Aston Medal 1998

Keith Jennings

Keith holds the singular distinction of having held, in addition to the Aston Medal awarded by the BMSS, all three major international mass spectrometry honours. These comprise the Field and Franklin Award for Outstanding Achievement in Mass Spectrometry (1998), the ASMS award for Distinguished Contribution in Mass Spectrometry (1995), and the Thompson Medal for Outstanding Achievements in Mass Spectrometry & for Distinguished Service to International Mass Spectrometry (1985).

Born in 1932 in Sheffield, his initial education was at the King Edward VII Grammar School, following which he completed his National Service working as a radio mechanic. In 1952 he was awarded a scholarship to read chemistry at Queen's College Oxford where he was greatly influenced by Jack Linnett. It was at this time he obtained his first mass spectrum (that of C_2D_2). He obtained his DPhil in 1956, his major studies focusing on the recombination of hydrogen atoms on varying surfaces. A postdoctoral stint with Bob Cvetanovic at the NRC in Ottawa, Canada, followed where he studied the photosensitised reactions of n-butane, and the reaction of oxygen atoms with alkenes. During this period Keith became more seriously interested in MS.

He returned to the UK in 1960 to take up an academic post at the University of Sheffield. His initial work was on the photosensitised reactions of partly fluorinated alkenes and alkanes but, to the benefit of the field in general, in 1963 he obtained his first mass spectrometer (an AEI MS10). This modest instrument was closely followed (1964) by the acquisition of an AEI MS9, and it was on this instrument that he carried out his groundbreaking work on collision induced dissociation (CID). He was appointed Reader at Sheffield in 1969. In 1972 he left Sheffield to become Professor of Physical Chemistry at the University of Warwick, a post he was to hold for the next 25 years. During the early years at Warwick Keith took delivery of the first ICR instrument to be installed in the UK, did fundamental work on the study of negative ions and developed his research on CID and metastable ion reactions using an AEI MS50. This instrument, which was later developed to undertake pulsed, high pressure studies, was the workhorse on which many memorable experiments were carried out. In the late 1980s Keith, showing great foresight, became increasingly interested in the application of MS in the life sciences. The purchase of a Kratos four sector Concept instrument led to work sequencing peptides of up to 2500 Da using combinations of CID and surface induced dissociation. In the years after 1994, using electrospray ionisation on a triple quadrupole instrument (Micromass Quattro II), Keith carried out a number of structural studies on proteins of significant biological interest.

He retired from his post in the Chemistry Department in 1997 and, reflecting his current scientific interests, was appointed Emeritus Professor in the Department of Biological Sciences at Warwick University. It is staggering to note that his research in the Department of Chemistry was carried out despite the fact that, of his 25 years there, Keith was Head of Department for 15 of them. Keith was always dedicated to MS education. An outstanding lecturer, he gave many well remembered courses on mass spectra interpretation. He was always in demand as a speaker at scientific meetings and gave invited lectures on every continent of the globe.

He served as Chairman of BMSS on two occasions (1969-1971 and 1986-1988) and was an Editorial Board member of all the major mass spectrometry journals. Although the whole body of Keith's work is of a very high standard and has influenced much of modern MS research it is perhaps worth remembering an observation that he made during his pioneering work on CID in the late 1960s. *"Structural inferences normally drawn from electron ionisation spectra could also be drawn from CID spectra".* This clearly underpins the work carried out in every significant mass spectrometry laboratory worldwide today and is a testament to his legacy and influence.

taken from Jim Scrivens' article in BMSS Mass Matters July 2008