Andre Darbre (1921–2018)

Andre Darbre was born on 28 May 1921 in Birmingham to Swiss parents with a family tree traceable back to 1601. He went to Waverley Grammar School where his love of swimming and playing the violin were kindled for life. After matriculation in 1936, he was appointed junior librarian at Birmingham Reference Library, but, like many of his generation, achievement of professional qualifications was interrupted by the war years. He volunteered to join the Royal Armoured Corps and served for 5 years, initially posted to North Africa into the battle of El Alamein and then moving up through Italy from Sicily to Bari. It was at a military party in Bari that he was made aware of the need for fluent French speakers to help translate for the French Resistance, and for this service he was mentioned in dispatches and awarded war medals.

After discharge from the army in 1946, instead of returning to the reference library, he registered as a student at the University of Birmingham to read biochemistry. He graduated with first class honours in 1950. Little did he realise then that his daughter would graduate from the same university, from the same department, with the same degree and the same classification of degree 23 years later. And furthermore, that his granddaughter would also read biochemistry at university.

Although he did not return to work at Birmingham Reference Library, he often popped in to see old friends. It was there that he met my mother, and they were married at Yardley Parish Church on 9 July 1949. My father started PhD studies, but grants were small in those days, and it was at that time that I was born, his only child, which focused the need for family stability. He applied for and was offered a university lectureship in biochemistry at King’s College, London, where he stayed all his working life. He was promoted to Senior Lecturer and then to Sub-Dean of the Medical Faculty, and always remained very proud to have been a part of King’s College. Most of all, he loved the students and encouraging them in their study of biochemistry. His love of supporting students led to his appointment in 1954 as National Assessor for HNC and HND in biochemistry and applied biology, and later as national examiner for the Institute of Biology, appointments which he held for 25 years.

Of course, academic life is an interwoven mix of research as well as teaching. He started his research with a PhD thesis entitled “The distribution of inositol in germinating cereals and pulses as determined by microbiological assay” which focused his research career into methodological development and turned him into one of the pioneers of gas chromatography. As a protein chemist, he gave much of his life to developing this emerging technology, which after later incorporating mass spectrometry, has become an essential component of analytical measurement. It is particularly fascinating to reflect on the miniaturization in biochemical research methodology over the past few decades, and in this context the contrast between the long fragile glass columns I watched my father make by hand to the small metal columns used today. He published many papers on gas chromatography and wrote several books, the last of which was translated into Russian and sold internationally.

He retired in 1982 during one of the periods in university life when the universities needed to downsize. He reduced to 3 days a week before fully retiring a few years later, an excellent way of completing outstanding research and adapting to retirement life. Coincidentally, his granddaughter was born around that time, followed by his grandson a few years later, which redirected his focus for the future. He and my mother were devoted to their grandchildren. Every Wednesday and Thursday for over 20 years, they met their grandchildren from school and cooked a family supper. This family support for the next generation was the mainstay for my own scientific career.

Andre Darbre died peacefully at the age of 96 on 21 March 2018 with his family around him, the last member of his generation in our family. We will miss him very deeply, but together with numerous ex-students, both undergraduate and postgraduate, in many corners of the globe, we will always remain grateful for all he gave to us, especially his enthusiasm for biochemistry which remained with him to the end.

Philippa Darbre-Gee
(Professor Emeritus (Oncology), University of Reading)
Hubert Greenslade Britton (1925–2017)

Professor Hubert Greenslade Britton, Emeritus Professor of Chemical Physiology at St Mary’s Hospital Medical School, Paddington and a lifelong member of The Biochemical Society, died at the age of 92 in Salisbury on 3 October 2017. Determinedly dedicated to scientific research, he continued to do research and write papers until well after his retirement. His interests spanned from enzymology and membrane transport to placental and foetal physiology, metabolism and endocrinology. In enzymology, he is known for the induced transport method for analysing enzyme kinetics.

Son of Edith and Professor Hubert T.S. Britton, Hubert went to Hele’s School, Exeter, before studying chemistry at University College Exeter, where his father was Professor of Chemistry. He completed his PhD on potentiometric titration. After studying medicine at Trinity College Cambridge and University College Hospital, he found a position in the physiology department at St Mary’s, Paddington.

At St Mary’s, Hubert joined Professor Huggett’s group investigating foetal nutrition and placental function and, together with Pauline Alexander and D.A. Nixon, there followed more than 50 papers describing the metabolic roles of the placenta, including its production of fructose, and foetal endocrine function. His work on transport processes was pioneering, with the first published paper on the transport of radiolabelled glucose in the erythrocyte and the mathematical modelling of flux across the red cell membrane.

In a series of single-author theoretical papers, Hubert applied the mathematical models used for studying flux across membranes to chemical reactions and enzymatic processes, an approach called the induced transport theory and method.

With J.B. Clarke, Hubert demonstrated the practical utility of the method by showing that the interconversion of glucose 1-phosphate to glucose 6-phosphate by phosphoglucomutase must involve the intermediates of glucose 1,6-bisphosphate and a dephosphorylated form of the enzyme. Subsequent studies on phosphoglycerate mutase, hexokinase and pyruvate kinase led to him becoming a true mechanistic enzymologist.

A productive collaboration with Professor Santiago Grisolia and colleagues over three decades began with a sabbatical in 1970–71 at the University of Kansas Medical Center. His papers (with Grisolia and José Carreras) on the mechanisms of diphosphoglycerate-dependent and independent phosphoglyceromutases remain a mainstay on the knowledge of these enzymes.

After Grisolia became Director of the Institute for Cytological Research in Valencia, Hubert became a regular visitor to Spain working with one of us (V. Rubio) on carbamoyl phosphate synthetase (CPS1) which mechanistically at the time was a complete ‘black box’. Hubert applied his modelling talents to successfully predict the entry of radioactivity into the products formed from labelled substrates in all day (and often all night) pulse-chase experiments that were carried out in a (literally freezing) cold room. Innovative isotope scrambling experiments followed for proving enzyme-bound intermediate formation using NMR and ATP labelled with $^{18}$O at specific positions, in collaboration with Brian Sproat and Gordon Lowe at the Dyson Perrins laboratory in Oxford.

Further CPS work focused on CPS1 activation by N-acetyl-L-glutamate (NAG), showing that it was exclusively an allosteric process. These pioneering studies, corroborated by the recent elucidation of the crystal structure of human CPS1, have played an important role in understanding the effects of mutations found in patients with hyperammonaemia due to CPS1 deficiency.

Hubert remained loyal to St Mary’s Hospital Medical School throughout and was particularly proud to work where Alexander Fleming discovered lysozyme and penicillin. He dispatched several letters to The Times stoutly defending Fleming’s key role in those discoveries when this was under question. He taught physiology to many generations of medical students and supervised many BSc students. He was rewarded with a personal chair in chemical physiology by the London University in 1977.

After retiring from St Mary’s in 1990, Hubert and his wife moved to Salisbury. He became a member of the local Civic Society and History Society and took up the cause of the Salisbury water meadows, which were under threat from a road development. Hubert had a mischievous, if somewhat unique, sense of humour. He enjoyed walking and used long walks to discuss anything scientific at length and in detail, from the formation of the universe to integrated circuits and the design of power-assisted braking in cars. When not immersed in the midst of piles of papers and journals (which gradually occupied all the space at home and work), he would play the piano, on which he was self-taught.

He married Joan (Judy) Kelly in 1954, who died in 1999. His twin sister died 6 weeks before him. He is survived by his five children.

Vicente Rubio and Thomas Britton