obituary

P.C. Sylvester-Bradley

PETER COLLEY SYLVESTER-BRADLEY, the F. W. Bennett Professor of Geology at the University of Leicester died unexpectedly at Weston-Super-Mare on 17 April 1978, at the end of a student vacation field course, at the age of 64. Tragically his death came only five months before he was due to retire and continue with his researches in micropalaeontology, fossil oysters and evolution—all subjects in which he had attained international eminence. With his death, British palaeontology has lost one of its most distinguished scholars.

He was born on 21 May 1913 at Pinhoe, Devon and went to Haileybury College, Herts. where he was a science prize winner. He graduated in geology at the University of Reading where he cultivated a range of other scientific interests: for example he became the first editor of the *Proceedings of the Reading and District Natural History Society*. He started his geological research on the Purbeck Beds of Dorset and became interested in their great variety of ostracods, a neglected group of microfossils on which he was later to become one of the world's leading authorities.

His first appointment was to found a geology department at the Agricultural College of Seale Hayne in Devon. This was interrupted by the second world war and, after a brief period at the British Museum, he joined the Royal Navy. After the war he became a lecturer, later senior lecturer, in palaeontology at the University of Sheffield, except for the year 1955-56 when he was Rose Morgan Professor at the University of Kansas. In 1959 he became the first F. W. Bennett Professor of Geology at the University of Leicester, a post which he held with great distinction. He built up a department which now has a high international standing in the major branches of geology and which has produced a number of eminent scholars. He took a personal interest in all the activities of his department and his scientific interests consequently broadened considerably.

His principal field of interest was in micropalaeontology, and in particular the internal and external structures of ostracods. These studies took a great leap forward when he applied

the newly-invented scanning electron microscope to their study. This provided a considerable amount of new data of high quality which he kept improving by careful experimentation. His work was published in the form of a stereo-atlas of ostracod shells, a new and improved form of palaeontological publication. He applied his expertise on ostracods to the history of the Mediterranean and to enhance our understanding of the Jurassic geology of Britain.

Another major life-long interest was the Jurassic oysters from Europe and to some extent from North America, from which he developed his ideas on iterative evolution. He wrote and lectured extensively about aspects of evolution ranging from the origin and evolution of life to the evolution of ethics. He contributed a great deal to the ideas on the volcanic environments in which life may have originated and directed attention to the possibility of evidence for the earliest forms of life being found in low-grade metamorphic areas. The geology of carbon and the origin of oil were related interests. He was a leading figure in the world of systematics and wrote extensively about the numerical approach to taxonomy, the concept of species, subspecies, superspecies, form genera, diversity and stratigraphic nomenclature.

He was active in over twenty scientific societies. At various times he was Chairman of the British Micropalaeontological Society, President of the Systematics Association, Vice-President of the International Palaeontological Association and of the Palaeontological Association. He also served as editor of a number of palaeontological and geological publications.

Peter Sylvester-Bradley was a brilliant lecturer and was always in great demand. His lectures on a wide range of subjects, were always very vivid and generally contained the latest ideas which stretched his students and staff to the limit. He had very wide interests outside the field of geology. He was a keen landscape gardener. He maintained active interests in conservation, travel, country wines and the arts, particularly operatic music. He was well-known in Leicester through his activities with the Haldane Society, The Leicestershire Trust for Nature Conservation and the Leicester Literary

and Philosophical Society, over all of which he presided. A devout Christian, he was a regular lay-preacher at the Stoughton village church. He was regarded with the greatest affection by all members of his department and will be sadly missed by his colleagues throughout the University and friends in many parts of the world. He leaves his wife, Joan, a fellow student at Reading whom he married in 1945, a daughter, Rosemary, and three sons, Rowan, Roger and Benjamin.

M. A. Khan

Sir Harry Jephcott

SIR HARRY JEPHCOTT, who died on 29 May 1978, at the age of 87, played a very important role in the development of the British pharmaceutical industry and in the applications of science to industrial needs.

Born at Redditch in 1891 he graduated in chemistry in 1915 and worked in the Laboratory of the Government Chemist to earn sufficient to enable him to study and qualify as pharmaceutical chemist in 1916. In 1918 he joined Glaxo and there began a remarkable career first as chemist then as General Manager, Managing Director, Chairman and Managing Director of an organisation originally manufacturing and marketing baby foods and developing to an organisation which, on his retirement in 1963 was the major producer in this country of penicillin, streptomycin, cortisone, hydrocortisone, poliomyelitis vaccine and other immunological products. It is a remarkable development reflecting the skill and influence of a remarkable man.

In his book *The First Fifty Years*, published for private circulation in 1970, Jephcott recalls the history of the Nathan organisation and the beginnings of the pharmaceutical interests of Glaxo. But it was the years of the Second World War that revealed Jephcott's potential. First as manufactured foods adviser to the Ministry of Food he brought a new concept to the definition of composition, description and labelling of manufactured foods that had the encouragement throughout of Lord Woolton. Simultaneously Jephcott found time and energy to direct the participation of Glaxo in the development of manufacture of peni-

collin; first by "bottle culture", then by deep fermentation.

It is a fascinating story of confidence in the ability to solve technical problems while being a realist in the use and need of capital resources and human skills. Initially through collaboration in the Therapeutic Research Corporation, but subsequently as agent for the Ministry of Supply, Jephcott secured agreement with the Merck, Squibb and Pfizer organizations in the USA which in the late 1940s enabled the manufacture of penicillin by deep fermentation to be preferred to the "tray" methods being explored by ICI and the small container methods preferred by others. He recognised the potential help of mycologists as well as chemists and the importance of selecting strains and producing mutants, the metabolism of which in media fortified by phenylacetic acid and hydroxyphenylacetic acid increased the yields many fold. New factories were developed both for manufacture of bulk antibiotics and also for sterile filling into containers for individual use on patients, both in this country and in several countries of the Commonwealth. The manufacture of penicillin was accompanied within a few years of its inception by the manufacture of streptomycin and there followed in the 1950s the added bonus of production of vitamin B₁₂ from the fermentative processes of streptomyces species.

In the war years and subsequently, Excess Profits Tax limited the generation of financial resources for reinvestment and expansion, but with the abolition of EPT in the early 1950s the fortunes of the Glaxo organisation became transformed and deservedly so. For Jephcott had a fantastic intuitive sense of what was possible by industry; he could define the right course to take and rationalise his decision afterwards. He understood how to use wisely the expertise of others and never ceased to emphasise the possibilities of application of science. He could recognise and encourage capacity in applied chemistry and therein lay much of his success.

His example of hard work, devotion to duty, economical use of time and energy, fearless approach to challenge influenced many with whom he worked and dealt both in this country and overseas. The world became his parish and he travelled to all the continents developing local manufacturing units as necessary. He also served for five years as Chairman of the Department of Scientific and Industrial Research where his experience led him to advise Ministers of the different requirements for development of science and technology. Many in the research associations have good cause to be grateful for Jephcott's influence on their develop-

ment, but so have the professions of chemistry and pharmacy.

He was President of the Royal Institute of Chemistry in 1953-1955, Chairman of the Association of British Chemical Manufacturers in 1947-1950, an Honorary Auditor for 40 years of the Pharmaceutical Society from whom he received their Charter Gold Medal in 1970. He was Chairman of the Council of the School of Pharmacy, University of London, from its inception as a body independent of the Pharmaceutical Society in 1948 until 1969.

From his industrial successes he created several charitable trusts, but only in his latter years did he really learn to spend any money on himself. He was always generous to others but the hardships of his youth had taught him to waste nothing. Never a patient man he learnt of late to endure physical pain with fortitude and to the end he rejoiced in his friendships. He was a towering example of an upright man in every sense.

His services to the Ministry of Food were recognised by a Knighthood in 1946 and his transformation of the pharmaceutical and fine chemical industries by a Baronetcy in 1962. He left for others to write *The Second Fifty Years* of the organisation with which he became identified and to which he gave so much of his energy and life. It will be a fascinating story of the influence of intuitive judgment, recognition of the potential applications of science and a financial acumen that deserved success and achieved it.

Frank Hartley

G. H. M. Lawrence

PROFESSOR George Hill Mathewson Lawrence died at his home on Rhode Island in the United States on 11 June 1978. Born on 19 June 1910 at East Greenwich, Rhode Island, he studied at Rhode Island State College and Cornell University where he received his PhD in botany in 1939.

He helped the eminent taxonomist, Liberty Hyde Bailey, in the revision of his *Manual of Cultivated Plants* (1949) while he was his assistant at the Bailey Hortorium at Cornell from 1945 to 1950. Cornell appointed him a professor of botany in 1947 and four years later Lawrence became Director of the Bailey Hortorium. His *Taxonomy of Vascular Plants* (1951) which considered many aspects of the botanical sciences, especially phylogeny, was well received and was reissued in an abridged version in 1955.

In August 1960 he left Cornell to take up the post of Director of the Hunt Botanical Library (now the Hunt Institute

for Botanical Documentation) at the Carnegie Institute of Technology (now the Carnegie-Mellon University) at Pittsburgh.

The Hunt Library was already renowned as an outstanding collection of choice books, drawings, prints and portraits in the fields of botany and horticulture, and it being the earnest wish of its founder, Mrs Rachel McMasters Miller Hunt, that it should not be dispersed, it was presented to the Carnegie Institute of Technology. Lawrence's assessment of Mrs Hunt as a person of 'great stamina, of amazing vigour and dynamism' could equally apply to himself. It was his energy, enthusiasm and vision that transformed this private library into an international centre for bibliographical research. He shared Mrs Hunt's concern for exacting standards and quality and all the library's publications are distinguished by impeccable scholarship and elegant design. Lawrence's most ambitious project was the *Bibliographia Huntiana*, an exhaustive bibliography of botanical and horticultural books and periodical articles published during the period 1730 to 1840. Although the *Bibliographia Huntiana* has not yet appeared the *Botanico-Periodicum-Huntianum* (1968) and the *Master Book List* (1972) are useful byproducts of the data already accumulated on magnetic tape.

Lawrence made substantial additions to the book stock, formed the nucleus of an archives collection and diversified the collection of botanical art with examples of the work of many contemporary artists. The acquisition, however, which gave him the greatest pleasure was Dr Birger Strandell's collection of books, periodicals and newspaper cuttings relating to Linnaeus. With Dr Strandell's assistance he undertook the compilation of an annotated catalogue of this immensely important collection and only a month before his death attended a conference in Sweden to report on its progress. Although he has not lived to see its publication, Professor Lawrence died as he would have wished, active and productive to the end.

Ray Desmond

James Shields

JAMES SHIELDS, who died on 20 June 1978, had achieved an international reputation for his contributions to the genetics of mental disorder and to twin research.

He was born on 21 November 1918. After two years at Oxford he was conscripted into the Royal Artillery. In 1945 he came back from five years in a prisoner-of-war camp with a fine record for helping to maintain morale. He came to psychiatric genetics at the Maudsley Hospital in 1947, and later was seconded for ten