

oxide. These reactions, and the effects of oxidizing and reducing ions in solution, can now be correlated with other studies of oxidation-reduction processes. In ionic solids, highly ionized atoms resulting directly from the collision of fast neutrons lose most of their energy by electronic excitation, but near the end of their track they must suffer elastic collisions. Atomic displacement and the rupture of chemical bonds thereby result, and the physical properties of solids are modified. A third field of radiation chemistry is in the study of 'hot-atom' chemistry—the ultimate chemical fate of atoms formed, often with high recoil energies, in nuclear reactions. To this category belong Szilard-Chalmers processes, and the formation of hydrogen cyanide, carbon monoxide and carbon dioxide, containing carbon-14, during the neutron irradiation of ammonium nitrate.

J. S. ANDERSON

## OBITUARIES

### Dr. A. E. V. Richardson, C.M.G.

THE death occurred in Melbourne on December 5, at the age of sixty-six, of Dr. A. E. V. Richardson, who for the last forty years has given distinguished service to the agricultural and pastoral industries of Australia. Born in Adelaide, Dr. Richardson's connexion with agriculture began when he was a student at Roseworthy Agricultural College. He studied science at the University of Adelaide, where he graduated M.A., B.Sc. In 1909 he was appointed assistant director of agriculture in South Australia, and in 1911 transferred to the Victorian Department of Agriculture as superintendent of agriculture. The purpose of his appointment was to put the activities of the Department on a scientific basis, and this was realized to the full. Richardson threw himself into his work with tremendous energy, and changed the whole basis of departmental advice from 'expert' opinion to the results of carefully planned experiments. He reviewed the scope of the State research farms and consolidated their work into three main stations: the Experiment Farm at Rutherglen, where work on the top dressing of pastures led to the establishment of subterranean clover throughout Victoria; the Central Research Farm at Werribee, working on cereal breeding; and Longerenong Agricultural College, which was responsible for the introduction of improved cultivation methods of wheat farming. As a result of his work, new wheat varieties were developed and many improvements made in wheat farming practice. Wheats developed from Werribee now represent 86 per cent of the acreage sown to this crop in Victoria. His publication "Wheat and its Cultivation" became a standard text on the subject in Australia, and for this work and research on the water requirements of farm crops he received in 1924 the first D.Sc. degree awarded in agriculture by the University of Melbourne.

In 1918 Richardson visited the United States and Canada for the Victorian Government to study agricultural education and research; as a result of his report on this visit, the School of Agriculture was established on its present basis at the University of Melbourne, and Richardson was appointed dean of the Faculty and director of the School. He held these posts in addition to his position with the Department of Agriculture, and thus ensured a close link between the educational and research activities of the Univer-

sity and the requirements of the Department for research and extension workers.

In 1924, Mr. Peter Waite, a prominent South Australian pastoralist, presented his estate on the outskirts of Adelaide, together with a considerable endowment, to the University of Adelaide, which, as a result, was able to establish the Waite Agricultural Research Institute and the Waite chair of agriculture. Richardson accepted an invitation to be first director of the Institute and occupant of the chair, and his energy, enthusiasm and devotion to the problems of agriculture found full scope in his new post. He was responsible for the development and expansion of the activities of the Waite Institute to its present leading position among the agricultural research institutes of Australia. In 1927 Richardson was appointed a member of the Executive Committee of the newly formed Council for Scientific and Industrial Research, a position he held until his retirement in 1949, and there is no doubt that his skillful judgment and wide knowledge of Australian agricultural problems contributed largely to the early success of the Council in selecting problems for research which yielded such valuable results for Australian primary industries. In 1938 he left the Waite Institute to become deputy chief executive officer of the Council for Scientific and Industrial Research, and in 1946, on the retirement of Sir David Rivett, he was appointed chief executive officer, a post which he held until his retirement in 1949. In 1927 Richardson was a delegate to the first Imperial Agricultural Research Conference in London and in 1932 an official adviser to the Australian delegation to the Ottawa Conference. He was created C.M.G. in 1932. He was the first president of the Australian Institute of Agricultural Science in 1935, and in 1947 was president of the Australian and New Zealand Association for the Advancement of Science. His presidential address, "Science in Relation to Australia's Development", is a brilliant survey of the possibilities of research in Australia.

Richardson was a big man, in mind and stature, and his genial, unassuming manner won him warm friends in many walks of life. Apart from his work he had wide interests, especially in the arts and in various games, in which he possessed greater than average ability. He had an encyclopaedic knowledge of agricultural matters and a prodigious memory for facts and figures which made him a formidable opponent in argument. As well as his ability as an experimentalist and his unflinching judgment of the practical value of research, he possessed a capacity for solid work and careful attention to detail which made him such a successful administrator. He is survived by his wife and daughter.

### Prof. W. H. Newton

PROF. WILLIAM HENRY NEWTON, professor of physiology in the University of Edinburgh, died on December 20, after an illness of a few months. His all-too-early death makes a grievous gap in the ranks of British physiology.

Newton was born in 1904, the son of the Rev. J. T. Newton, and educated at Ashville College, Harrogate, and at the University of Manchester, taking first-class honours in physiology at the B.Sc. examination in 1925. After a further year he took the M.Sc. degree, and continued physiological studies (on plain muscle) during the succeeding three years, which were

occupied chiefly in qualifying in medicine. He then became a house physician at the Manchester Royal Infirmary, but finally was launched as a physiologist by being appointed to the Sharpey Scholarship in physiology at University College, London, in 1930. It was at University College that he spent the largest part of his academic life, as lecturer, senior lecturer (1933), and finally as a reader during 1937-44. He was sub-dean of the Faculty of Medical Sciences for several years. During 1937-38 he worked at Yale University as a Rockefeller Fellow, and further extended his knowledge and his circle of friends. During the war years 1939-44 he was acting head of the Department, and, despite unstable health, administered it with tact and wisdom in the difficult conditions imposed by evacuation and by the strain of war.

In 1944 Newton was appointed to the Holt chair of physiology in the University of Liverpool, effected fundamental improvements there, and was very happy. Nevertheless, when invited to the chair at Edinburgh in 1948, he accepted, though with some hesitation. A major factor in deciding him was his wish to rejoin Prof. G. F. Marrian, with whom he had collaborated in earlier years. At the time when his appointment began, the preclinical syllabus was being re-planned, and he gave himself wholeheartedly to assist in this undertaking.

Newton was elected a member of the Physiological Society in 1930, and served it with characteristic zeal

and loyalty, as a member of Committee (1941-43 and 1948-49), as a secretary during 1943-47, and as a valuable member of the editorial board of the *Journal of Physiology* during 1948-49. He relinquished the last-named position in order to become chairman of the editorial board of the *Quarterly Journal of Experimental Physiology*. His last communication to the Physiological Society was given by a collaborator only three days before he died.

Newton worked in various fields in physiology; but the subject which he made his own was that of reproductive endocrinology. He showed that many of the phenomena of pregnancy persisted, in some species, after removal of the foetus, if the placenta remained, and that it could sometimes persist after removal of the ovaries: the placenta, as these observations showed, had important endocrine functions.

Newton was a completely sincere and strong character, a writer of wit and charm, and withal a sensitive and modest personality. He was self-critical, patient and completely dependable in all ways. His "Recent Advances in Physiology" bore witness to some of his fine qualities, to his wide knowledge and interests, his high critical faculties, and to his literary abilities. His department was a happy and a united one, and he will be long and affectionately remembered. He married in 1931, Stella, daughter of Mr. Roger Reynolds, and his family consists of two daughters. C. LOVATT EVANS

## NEWS and VIEWS

### Electrical Engineering at University College, London : Prof. R. O. Kapp

At the end of the present University session, Prof. R. O. Kapp retires from the Pender chair of electrical engineering which he has held at University College, London, since 1935; his successor will be Prof. H. E. M. Barlow, professor of electrical engineering in the College. Prof. Kapp entered academic work from consulting engineering practice, in which he had been concerned particularly with the technical problems of a number of large-scale electricity supply systems, including the North-West and North Wales sections of the British Grid. He took to University College a wealth of experience on the needs of the professional engineer, and with it considered views about the best way in which to direct academic training towards meeting those needs. Apart from important and valuable innovations in the teaching of engineering science, he has been instrumental in establishing at University College, as a regular part of the undergraduate course, training in applied economics, law for engineers and the study of the presentation of technical information. His book, dealing with the last of these subjects, and the wide interest which this and his lectures have stimulated, are examples of the enthusiasm which he has given to this work and of the response it has engendered. Prof. Kapp has also devoted unremitting energy to the affairs of the University of London as a whole. For the past four years he has been dean of the University Faculty of Engineering, and a member of the Senate. In this capacity he has played a vital part in the solution of many difficult post-war problems. Prof. Kapp's breadth of knowledge is remarkable. It extends far beyond the horizon of

most of those engineers who in other respects may stand comparison with him, and includes languages, music and philosophy. His book entitled "Science and Materialism" reveals unsuspected depths of thought well outside ordinary spheres. By his teachings and his personal influence, Prof. Kapp has made a profound contribution to educational work, both inside and outside the University of London.

### Biochemistry at University College, London : Prof. E. H. F. Baldwin

LONDON will be the gainer and Cambridge the loser by the appointment of Dr. Ernest Baldwin to the chair of biochemistry at University College in succession to Prof. F. G. Young. He combines with long and successful teaching experience the distinction of being the leading exponent in Great Britain of comparative biochemistry—the study of that vast field of strange chemical adaptations and unfamiliar solutions of the problems common to all living organisms. Such work has been Dr. Baldwin's chosen field since the time when, twenty years ago, he worked at the Marine Biological Station of Roscoff in France just after completing the Cambridge Part II Tripos courses, on the distribution of the phosphagens in the lower animals, with special reference to the prochordates. Some of his most recent work, done at Woods Hole, Massachusetts, has followed further the same story. He has also worked on the electrical organs of fishes, the phosphorus compounds in Diptera, forms of glycogen in molluscs, the general physiology of nematodes, and nitrogen metabolism in the snail. Very interesting work has recently been completed by members of his group on nitrogen excretion in *Chelonia* and in a range of aquatic and