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Emeritus Professor Stephen Mason CChem FRSC
FRS

6 July 1923 - 11 December 2007

Stephen Mason was born in Leicester in 1923 and brought up in the village of Anstey. He won a scholarship to Wyggeston Grammar School and from there took up an open scholarship in natural sciences at Wadham College, Oxford.

He graduated BA in 1945 and completed his D. Phil. with D.Li.Hammick in 1947 on the physico-chemical factors underlying the biological properties of some antimalarial agents. Mason had become interested in the history of Wadham college and in particular of John Wilkins, who was a founder member of the Royal Society. An essay on the history of protochemical ideas led to the offer of a departmental demonstratorship in the Museum for the History of Science, Oxford (1947-53) which he held concurrently with a college tutorship at Wadham. The lectures on science history given as part of the demonstratorship were augmented and published as *A History of the Sciences* (1956), a pioneering work which treated the development of science in the context of economic and social factors. It has never been out of print and has been translated into at least seven languages.

He had kept up his chemical researches in Hammick's laboratory during his time at the Museum and, feeling that it was easier to do historical research in a chemistry department than vice versa, took up a Fellowship with Adrian Albert at the Australian National Laboratory (then in the Euston Road, London). Here began his life long interest in spectroscopy. In 1955 he attended the first of Charles Coulson's Summer Schools in Theoretical Chemistry and from then on the interaction of synthetic chemistry, experimental spectroscopy and theory characterised his research. While at the ANU he met and married Joan Banus who was then a Postdoctoral Fellow at UCL.

In 1956 he took up a lectureship in physical organic chemistry at the University of Exeter and was promoted to Reader in 1963. He moved to a foundation chair of Chemistry at the University of East Anglia in 1964 and in 1970 to Kings College London where he remained until retirement.

Mason is best known for his contributions to Optical Activity in its widest form. He was particularly interested in the spectroscopy of chiral molecules and, shortly after arriving at Exeter, built a spectrometer to measure circular dichroism. Early achievements included the use of exciton theory to determine the absolute configuration of an organic molecule (calycanthine) in solution for the first time. This work was subsequently crucial to validating the Bijvoet method of determining absolute configuration from X-ray crystallography. He also made the first measurements of single crystal CD spectra of transition metal complexes. This in turn led to the development of a theoretical understanding of such spectra.

Understanding the theoretical basis of transition metal optical activity was paramount and was achieved during the 1970s by the development of Ligand Polarisability Theory which also explained the origin of hypersensitive lanthanide $f \leftrightarrow f$ transitions and the intensities of the $d \leftrightarrow d$ transitions in non-centrosymmetric transition metal complexes. Instruments continued to be developed during this period and CD measurements were extended to the vacuum ultraviolet and (for the first time) to the infra-red regions. As a direct result of the IRCD work, a comprehensive theory of the optical properties of cholesteric liquid crystals was also published.

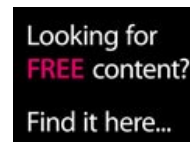
During his final decade at Kings, Mason's attention focussed on interactions between chiral molecules and particularly the role of the weak nuclear force in the origin of biomolecular homochirality. The distillation of over twenty five years of research into Optical Activity was published as *Molecular Optical Activity and the Chiral Discriminations* in 1982, the same year he was elected FRS.

Stephen Mason was an innovative scientist and an innovative historian, who genuinely bridged C P Snow's "two cultures". There was a period (Kings in the 1970's) when a (today unthinkable) variety of activities took place in Mason's laboratory: organic and inorganic synthesis, instrumental development, spectroscopy, computational and theoretical investigations and historical studies. We embraced all of chemistry and felt there were no boundaries. In summing up his attitude to research we can do no better to quote the man himself. When asked by students whether they should do A or B, his inevitable mantra was "Its not 'either/or' its 'AND AND!' " which sums up his all inclusive philosophy of research. His many postdoctoral workers and visitors benefited from being treated as colleagues and co-workers and were allowed a remarkable freedom to publish alone while enjoying hospitality in his laboratory.

In 1988 Stephen and Joan retired and moved to Cambridge where he held an extraordinary Fellowship at Wolfson College (1988-90). His final book, *Chemical Evolution: Origins of the Elements, Molecules and Living Systems*, was published in 1991.

He was an active member of the Chemical Society (later the RSC) having joined on graduation in 1945. He served on Council twice (1964-69 and 1978-81). In 1991 he founded the Historical Group of the RSC and served as its chairman for the first three years.

Stephen's principal interest outside chemistry was the history and philosophy of science. He had begun a major revision of *A History of the Sciences* when Joan died in 2004, which hit him extremely hard. He died on 11 December



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2007 and is survived by his sons, Oliver, Andrew and Lionel.
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