ford celebration of the American Academy of Arts and Sciences I happened to be sufficiently behind the scenes to witness Simon's tactics to ensure that he did not encounter the inconveniences in getting an American visa that were being experienced by so many other foreign scientists at that time; these tactics can only be described as masterly!

The rapid turnover of his secretaries was legendary, it being the almost invariable rule that after a year or two they left to marry a graduate student or one of his young colleagues—something which gave Simon the keenest pleasure in spite of the obvious inconvenience to him.

He had a refreshing and somewhat Puckish wit, of which the subject might equally well be himself or someone else. He had his foibles; his dislike of drafts and of the insufficiently heated English rooms (conditions which caused him to don, as occasion demanded, cap and sweater and muffler) is well known. Although he flew a great deal, he did not like flying, and before pressurized cabins were common he always traveled with an oxygen bottle, apparently for very real reasons of health. However, his colleagues were not always sympathetic about such measures, and on at least one occasion Simon's maneuvers to supply himself with his oxygen flask without public knowledge provided much entertainment to those who knew of them.

Simon's adaptability in transplanting himself to a foreign country at the age of 40 and making himself so valuable as to be officially rewarded in the way he was is well-nigh unique in these times. He felt himself thoroughly at home in England, although he continued to hold the view that in some respects the English were a little mad. He even acquired some of the exterior markings of an Englishman. I remember that after he had appeared in the dining-room of the local hotel, in the New Hampshire town where I have my country home, one of my friends, on learning that it was *Sir* Francis Simon, remarked, "I spotted him at once for a typical Britisher." I am told, however, that his British colleagues were under no such illusions. His English was fluent, but he never felt that he had mastered all the niceties of the language, and he always gave his papers to friends for editing before submitting them for publication.

To a high degree his was a vital, almost exuberant, personality. To it was due in great measure the richness and fertility of his scientific ideas, which permitted him to catalyze so successfully the work of his many students and colleagues. It is hard to realize that we shall no more see him in our midst, and hard to justly assess the magnitude of our loss. His memory will long be with us.

Note

In preparing this article I received valuable assistance from a number of Simon's intimate associates, in particular N. Kurti and Lady Simon.

Charles Judson Herrick, Neurologist

The leitmotiv of Charles Judson Herrick's scientific career was the integration of the several disciplines involved in the understanding of the nervous system. When such a plan was originally envisioned by his elder brother Clarence, in 1891, the factual basis was meager, and a frontal assault on the barriers between university departments could not be tolerated. In the course of 70 years, "C.J.," as his friends called him, contributed a wealth of histological detail on the fundamental structure of the nervous system and correlated his findings with the rapid advances of the 20th century in psychology, physiology, and psychiatry.

From early boyhood his brother had been his teacher in "natural history," and before graduating from college Herrick began to study the brains of fishes. In 1893 his brother had to resign his professorship at Denison University and hasten to Arizona because of tuberculosis. "C.J.," two years out of college, undertook to conduct, single-handed, all of the scheduled courses in biology. He assumed an even heavier burden in saving the *Journal of Comparative Neurology*, which his brother had founded, "because its suspension would break my brother's heart and retard his recovery." He became editor, business manager without a secretary, proofreader, and supervisor of the printing of engravings. Until 1908 he paid the inevitable deficits of the journal from his own salary. On one occasion he felt called upon to decipher a manuscript in longhand which had been charred black in the fire which destroyed his laboratory. Many a robust man would have been overwhelmed by these labors. They did not keep C. J. Herrick from continuing his research.

After a year's leave of absence in 1896 he completed his doctoral dissertation, a monograph of 302 pages. It was the first complete analysis of the cranial nerves and contributed more than any other single work to the establishment of the "American School," which was interpreting the structure of the nervous system in terms of its functions. By 1907 he had published 17 papers on the nervous system of fishes in which certain afferent systems are highly developed and their centers in the brain are hypertrophied, so that the connecting fibers can be followed without experimental interference. A study of the behavior of normal catfish (1902) clearly demonstrated the gustatory function of the "terminal buds" which are distributed over the skin of head and trunk.

The reputation established by these studies resulted in an invitation to Herrick to become professor of neurology at the University of Chicago when H. H. Donaldson resigned to go to the Wistar Institute in 1907. Herrick hesi-

tated to make so radical a change because of his health. The matter was decided by his wife's question, "Would you rather go to Chicago and burn out or stay here and rust out?" He joined the department of R. R. Bensley, who was in the midst of correlating the structural changes in cells with the cell functions. The change provided ample facilities, technical help, and leisure for research, gave him inspiring colleagues in the university, and freed him from executive duties. A year later he presented the *Journal of Comparative Neurology*, free of debt, to the Wistar Institute, so that he was relieved of much of the labor it involved. He continued to guide its editorial policies until 1948 and saw it become one of the outstanding biological journals.

His training and his extraordinary patience and persistence led him to continue the histologic analysis of the brain as a working mechanism. He turned from the highly specialized fishes to the primitive and generalized tailed amphibia. In the course of 40 years he made the most complete analysis that we have of a vertebrate brain. It culminated in publication of *The Brain of the Tiger Salamander* (1948). He showed that the larval and adult nervous systems are primitively organized for responses of the body as a whole to normal environmental stimuli. This mechanism for the stereotyped, inherited behavior has evolved in all species that have survived through the ages. All living creatures are also capable, to a greater or lesser extent, of adaptation to change. The elaboration of the ability of the individual to learn by experience has, in vertebrates, gone hand in hand with the development of the cerebral cortex. In the

Charles J. Herrick

light of his studies of reptiles and primitive mammals, Herrick could recognize in the amphibian forebrain the primordia from which the cortex has evolved. This provided the fundamental plan for the entire vertebrate brain and has been invaluable for the analysis of more complex brains. These topics were elaborated in his *Neurological Foundations of Animal Behavior* (1924). The relations of brain and mind were clarified for "the man in the street," as he used to call him, in *The Brains of Rats and Men* (1926). He wrote *The Thinking Machine* (1929) with the needs of students of psychology in mind.

Teaching was an essential part of his mission. During the first year at Chicago he organized a new type of course in neuroanatomy and gave a brilliant series of lectures on the evolution of the nervous system and its functions to the group of advanced students his coming had attracted to the university. To those of us who had encountered only the current textbooks of anatomy, he opened up a new and fascinating field of study. His "seminar in neurology" was popular, and as members of other departments were invited to contribute, it developed into the stimulating Neurology Club of the University.

In 1914 there was still no elementary textbook on the nervous system, so he wrote one. Its unique point of view soon stimulated the production of a whole flock of texts designed for the courses in neuroanatomy patterned after his. His *Introduction to Neurology* provided a background for his course for psychology students, offered from 1916 to 1934 (except during his service in the Army). This was a true university course, without formal lectures or examinations and with unlimited opportunity for discussion. J. B. Obenchain assisted and later continued it. From the outset scholars from abroad as well as many advanced students came to work in Herrick's laboratory. To them his splendid library as well as his advice was always available.

Ten years after his retirement to Grand Rapids, Michigan, he found it necessary to give up the long hours of observation at the microscope. He devoted himself to meditation, reading, and writing on the philosophy of science. In his last book, *The Evolution of Human Nature* (1956), he brought sociology into the field of psychobiology. He died at the age of 91 on 29 January 1960, before he had completed all he had planned to do.

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