



IN MEMORIAM

Oleh Hornykiewicz—In Memoriam

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Dr. Oleh Hornykiewicz (1926–2020) was one of a rare handful of scientists familiar with the deep anatomical pockets of the human brain and capable of dissecting them out individually. This special ability made it possible for him to uncover the neurochemical abnormalities of various regions of the brain in Parkinson's disease.

A descendant of several generations of priests of the Ukrainian Eastern Catholic rite (that encourages its priests to marry), Oleh was born on the outskirts of Lwów, then part of Poland. In September 1939, Germany invaded Poland and the family fled to Vienna where Oleh, suffering from tuberculosis and speaking not a word of German, started high school. His elder brother was conscripted into the German army and died on the Eastern front.

Immediately after the War's end, Oleh entered the University of Vienna to study medicine and, on graduation, joined the Pharmacology Institute, combining clinical work with research into

Wilson's disease. From 1956 to 1958, he took a break from Vienna at Oxford University in England where his attention became focused on dopamine, a substance just becoming recognized as potentially important to brain function. On his return to Vienna, Oleh decided to combine his prior interest in the basal ganglia (from his work on Wilson's disease) with his new interest in dopamine. He measured dopamine levels in postmortem striatum of neurological patients. By 1960, Oleh had analyzed the brains of six Parkinson patients, eight patients with other neurological disease, and 17 non-neurological controls. Only the brains of the Parkinson's patients showed a severe dopamine deficiency in the caudate and the putamen.

With neurologist Walther Birkmayer, Oleh tried replacing the missing dopamine in Parkinson's patients. The effect was spectacular, especially so on the symptom of akinesia. I have myself witnessed the effect on medical students when Oleh showed film clips of an elderly woman with Parkinson's initially not able to move, and then, quite astonishingly, springing up from bed after the intravenous administration of levodopa. Today, it is generally agreed that the idea of treating Parkinson's disease with L-dopa represents one of the greatest triumphs of pharmacology and marks the start of the era of transmitter-based therapeutics.

Oleh spent 1967–1977 at the University of Toronto, where I had the good fortune of being his colleague and his friend. Even after Oleh returned to Vienna as the head of the Institute of Biochemical Pharmacology, he, his wonderful wife, Christina, and their four children (a daughter and three sons) often came back to Toronto where, he often said, they had spent the best ten years of their lives. He was an Emeritus Fellow of the ACNP.

A closing anecdote from Oleh's time in Toronto: my wife and I were invited to the Hornykiewicz home for dinner the very week they bought their first automatic dishwasher. Dishwashers were new at the time and no one among the guests had seen one. With the same logical steps that took him from low dopamine levels in the caudate and putamen of Parkinson's postmortem brains to the demonstration of the levodopa effect, Oleh methodically showed us how placing different sized dishes in specific slots in the dishwasher rack affected their relative cleanliness at the end of the cycle. Oleh remained a memorable teacher as well as a hands-on researcher all his life.

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