division of his activities and a multiplication of interests. His distinguished presence and faculty for the vivid presentment of ideas in speech or writing, and his capacity for the formation of wise and tolerant judgments, won for him quickly the confidence of both academic and lay elements inside and outside the Yorkshire College, and his work in aiding its development into the University of Leeds, by way of the federal Victoria University, was of inestimable value. As a trusted member of Senate and Council, as pro-vice-chancellor and as chairman of the Board of Science and Technology, he placed himself unsparingly at the service of the University in a successful endeavour to collaborate in securing for it the best of university traditions, while maintaining and developing its special character as a school of applied science of international reputation.

In 'pure' chemistry, Smithells obtained the co-operation of his life-long friend, Julius Cohen, and that of his pupil, Dawson, for organic and physical chemistry respectively, and was largely responsible for the appearance of such names as Procter, Green and A. G. Perkin on the list of teachers and research workers in special departments of applied chemistry. His own lecture courses were admirably planned and delivered. Although of necessity so much diverted by claims of university statesmanship and administration, he worked for many years on the subject of flame structure. He became a fellow of the Royal Society in 1901 and president of Section B (Chemistry) of the British Association in 1907. His instinct urged the application of this branch of science to practice and led him to make contacts with the gas industry by a series of striking lectures and by productive conversations. One outcome was the foundation by the gas industry in 1910 of the Livesey professorship of coal gas and fuel industries in the University of Leeds as a memorial to Sir George Livesey, W. A. Bone becoming the first occupant of the chair. Another result was the formation of the Joint Research Committee of the University and the Institution of Gas Engineers, with Smithells as its first chairman. This Committee, unique at the time of its formation, has gradually increased the scope of its work, and Smithells was made its first honorary member a few weeks before his death. The Society of British Gas Industries too honoured him by election to its presidency in 1911.

Another way in which Smithells was anxious to see scientific training and method take its proper place in the arts of life was indicated by those activities which led to his appointment as honorary educational adviser on home science and household economics in King's College, London, where such ideas received more toleration than elsewhere and have since come into a well-deserved prominence.

In 1913 came a break in Smithells' activities at Leeds, arising out of the interest he had displayed in the training of Indian students. He was invited to go as special lecturer to the Punjab University, and accepted willingly since he was anxious to illustrate how, in his opinion, the subject of chemistry might be made to appeal to the mentality of the Indian student and carry him from theory to practice.

His generous and peaceful soul, with its memories of student days in Germany, was greatly shocked by the outbreak of war in 1914; but, like many others, he felt impelled to help and, first as special lecturer in the Northern Command and later as chief chemical adviser on anti-gas training to the Home Forces, with an office at the Horse Guards and the rank of lieutenant-colonel, he rendered services which were recognized by the distinction of C.M.G.

In 1923, after a few more years at Leeds in the busy post-War period, Smithells resigned the professorship he had held so long in order to take up the congenial duties of the director of the Salters' Institute in London. There he was occupied in the selection of promising young graduates in chemistry who might receive the endowment of the Institute in a further carefully planned training which should fit them for responsible work in industry. His personal knowledge of, and friendship with, so many who counted in the universities and in the various chemical industries, and his powers of judging and advising young men were here invaluable, and he was actively occupied with the duties of this post until failing health dictated his retirement in 1937. It was during this period that he interested himself specially in the Institute of Chemistry and was president for the term 1927–30. He was Harrison lecturer in 1935. Manchester, the university of his studentship, and Leeds, that of his professorship, both conferred upon him the honorary doctorate of science.

In writing, as in speech, Smithells was both lucid and convincing. This was apparent in the accounts of his scientific work submitted to the learned societies and in his lectures. His letters were greatly valued by those privileged to receive them for the same qualities, with more intimate, human and humorous touches and occasional accompanying sketches of persons—often children, in whom he delighted. He could never settle down to the writing of a treatise or text-book, but the Oxford University Press published a collection of his addresses, under the title "From a Modern University", dealing with such subjects as "The Relation of Universities to Technical and Professional Education", "The University and Women's Work", "Professors and Practical Men" and "The Modern University Movement".

Arthur Smithells was the third son of James Smithells and Martha, the daughter of James Livesey. He was twice married—in 1886 to Constance Marie (daughter of F. Mawe) and in 1908 to Katharine (daughter of Arthur Booth), who survives him. He had two sons and one daughter by his first, and one son by his second marriage. JOHN W. COBB.

Prof. Robert Wallace

PROF. ROBERT WALLACE, professor of agriculture in the University of Edinburgh from 1885 until 1922, died at Kincardine-on-Forth on January 16 at the age of eighty-five years. The chair of agriculture, the oldest in the country, goes back to 1790, and Wallace

and his three predecessors in office, all men of mark, between them filled it for 132 years, a rather remarkable record.

The second son of Mr. Samuel Wallace, who farmed in a large way in Dumfriesshire, Robert Wallace studied agriculture at the University of Edinburgh under Prof. John Wilson, a notable teacher, whose "Farm Crops" was long a standard work. From the University he returned to his native county to engage in the practice of farming, whence in 1882, at the age of twenty-nine years, he was called to be professor of agriculture at the Royal Agricultural College, Cirencester. Three years later he was chosen to succeed Wilson in the Edinburgh chair.

While under such notable teachers as Coventry, Low and Wilson, the agricultural classes at Edinburgh had attracted students from a wide field, there had been up to this time no development of a co-ordinated course in agricultural science. Agricultural students could, and frequently did, take the ordinary classes in chemistry, natural philosophy, botany, natural history and economics; but there were no courses relating these subjects to the practice of agriculture. Wallace, with characteristic energy, set himself to remedy this defect, and the immediate result was the establishment by the University of the B.Sc. degree in agriculture, the first to take the degree being the late Sir William Somerville, afterwards Sibthorpian professor of rural economy in the University of Oxford. At a later stage he was instrumental in obtaining endowments for the establishment of the Steven lectureship in agricultural entomology and of the Garton lectureship in Indian and Colonial agriculture.

The earlier years of the present century were a period of great development in agricultural organization and in agricultural education and research, both in Great Britain and in the Colonies, and the Edinburgh School of Agriculture, first in the field with a comprehensive course in agricultural science of degree standard, was called upon in an extraordinary number of cases to provide men to fill key positions in agricultural departments and in agricultural colleges. One has only to recall such names as Somerville, Middleton, Campbell, Greig, Gordon, Gilchrist, Seton, Milligan and Clouston—to mention a few—to indicate the extent to which the Edinburgh School has influenced agricultural development in the last forty years; and just as no trouble was too great for Wallace to get his former students placed, so nothing gave him more pride and satisfaction than the successes later achieved by them.

Throughout the greater part of the tenure of his chair, Wallace lived under the happy dispensation of the two-term (winter session) academic year, and for many summers he travelled widely to study agriculture under varying climatic conditions. India, Australia, South Africa, Rhodesia, the United States, Canada, Mexico, Egypt, Greece and Italy all came under investigation, and the fruits of his studies gave a refreshing quality to opening lectures and were embodied in many books—for he was an indefatigable and voluminous writer. His best known book is "Farm Live-Stock of Great Britain", which, first published in 1885, has gone through many editions, and is still a standard work.

A perfervid champion of a wide range of causes, Wallace could scarcely avoid achieving a state of variance with quite a number of people, but none who really knew him could fail to appreciate the essential kindliness, the rare generosity of the man.

E. SHEARER.

Mr. J. O. Borley, O.B.E.

MR. J. O. BORLEY, who died at Bexley, Kent, on December 30, at the age of sixty-six years, had retired only a year or so before from the post of fisheries adviser to the Discovery Committee (Colonial Office), and was still an active member of that Committee. His interest in whaling and antarctic research dated from his membership of the original Falkland Islands Committee, the recommendations of which led to the splendid investigations carried out under the auspices of the Discovery Committee. Borley took a great part in the planning of these investigations and in their administration. His thorough grasp of practical problems and the soundness and sobriety of his judgment were of the greatest assistance in the negotiations which led up to the international regulation of whaling.

The success of his work on the whaling problem was, I think, largely due to his long and intimate experience of fishery research, for up to 1928, when he joined the Colonial Office, Borley's life-work was the investigation of fishery problems. He started his fishery career at Lowestoft in 1903 under the Marine Biological Association, which, at that time, was responsible for the English share of the international fishery investigations. In 1910, when this work was transferred to the Board (later Ministry) of Agriculture and Fisheries, Borley moved to London with his staff, and was associated with Dr. A. T. Masterman in the general direction of the investigations. During the Great War, he rendered valuable services to the Ministry and to the Restriction of Enemy Supplies Department in an administrative capacity, which earned him an O.B.E. in 1918. In 1921, after the reorganization of the scientific staff, Borley returned to Lowestoft to take charge of the new Fisheries Laboratory which had been set up there through the energy of Prof. J. Stanley Gardiner.

Borley's own scientific work was concerned mainly with the plaice and the plaice fisheries, on which he became an acknowledged authority of international repute, publishing many papers of great value on this subject. He was an extremely painstaking and thorough worker, and was never content until he could wring out the last drop of information from the elaborate biological and statistical data at his disposal. He took a very keen personal interest in the difficult question of the protection of the plaice fisheries, and worked amazingly hard on the Plaice Committee of the International Council to bring about some effective measure of international control.