Peter Raymond Lewis
1924–2007

Peter Lewis died on 17 December 2007 aged 83 after coping valiantly with Parkinson’s disease for over 15 years. He was elected a Member of The Society in 1954, serving on the Editorial Board of The Journal of Physiology from 1975 to 1977. Peter’s research career reflected his wide interests. He went up to Exeter College, Oxford with an open scholarship to read chemistry, but his subsequent D Phil thesis on the kinetics of bacterial growth led him into biology and ultimately to neuroscience.

In 1948 Peter joined the Cambridge Physiological Laboratory where, financed by a grant from the Rockefeller Foundation, he worked with Richard Keynes on the net movements of sodium and potassium in squid nerves during nervous activity. This was the first effective application of radio activation analysis to biological problems. He then became interested in the role of the CNS in the maintenance of diurnal rhythms in man, a question that had been little studied. In collaboration with Mary Lobban he made two MRC-funded expeditions to Spitzbergen where, in the perpetual summer daylight, their subjects lived on strictly controlled ‘days’ of 21, 22 or 27 hours. While the fluctuations in body temperature adopted a new rhythm quite rapidly, the effect on peak output of water, sodium and potassium was less consistent leading to the conclusion that more than one mechanism may be involved in controlling diurnal rhythms.

After 4 years as a University Demonstrator, Peter was appointed an Assistant Director of Research in the Department of Anatomy where, with his talent for innovation, he had an enormous formative influence on colleagues and students and, mainly with Charles Shute, he began the important work on cholinesterases that became the core of his research career. His chemical background enabled him to introduce improvements to the histochemical method developed by George Koelle. He also adapted the technique for use in electron microscopy, the thiocholine substrate being far more specific than thiolacetate that had been used for EM histochemistry hitherto. A major study of the distribution of cholinesterase-containing fibres in the rat brain resulted in two landmark papers in Brain in 1967. Peter the chemist was always more cautious than Charles the anatomist, in equating cholinesterase-containing with cholinergic. In a collaborative study, I was recruited to measure the level of choline-acetyltransferase proximal and distal to a lesion in the fimbria. The increase in the histochemical reaction for acetylcholinesterase proximal to the lesion, and its disappearance distally, was mirrored by the changes in cholineacetyltransferase. This strengthened the evidence that the cholinesterase-containing fibres in the fimbria did indeed represent a cholinergic input to the hippocampus, probably from the ascending reticular formation. Degeneration of this ascending cholinergic pathway is now widely believed to underlie Alzheimer’s disease. In 1970 Peter moved back to The Physiological Laboratory where Charles had been appointed Professor of Histology on the retirement of E N Wilmer.

While the bulk of Peter’s work concerned the anatomy of the cholinergic system in the CNS, his research topics included spectral sensitivity curves, monoamines, placental esterases and weeping lubrication in mammalian joints. He will, however, be remembered for more than his range of scientific interests. Cambridge students, whether medics, vets or natural scientists, benefited from his enthusiasm and skills as a lecturer, demonstrator and supervisor. His breadth of knowledge meant that he contributed to the teaching of biochemistry, cytology and neurology as well as anatomy and physiology. During the early part of his retirement he continued to demonstrate to histology classes often using his Parkinsonian symptoms, and their control, as a teaching aid.

In May 2007 a society was founded in his college, Corpus Christi (where he was a Fellow from 1959 till his death), to bring together all its medical alumni and students (preclinical and clinical). Despite his worsening health Peter played a major role in establishing the society which, by unanimous decision, has been named the Lewis Society of Medicine. A founding member described him as an invaluable source of scientific and general wisdom, while one of his erstwhile technicians described him as a perfect gentleman. These words neatly sum up Peter the scientist and Peter the man. Our sympathy goes to his wife Joyce and children Anne and Mark, and to his friends worldwide.

Ann Silver

Gertrude Falk
1925–2008

Gertrude came from the University of Washington in Seattle to work with Paul Fatt in the Biophysics Department at UCL in 1961, on a Guggenheim Fellowship. Although her PhD work at Rochester was on diuresis in the rat, she then became one of the early microelectrode electrophysiologists. She had worked as a postdoc with Gerrard in Chicago and studied a wide range of smooth and striated muscle types. She and Paul Fatt tackled the question of the puzzlingly high capacitance of muscle – this was before it was established that the membranes of the transverse tubules were
continuous with the surface membrane. They used two electrode recording techniques that required an in-depth understanding of the electrical properties involved (‘real’ biophysics). They reached the conclusion that the ‘internal’ membranes accounted for the high capacitance ([Proc R Soc Lond B Biol Sci [1964], 160, 69-123]) about the same time as the electron microscopy revealed the structure.

Gertrude continued to collaborate with Paul for some years, turning their techniques to electrical studies of rod outer segments (chosen as a tissue that did not move). It is worth remembering that when they started to work on retina very little was known about phototransduction. They were among the first to look at the cellular biophysics of the problem.

Gertrude’s interests in the synaptic connections and function of the retina started with a theoretical paper (as well as two extensive and scholarly handbook chapters) that she and Paul wrote in 1974. Jonathan Ashmore began working with her as a post-doc at that time and claims that he only got the job because he could solve cable equations analytically – which must have struck a chord, as Gertrude recounted that in her student days in the USA she was well-nigh a national champion at doing integrations in her head. The joint work became a lively collaboration and produced a small clutch of Nature papers.

This was then carried forward over many years by Gertrude and Richard Shiells: shortly before she retired they discovered that the rod-ON-bipolar cell synapse depended upon a metabotropic glutamate (mGLUR6) receptor cascade. It was a critical scientific combination, with Richard’s experimental skills complementing Gertrude’s encyclopaedic knowledge of the literature, old and new.

She continued to teach occasionally for many years beyond her retirement, and to come to the Starling Room to indulge her great conversational skills and challenging opinions until just a couple of months ago. Her great sense of humour and ready amusement at the oddities of life and people was always tempered by her warm and generous spirit.

Gertrude had a fierce sense of justice and ready sympathy for the underdog. She was a loyal and kind friend to anyone in need; typically this was shown not in mere words of protest, but was translated into action. Her indifference to conventions is well illustrated by the occasion when, drinking coffee in the men’s staff common room, at that time still segregated, she responded calmly to the Beadle summoned to escort her out: ‘well, I am certainly going to finish my coffee first’, and did so at her leisure.

Gertrude and Paul Fatt were married for a period, and had one daughter. Although they later divorced, their relationship remained amicable. Her illness was sudden and, perhaps mercifully, quite short since the thing that saddened her most during this, aside from the prospect of not seeing her two grandchildren grow up, was the likely loss of her memory and her intellect.

Jonathan Ashmore
Lynn Bindman
Tony Gardner-Medwin
Sally Page

Christopher Bell
1941–2008

Chris Bell died at home in Melbourne, less than a year after his retirement from the Chair in Physiology in the School of Medicine at Trinity College Dublin. He was 66. Although he spent his academic life in departments of physiology, he was equally at home in the company of pharmacologists and, indeed, was the first winner of the Sandoz Prize (now called the Novartis Prize) of the British Pharmacological Society. He was an active member of The Physiological Society, the British Pharmacological Society and the Australian Physiological and Pharmacological Society. Chris served the APPS over many years as a member of Council (twice), Treasurer, National Secretary and CEO, this commitment being recognised by election to Honorary Membership in 2007. He also contributed to the updating of the Australian code of practice for animals used for scientific purposes. Chris was an editor for many international journals and completed his second term on the Editorial Board of the British Journal of Pharmacology only a few months before he retired from Trinity.

Chris grew up in what was then the rural outskirts of Melbourne in a wooden cottage on a smallholding on the banks of the Yarra river. His parents were part of a diffuse community of artists centred around Eltham since the early 1900s. His