obituary

Robert Stoneley sometimes remarked how much he regretted never having been a research student. The First World War took him away from University, and he returned to begin teaching straight away. Yet he made valuable contributions to theoretical geophysics during the years when he was heavily engaged in lecturing, first at Sheffield then at Leeds. His published papers were short and not frequent, averaging one a year, yet he made key contributions. His first paper, in 1924, investigated the possibility of waves channelled along the welded interface of two elastic media. These came to be called Stoneley waves, though he could never bring himself to use the name and spoke of 'interface waves of Rayleigh type'.

In 1925 another important paper showed that the observations of surface waves which had been used by seismologists to calculate phase velocities in fact gave group velocities. In 1926 he made a numerical study of the Earth's elastic yielding, using C. G. Knott's velocities of sound waves and shear waves throughout the Earth. This was one of the pioneer papers that led to the conclusion that the core of the Earth is liquid.

In 1931 Stoneley explored the significance of Jeffrey's remark that a deep earthquake should excite relatively small surface waves. This consequence of dynamical reciprocity was skilfully used by Stoneley to confirm that some earthquakes, suspect on account of anomalous travel times, had indeed originated at depths of several hundred kilometres.

During the 1920s and 1930s Stoneley worked both on theoretical problems of surface wave propagation in layered media, and on data analysis from seismograms or from tables in the International Seismological Summary. He showed how to separate double earthquakes, and how to distinguish in seismograms between Rayleigh and Love waves. Later he suggested to Michael Longuet-Higgins the work which led to an explanation of the origin of microseisms.

The Second World War, during which he carried very heavy teaching loads in Cambridge, interrupted his research for ten years. When he began to publish again it was in a valuable series of summaries or review articles on microseisms, waves in anisotropic media, surface waves, tsunami, oscillations of the Earth, deep structure of the Earth, and the history of modern seismology. He retained robust health and remarkable vigour for many years beyond retirement. During the period 1961–68 he served in Washington as consultant in the US Coast and Geodetic Survey and as Professor at the University of Pittsburgh.

A great formative influence in Robert Stoneley's career was his close friendship with Harold Jeffreys. Again and again in his papers there is reference to help or criticism from Jeffreys. Men of very different characters but similar in scientific interests—extending from differential equations to botany—their association was highly creative.

Robert Stoneley was a man of great personal kindness, responding eagerly to any request for help and going to any amount of trouble to provide it. He was patient and equitable, yet at the same time efficient, and the long list of organisations in which he served as secretary or chairman testifies to the confidence people placed in him. His advice and warm humanity were deeply appreciated everywhere.

E. R. Lapwood

George Hoyt Whipple, whose work in the 1920s led to the control of pernicious anaemia, died on February 1 at the age of 97.

After gaining his medical degree, at Johns Hopkins, Dr Whipple remained there until, at the age of 36, he became director of the Hooper foundation for medical research at the University of California. Whilst there he demonstrated that a diet containing raw liver was an effective way of treating experimental anaemia in dogs. That discovery led to clinical trials of raw liver for various anaemias culminating in 1926 when G. R. Minot and W. P. Murphy in Boston showed that pernicious anaemia, previously incurable, could be controlled by dietary liver. Dr Whipple's contribution to that success was recognised in his sharing the 1934 Nobel prize for medicine with Minot and Murphy. It was another fourteen years before teams at Merck and Glaxo simultaneously identified vitamin B_{12}, the active factor in the liver.

In 1921 Dr Whipple moved to Rochester University where he headed the newly founded medical school. During the next thirty years, first as professor of pathology and then as dean of the medical school, he continued to study the factors, particularly iron, that can reverse experimental anaemia. He also served as a trustee of the Rockefeller Foundation from 1927 to 1943 and as a scientific director from 1936 until 1953.

announcements

International meetings

April 15, Deadline for abstracts for **Nonspecific Immune Stimulation in Cancer and Autoimmune Disease** (to be held July 5–6 in Bucharest) (2nd International Symposium on Cancer Immunotherapy, Oncological Institute, P.O. Box 5916, Bucharest 12, Romania).

April 28–30, **Land as a Waste Management Alternative,** Rochester, N.Y. (Agricultural Waste Management Conference, 207 Riley-Robb Hall, Cornell University, Ithaca, New York 14583).

Person to Person

Going on sabattical with family to King's College, London, and would like to exchange a large 4-bedroom, furnished house in desirable area of Washington, D.C. and 20 min from NIH for comparable house or flat in interesting section of downtown London, with good schools. Seven months from June, but flexible. (Dr Mark Smulson, Department of Biochemistry, Georgetown University, Schools of Medicine and Dentistry, Washington, D.C. 20007.)

May 12–15, **Dictyostelium,** a workshop at Cold Spring Harbor, New York (Dr Harvey Lodish. Department of Biology, MIT, Cambridge, Mass, or Dr William Loomis, Department of Biology, University of California at San Diego, La Jolla, CA 92093).

May 30, Deadline for abstracts for the **27th Annual Session of the American Association for Laboratory Science** (to be held on November 7–12 at Houston) (Dr Charles W. McPherson, Animal Resources Branch, DRR, NIH, Bethesda MD20014).