

DAVID KEITH C. MACDONALD, 1920 - 1963

Keith MacDonald came from Oxford to Canada in 1951, having been asked by the National Research Council (NRC) to establish a low temperature and solid state physics section at NRC's Ottawa laboratories. He did this with outstanding success, and in such a manner as to allow him to make an astonishingly wide and lasting impression on Canadian science and on the public's appreciation of science during the twelve years of life remaining to him.



Keith MacDonald

MacDonald was born in Scotland in 1920. During World War II he took a degree at Edinburgh University, worked on radar development as a member of the Royal Electrical and Mechanical Engineers, and joined the staff of the British Military College of Science. After the war he returned to Edinburgh University, receiving a Ph.D. in 1946 for his work on electrical noise. He then went to Oxford where his studies of the transport properties of metals gained him a D.Phil.

He arrived in Ottawa with experience as a researcher, a teacher, an organiser and a leader. Initially he was on his own, but with freedom to purchase equipment and to select or take on additional staff or Research Fellows of his own choosing. The result was a highly productive and cosmopolitan group that within a year began producing a steady flow of publications and presentations at conferences. MacDonald had taken an immediate liking to Canada, and would point out to fellow immigrants its numerous advantages, citing examples such as Canada's generous research budgets and its simple income tax forms that could be filled out in fifteen minutes – this was in 1952 – instead of their requiring, as had his UK ones, more than half a day.

An excellent teacher, he introduced Ottawa to the British tradition of Christmas science lectures for children, and used radio, film and television to present science topics to the general public. From 1955 to 1960 he was Honorary Chairman of the Physics Department of the University of Ottawa, and continued to give lectures there until near the end of his life. In 1958, a week's stay at the Montreal Neurological Institute undergoing medical tests put MacDonald in contact with various medical specialists. This resulted in his organizing a multi-disciplinary

symposium on "self-regulation in living systems", the first of several similar symposia, each deliberately arranged to attract attendees from half a dozen differing scientific or engineering disciplines.

During the last six years of his life MacDonald suffered from a progressive atrophy of the muscles that, starting with the loss of control of a single finger, near the end left him able only to breathe and speak. He continued to work for virtually all of that time, his intellect being unimpaired. But his personality changed significantly; he became less dissatisfied with his own worth and more concerned for and considerate of other people.

In a short research career, MacDonald published about 130 papers and wrote five books. He became a fellow of the Royal Societies of Edinburgh, Canada and London. He was a complex and occasionally, until his last years, a difficult man, and an inspiration to all who knew him.

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