

Keith J. Laidler (1916–2003)



Keith James Laidler was born on January 3, 1916 in Liverpool, England. He attended secondary school in Liverpool, received his B.A. in chemistry from Trinity College, Oxford (1934), and his M.A. and D.Sc. in physical chemistry (kinetics) from Oxford in 1938, working with C. N. Hinshelwood. In the summer of 1938, he came to the United States to attend Princeton University where he received his Ph.D. in physical chemistry in 1940, working with Henry Eyring. He joined Samuel Glasstone and Eyring to publish *The Theory of Rate Processes: The Kinetics of Chemical Reactions, Viscosity, Diffusion, and Electrochemical Phenomena* (1941), which has become a classic in the field.

He returned to England and worked there as a scientist for the Canadian government during World War II as a member of the Canadian Armaments Research and Development Establishment. In 1955 he became a professor of chemistry at the University of Ottawa, where he later served as chair of the department and vice-dean of the faculty of science.

Laidler was a Fellow of the Royal Society of Canada, who described him “as one of the twentieth-century pioneers in the remarkable progress made in chemical kinetics leading to the development of transition state theory which provides the modern kinetic theory. Laidler's work includes seminal contributions in several areas of the field: gas phase reactions; kinetic aspects of reactivity of electronically excited molecules and construction of potential energy surfaces for such processes; development of treatments for kinetics and mechanisms for surface reactions and solution reactions, introducing modern concepts of solvation through dielectric polarization effects in the treatment of ionic redox reactions and of reactions producing or consuming ions; gas phase free-radical reactions involving pyrolysis and other thermal decomposition processes; and ... the kinetics of enzyme-catalyzed reactions.”

Laidler published over 250 scientific papers, but also wrote on the history of physical chemistry, including “The Development of Transition State Theory” (with M. Christine King), *Journal of Physical Chemistry* (1983), “The Development of the Arrhenius Equation,” *Journal of Chemical Education* (1984), “A Century of Solution Chemistry,” *Pure and Applied Chemistry* (1990), “Lessons from the History of Chemistry,” *Accounts of Chemical Research* (1995), and “van't Hoff and the Scientific Imagination,” *Chemical Intelligencer* (2000).

Many of Laidler's books were in the more traditional areas of chemistry, including: *Chemistry of Enzymes* (1954); *The Chemical Kinetics of Excited States* (1955); *Chemical Kinetics of Enzyme Action* (1958); *Principles of Chemistry* (1966); *Theories of Chemical Reaction Rates* (1969); *Physical Chemistry With Biological Applications* (1978); and *Physical Chemistry* (1982). But Laidler was also concerned with history in *The World of Physical Chemistry* (1993), considered a major work in the history of science. He also became recognized as a popular science writer through such books as *To Light Such a Candle: Chapters in the History of Science and Technology* (1998); *Energy and the Unexpected* (2002), *The Harmonious Universe: The Beauty and Unity of Scientific Understanding* (2004), and *Science and Sensibility: The Elegant Logic of the Universe* (2004).

Laidler's awards include the Award for Excellence in Research, University of Ottawa (1971) and the Queen's Jubilee Medal (1977), the Centenary Medal (1982) and the Tory Medal (1987), all from the Royal Society of Canada. In 1996, he received the Dexter Award for his historical accounts of the history of chemistry, especially physical chemistry. Laidler retired in 1981 but continued to lecture as professor emeritus long after that. He died on August 26, 2003. In 2004 the Canadian Society for Chemistry renamed their Norana Award as the Keith Laidler Award in his memory.

Sources

Brian E. Conway, "Professor Keith J. Laidler," *International Journal of Chemical Kinetics* 13 (1981): 787–788.

Biographical information from the Royal Society of Canada Award of the Henry Marshall Tory Award to Keith J. Laidler at http://www.rsc.ca/index.php?lang_id=1&page_id=146#TOC8.

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