

preparation in the rat, a species with much smaller individual variations than the dog, hitherto used by workers in this field. A great deal of preparatory work had to be done concerning both surgical technique and apparatus; in this he was ably supported by his technician, A. M. Taylor, who served him as skilfully as he had done his two predecessors, J. A. McWilliam and J. J. R. Macleod.

Quite soon after his arrival in Aberdeen, Prof. Cruickshank, through his close association with the Rowett Research Institute, became interested in problems of nutrition and, when asked as a newly appointed professor to give the Farquhar Thomson Lectures, he chose nutrition as his subject. In a modified form these lectures were published two years later in book form, under the title *Food and Physical Fitness*. This book was in great demand and was republished in an enlarged form as *Food and Nutrition* in 1946 and in a revised edition in 1951.

At the beginning of the Second World War he was appointed to the Nutrition Sub-committee of the Scientific Advisory Committee of the Department of Health for Scotland and served as its chairman during 1944-48.

Prof. Cruickshank was a quiet and gentle man who showed great courage and perseverance in adversity. This quality stood him in good stead when, after a cerebral vascular illness in 1947, he was prevented from continuing with the experimental work which meant so much to him. Because of his experience in the universities of many different countries, he was asked several times during the nineteen-fifties by the World Health Organization to act as consultant and visit medical schools in various parts of the world. It was characteristic of him that about a year ago he accepted an invitation to visit the U.S.S.R. to discuss problems of medical education.

H. W. KOSTERLITZ

#### Dr. José Ramírez de Arellano

DR. JOSÉ RAMÍREZ DE ARELLANO was killed in a car accident in Mexico City on September 9, 1964.

Dr. Ramírez obtained the doctor of medicine degree in the University of Mexico, working during this time in the laboratory of Prof. Arturo Rosenblueth. In 1956 he went to the United States, where, following an interval with Prof. Guzman Barron at the University of Chicago, he joined the staff of the Johnson Research Foundation of the University of Pennsylvania. On returning to Mexico City in 1958, he spent several years at the Instituto Nacional de Cardiología before joining the Department of Biochemistry in the newly established Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional.

Dr. Ramírez had a deep interest in all phases of biology, but particularly in bioenergetics, and made unique contributions to the investigation of such different systems as mammalian muscle and photosynthetic bacteria. As an example, his work on responses of cytochromes to single contractions of cardiac muscle can be regarded as classic, and led him on to examine further the possibility of a phosphorylation site in the cytochrome oxidase. His work on the changes in absorption spectra of cytochromes and carotenoids of photosynthetic bacteria following illumination or oxygenation, and the response of cytochromes to adenosine diphosphates in *R. rubrum* chromatophores stands out as another landmark of progress in the investigation of energy conservation reactions.

José Ramírez will be remembered by his many friends as a dedicated scientist who did everything in his power to make the experiment a success, out of the warmth of his heart and his abiding interest in the progress of science. He had an outstanding talent for handling both complicated biological preparations and sophisticated apparatus. With his perceptive mind and rapid grasp of complex biological problems, he was a thoughtful col-

league from whom much could be learned. He will also be remembered for his honesty, his warm and charming personality, his delightful sense of humour and his contagious enthusiasm. Those of us who know him feel that we were fortunate to have been his colleague and his friend.

LUCILE SMITH  
BRITTON CHANCE

#### Mr. P. F. Holmes, O.B.E.

PAUL FOSTER HOLMES was born at Hornsea, in the East Riding of Yorkshire, in November 1913. He was at school at Charterhouse from where he won an Exhibition to Trinity Hall, Cambridge. There he read natural science, played bridge badly, golf well and worked hard, being awarded a II.i in the Part 2 Zoology Tripos. He stayed on at Cambridge for two years as a research assistant, taking the opportunities to go on expeditions to Lake Titicaca and Yugoslavia. In 1937 he joined the biology staff at Shrewsbury School. He served during the Second World War with the Shropshire Light Infantry, playing a part in reviving the University at Bologna in 1944-45.

After demobilization he returned to Shrewsbury until August 1, 1947, when he moved across to be the first warden of the Malham Tarn Field Centre, one of the first four centres to be established by the Council for the Promotion of Field Studies, as it was then.

His work at Malham was at full flow when he died suddenly in a car crash on December 10, 1964. He was a past-president of the Yorkshire Naturalists' Union, sometime member of the committees of the British Ornithologists' Union, the Freshwater Biological Association and the British Ecological Society. At the time he died he was a member of the England Committee of the Nature Conservancy and one of the Minister's nominees on the West Riding Park Planning Committee.

He leaves a widow and four daughters.

Paul Holmes was above all else a countryman. He cared intensely that the beauty, the quiet and the community of the countryside should be conserved for its own sake and so that urban man, provided he behaved himself, should still have hills, coasts, forests and moors unspoiled for his recreation. In later years Holmes gave more and more time and thought to the problems of large-scale conservation, and by associating himself with constructive planning his knowledge of the countryside in all its ways was quickly gaining him a reputation for understanding many points of view and for effective persuasion against those he believed to be misguided. The O.B.E. he received in the 1964 New Year's Honours marked his contributions.

Holmes was a naturalist in the old-fashioned use of the word. Nothing that affected the landscape—and the Pennine Craven landscape in particular—was left aside. Plants and animals, the rocks and their history, the activities of man, the wind and the rain—he was so much at home in the environment in which he delighted to live that I doubt if he realized how unusual, and valuable, was his knowledge of it.

He wrote little but well. Had he been given time—and had he been prodded—he would have come to write more. As it was, he was constantly busy for the benefit of other people and his services were in ever-greater demand.

No man owed Paul Holmes a grudge; no man saw him lose his temper; no man was ever set at a misleading disadvantage by anything that Paul Holmes might have said. He was himself a quiet character, determined to the point of obstinacy, humorously good-natured and very patient, as befits a fisherman; devoted to his splendid family, knowing himself to be fortunate in his life, he wished so much that others might share his pleasures. So few others achieved his standards that the gap he leaves is all too obvious. Paul Holmes will be deeply mourned by all kinds of people who will never forget him.

JOHN BARRIETT