

theory, solid-state semiconductor physics, acoustics of inhomogeneous media, quantum mechanics, the theory of chain reactions in atomic reactors, and the physics of elementary particles. His death, it says, is a serious loss to Soviet science.

Vera Rich

Peter Bishop

DR PETER MAXWELL FARROW BISHOP, FRCP (Lond.), FRCOG, one of the pioneers of British clinical endocrinology, died on 19 January 1979 at the age of 74. His main achievements were in gynaecological endocrinology, of which he was the prime mover in the United Kingdom.

He was born on 14 August 1904, the son of a doctor, and was educated in Berlin and at Charterhouse, Trinity College, Oxford and Guy's Hospital Medical School, from which he qualified in 1929.

He entered the clinical field from the physiology laboratory at Guy's Hospital Medical School, where he was demonstrator and lecturer from 1930 onwards and where his researches included the modification and application of the Friedman test for pregnancy. With the help of a physician and in liaison with the gynaecological department, he started an endocrine clinic for functional menstrual disorders in 1934. He studied the effects of oestrone in amenorrhoeic women and of the new corpus luteum extract (progesterone), soon replaced by synthetic progesterone, in dysfunctional uterine bleeding and recurrent abortion. The clinic later expanded to include testicular and other endocrine disorders.

He was quick to recognise the clinical applications of recent animal experiments and was in close touch with new developments in the pharmaceutical field. Thus he applied the concept of the oestrogen threshold for uterine bleeding developed by Zuckerman in primates and, following the experiments of A. S. Parkes and his colleagues in rats, he was the first to demonstrate the effectiveness of crystalline oestrone implanted subcutaneously in a human female castrate. At the request of the Therapeutic Trials Committee of the Medical Research Council, he undertook the first clinical trial of the earliest synthetic oestrogen, diethylstilboestrol, synthesised by E. C. Dodds and his colleagues in 1938.

His researches were interrupted by the Second World War, during which he was preoccupied with administrative duties at the hospital, although he continued his clinical work and studied with S. J. Folley the rates of absorption of various hormones from subcutaneously implanted pellets.

After the war he was appointed Consultant Endocrinologist to Guy's Hospital and Chelsea Hospital for Women and Senior Lecturer in the Obstetric Department at The Royal Postgraduate Medical School. At Chelsea he made painstaking studies of the comparative potencies of various synthetic oestrogens, as determined by the dosage required to induce withdrawal bleeding in amenorrhoeic women. He also published further studies of the use of implanted progesterone in women with recurrent abortion. At the same time, with his gynaecological colleagues at Chelsea, he established a clinic for the investigation and management of infertility. He also took part in the first British clinical trials of ACTH and cortisone in rheumatoid arthritis in 1950. In later years he and his colleagues were involved in a variety of publications, including the use of dydrogesterone in dysmenorrhoea, induction of ovulation with clomiphene, the use of oral contraceptives, genetic studies in gonadal dysgenesis and the management of Cushing's syndrome.

He was a fine teacher and excelled in his lectures on various endocrine topics and clinical demonstrations of endocrine disorders. Not only undergraduate students but many young physicians and gynaecologists, both at home and from overseas, gained their knowledge and experience of endocrinology under his guidance. His writings were extensive, lucid and stylish. Apart from his original articles he wrote monographs on gynaecological endocrinology and on the chemistry of the sex hormones. He also wrote single-handed the 7th edition of *Recent Advances in Endocrinology* (1954) and contributed numerous chapters to other textbooks and invited articles to various journals for the general reader.

He was at various times President of the Section of Endocrinology of the Royal Society of Medicine and Chairman of the Society for the Study of Fertility and of the Council of Management of the *Journal of Reproduction and Fertility*. He was also Medical Consultant to the Family Planning Association.

Dr Bishop had the unusual distinction of being elected Fellow of both The Royal College of Physicians and The Royal College of Obstetricians and Gynaecologists. He was Sir Arthur Sims' Travelling Professor in 1964. In the year of his retirement from hospital in 1969 he became Master of the Society of Apothecaries.

He retained single-minded dedication to clinical endocrinology throughout his career despite considerable scepticism and opposition from others. This required great determination and

courage: qualities which he likewise displayed in the face of the physical disability which followed his retirement and immobilised him for the last few years of his life, but which never extinguished his interest in his subject nor his zest for living.

Robert R. de Mowbray

Fred Lang

THE death of Dr Fred Lang at the age of 34 in an automobile accident on 8 December 1978, cut short a promising career in neurobiology. He was Associate Professor of Biology in Boston University; he taught in the Boston University Marine Program at Woods Hole, Mass., and was a director of the winter neurobiology course given there. Recently he had received a Career Development Award from NIH to further his research on invertebrate neuromuscular systems, which had reached a flourishing stage and had attracted a large entourage of graduate students at Woods Hole.

Fred Lang worked as a graduate student with Bernard Abbott and Ladd Prosser at the University of Illinois, and as a postdoctoral fellow with Harold Atwood at the University of Toronto. His initial work on the innervation of the heart of the horseshoe crab *Limulus*, and on neuromuscular physiology of crustacean limbs, was extended later to include development of neuromuscular synapses in crustaceans, and in particular, development of the nervous system and muscles in the American lobster, *Homarus*. He and his collaborators described the physiological properties of the differentiated asymmetric 'crusher' and 'cutter' claws of the lobster, and then looked for neural and environmental influences on differentiation. In addition, adaptation of the animal to its environment was examined. A thorough description of physiological and morphological changes occurring in the muscle fibres throughout development led to a correlation of muscle fibre properties with their innervation and to a demonstration that muscle differentiation could be influenced by conditions in the animal's environment. Although this evidence suggests a neural influence on muscle differentiation, the problem remains open and controversial.

His enthusiastic activity, his lively and forthright dialogue, and his ability to generate interest and debate, will be well remembered. He had an important place among invertebrate neurobiologists.

H. L. Atwood