

Alan G Brown

1939–2006



Alan Brown was a distinguished Edinburgh neurophysiologist who will be remembered for his originality, enthusiasm and humanity. He died on 6 December 2006 at the age of 67. His enduring interest was in the physiology and anatomy of the mammalian central nervous system, especially those components concerned with somesthetic mechanisms in the spinal cord. His 1982 book *Organisation of the spinal cord* contains numerous neuronal reconstructions reminiscent of Cajal's illustrations, but accompanied by precise information as to their functional characteristics, the nature of their afferent inputs and the potential role of descending pathways from higher centres in the dynamic regulation of somesthesia. He contributed prominently to our understanding of the diversity of sensory mechanisms in the dorsal horn and his unique contribution was the correlation of these physiological mechanisms with detailed morphology and ultrastructure.

A native of Nottingham, Alan Brown read Medicine at the University of Edinburgh, qualifying with an honours BSc in Physiology in 1961 and MBChB in 1964. After graduation he joined the newly formed Department of Veterinary Physiology at the Royal (Dick) Veterinary College, University of Edinburgh. He received his PhD in 1968, progressed to a Readership in 1976 and to a full Professorship in 1984. He received some prestigious research awards including a Beit Memorial Research Fellowship and

MRC Research Fellowships during this period. A member of The Physiological Society since 1968, he was elected Fellow of the Royal Society of Edinburgh in 1984 and Fellow of the Institute of Biology in 1988. He served as a member of the MRC Neurosciences Grants Committee and held editorial positions on *The Journal of Physiology*, the *Quarterly Journal of Experimental Physiology*, the *Journal of Neurophysiology*, *Neuroscience* and *Brain Research/Brain Research Reviews*. He was Head of Department of Preclinical Veterinary Sciences for much of the 1990s.

Alan mentored a number of distinguished neuroscientists who achieved high positions in their own right in North America, Australia, UK and elsewhere. They have written uniformly of the warmth of the welcome they received when they visited his laboratory, and of their happy memories of time spent in Edinburgh and the high productivity at that time in their careers. His personality and character were those of the true academic, with dedication and commitment to his discipline, integrity in the conduct and presentation of his research, and a love of the broader intellectual and cultural life that enriches and enlivens the human spirit. He approached life with a characteristic meticulous and thoughtful approach, lacking hubris and self-promotion, and his enthusiasm for scientific debate in the best tradition of The Physiological Society will be remembered by many. Other visitors to his laboratory felt they learned through their visits that the destructive behaviors that existed in their home institutions were not inevitable. Many have commented on how they and their families were welcomed into his home, in the best of Edinburgh traditions, during their visits. Other senior visitors during the period of his headship have commented that despite successive rounds of cuts, his department was a settled one, due not least to his own personal qualities and support for his staff.

My own links with Alan and his family date back to his undergraduate days in Edinburgh and I fully concur the

feelings of his distinguished students and colleagues from the 1980s and 1990s. I too enjoyed some time in his laboratory, but my main contact was with him and his family in our home environments over a span of more than 40 years, when he would often talk about science, music, politics, art, literature and education, not to mention everyday matters of family and work, and one of his favorite hobbies, gardening. Our families visited each other regularly, and our shared enthusiasm for music originated from participation in chamber music of various genres. Alan was a skilled violinist and in adulthood also learned to play the cello; in recent years he was an active member of the New Edinburgh Orchestra.

Alan took enormous pride in his two children, Jeremy and Jessica, who are both in academia. He is survived also by his mother, his first wife, Judith, and his second wife, Patricia, whom he married just weeks before his death, and who looked after him lovingly throughout his final illness.

John F B Morrison

W E Balfour

1927–2007



Bill Balfour died on 1 February after a very long illness. He was educated at Harrow County Grammar School, but because his father had died when he was 11, Bill left immediately after passing School Certificate in 1942 and went to work in the local Kodak factory. While there he took evening and weekend courses at Birkbeck

College. After gaining Higher School Certificate he was awarded a Kitchener Scholarship that enabled him to go to King's College London to take a BSc. He then went to Edinburgh on a scholarship from the Agricultural Research Council (ARC) to do a PhD with Catherine Hebb. Though offered a junior lectureship in Edinburgh, he opted to move to The Physiological Laboratory in Cambridge where he remained for the rest of his working life, first as an ARC Fellow and then as a member of the academic staff.

Bill was elected a Member of The Physiological Society in 1955 and served on the Committee from 1980 to 1984. News of his death prompted a flow of emails from his Cambridge colleagues and ex-students. Woven together here, these highlight his standing as a physiologist, a teacher and a good and wise friend.

Bill's lab was a solitary affair, untidy, full of antique equipment with reprints all over the place. Although constantly at the bench his publication list is short. He was always reluctant to publish unless he felt he had something worth writing about. His preference, when he did publish, was for a letter to *Nature*. He enjoyed discovering novel, important, and frequently counter-intuitive phenomena that would act as a stimulus to others to head off in new directions. He preferred, in his own quiet way, to lead the pack rather than to follow, and a letter to *Nature* is a time-honoured way of doing just that. Having cracked a problem, or demonstrated something important, he was content to let others sort out the boring bits while he moved on to new but always fertile ground.

Bill worked largely alone though early collaborative work included studies on the synthesis of acetylcholine in brain, carrier proteins for thyroxine and triiodothyronine, the role of the carotid body in the regulation of erythropoiesis, the secretion of progesterone by the adrenal gland, and absorption of colostrum in the newborn calf. Later, his main interest was in the regulation of blood volume. As a willing source of updated and critical wisdom on all aspects of kidney function and

endocrinology he was invaluable to his colleagues who appreciated what one described as his high standards and sceptical integrity about science.

A trademark of his experiments was their simplicity. This is exemplified by an experiment in the late 1970s. It had been established that when a muscle-derived preparation of ATP was used in measurements of $\text{Na}^+\text{-K}^+\text{-ATPase}$ the enzyme activity was less than that obtained with ATP prepared from yeast. The suspected inhibitory contaminant was eventually identified as vanadate, then attracting interest as a possible mediator of the diuretic effect of atrial distension. However, when sodium orthovanadate was injected into rats its diuretic effect was small and transient. On being consulted by the colleagues involved in this experiment, Bill's reaction, to the surprise of all concerned, was 'What a huge effect!' He set out to prove that the apparently disappointing result was attributable to dehydration. An anaesthetized rat fitted with an intravenous cannula was put on an old-fashioned balance and a primitive but ingenious feedback system set up to keep the rat's weight constant by intravenous infusion. Vanadate induced a diuresis comparable to the animal's weight in a few hours. A beautiful experiment, with the simplicity only profound expertise can deliver.

Bill was a dedicated teacher and an excellent and caring Director of Studies in King's College. His lectures on endocrinology are remembered for their clarity, logical progression, and the vast amount of fascinating information conveyed at a speed that allowed copious note taking (although, according to one student, this was at the expense of an aching hand).

Progressive ill health meant that in his later years Bill became increasingly reclusive but as a young man he had a passion for exotic cars. These included a red Gordon-Keeble – a British car of which only 100 were built, two of them being owned by fellow physiologists in the Cambridge Lab. Another enterprise was making his own trousers and shirts which he did with some success.

Our sympathy goes to Bill's wife Margaret, his three daughters and his grandchildren.

Ann Silver

(using contributions from Hal Dixon, Alan Findlay, James Fitzsimons, James Hickson, Arie Lew, Miranda Potter (née Harrison) and David Tolhurst).

Paul Lauterbur

1929–2007



Paul Lauterbur, who has died aged 77 from kidney disease, published the first magnetic resonance image in a short letter to *Nature* in 1973 (242, 190-191). Though the name he coined for the technique – zeugmatography – never caught on, the method has revolutionised medical imaging, particularly of soft tissues. An estimated 60 million or more magnetic resonance imaging (MRI) scans are now carried out each year. The invention of MRI won Lauterbur many prizes and awards, culminating in the 2003 Nobel Prize for Physiology or Medicine jointly with the British physicist Peter Mansfield.

Paul Lauterbur enjoyed being something of a scientific maverick. As a teenager he built his own basement chemistry laboratory, and would recall as an early inspiration a chemistry teacher who let him get on with doing self-designed experiments 'while the rest of the class got a lecture'. The lifelong independence of mind led him to give up MRI research in his 70s, as he joked, 'just in time for the Nobel', to work on the possible pregenomic chemical origins of life.

Paul Lauterbur was born in Ohio in the American Midwest, and got his Bachelor degree from Case Institute of Technology (now part of Case Western University) before being drafted into the US army. As he described in a 2003 interview with *Physiology News* (55, 12-15), it was in the Army that he first got to use an NMR spectrometer, publishing several papers.