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JOHN TUZO WILSON (1908-1993)

With the death of Dr. John Tuzo Wilson on 15 April 1993, Canada lost a renowned scientist, and the North lost one of its most enthusiastic supporters. His other achievements were so wide and touched so many fields that they tend to overshadow his important contributions to our knowledge of the Arctic, which form the substance of this tribute.

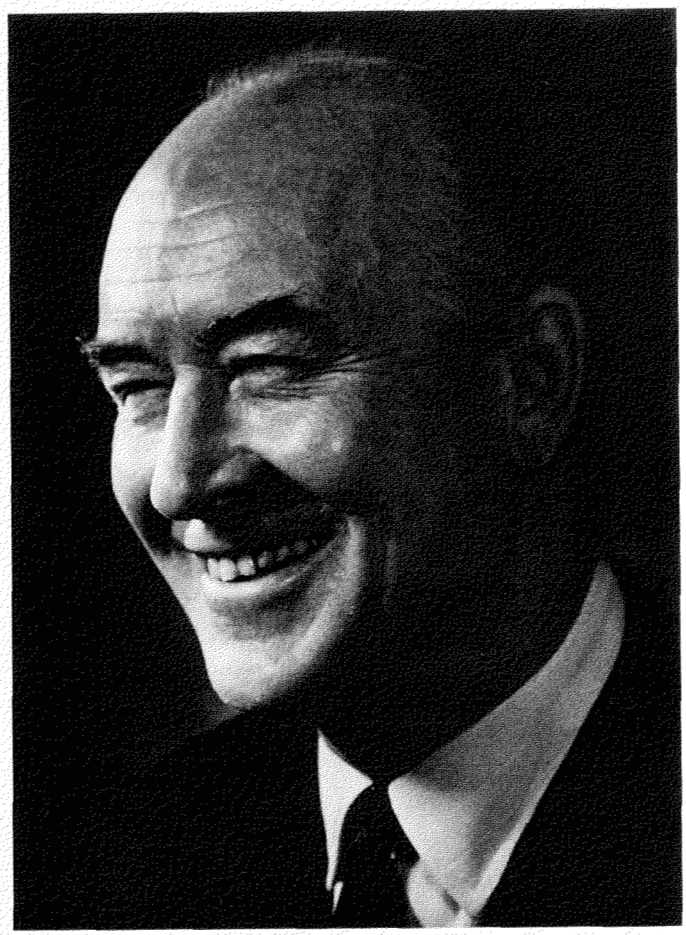
Both his parents had been deeply involved in the expanding frontiers of Canada. His father, a senior Canadian public servant in Ottawa, had played a major part in the planning and support of the Canadian Arctic Expedition of 1913-18. When a young boy, Jock, as he was known to his family and friends, met Vilhjalmur Stefansson, Diamond Jenness, and many other members of this expedition. Later, as director of Air Services, his father recognized the important part that aircraft would play in the North and took particular interest in identifying sites where airfields might be developed. This again brought his son into the company of many of those who felt strongly about Canada's opportunities and responsibilities in the North.

His mother, Henrietta Tuzo, was a well-known mountaineer who climbed extensively in the Alps and Canadian Rockies, including the first ascent of Peak 7, later named Mount Tuzo in her honour.

Jock graduated with a degree in physics and geology, substantially the first degree in geophysics given at the University of Toronto, followed by postgraduate studies at Cambridge and a doctorate at Princeton. He joined the Geological Survey of Canada in 1936, where he spent two summers mapping the area north of Fort Smith. This gave him an opportunity to study the possible routes followed by Samuel Hearne on his journey to the mouth of the Coppermine River in 1771-72 and led to an abiding interest in arctic history and the assembly of an arctic library that was the envy of many who shared his enthusiasm for the North.

At the outbreak of the Second World War, Jock joined the Canadian Army, proceeding overseas with the First Canadian Division in January 1940. He was recalled to Canada in 1943 to become the first director of Operational Research at National Defence Headquarters. Recognizing that Canada should play a leading role in the development of winter warfare, he organized a series of northern exercises. It was owing to his foresight and initiative that at the end of the war the Department of National Defence undertook Exercise Musk-Ox, which he directed. This major operation involved a journey in the winter and early spring of 1946 of more than 5000 kilometres through the Arctic and Subarctic by ten army oversnow vehicles, supported by RCAF aircraft. It was designed to test equipment and techniques developed during the war, particularly in relation to the part they might play in the civil evolution of the Canadian North. The success of this operation, which owed so much to his enthusiasm and able direction, had a far-reaching influence, both directly and indirectly, on the changes that have occurred in the Canadian North over the past half century.

The United States defence services were at that time expanding their role in the Arctic, and Jock (then Colonel Wilson) was able to promote and foster close cooperation and greater Canadian participation in their northern activities. He himself took part as a Canadian observer in many of their operations, including the first USAAF flight to the North Pole.



Towards the end of the war Jock was one of a small group of Canadian and U.S. scientists who, recognizing the need for international cooperation in arctic science, founded the Arctic Institute of North America. He was the first chairman of its Board of Governors, and the first article in *Arctic* is under his name (*Arctic* 1[1]:3). It reviews the history of the exploration of the North American Arctic, the nature of the research required there, especially in earth sciences, and stresses the benefits of continuing goodwill and cooperation among scientists of all nations.

After Exercise Musk-Ox, Jock accepted a professorship in the Department of Geophysics at the University of Toronto. His concept of the earth sciences had outgrown the narrower definition of geology then favoured in the Geological Survey of Canada, and he was attracted to the freedom of academic life. He became an inspiring lecturer and a brilliant improvisor of effects to explain difficult or novel concepts. His students relished his ability to make them think, his deep enjoyment of the earth sciences, and his desire to help them, especially by attracting support for their studies. Generous

in every way, he was eager to give credit to others and to hear good of their work.

His interest in the Arctic continued at the University of Toronto. Air photographic coverage of all northern Canada was then becoming available, and he was one of the first to realize the part it could play in the study of the Quaternary geology of the Arctic, where there was little vegetation to obscure the surficial geology. He initiated and directed the preparation of the first Glacial Map of Canada, which showed the eskers, raised beaches, and other Quaternary characteristics of the surficial geology. This proved not only of great academic value in glaciology, permafrost, and related studies; it was also of practical importance in planning transportation routes, locating engineering materials, and identifying sites suitable for construction.

Jock had also been involved with the Tectonic Map of Canada. He was a member of the committee of four that initiated and directed its preparation. The map showed deeper structures, such as faults and stratigraphy, and was widely used throughout Canada in prospecting for metals and petroleum.

Later he became a convert to the concept of continental drift and went to the east coast of Baffin Island to correlate rock formations there with those in Greenland across Davis Strait. Other research work took him to Antarctica. Recognizing the wide implications of continental drift in geology and geophysics, he became an early authority in the new and rapidly expanding field of plate tectonics and among its leading proponents and defenders.

Jock became vice president of the International Union of Geodesy and Geophysics from 1954 to 1957 and president from 1957 to 1960. In these capacities he had a leading role in the organization and conduct of the International Geophysical Year of 1957-58, which continued and expanded the work of the two International Polar Years of 1882-83 and 1932-33. As there was another Dr. J.T. Wilson, who was a well-known geologist, Jock began to use his name "Tuzo" more frequently to avoid confusion.

At the University of Toronto Jock was appointed director of the Institute of Earth Sciences in 1960. Seven years later he became principal of Erindale College. Here a much wider range of students was able to benefit from his insatiable enthusiasm for knowledge and his drive to get things done. He was always trying to look at things in a new light and always eager to discuss his concepts.

On retirement from the University of Toronto in 1974, Jock was appointed director general of the Ontario Science Centre. Here he was extremely successful in increasing public awareness of the part that science could and should play in the life of the nation. His continuing interest in the North led to several activities and exhibits that demonstrated the special characteristics of the polar regions and Canadian contributions to polar knowledge. They included the Native Heritage Exhibition, which brought a number of Indians and Inuit to the Science Centre to demonstrate their skills, techniques, and ways of life, and the Symposium of Living Explorers of the Arctic, which gathered together so many of those who had taken part in exploration of the Arctic.

Jock's guidance was often sought and valued by both national and international bodies, and it was readily given at all times. He was appointed by the Canadian government to the Defence Research Board, the National Research Council, and the Science Council, and he was made a trustee of the National Museums of Canada. He was chancellor of York University from 1983 to 1986 and served as president of the Royal Society of Canada and president of the American Geophysical Union. Among his many and well-deserved honours and awards were induction as a Companion of the Order of Canada; the Vetlesen Prize, which is often described as the Nobel Prize of the earth sciences; the J.J. Carty Medal, the highest award of the U.S. National Academy of Science; fellowships of the Royal societies of London and Edinburgh; fellowship of Massey College; honorary fellowship of St. John's College Cambridge; and honorary degrees at many universities.

He derived great enjoyment from his work, which was incessant. At the time of his death, he was about to start a new geophysical book, he left his autobiography unfinished, and he was writing pioneering papers on the concept of migrating mountains; he also had material for at least one book on the North. He was always thinking about the structure of the earth, and a new paper was forming in his mind before the ink on the last was dry.

With a life so full and interests so wide, it might be assumed he had little time left for home and family. Nothing could be farther from the fact. His wife, Isabel, helped and complemented him in every possible way. She was always a welcoming hostess, however many the unexpected guests her husband brought back to their house. Less obvious was the careful and rigorous editing much of his writing had undergone at her hands. He took great pleasure in the careers of his two daughters. Whenever possible members of his family accompanied him on his frequent travels around the world.

Few men have done so much to reveal the secrets of the earth or have inspired so many to continue along the trails he blazed. We are all the poorer for his loss, but those fortunate enough to have known him will always cherish his memory and exuberant love of life. "The world is my lab" was how he described his work, which was indeed worldwide both in its subject and in the cooperation he sought and found with scientists of other nations.

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