

DR. ROBERT STUART TIPSON

This issue of *Carbohydrate Research* is dedicated to Dr. R. Stuart Tipson, one of the founding editors of this journal, a pioneer in the chemistry of nucleic acids, sugars, and polysaccharides, and a master in the use of precise language and terminology for the communication of science.

Robert Stuart Tipson was born on November 23rd, 1906 in the hamlet of Wadshelf, Derbyshire in England. He was the son of a schoolmaster and was tutored at home until the age of ten, when he entered Bablake School in Coventry to study for the School Certificate, Higher School Certificate, and university matriculation. Proceeding to the University of Birmingham, he received his B.Sc. degree in Chemistry with First Class Honours in 1927, whereupon he entered the research group of Professor W. N. Haworth and was awarded the Ph.D. degree in 1932 for a thesis entitled "Studies in the Carbohydrate Group". Professors Sir Ian Heilbron and Sir Robert Robinson were his external examiners. Tipson earned his senior doctorate (D.Sc.) from Birmingham in 1945.

Tipson left England in 1929 and worked in Canada at McGill University in Montreal with Professor Harold Hibbert on the structure of the bacterial polysaccharide, levan. A year later, he entered the United States to work in New York City with the celebrated biochemist P. A. Levene at the Rockefeller Institute for Medical Research (now Rockefeller University). There he conducted seminal work on the structures of the nucleic acids and their sugar components, showing that the saccharide rings in DNA and RNA are furanoid. He completed the first synthesis of a nucleotide, and demonstrated the "*trans*-rule" governing the stereochemistry of glycosylation reactions. Other studies were concerned with the structures of plant gums, and Tipson also lectured in advanced biochemistry in Brooklyn College.

Dr. Tipson moved in 1939 to Pittsburgh to a position as a Fellow in the Department of Research in Pure Chemistry at the Mellon Institute, where he collaborated with Dr. Leonard H. Cretcher in studying carbohydrates, cinchona alkaloids as antipneumococcal drugs, quinoline derivatives as antimalarials, alkylation processes, and a range of other projects that remained largely unpublished because of patent restrictions. He contributed a landmark article on the sulfonic esters of sugars in Volume 8 of the *Advances in Carbohydrate Chemistry*; earlier he had helped to launch the initial volume in that series with a concise but comprehensive article on the chemistry of the nucleic acids. A precise experimentalist, he took great pains to characterize compounds on a crystalline basis, and was the first to crystallize the sugar D-talose; and he wrote a monumental and definitive chapter on

the subject of crystallization for the Weissberger compendium on *Technique of Organic Chemistry*.

In August 1957, Dr. Tipson accepted a research appointment in Washington, D.C., at the National Bureau of Standards, where he remained until 1972. He was actively engaged in research on carbohydrates and on standard reference materials, and published numerous papers, many in collaboration with Dr. Horace S. Isbell as well as with other staff members of the Bureau. In particular, he and Isbell published extensive studies on the infrared spectra of sugars and on the conformations of the cyclic sugars; their initiative set the stage for much later development with the advent of improved instrumentation.

While in government service, Tipson undertook special assignments from the U.S. Congress and received several awards for outstanding service, although internationally he was better recognized for his work since 1959 as one of the editors of the *Advances in Carbohydrate Chemistry* series (later *Advances in Carbohydrate Chemistry and Biochemistry*), a responsibility he still maintains. He became one of the editors of *Carbohydrate Research* when it was established in 1964, and continues as a member of the Advisory board of this journal and also serves as its Book Reviews Editor. Throughout his career, he has had a strong interest in the nomenclature of organic compounds and, in particular, in the naming of carbohydrate compounds, and has been a major animator on various official nomenclature committees.

Dr. Tipson's involvement in scientific societies includes life memberships in the Royal Society of Chemistry, the American Society of Biological Chemists, and the American Chemical Society. He has worked actively on behalf of the Carbohydrate Division of the ACS, serving a term as an officer of the Division, taking a key role in the Division's Nomenclature Committee, and editing the abstracts of papers presented at the meetings of the Division. His outstanding contributions to the carbohydrate field were recognized in 1971 with the conferring of the Claude S. Hudson Award, and, in 1986, the Carbohydrate Division honored him with the recently established Melville L. Wolfrom Award.

The Tipson home at 10303 Parkwood Drive in Kensington, Maryland has for many years been the focus of Dr. Tipson's prodigious activity as a scientific editor of unique ability. Rarely travelling in recent years, he is nonetheless a familiar friend and unprejudiced critic to numerous scientists around the world who have benefitted from his meticulous editing of their manuscripts. His incisive revisions in multiple colors, bestowed impartially upon the mandarins of science as well as on the beginning investigator struggling with a language not his own, have brought clarity and impact to countless texts that have passed through his hands. The busy reader has been the immediate beneficiary, but there are few authors who have not ultimately recognized, after the initial trauma of retyping a heavily revised manuscript, the excellence of presentation of their work thanks to the unstinting efforts of Bob Tipson.

We join with many friends and colleagues, some of whom present their scien-

tific work in this issue, in saluting Robert Stuart Tipson for his long and unmatched contribution to carbohydrate science and its publication, and wish him continued enjoyment of his scientific work and leisure activities.

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DEREK HORTON