Donald T. Elmore (1924–2012)

Emeritus Professor Don Elmore, who died aged 88 on 31 May this year, was an eminent enzymologist and Head of the Department of Biochemistry at Queen’s University Belfast from 1971 until he retired to Oxfordshire in 1987.

Don was born in Sleaford, Lincolnshire, where he gained his early education at Carre’s Grammar School. As an undergraduate, he read Chemistry at Imperial College London during the Second World War when circumstances demanded that he combined his studies with nights on fire-watch duty on the roofs of the college buildings. Having completed his first degree in just two years, he moved to University College Nottingham in 1944 where he carried out research for his PhD with J.M. Gulland and D.O. Jordan on the reactions of mustard gas with nucleic acids. After being awarded a Beit Memorial Fellowship in 1949, Don joined the renowned laboratory of Sir Alexander (later Lord) Todd in Cambridge where he explored the use of ion-exchange resins in separating pyrimidine nucleosides and (with C.A. Dekker) isolated 5-methyldeoxycytidine from wheatgerm DNA. As a foretaste to his subsequent interest in peptide synthesis, he also succeeded in preparing synthetic dinucleotides by chemically coupling protected monomers.

When Don moved from Cambridge to an assistant lectureship at Sheffield University in 1952, he shifted the focus of his research and began an abiding interest in the biochemistry of proteins. Initially, this centred on degradative studies related to the Edman sequencing method. However, following his appointment to a lectureship in Biochemistry at Queen’s University Belfast in 1957, Don embarked on the wide-ranging investigations of the structure and mechanism of proteolytic enzymes that were to occupy the rest of his career. With a view to their possible therapeutic applications, he was particularly successful in designing and preparing synthetic substrates and inhibitors for a number of serine and aspartyl proteases of medical importance. He published regularly in the Biochemical Journal and one of his key papers, on the development of fluorogenic titrants for trypsin, chymotrypsin and related enzymes, has attracted more than 350 citations to date. His authoritative short monograph Peptides and Proteins published in 1968 by Cambridge University Press provided an excellent introduction to the field and achieved international acclaim. In recognition of his manifold contributions to protein chemistry, Don was awarded a medal by the National Committee for Biochemistry of the Royal Irish Academy in 1986.

At the time Don came to Queen’s University, Biochemistry was a small subdepartment of the Medical Faculty whose primary function was to deliver service teaching for medical and dental students. However, with the introduction of an Honours degree in Biochemistry for science students in 1967, the unit was expanded to become an independent department and provided with well-equipped laboratories in the newly built Medical Biology Centre. Don, by now promoted to Reader, played a major role in this transition and was subsequently appointed to the J.C. White Chair of Biochemistry as Head of Department in 1971. During his tenure spanning the next 16 years, he managed the departmental activities with quiet efficiency and unstinting dedication. As an enthusiastic advocate of interdisciplinary research Don initiated many collaborative projects between his own group and other laboratories, within Queen’s and beyond, on topics ranging from peptide synthesis to the roles of proteolytic enzymes in health and disease. He was quick to appreciate the potential of computer applications in biochemistry and, long before the ‘digital revolution’, had devised analogue computer simulations of enzyme kinetics for use in undergraduate practical classes.

Together with representatives from other universities on the island, Don was involved in the far-sighted negotiations that led to the inauguration of the Irish Area Section of the Biochemical Society in September 1967. Ever since, the Section has played a most valuable role in fostering professional contacts and scientific co-operation between biochemists throughout Ireland.

Following his retirement from Queen’s University, Don held a fellowship for one year at the Dyson Perrins Laboratory for Organic Chemistry in Oxford and maintained the contact thereafter as he and his wife Mae had settled in the nearby village of Eysham. His scholarly output continued unabated and each year between 1989 and 2003 he wrote a 50-page chapter on peptide synthesis for the Royal Society of Chemistry’s Specialist Periodical Report on Amino Acids, Peptides and Proteins. With G.C. Barrett of Oxford Brookes University as co-author, he also published a textbook, Amino Acids and Peptides, through Cambridge University Press in 1998.

Aside from his academic interests, Don enjoyed classical music and he read widely. In a more leisured era when university life was less pressured than it is today, he was a talented member of the Queen’s University Staff cricket team. Above all, Don was a first-rate scientist who was always happy to share his insights and knowledge with fellow researchers. He will be remembered with respect and affection by former students and colleagues alike. Don is survived by his daughters Nicola and Melanie, her husband Chris Kirkpatrick, and three grandchildren Rebecca, Benjamin and Verity.

R.J.H. Davies (Queen’s University Belfast)

Reference