Historical Vignette

The Montreal Neurological Institute

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In this centenary year of Wilder Penfield, his contribution to the creation of the Montreal Neurological Institute is reviewed. In the early 1930's, a confluence of favorable circumstances at McGill University and the Royal Victoria Hospital, Montreal, made it possible for Wilder Penfield, with his partner William Cone, to realize his dream of a combined neurological hospital and research institute. Endowed by the Rockefeller Foundation and with initial and ongoing support from community and governments, the Montreal Neurological Institute has continued its exponential growth over the past half-century as a world center for the study and treatment of disorders of the brain and nerves.

KEY WORDS • Wilder Penfield • Montreal Neurological Institute • McGill University • Rockefeller Foundation • neurosurgical history • historical vignette

The Montreal Neurological Institute of McGill University opened in 1934 as a 50-bed hospital for brain disorders combined with a brain research center. This complex, in the words of Wilder Penfield, was "Dedicated to relief of pain and suffering and to the study of neurology." The outstanding features of the institute have been the combination of neurology and neurosurgery intimately associated with basic research, the establishment of a permanent endowment overseen by the Director, and the long-term commitment to developing methods for the surgical cure of patients with focal epilepsy.

Wilder Penfield's background was linked to two famous institutions, the Johns Hopkins Hospital and the New York Neurological Institute, that played a primitival role in the development of neurology and neurosurgery as specialties in North America. At Johns Hopkins in 1918, he had been exposed to the surgical teaching of Halsted and then, at the Peter Bent Brigham Hospital, to Harvey Cushing's work. When he was at Oxford University (on a Rhodes Scholarship won from Princeton University), Charles Sherrington became his scientific hero and William Osler his life-long inspirational idol. He studied with Holmes and Sargent at Queen Square, London. He interrupted his practice as a young neurosurgeon at the Columbia-Presbyterian Hospital in New York to work with Horsley, the brilliant student of Cajal in 1924, and again to learn from Foerster in 1928 the method of cortical stimulation and resection of cerebral scars to treat focal epilepsy. During this time, he visited major centers in Europe, reporting his shrewd evaluations of their organization and personnel in neurology and neurosurgery to the Rockefeller Foundation.

For some years, Penfield had been driven by a dream to establish an institute for the scientific study and treatment of neurological disorders. He began to realize this goal in 1928 when he arrived in Montreal with his life-time surgical partner, William Cone. The excellent relationship that McGill University had already developed with the Rockefeller Foundation since 1922 to modernize its medical school offered Penfield a favorable matrix in which he could fulfill his conviction to "provide a center for neurological thought that would serve the whole continent" and to "work effectively upon the unsolved problems in neurology unhampered by the artificial division in medicine and surgery."

After 3 years of applications and negotiations, strongly backed by his McGill colleagues, Penfield succeeded: in April, 1932, the Trustees of the Rockefeller Foundation approved a grant of $1,232,000 to McGill University for a new Neurological Institute. The bulk of the grant ($1,000,000) was specified as endowment to support brain research; the remainder was applied to provide half of the cost of the structure. The founding of the Institute was Penfield's main legacy to world neurology, with the assurance of its continuity by endowment, the enhancement of the intellectual life of its staff by the fortunate setting within a great university and medical school and next to a famous teaching...
hospital, the continual comings and goings of young physician-scientists, and, most of all, the focus of its scientific projects always sharpened by the compelling demands of patients with neurological disorders (Fig. 1).

The Institute became a model for others throughout the world of the benefit of combining clinical neurology and neurosurgery with the basic neurosciences. Its "Fellows," trained in this atmosphere, returned to many countries, such as China, India, Poland, Hungary, Scotland, and Brazil, where they established similar units, often for the first time. Many others spread the techniques and spirit of the "Neuro" across Canada and particularly the United States, where they headed departments from Boston to San Francisco and from Chicago to Houston. When the National Institutes of Health in Bethesda created an institute for neurological disorders in the 1950's, many of its key figures were recruited from the Montreal Neurological Institute, and two became distinguished Directors.

In its first half-century, the Institute and its work grew exponentially. The building was doubled in size in 1953 with the construction of the J. W. McConnell Pavilion (named after a most generous Montreal supporter) and doubled again by further addition of the Penfield Pavilion in 1978 and the Webster Pavilion in 1984. Within the latter, the activities of a Brain Imaging Centre, integrating positron emission tomography, magnetic resonance imaging, and spectroscopy with computerized tomography and electroencephalography, epitomizes the pattern of interdisciplinary teamwork that marks the Montreal Neurological Institute.

"In the building itself," Penfield wrote, "we have tried to express the best traditions of neurology, have tried to give to it such beauty and dignity as we could achieve. But the significance of the building lies in the things which it houses. The building is only a shell. Within the shell should lie a living mollusc, a collective creature that is expected from time to time to form a pearl of great price. If this pearl can only be secreted within the protective covering of the shell and not without it, then the Institute achieves its purpose."56

How that purpose has been achieved over more than 50 years is best indicated by the vast numbers of patients successfully and compassionately treated and by published records of the scientific endeavors. The Institute's role can best be assessed by those who saw it from a distance as did Alan Gregg of the Rockefeller Foundation, who was involved in the early plans of the Institute. In 1953, he commented: "In but very few, if any, of the enterprises to which the Rockefeller Foundation has been privileged to contribute in the last twenty years have the results equaled those you have created here in this Neurological Institute. If I were asked to name a single grant that the Medical Sciences Division of the Foundation has made since 1931 that I consider ideal in purpose, in performance, in local response and in national and international influence, and in the character of our relationships maintained from the very beginning, I would say without a moment's hesitation the grant to the Neurological Institute of McGill University."57

References


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FIG. 1. Photograph of the Montreal Neurological Institute as it appeared in 1934.