

JOHN TUZO WILSON  
CC, OBE, ScD(Cantab), PhD(Princeton), FRSC, FRS

John Tuzo Wilson, born in Ottawa on 24 October 1908, was one of the most outstanding and prolific Earth Scientists of this century. He died in Toronto on 15 April 1993, aged 84.

His exposure to geology and to exploration began early in life: during school holidays he worked as a geological field assistant in remote parts of Canada and the USA. He went on to study physics, maths and geology at Trinity College, Ottawa, and became the first graduate in geophysics in 1930. He then won a scholarship to Cambridge where he took a BA in 1932, and went on to take his PhD in geology at Princeton in 1936.

His first job was with the Geological Survey of Canada. His extensive field trips to the North-West Territories combined geological mapping with the adventure of exploration which he loved. During these years he became interested in the large scale structure of mountain ranges, and began to think about them from a global perspective. This approach was to become a characteristic of his later fundamental contributions to geology.

From 1939 to 1946 he served with the Canadian Military Engineers, including four years in Europe, achieving the rank of Colonel. He ended his military service in command of an expedition (Exercise Musk Ox) that is credited with opening up the Canadian Arctic to long distance winter travel, encouraging settlement and stimulating scientific research in the Canadian north. As a consequence of this work he was named in 1946 both to the US Legion of Merit and to the Order of the British Empire.

In 1946, Tuzo Wilson then took up the appointment as Professor of Geophysics at the University of Toronto. From this base, through the next decade, he worked on several committees, and by his efforts raised the profile of Canadian geophysics in the international sphere. He served as an officer of the International Union of Geodesy and Geophysics (IUGG) from 1948 to 1963, including a term as President (1957-60) which importantly included the International Geophysical Year (1957-58). This provided him with the opportunity to travel widely and he visited all the continents including Antarctica and the islands of the Pacific Ocean enabling him to develop by direct observation the truly global view of geology which stood him in good stead for the next, and what turned out to be scientifically, the most important phase of his career.

This took place through the 1960s when he earned wide international acclaim as one of the primary advocates of the Plate Tectonics hypothesis. By energetic and well informed argument he became undoubtedly one of the most important and influential personalities that drove this profound revolution in our approach to geology and geophysics. His contributions have been widely recognised by the award of a dozen prestigious medals including the Ewing Medal and the Bucher Medal of the American Geophysical Union, the Penrose Medal of the Geological Society of America, the Wegener Medal of the European Union of Geosciences, the Wollaston Medal of the Geological Society of London and by the election to Fellowships of many national Academies and Societies. He was the recipient of many prizes including the Vetlesen Prize of Columbia University which is regarded in the Earth Sciences as the equivalent of a Nobel Prize. He has been President of the International Union of Geodesy and Geophysics, of the Canadian Geophysical Union, and is the only foreigner to have been elected President of the American Geophysical Union.

Yet Tuzo Wilson was not one of the earliest advocates of the importance of horizontal motions in the evolution of the distribution of the continents and oceans. In fact, in so far as he had given thought to the problem, Tuzo seems to have gone along with the then broadly accepted fixist views of geology, not paying much attention to the pioneer work during the early part of the present century of Alfred Wegener and others, nor even to the first palaeomagnetic evidence of apparent polar wander and continental drift which was being assembled, mainly in England through the late 1950s. But when the evidence for sea-floor spreading began to emerge in the early 1960s, Tuzo was very quick to 'see the light', and played a major part in the development of the new concept that the outer layers of the Earth consist of a number of rigid 'plates' which at one edge are forced apart along the mid-ocean rift/ridge systems, and which at the opposite edge are consumed by subduction into the Earth's mantle evidenced by much enhanced deep earthquake activity, along another global set of linear systems. These ideas which became known as 'plate tectonics' were developed rapidly over the period of only a few years; they resulted from interaction and discussion between virtually a handful of researchers, most (though by no means all of them) a generation younger than Tuzo. At this stage, Tuzo's vast field experience and knowledge accumulated throughout his active career of large scale geological survey work and exploration through the 1930s and 1940s came into play, enabling him to take arguably the leading role in fleshing out the basic concept of plate tectonics by relating predictions of the hypothesis with hard geological evidence recorded in the existing literature. Perhaps one of his more important specific contributions was the understanding of the dynamics of the faults which were observed to occur as transverse 'steps' along the main ocean rift system: he named these 'transform' faults. He was one of the most persuasive advocates of the new hypothesis: travelling widely and lecturing with missionary zeal, he personally was responsible for the conversion of a great many of the most respected and authoritative geologists and geophysicists of the time. In fact, he took great pleasure in keeping a record of the dates of their conversion as, one by one, they came to accept the new line of argument.

And so, by the end of the 1960s he had achieved pre-eminent international scientific fame. He continued to the end of his life to take an active interest in the Earth Sciences, coming up with a succession of innovative ideas. But through the later stages of his career, his most important achievements were in organisation and administration where, true to character, he injected originality and creativity.

At the new Erindale Campus of the University of Toronto, in the seven years following his appointment as Principal in 1967, he developed a thriving community of several thousand students from virtually nothing. This task was made particularly pleasurable for him because of the valuable and complementary contribution his wife Isabel was able to make.

His final appointment, in 1974, was as Director of the Ontario Science Centre, a museum of modern science. Here he directed his vast resources of energy, imagination and enthusiasm to popularize science through the development of 'state of the art' 'hands-on' educational and, at the same time, entertaining exhibits. By the end of his Directorship, the OSC attracted over a million people a year, including some 300,000 Ontario school children. An important development was the arrangement of exchange of exhibitions with a number of countries, particularly with China where a number of similar science centres were established.

Although he retired in 1985 at the age of 78, he served as Chancellor of York University, Toronto from 1983 to 1986. Then his final years were spent free of other responsibilities, so that he was able, once again, to think about science, and come up with further new and original ideas.

Throughout his busy, full, and satisfying international scientific career he never forgot that he was a Canadian, and served on many committees of scientific and technological importance. In recognition of this work he was named as an Officer (1970) and Companion (1974) of the Order of Canada, and he was awarded a Canada Centennial Medal in 1967 and a 125th Anniversary Medal in 1992.

Tuzo Wilson was elected Honorary Fellow of the Royal Society of Edinburgh in 1986.