multiple Sclerosis Physiotherapy Centre

Outpatient Clinic Work

Year	Neurology		Neurosurgery		Total
	New Patients	Revisits	New Patients	Revisits	
1950.....	577	3430	219	695	4921
1951	543	3509	122	833	5007
1952.....	487	3266	206	627	4586

REPORT OF THE BUSINESS MANAGER

DONALD C. BAIN

During the year 1952, 1,836 patients, representing a total of 31,725 days' care, were admitted to the Institute. The year has been a period of transition, a period during which the full impact of reduced accommodation, due to the demolition of the annex, has made itself felt. Therefore, it is not surprising to learn that these figures are somewhat lower than those of previous years.

It had been anticipated that there would be a decline in the number of days' care that could be given to patients. However, due to the whole-hearted effort of the staff, and, in particular, the nursing staff, the consequences of this loss of accommodation has been kept to a minimum, the number of days' care being only 1,830 less than the previous year. There has not been any significant change in the average length of stay of a patient in hospital, i.e., 17.3 days.

On the financial side it is to be reported that the cost of operation has continued to rise despite all efforts of control. The price of supplies has risen and slight increases in wages have had to be paid. Consequently, the cost of providing proper care for each patient has risen to a new high of \$20.73 per diem. It must be said, however, that the decline in the number of days' care that could be provided to patients is a factor to be kept in mind when considering such costs, as certain items of overhead still continue more or less irrespective of the number of patients hospitalized. Some amelioration of this condition may be expected in the near future when an increase in accommodation and other facilities become available on completion of the new wing.

Of the 31,725 days' care provided patients during this year, 19,409, or 61%, were provided to patients in the public category. Of this group, some 132 patients came under the provisions of the Quebec Public Charities Act. Last April, the rate of payment for the hospitalization of these patients was increased from \$4.00 to \$5.50 per diem. This, obviously, is considerably less than the cost of providing adequate care and the hospital has had to absorb the difference.

The transfer of our Business Office from the Royal Victoria Hospital has, for all practical purposes, been completed. That this has been done with a minimum of disruption is due in no small part to Dr. J. Gilbert Turner, Executive Director, and to the Administrative Staff of the Royal Victoria Hospital who, as in past years, have always been available for constructive advice and help.

REPORT OF THE DIRECTOR OF NURSING

MISS EILEEN C. FLANAGAN

The nursing staff is looking forward eagerly to moving into the new wards and to being free of the great strain they have been under for the past two years, nursing an ever increasing number of patients under most trying conditions. It is a great tribute to their expert nursing and watchfulness and the constant help of the medical staff that we have had no untoward happenings due to the congestion.

We have admitted two classes of postgraduate students, a total of 14 graduates from Canada, U.S.A., Norway, Denmark, Holland and Belgium.

There is an ever increasing demand for nurses trained in neurosurgery, and we now have graduates all over the world. It puts a great deal of responsibility on us to ensure that they are well equipped to teach neurosurgical nursing.

For the past six months we have been carrying out a survey and study of the nursing care of the patients, that is, the type and number of procedures and equipment required and the time involved, and the type, number and ratio of nurses and nursing aides required, with the hope that we will be able to make the most appropriate and economical use of the time and skills of our staff. This is, I believe, the first study and job analysis made of neurological and neurosurgical nursing, and already we are having many requests for it.

The majority of patients are nursed by our own staff. Whereas in 1945 there were 902 special nurses giving 8,470 nursing periods, this year there were 396 special nurses giving 3,594 periods. This amounts to an average of only 3 patients a day being nursed by special nurses over the 24 hour period.

Sixty-four Royal Victoria student nurses have had an eight weeks' affiliation with us. We always appreciate their help and enthusiasm, and in return we try to give them as much teaching and experience as possible.

The graduate staff have formed a society of their own and were honoured by having the Director, Dr. Penfield, speak to them at their first meeting. They have planned a programme which should benefit them both professionally and socially.

We are indebted as always to the medical staff for help and guidance day by day on the wards, and for the many hours of formal teaching which they give to the staff.

DEPARTMENT OF SOCIAL SERVICE

Director: MISS JOYCE BEATTY
Social Workers: MRS. M. GARMAISE
MISS T. HIDAKA
MISS I. MULLANEY
MRS. G. PHILLS

During the past year, the Social Service Department was very sorry to lose its Director, Miss DeBrisay, who has returned to England to live. The Department owes much to Miss DeBrisay and she will be greatly missed.

Through funds made available by the Dominion Provincial Grants, a social worker has continued to work on the Epilepsy Research Project, and we feel that considerable progress is being made in understanding the problems of epilepsy and in trying to help the epileptic patient lead a satisfying, useful life. Similar research was undertaken with the multiple sclerosis patients through a much appreciated grant from the National Multiple Sclerosis Society of Canada.

As the new Director of Social Service, I have been here just three months and yet already I have been impressed with the high degree of teamwork throughout the Institute. Everyone on the staff is obviously working for the good of the patient, and the result is unanimity of purpose which is distinctly felt by the outsider joining the staff. I have given considerable thought as to how our department can best play its role as a member of this team, and I feel that our contribution should be threefold: in the areas of direct casework service to the patient and his family, teaching the social aspects of illness, and in social research.

Illness, as we all know, can present many problems to the individual, his family, and friends. Sometimes the breadwinner is disabled and the family left without a means of support; sometimes a baby is born with a crippling congenital deformity which the parents cannot accept; sometimes a mother is stricken with a disease which makes it impossible for her to care for her children; sometimes a young man is unable to find work because of epileptic attacks. These are all problems that we face frequently in the social service department, and in all instances we try to help patients and their families to make as satisfactory an adjustment as possible to the situation that illness creates or complicates.

We are also acutely aware of our responsibility in working with other health and welfare agencies, with the end in view of making life in the community happier and healthier for the inhabitants. The hospital is now a member of the Montreal Council of Social Agencies, and members of our staff are serving on several committees of the Council. We feel that in many instances the social workers act as liaison between the hospital and the community, and I think, therefore, that we should accept the responsibility of working on committees and participating in community projects.

DEPARTMENT OF ANAESTHESIA

DR. ANDRÉ PASQUET

It was pleasant to report the rapid changes which characterised the early development of the department. Once, however, relative stability has been reached, progress and innovations are less apparent.

The first phase in the organization of this department concerned mainly its clinical side. The second phase has been the initiation of a number of projects, or rather the preparation of equipment and personnel in order that such may be undertaken.

From the clinical aspect, the volume of work has remained unchanged although methods and techniques have been modified. Ultra short-acting muscle relaxants have found a place in neurosurgical anaesthesia, as has trichlorethylene.

The number of anaesthetics given of each type is as follows: Local and supplement - 75; spinal - 155; general - 645. It is in the last category that the greatest changes have occurred, over fifteen different techniques having been employed. The recording of vital functions in the operating room is now being carried out, as suggested by Dr. Penfield.

Clinical investigations have included the use of Brevdil, Efocaine, and Thiamine Hydrochloride. The use of this latter as a possible antagonist to barbiturate narcosis continues to be observed.

Residents during the past year have all been diplomatists of the McGill course in Anaesthesia. Dr. Aavik, Dr. Beldavs, Dr. Wielhorski and Dr. Power have all served a six months' rotation in this department.

DEPARTMENT OF RADIOLOGY

DR. DONALD MCRAE

During the year 1952, 6,928 examinations were carried out, slightly more than in 1951. There were 576 encephalograms, 191 ventriculograms, 393 myelograms and 119 angiograms. The number of cerebral angiograms increases yearly due to the increasing use of the percutaneous technique. Cerebral arteriograms are carried out only in patients suspected of harbouring vascular lesions, since we believe that air-studies are more efficient in localizing expanding lesions.

As in previous years, the neuroradiological seminar was given for the fellows and neuroradiological colloquia were carried out three times each week. Postgraduate and undergraduate lectures continued as before.

Drs. Hineman, McPhillips and Hale of McGill University pursued their studies in neurological radiology in the department during the past year. Dr. Laberge of the University of Montreal collected our cases of pituitary tumour and summarized the clinical and radiological findings in the 145 cases. Dr. Leonard Doubleday, of Sidney, Australia, joined the department as Research Fellow and Assistant Radiologist. With his help, a study of the uptake of radioactive materials by pathological lesions of the brain was begun. We are also attempting to localize intracranial lesions by means of their uptake of isotopes. This work is being carried on in the film filing room, in the hall, or wherever we can find a few square feet of space unoccupied for an hour. We are eager for the increased space and facilities of the new Department of Radiology. It will give increased opportunity for clinical and laboratory research, as well as for teaching.

DEPARTMENT OF NEUROCHEMISTRY

DR. K. A. C. ELLIOTT

DR. DONALD B. TOWER

With the resignation of Miss Doris Brophy as head technician, the clinical neurochemistry laboratories have lost an old and valued colleague. Miss Brophy has been associated with neurochemistry at the Institute since the opening of the original laboratory in 1935 and has contributed much to the development of technical procedures and to the maintenance of high standards. Miss Kathleen Ramsay is now senior technician and Miss Joan Baker has joined the staff with responsibility for the ward laboratory. Increased work, present and anticipated, will necessitate the addition shortly of a third technician. Meanwhile Mrs. Eva Baker of the Donner Laboratory has been assisting in the clinical chemistry. To improve flexibility all technicians are now being trained in all procedures of both main and ward laboratories.

The total number of procedures carried out by the laboratories reached an all-time high of 11,792. Of these 5,967 were done in the main laboratory, and 5,825 in the ward laboratory. In the ward laboratory there were some 700 more procedures than in 1951-52. In addition to the above procedures, technicians drew 2,213 blood samples from patients. The preparation of operating room solutions was continued with 4,350 litres of "Elliott's A" solution and 82 litres of "Artificial Spinal Fluid" being supplied. The above figures represent an average of 11 to 12 laboratory procedures carried out per patient.

The use of the flame photometer was extended to include determinations of sodium and potassium concentrations in urine and cerebrospinal fluid. With these procedures it has been possible, in collaboration with the neurosurgical services, to study a number of cases of marked electrolyte imbalance associated with intracerebral lesions. It is hoped to continue this project on a broader scale. With the acquisition of an ultraviolet light source and a standard porphyrin solution it has finally been possible to carry out satisfactory examinations of urine for porphyrin content. A re-evaluation of the method for determination of sulfonamides resulted in improvements in the basic procedure and the abandonment of the determination of conjugated sulfonamides because of unreliability of existing methods.

Provision for services to private office patients have been made in the course of the revision by Mr. D. C. Bain of the scales of charges for the different classes of patients.

Despite the dislocations attendant on construction of the McConnell Wing, the laboratories have functioned well, but we look forward to the more convenient arrangements which will soon be in operation.

DONNER LABORATORY OF
EXPERIMENTAL NEUROCHEMISTRY

DR. K. A. C. ELLIOTT

DR. D. B. TOWER

This department, like others, has continued to work under difficulties due to lack of space and the disruption caused by the building program. The new quarters, to be occupied shortly, will be all the more appreciated.

Dr. Hanna Pappius, who was previously in the Department of Biochemistry, McGill University, has joined the laboratory as Research Assistant.

Dr. Donald Tower, Markle Scholar in Medical Science, has pushed forward his studies of biochemical abnormality in epileptogenic cortex. He had found that adenosine-triphosphate (ATP), like glutamine or asparagine, when added to the medium in which the slices of cortex are incubated, will correct the previously observed defect in acetylcholine metabolism. Determinations of glutamine and glutamic acid have shown a defect in the ability of slices to concentrate these substances which can also be corrected by the presence of ATP or asparagine. This work has been greatly aided by the generous cooperation of Dr. J. W. Stevenson of the Bacteriology Department, McGill University, who has prepared the micro-organisms which are used in these determinations.

In collaboration with Dr. Guy Courtois, Dr. Tower has shown that high doses of glutamine or asparagine may be administered to dogs and to man without untoward physiological effects.

Mr. Elliot Brodtkin completed a study of bound acetylcholine in brain showing the marked influence of calcium, magnesium, potassium, pH, and osmotic pressure on its breakdown, as well as its reformation from free acetylcholine. He has now developed methods for determining ATP and creatine phosphate in brain slices and is studying the relation of the concentration of these high energy substances to acetylcholine metabolism and the actions of drugs. He has also applied these methods in connection with Dr. Tower's studies.

With Mrs. Eva Baker, and later with Dr. Pappius, Dr. Elliott has continued the study of the complex system in brain which splits ATP. Methods have been standardized for the determination of this activity and for the determination of potassium and sodium in tissue. A survey of the ATP splitting activity, respiratory activity in a new stimulating medium, and the potassium and sodium content of normal and focal epileptogenic tissue is in progress and will be correlated with histological observations by Dr. Olszewski.

DEPARTMENT OF ELECTROENCEPHALOGRAPHY

DR. HERBERT JASPER

DR. COSIMO AJMONE-MARSAN

This department has carried out 2,199 electroencephalographic examinations during the past year, and 63 electro-corticograms. The latter were taken from the exposed cortex of epileptic patients during operations performed by Dr. Penfield. There were 556 repeat examinations so that 1,643 different patients were examined during the year. The number of E. E. G. examinations carried out on epileptic patients exceeds the combined number of examinations on all other types of patient.

The number of epileptic patients of all kinds which are studied in these laboratories, and especially those receiving more detailed study in the operating room, is providing a wealth of information of value in the understanding of mechanisms of epileptic seizures. Careful observations and cinematographic records of clinical attacks as related to the E.E.G. findings are proving of added value both for research purposes and for the guidance of treatment in individual cases.

As in previous years only about one half of the examinations have been carried out on patients admitted to the Neurological Institute and referred from the Outpatient Clinic of the Royal Victoria Hospital. There were 443 examinations carried out on patients referred from other hospitals, and 562 examinations on patients referred from private offices.

Special mention should be made of the excellent work of Dr. Guy Courtois who completed his training in electroencephalography with us during the past year preparatory to taking charge of two new E.E.G. laboratories, one at the Hôtel Dieu Hospital and the other at Ste. Justine. The Ste. Justine laboratory is to be operated by Dr. Annie Courtois who also received her training in our department and at the Children's Memorial Hospital during the latter half of the year. In spite of this formal departure of the Drs. Guy and Annie Courtois we shall welcome them back at the Institute frequently where they intend to continue with some of their research activities.

It is of interest that there will be ten E.E.G. laboratories in Montreal in full operation by the end of 1953, all in charge of men trained in our laboratories. Their technicians were trained by Mr. Henderson and Miss Prisko. These new laboratories should affect somewhat the number of patients referred to the Institute department from other hospitals, but we have scarcely felt the decrease in pressure as yet.

DEPARTMENT OF NEUROPHYSIOLOGY

DR. HERBERT JASPER

During the past year there have been 15 fellows engaged in neurophysiological research in this department. The facilities of the department have been used by ten fellows and staff of other departments in relation to problems of neurochemistry, neuropathology and neuroanatomy. Although some of the 15 neurophysiology fellows were not doing active research throughout the year, these laboratories were utilized to capacity (and more). The provision of apparatus and supplies, animals, and working space for so many enthusiastic workers has again taxed our resources, not to mention the interesting task of providing them with guidance and assistance in the planning and execution of their experiments. Dr. Penfield has played an active role in this aspect of the work of this department, and excellent teamwork among the fellows themselves has contributed largely to the success of the various research projects undertaken.

The three principal themes of our research program have continued to be (1) the analysis of functional anatomical relationships between the cerebral cortex and subcortical structures with particular reference to the brain stem reticular system, (2) studies of functional localization and intrinsic functional organization of neurones and their synaptic interconnections within the cerebral cortex, and (3) studies of the mechanisms of epileptic discharge. Only a few highlights of the results of these studies may be mentioned within the scope of this report.

Laminar microelectrode studies of the discharge of single neurones at measured depths in the cerebral cortex have continued to yield important, and often startling, results in relation to the effects of convulsant drugs, anoxia, anaesthesia, as well as in relation to normal states of consciousness (sleep or alertness) and specific responses of the cortex to sensory (and other) impulses arriving to it from the thalamus. It is becoming increasingly obvious that the usual electroencephalographic picture of the activity of the brain is a most inadequate representation of cortical function.

The thalamic reticular system has been shown to have separate pathways to all areas of cerebral cortex, and to terminate in the cortex in a different manner than do the specific afferent fibres such as those from sensory tracts. Exerting as it does such remarkable effects upon the electrical activity of the cortex, and forming a part of the more extensive brain stem reticular system shown to be essential to consciousness, a clearer picture of the detailed anatomy and functional properties of the "centrencephalic system", postulated by Dr. Penfield, is gradually taking more substantial and precise form.

Further progress has been made in the analysis of the physiological and anatomical mechanisms of temporal lobe seizures in relation to the brain stem reticular system. The functional properties of the supplementary motor cortex have been reinvestigated in monkeys and the efferent pathways have been shown to form a part of the pyramidal tracts independent of those from the precentral motor cortex.

The mechanisms of myoclonic and petit mal seizures have been under continued investigation confirming the fact that the reticular or non-specific portions of the brain stem are definitely involved, but that changes in excitability and discharge of the cortex also plays an important role in the elaboration of these poorly understood forms of epilepsy.

DEPARTMENT OF NEUROANATOMY
AND
NEUROLOGICAL PATHOLOGY

DR. FRANCIS McNAUGHTON

DR. JERZY OLSZEWSKI

The work in the department falls into three categories: A. Undergraduate and postgraduate teaching, B. Technical routine work, C. Research.

A. The undergraduate course of neuroanatomy and neurophysiology for the second year in medicine was conducted during the fall term in collaboration with Dr. Burns and Dr. Jasper. As in previous years, the course proved to be a valuable teaching experience.

Members of the Department of Neuroanatomy together with Dr. Jasper and his staff took active part in the graduate seminar in neuroanatomy and neurophysiology. The seminar was supplemented by a brain modelling course held by Dr. McNaughton during the winter and spring terms.

B. The amount of histological work for the Department of Neurophysiology increased so considerably that it became necessary to employ a third technician. In the field of neurological pathology the work consisted of routine preparation and study of autopsy and biopsy material. The histological collection was enriched by several specimens from the U.S. Armed Forces Institute of Pathology, through the courtesy of Dr. Haymaker. Weekly neuropathological demonstrations were held in the winter and early spring by Dr. Olszewski. Dr. Miller Fisher presented a number of interesting cases during the demonstrations.

C. Dr. Donald Baxter, Fellow of the National Research Council, has been working with Dr. Olszewski on the atlas of the normal cytoarchitecture of the human brain stem. This work has now been completed and arrangements for its publication are in progress. Dr. Baxter has also been working experimentally on the organization of respiratory brain stem mechanisms in the cat. Dr. Claude Belanger has helped in the routine work of the department and has carried on with Dr. McNaughton investigations of innervation of the dura and cerebral blood vessels. Dr. Roth is building a wooden model of thalamic nuclei and is conducting work on the effect of stimulation of the brain stem of the cat with heated electrodes.

A special grant from the Department of Health of the Province of Quebec was given to Dr. Olszewski for epidemiological research. Mr. E. Johnston and Mr. B. Cooper of McGill University held studentships under this grant.

LABORATORY OF MULTIPLE SCLEROSIS INVESTIGATION

DR. ROY SWANK

The first 3½ years of our experience with a low fat diet in the treatment of multiple sclerosis was analyzed and recently published. The diet appears to reduce both the severity and frequency of exacerbations of the disease particularly during the second and third years on the diet.

We have also extended our observations on the plasma proteins. These abnormalities were first reported in collaboration with Dr. Franklin and Dr. Quastel. They develop periodically, and were present during all but one period when the disease was active clinically. Normal plasma protein patterns were present in one third of the tests, and questionably normal patterns in another one third.

Our studies of the suspension stability of the blood were extended in collaboration with Dr. Chester F. Cullen by *in vivo* studies of the cheek pouch of the hamster. These studies demonstrated that large fat meals cause the red blood cells to become adhesive and then aggregate. Slowing and cessation of the circulation often follows. Later the circulation returns to normal spontaneously. These changes were recorded in colored movie film.

Mr. Sam Levy is continuing his work on the influence of commercial and native heparin on lipemia, and upon the suspension stability of the blood.

Mrs. Esther Roth has been with us in the laboratory during the past year and has very effectively collaborated in studies of the relationship of lipemia to hemolysis. This subject has formerly received very little attention, yet the hemolysis which occurs during shaking of lipemic blood may be very great.

DEPARTMENT OF NEUROSURGICAL PATHOLOGY

DR. WILLIAM CONE

The attendance at the Friday afternoon Neurosurgical Conference has been so large that it has been necessary to change the method of presentation of material. For the most part, microscopes and slides have been dispensed with. Thirty-five millimetre Kodachromes of the microscopic preparations have taken their place. This has been possible because of the excellent photomicrographic equipment provided the laboratory through private donations and government grants. Dr. Gordon Dugger standardized the photographic technique and made the change-over feasible. Dr. Joseph Stratford has carried on. The reproductions of both chromatic and metallic stains have been excellent. For the large group, many of whom have had little experience in cytology, the change provides particularly significant advantages. For the experienced ones, the Neuropathological Fellow must be something of an artist as well as a careful observer to hold interest. Dr. Stratford has managed to be both.

Surgical specimens studied in the laboratory for the year numbered 496. There were 60 autopsies. Fifty of these were done in collaboration with General Pathology, and in ten, material was obtained at the Coroner's Court.

Dr. John Roth and Dr. Lamar Roberts have each spent six months in the laboratory. With them Dr. Stratford has shared the heavy responsibility for the detailed study and reporting on surgical specimens and autopsies.

Dr. Frederick McConnell has been studying in the laboratory and we are grateful for his enthusiastic cooperation when we needed help with routine.

Dr. Martinez-Coll has been working under Dr. Elvidge's supervision on the subclassification and long-term follow-up of the astrocytomas.

Dr. John Roth and Dr. Lamar Roberts have each spent six months in the these, the effect of antibiotics on the brain, has been of immediate and practical application to problems on the ward. Chloromycetin has been found to be sterilizable without lowering its potency. Applied directly to the brain, there are no adverse physiological effects as judged by electroencephalographic recording. The antibacterial spectrum of Chloromycetin is broad, and we feel from the clinical results of its intrathecal and intraventricular and intracerebral use, we have a safe and potent weapon against a variety of organisms. Bacitracin, while causing cortical discharge of seizure-type and actual convulsions, is less toxic than penicillin and streptomycin. With these two antibiotics in safe dilutions, it seems most of the meningitides and brain abscesses can be controlled. Dr. Hanbery has also been transplanting human tumours of the brain to the brains of animals. This involved and expensive work has been made possible through a grant from the Cancer Research Society.

PHOTOGRAPHY

DR. JERZY OLSZEWSKI

During the year, operating room photography, clinical photography of patients, photography of pathological specimens, photomicrography, preparation of lantern slides and moving picture photography were the main fields of work.

The department assisted the Laboratory of Multiple Sclerosis in the production of a cinephotomicrographic film on the blood circulation in the cheek pouch of the hamster.

An unusually large number of photomicrographs were made for the Department of Neuroanatomy, in connection with the investigation of the human brain stem. The operating room photographic set-up was further improved by an introduction of a new technique for reproduction of pictures at life size. A considerable number of clinical moving pictures of patients has been taken, and a need for a moving picture library is very urgent.

FELLOWS' LIBRARY

DR. FRANCIS McNAUGHTON

There have been no noteworthy changes in the Library during the past year. We have increased the number of journal subscriptions from 52 to 53, covering a wide range of subjects related to neurology and neurosurgery. Seventy-nine new books have been purchased, and 85 received as gifts. Dr. Colin Russel has again given us a number of valuable books from his own library, and we are grateful for books and journals donated by Dr. C. Chen, Dr. J. Droogleever Fortuyn, Dr. W. Feindel, Dr. K. Melville, Dr. E. A. Stuart, Dr. R. Swank, Dr. W. Penfield, and by the McGill Medical Library. The files of several important journals have been completed with the aid of the Dominion-Provincial Grant. Mrs. Foster Kennedy gave a set of her husband's writings.

As in the past years, Dr. Stehle and Miss Gordon, of the McGill Medical Library, have assisted us in many ways, and we are grateful for their help.

THE FELLOWS' SOCIETY

DR. JOSEPH STRATFORD, *President*

DR. GUY COURTOIS, *Vice-President*

DR. GILLES BERTRAND, *Secretary-Treasurer*

During the past year the Fellows' Society has included some 35 to 40 Fellows of various nationalities.

Following the custom established in previous years, frequent scientific meetings were held to which some of the many visitors to the Institute were asked to participate in an informal manner.

Thanks to the Lewis Reford Fellows' Fund, the Society has been able to acquire some furniture, to cover part of the fellows' expenses at the Quebec meeting of the Montreal Neurological Society, to organize farewell gatherings for departing fellows and to provide refreshments at the scientific meetings.

The speakers of the year were: Dr. Anatol Dekaban, Dr. Henri Hécaen of Paris, France, Dr. Guy Odom of Durham, North Carolina, Dr. John S. Meyer of Boston, Mass., Professor Richard Jung of Freiburg, Germany, Dr. Jerzy Rose of Baltimore, Md., Dr. Herbert Jasper, Dr. Choh-luh-Li, Dr. Mogens Lund of Denmark, Dr. William Windle of the Baxter Laboratories, Dr. Eldridge Campbell of Albany, N.Y., Dr. Keith Bradley of Melbourne, Australia.

MONTREAL NEUROLOGICAL SOCIETY

1952-1953

<i>President</i>	DR. PRESTON ROBB
<i>Vice-President</i>	DR. ROMA AMYOT
<i>Secretary-Treasurer</i>	DR. DONALD B. TOWER

Thirty meetings of the Section of Neurology of the Montreal Medico-Chirurgical Society were held weekly from October 1st to May 13th. Membership of the Section totalled 80, of which 29 were members and 51 were associate members.

Bimonthly clinical meetings were held at Notre Dame Hospital, Hôtel Dieu, the Montreal General Hospital, and the Montreal Neurological Institute. The remaining meetings were held at the Montreal Neurological Institute at which papers by distinguished visitors and local colleagues were presented. This year a special meeting was held in Quebec City in November with neurological colleagues of Laval University and clinics in Quebec. The meeting was arranged in cooperation with Dr. Jean Sirois and Dr. Sylvio Caron with seven clinical and scientific presentations by Quebec neurologists, followed by a dinner for members and guests. Outstanding among the presentations were the paper by Dr. Lionel Lemieux on "Some Aspects of Thalamic Pathology in Familial Amaurotic Idiocy" and the after-dinner address by Dr. Herbert Jasper on "Les Pionniers de Neurologie." As the first meeting of the Society held outside Montreal, it was a distinct success.

During 1952-53 the following papers were read before the Society:

- DR. F. M. R. WALSHE, Queen Square, London. "Neurological Complications of Disease and Injury of the Cervical Spine."
- DR. ARTHUR E. CHILDE, Winnipeg. "Localized Thinning and Enlargement of the Cranium."
- DR. JOHN MEYER, Boston City Hospital. "The Significance of Perceptual Rivalry in Parietal Lobe Lesions."
- DR. E. WORINGER, Colmar, France. "A New Ultrarapid Technique for Skull Repairs with an Autopolymeric Acrylic Resin."
- DR. GUY ODOM, Duke University. "Intracranial Bleeding of Non-Traumatic Origin."
- DR. JERZY ROSE, Johns Hopkins University. "The Mammalian Tactile Thalamic Region." (Annual Neuroanatomy Lecture).
- PROF. HERBERT OLIVECRONA, Stockholm. "The Arteriovenous Aneurysms of the Brain."
- DR. WILLIAM F. WINDLE, Baxter Laboratories. "Regeneration in the Central Nervous System: Studies with Piromen."
- DR. ELDRIDGE CAMPBELL, Albany Medical School. "The Incidence and Significance of Shock in Head Injuries."

- DR. CHOH-LUH LI, Montreal. "Microelectrode Studies of Cortical Neuronal Discharges."
- DR. ROGER ROSSITER, University of Western Ontario. "Degeneration and Regeneration in Nerve: The Relation of Chemical to Pathological Observations."
- DR. DOUGLAS BUCHANAN, University of Chicago. "The Limp Child." (Combined meeting with Section of Pediatrics).
- DR. GARDINER McMILLAN and DR. G. LYMAN DUFF, Montreal. "Recent Trends in the Study of Atherosclerosis."
- DR. JAN DROOGLEEVER FORTUYN, University of Groningen, Holland. "Anatomical Relationships between Diencephalon and Telencephalon."
- DR. ROY SWANK and DR. CHESTER CULLEN, Montreal. "Changes in Circulation produced by Fat Meals and large Molecular-Weight Substances: Possible Relationships to Multiple Sclerosis."
- DR. SAMUEL P. HICKS. Harvard Medical School. "The Effects of Ionizing Radiations on the Nervous System."
- DR. KATHERINE METRAKOS, DR. ANNIE COURTOIS, DR. JULIAN METRAKOS and DR. F. CLARKE FRASER, Montreal. "The Genetics of Epilepsy."
- DR. HERBERT JASPER, DR. GUY COURTOIS and DR. DAVID INGVAR, Montreal. "The Centrencephalic Epilepsies: Clinical and Physiological Studies."

GRADUATE STUDIES AND RESEARCH

DR. HERBERT JASPER

An active graduate research program has continued during the past year with the usual close collaboration between fellows and staff in special projects. Research trends and progress is reviewed in the report of the Director, while detailed accounts of activities in sub-departments are presented in their individual reports.

There have been 25 fellows engaged in active laboratory research during the past year. There were 15 fellows working in the neurophysiology laboratories, 5 in Neuroanatomy, 4 in Neuropathology, 2 in Multiple Sclerosis Research, and 1 in Neurochemistry (two fellows worked in more than one department).

These men have come from Canada, the United States, and from far off lands to gain knowledge and skill in the study of the nervous system in all its aspects. They have brought to our Institute a varied background of training and experience which helps to enrich the intellectual and spiritual life of the University and hospital community. The results of their researches are continually adding to our fund of knowledge, and, in some instances, opening up new fields of thought regarding mechanisms of brain function, and suggesting new forms of improved treatment for brain diseases.

The most extensive graduate instruction has been the Seminar in Neuroanatomy and Neurophysiology, which has been improved this year by even more active participation of research fellows as well as of various members of the staff, including lectures by Professor Penfield, Professor MacIntosh, Professor Hebb and Dr. Burns, Dr. Melville and Dr. McNally.

Advanced courses in neurochemistry and neuroradiology have also served to round out the training available to those interested.

The traditional weekly neuropathology conferences have maintained their high standard of interest and value and improved their methods of presentation of material to accommodate the large attendance. The addition of a series of clinical pathological conferences under the direction of Dr. Miller Fisher and Dr. Olszewski has been well received.

Once again it should be emphasized that the most important graduate instruction occurs, not in these formal courses, but in the daily work of staff and fellows together in laboratory, clinic and operating room.

CLINICAL APPOINTMENTS AND FELLOWSHIPS*

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

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

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

Assistant Resident in Neurology — six to twelve month's duration — available January 1st and July 1st.

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

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

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

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

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

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

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

Applicants for clinical services are preferred who have a speaking knowledge of the French language.

*Graduate physicians or surgeons who wish to be enrolled in clinical or scientific work, as something more than an observer, must fill out application forms obtainable from the Registrar, and provide names of reference.

COURSES OF INSTRUCTION

UNDERGRADUATE

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

GRADUATE

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

***A. SEMINAR IN NEUROANATOMY, M.N.I. 3 hours weekly (6 months)**

1. Lectures, demonstrations and discussion, correlated with Seminar in Neurophysiology (B), Mondays, 5 p.m. beginning in November.
2. Advanced Neuroanatomy for selected group; brain modelling, 2 laboratory periods weekly beginning in December, times to be arranged.

Professor McNaughton
Doctor Olszewski

***B. SEMINAR IN NEUROPHYSIOLOGY, M.N.I. 2 hours weekly (6 months)**

Lectures, demonstrations and discussions, correlated with Seminar in Neuroanatomy (A), Mondays, 8 p.m. beginning in November.

Professor Jasper
Doctor Ajmone-Marsan

C. COLLOQUIUM IN CLINICAL NEUROLOGY, 1 hour weekly, Clinics and Lectures, Wednesdays, 5 p.m., M.N.I.

Doctor Lloyd-Smith

**D. SEIZURE MECHANISMS AND CEREBRAL LOCALIZATION; Neurosurgical, Electroencephalographic and Roentgenographic Conference.
M.N.I., 2 hours weekly (9 months)**

Professor Penfield
Professor Jasper
Doctor McRae

***E. SEMINAR IN NEUROPATHOLOGY, 1 hour weekly (10 months)**

Gross and Microscopic demonstration to be supplemented by collateral work.
Fridays, 5 p.m.

Professor Cone
Professor Penfield

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

Professor Elliott
Doctor Tower

G. COLLOQUIUM IN CLINICAL NEUROLOGY, 1 hour weekly (8 months)
Lectures, discussions, demonstrations, Thursdays, 5 p.m.

Professor McNaughton
Doctor Lloyd-Smith

H. COLLOQUIUM IN NEUROLOGICAL ROENTGENOLOGY, 1 hour weekly (9
months) Monday, 9 a.m.

Professor McRac

I. COLLOQUIUM IN EXPERIMENTAL AND CLINICAL NEUROLOGY, 1 hour
weekly (9 months)
Discussions and lectures before Fellows' Society.

Professor Jasper
Doctor Robb

*Acceptable for credits for M.Sc. and Ph.D.

DONATIONS

To HARVEY CUSHING CLINICAL RELIEF FUND:

Mrs. Esther Bloom	\$ 100.00
Miss Suzanne Cohen	25.00
Mr. A. G. Massabke	100.00
British Naval Benevolent Fund	200.00

To MISCELLANEOUS CONTRIBUTIONS:

Quebec North Shore Paper Company	1,000.00
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To THE M.N.I. CANCER RESEARCH FUND:

Cancer Research Society, Inc.	6,000.00
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To THE HOBART ANDERDON SPRINGLE MEMORIAL FUND:

Mrs. H. A. Springle	1,500.00
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To THE FURNISHING & EQUIPMENT FUND:

Dr. S. W. Chaisson	50.00
Mr. Gerry Cohen	500.00
Mr. Percy Walters	2,000.00
Dr. Preston Robb	100.00
Mrs. Jacob Kellert	250.00
Mr. Robert H. Rolfs	3,000.00
Lasker Foundation	100.00
Anonymous	15,000.00

To THE CONE RESEARCH FUND:

Mr. and Mrs. Josef Aron	50.00
Mr. A. D. Crews	300.00
Mr. K. B. Jenckes	50.00
Mr. M. Lecker	25.00
Mrs. Sara Policoff	100.00
Mr. Harry Post	100.00
Mrs. Lewis Reford	10,000.00
Mr. Joseph Schumer	500.00
Mrs. Samuel F. Smoller	250.00

PUBLICATIONS

1952-53

ANATOLE DEKABAN:

The Haemogram, Gastric Acidity and Cerebrospinal Fluid Findings in Multiple Sclerosis. *Neurology*, 2: 514-519, 1952 (with T. R. Waugh and R. J. Broderick).

K. A. C. ELLIOTT:

Brain Tissue Respiration and Glycolysis. In *The Biology of Mental Health and Disease.* New York, Paul B. Hoeber, Chap. 5, pp. 54-70, 1952.

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See Donald Tower, Joint Author.

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The Pattern of Motor Innervation in Mammalian Striated Muscle. *J. Anat.*, 86: 35-48, 1952.

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Principles and Management of Post-operative Cases. *Canad. M.A.J.*, 67: 9-12, 1952.

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HERBERT JASPER:

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Les Pionniers et les frontières de la neurologie. *L'Union Médicale*, 82: 188-192, 1953.

See B. R. Kaada, Joint Author.

See Choh-luh Li, Joint Author.

See W. Penfield, Joint Author.

See K. Tukel, Joint Author.

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The Classification of the Epilepsies. Epilepsia (3rd series), 1: 1-10, 1952.

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See Bernard Smith, Joint Author.

ANDRE PASQUET:

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Mastication and Consciousness in Epileptic Seizures. Acta Psychiat. et Neurol. Scandinav. 27: 91-115, 1952 (with O. Magnus and H. Jasper).

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CLASSIFICATION OF DISEASES

Nervous System Generally:

Neurosyphilis	9
Multiple sclerosis	63
Motor neurone disease	3
Myasthenia gravis	8

Meninges:

Meningocele or myelomeningocele	44
Acute purulent meningitis	13
Tuberculous meningitis	10
Spontaneous subarachnoid haemorrhage	2
Headaches	29
Subdural haematoma	14
Epidural haematoma	4
Miscellaneous	6

Brain:

Congenital anomalies	10
Hydrocephalus	17
Brain abscess	5
Cerebral concussion	58
Cerebral contusion and/or laceration and encephalopathy	38
Migraine	9
Epilepsy	298
Hypertensive encephalopathy	10
Encephalopathy chronic and of undetermined etiology	11
Cerebral arteriosclerosis	18
Intracranial aneurysm	34
Cerebral atrophy	7
Narcolepsy	2
Encephalitis	10
Choreoathetosis	5
Miscellaneous	34

Tumours:

Glioma	65
Perineurial fibroblastoma	7
Meningeal fibroblastoma	13
Pituitary adenoma	9
Craniopharyngioma	5
Haemangioma	10
Third ventricle tumour	2
Unclassified tumour	16
Unverified tumour and tumour suspects	24
Secondary tumour of brain and spinal cord	25
Miscellaneous tumour C.N.S. and body generally	35

Spinal Cord:

Compression of the spinal cord	13
Acute myelitis	3
Subacute combined degeneration	5
Myelopathy undetermined etiology	3
Miscellaneous	23

Cranial and Peripheral Nerves:

Papilloedema, unknown cause	3
Trigeminal neuralgia	49
Menière's syndrome	7
Lesions of the brachial plexus and branches	7
Multiple neuritis	10
Other neuralgias	14
Traumatic peripheral nerve lesions	9
Neuropathy of undetermined etiology	15
Miscellaneous	16

Mental Diseases:

Mental deficiency	7
Psychoneurosis	7
Presenile dementia	6
Anxiety state	45
Miscellaneous	8

Other Systems:

Congenital anomalies of spine	10
Herniation of the intervertebral disc (cervical)	19
Herniation of the intervertebral disc (lumbar)	233
Discogenic disease	4
Low back pain	42
Fracture of the skull	92
Fracture and/or dislocation of the vertebral column	46
Laceration, contusions, abrasions and/or haematomas	3
Intractable pain	8
Destructive lesion vertebrae and skull undetermined etiology	4
Muscular dystrophy	5
Essential hypertension	17
Post-traumatic syndrome	9
Infections	5
Miscellaneous	80

CLASSIFICATION OF OPERATIONS

Craniotomy	
and hemispherectomy	3
and pedunculotomy	4
and biopsy	1
and decompression	3
and drainage of abscess	5
and drainage of subdural haematoma	23
and drainage of intracerebral haematoma	4
and drainage of extradural haematoma	7
and excision of focal area of brain	32
and excision of aneurysm	4
and exploration	5
and hypophysectomy	2
and incision and drainage of cyst	2
and obliteration of aneurysm	6
and obliteration of cyst	2
and plastic repair of dura	6
and plastic repair of skull	1
and removal of adhesions	1
and removal of tumour	94
and rhizotomy	10
and lobectomy	23
Trepanations	21
and biopsy	5
and drainage of subdural space	2
and drainage of abscess	1
and ventricular puncture	1
and ventriculography	14
Elevation depressed skull fracture	41
Plastic repair of skull defect, tantalum	9
Plastic repair of skull defect, bone	7
Suture of lacerated wound of scalp	6
Ventriculocisternostomy (Torkildsen)	3
Catheterization of Sylvian aqueduct	1
Laminectomy or hemilaminectomy	
and anterolateral chordotomy	12
and decompression of spinal cord	3
and exploration	3
and incision and drainage of intramedullary cyst	3
and removal of tumour	17
and rhizotomy	5
and spinal fusion with bone graft	33
and spinal fusion with 18 wire	28
Discoidectomy	
lumbar	131
cervical	13
cervical occipital fusion	7
Sympathetic supradiaphragmatic ganglioneurectomy unilateral	5
Plastic repair of cranium bifida	4
Plastic repair of spina bifida	24
Exploration of nerve	3
Neurectomy	2
Nerve suture	9
Re-opening of wound with evacuation	13
Re-opening of wound with exploration	5
Re-opening of wound with removal of bone flap	1
Re-opening of wound and re-packing	9
Re-suturing of wound	3
Section of scalenus anticus muscle	1
Miscellaneous	31
Plaster cast	46

Suturing of wound	2
Ventriculo-peritoneal shunt	43
Cerebral arteriography	
Neck dissection	15
Percutaneous	103
Injection of trigeminal nerve	8
Nerve blocks	9
TOTAL	<u>944</u>

ITEMS OF INTEREST

All members of staff rejoiced at the news that Her Majesty had awarded the Order of Merit to our Chief, Dr. Wilder Penfield. No greater honour could have been bestowed on him, and no one could have deserved it more.

Dr. Penfield was also granted the Jacoby Award for meritorious research in nervous and mental diseases by the American Neurological Society. The award recognized in particular his work in the surgical treatment of epilepsy.

Dr. Colin Russel continues to be well and takes an active interest in the affairs of the Institute.

The annual M.N.I. party took the form of a dance held in the McGill Union. The credit must go to Miss J. Stanley and her committee for the excellent time that everybody had.

The international nature of the M.N.I. was emphasized at the annual Neurological Society Dinner where the different fellows from various parts of the world spoke briefly. Dr. Reuben Rabinovitch had composed a new song which greatly added to the occasion.

The McConnell Wing is about complete and we soon hope to expand into the new quarters. Dr. K. A. C. Elliott deserves great credit for the liaison work he has done between the architects, the contractors and the Institute. Our thanks must go to all who patiently endured the crowded conditions and temporary working quarters during the period of construction.

"Fellows come and Fellows go at the M.N.I." We regretfully report that Dr. Donald Tower, on the call of the United States Navy, is leaving the Institute to continue his research at the National Institute for Neurological Diseases and Blindness. There he will join Dr. Maitland Baldwin and Dr. Milton Shy who recently left Denver to go to Washington. Dr. Lamar Roberts also has been called to the Navy, and will be doing neurosurgery at San Diego. Dr. Bernard Smith, after a year's work on epilepsy, is leaving to practice neurology in Buffalo. Dr. Guy Courtois will continue his work in E.E.G. at Hotel Dieu Hospital, Montreal, and Dr. Annie Courtois will be working in E.E.G. at St. Justine's Hospital, Montreal.

Dr. Harold Rosen is now practising neurosurgery in St. John, New Brunswick. He has a very enviable set up and from the appearance of things will soon be needing an assistant.

Congratulations are in order for Dr. Miller Fisher who was awarded the prize for the best work presented at the Royal College of Physicians and Surgeons. Dr. Fisher is continuing his research on vascular diseases of the brain as well as being Director of Neurology at the Queen Mary Veteran's Hospital.

The Annual Hughlings Jackson Memorial Lecture of the Montreal Neurological Institute was given by Dr. James C. White of the Harvard Medical School, who spoke on "Pain Conduction in Man: Studies on its Transmission in Spinal Cord and Visceral Plexuses."

Mr. Charles Hodge participated in the convention of the Biological Photographic Association where he presented a paper on photography in the operating room. He also won an "Award of Merit" for his exhibit in the class of medical photography. He was also elected a director of the Association of Professional Photographers of the Province of Quebec.

During the year many visitors and old fellows came to the Institute. We always benefit by their visits and hope they will continue the practice.

In the fall of 1952, Dr. Guy Odom, Professor of Neurosurgery, Duke University School of Medicine, became our first visiting professor. As well as conducting ward rounds and lectures to the undergraduates, he addressed the Montreal Neurological Society and the Fellows' Society. It is hoped that this practice of a visiting professor may continue.

Dr. and Mrs. Penfield left for England at the end of May where they are to attend the Coronation. Dr. Penfield will attend the Reunion of Rhodes Scholars and an Honorary Doctorate of Civil Law at Oxford University will be granted.

