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Neurologiques**

SPECIAL SUPPLEMENT

**PRESURGICAL EVALUATION
AND SURGICAL THERAPY
OF FOCAL EPILEPSY**

Proceedings of the 50th Anniversary
Symposium of the EEG Department of the
Montreal Neurological Institute,
McGill University



The Official Journal of

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The Canadian Neurosurgical Society
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Presurgical Evaluation and Surgical Therapy of Focal Epilepsy

Table of Contents

1. History of the Early Development of Electroencephalography and Clinical Neurophysiology at the Montreal Neurological Institute: The First 25 Years 1939 – 1964 <i>H. Jasper</i>	533
2. Development of Surgical Therapy of Epilepsy at the Montreal Neurological Institute <i>W. Feindel</i>	549
3. Preoperative Electroencephalographic Investigation in Temporal Lobe Epilepsy: Extracranial and Intracranial Recordings <i>P. Gloor</i>	554
4. Preoperative Electroencephalographic Investigation in Frontal Lobe Epilepsy: EEG, SEEG and ECoG Recordings <i>L.F. Quesney</i>	559
5. Preoperative Electroencephalographic Localization of Large Epileptogenic Zones in the Frontal and Temporal Lobes <i>C. Ajmone-Marsan</i>	564
6. Introduction à l'Etude Clinique des Crises Epileptiques Rétrorolandiques <i>J. Bancaud, J. Talairach, C. Munari, T. Giannonardo et P. Brunet</i>	566
7. Localization of Epileptic Foci in Children <i>W. Blume and M. Kaibara</i>	570
8. Relationships Between Interictal Spiking and Seizures: Human and Experimental Evidence <i>J. Gotman</i>	573
9. Electroencephalography, Magnetic Resonance Imaging and Pathology in Patients Treated Surgically for Temporal Lobe Epilepsy <i>W. Feindel, Y. Robitaille, D. Tampieri, L. Goossens, M. Li and D. Melançon</i>	577
10. Neuronal Migration Disorders: A Contribution of Modern Neuroimaging to the Etiologic Diagnosis of Epilepsy <i>A. Palmieri, F. Andermann, D. Tampieri, Y. Robitaille, D. Melançon and R. Ethier</i>	580
11. PET Scanning in Partial Epilepsy <i>J. Engel</i>	588
12. Temporal Lobe Surgery for Epilepsy: Neuropsychological Variables Related to Surgical Outcome <i>G. Leonard</i>	593
13. Relative Localizing Value of Common Tests Used in the Pre-Operative Investigation of Epileptic Patients <i>J.M. St-Hilaire, F. Richer, A. Turmel, I. Rouleau and G. Bouvier</i>	598
14. Temporal Lobectomy: Review of 100 Cases with Major Hippocampectomy <i>T. Rasmussen and W. Feindel</i>	601
15. Temporal Lobectomy with Amygdalectomy and Minimal Hippocampal Resection: Review of 100 Cases <i>W. Feindel and T. Rasmussen</i>	603
16. Tailoring of Cortical Excision for Frontal Lobe Epilepsy <i>T. Rasmussen</i>	606
17. Surgery for Central, Parietal and Occipital Epilepsy <i>T. Rasmussen</i>	611
18. Selective Amygdalohippocampectomy: Indications and Follow-up <i>H.G. Wieser</i>	617
19. Relevance of Removal of Limbic Structures in Surgery for Temporal Lobe Epilepsy <i>A. Olivier</i>	628
20. Electrophysiological Analysis of Human Neocortex <i>In Vitro</i> : Experimental Techniques and Methodological Approaches <i>M. Avoli, G.G.C. Hwa, G. Kostopoulos, A. Olivier and J.-G. Villemure</i>	636
21. Biochemical Markers of Excitability in Human Neocortex <i>A.L. Sherwin, O. Vernat, F. Dubeau and A. Olivier</i>	640
22. Bilateral Pathological Damage in Temporal Lobe Epilepsy <i>T. Babb</i>	645
23. Surface Ictal Electroencephalographic Patterns in Frontal vs Temporal Lobe Epilepsy <i>B.E. Swartz, G.O. Walsh, A.V. Delgado-Escueta and P. Zolo</i>	649

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Introduction

Wilder Penfield, in his diary in 1935 wrote, “the physiological mechanism of the attack, is what I wish I could discover”. He was referring, of course, to his attempts to understand the pathophysiology of epilepsy, toward which his scientific and surgical career was dedicated. While still at the Royal Victoria Hospital, before the opening of the Montreal Neurological Institute, he strove valiantly with William Cone, his surgical partner, to treat intractable epilepsy caused by trauma or tumors. Applying the technique that Penfield had learned while working with Otfried Foerster in Germany, they scored some brilliant successes. But many cases resulted in failure because of the lack of adequate means to localize the epileptic focus. Many cases came to surgical exploration but were rejected for excision. More had to be known to tell beforehand where the surgeon should operate even though seizure patterns were scrutinized in great detail, catalogued and matched with the type and location of the lesions revealed at operation. Even though, too, hundreds of stimulation points were plotted out from successive brain drawings of the sensory and motor areas to give a more exact idea of how the surgeon could skirt these vital areas to avoid paralysis.

Then, in 1938, Herbert Jasper brought the novel technique of recording the brain’s electrical activity through the skull and scalp and later even from the brain exposed at surgery. The whole scene for Penfield changed. The first two patients in whom the localization of the seizures was made by Herbert Jasper were brought to Montreal and operated on by Penfield. Happily, the outcome was successful. The opening in January 1939 of a new annex added at the back of the Institute signalled the birth of electroencephalography in Canada. (Herbert Jasper with Leonard Carmichael, in 1935, had reported in *Science* on the electrical potentials recorded from the intact human brain.) Indeed, it was probably the first properly planned clinical and research EEG unit anywhere.

The rest of that story has been told many times — how Jasper applied the EEG to the greatly improved selection of epileptic patients for surgical treatment, how cortiography began to provide important clues on the initiation and propagation of electrical discharges in the human brain and, perhaps most important of all, how the EEG Laboratory sparked off a vigorous productivity in experimental neurophysiology that has continued at the Institute over the years. Herbert Jasper’s scientific expertise coupled with Wilder Penfield’s surgical enthusiasm brought insight into our understanding not only of the problem of epilepsy but also of the physiology and behavior related to the human brain.

The reports which follow were presented appropriately enough to mark the 50th Anniversary of the opening of the EEG Laboratory at the Montreal Neurological Institute. Herbert Jasper sets the stage by his first-hand historical review, which is a most valuable one to have on record. The remaining score or so papers contributed by former research fellows of the Institute and by distinguished colleagues from other neurological centers were focussed mainly on the surgical treatment of epilepsy. But these papers also emphasize that many questions regarding the genesis and therapeutic approaches to epilepsy still remain, despite a vast amount of investigation, largely unsolved. These reports have been brought together by our Editorial Committee in the hope that they will represent a contribution to the history of neurology, not only in Canada, but in the world at large. We are grateful to sponsors who made this publication possible and to the patience of the authors and the editors for their kind indulgence while we prepared the material for publication.

We appreciate the help of Drs. Richard Desbiens and Jean Gotman for the French translation of the abstracts and of Manon Gagnon for supervising the editing of the manuscript.

L.F. Quesney, M.D.

W. Feindel, M.D.

Tribute to the Savoy Foundation

The magnanimous devotion of George Savoy, his family and many friends to those with epilepsy has been manifested by many good works. Dieppe House for Epileptics (called after Major Paul Savoy, a casualty of the Dieppe Landing), set up with the advice of Wilder Penfield, provided, for almost three decades, special care and sheltered workshops for those disabled by epilepsy. It was established as an ecumenical center, available to all epileptic patients in Quebec, regardless of creed, language or color.

A mark of the continuity of the Savoy family's concern was evident when the responsibilities for the care of epileptics were eventually assumed under the improved Quebec health care system in 1969. The Directors of the Savoy Foundation then turned their efforts to much needed support for research in the field of epilepsy.

The proceeds from the sale of the Savoy Foyer in 1988 enhanced the endowment of the Foundation, so that it now offers annual grants-in-aid amounting to \$250,000 for investigations into epilepsy.

So from the small beginnings in 1940, when George Savoy developed fan-folded and time-lined paper for the MNI EEG Department and sponsored the EEG ski meetings in the Laurentians, the Savoy family and its loyal friends continue to maintain dedicated efforts which deserve the gratitude of physicians, scientists and patients concerned with the never-ending problems of epilepsy.

Le grand dévouement de George Savoy, de sa famille et de bien d'autres à la cause des personnes épileptiques s'est manifesté par de grandes réalisations. Le Foyer Dieppe ou "Dieppe House for Epileptics" (nommé d'après le Major Paul Savoy, décédé lors du Débarquement de Dieppe), et fondé sous les auspices de Wilder Penfield, a dispensé, depuis presque trois décennies, des soins spéciaux et des ateliers protégés pour les personnes souffrant d'épilepsie invalidante. Il a été établi dans une visée oecuménique, sans égard aux croyances religieuses, au langage ou à la couleur.

Une réorientation dans l'implication de la Famille Savoy a dû s'opérer lorsque les soins des patients épileptiques sont passés sous l'égide du Système de santé du Québec, lors de sa réforme, en 1969. Les Directeurs de la Fondation Savoy ont dès lors axé leurs efforts vers le support de la recherche dans le domaine de l'épilepsie.

Les bénéfices réalisés lors de la vente, en 1988, du Foyer Savoy (anciennement le Foyer Dieppe), ont gonflé le capital de la Fondation, qui peut maintenant offrir annuellement \$250,000 en subventions pour la recherche en épilepsie.

Après des débuts modestes, en 1940, lorsque George Savoy a offert du papier d'enregistrement spécial pour le Département d'EEG de l'Institut Neurologique de Montréal et a parrainé les "EEG ski meetings" dans les Laurentides, la Fondation Savoy et ses loyaux bienfaiteurs ont continué à maintenir leurs précieux efforts qui méritent la gratitude des médecins, scientifiques et des patients concernés par les problèmes sans fin que pose l'épilepsie.