

OBITUARIES

Sir John Russell, O.B.E., F.R.S.

SIR JOHN RUSSELL, director of Rothamsted Experimental Station during 1912-43, and for more than half a century a dominant figure in world agriculture, died at Goring on July 12, 1965. He survived Lady Russell, who constantly supported him through an exceptionally long and active career, by only three months, and he finished his last book, a history of agricultural research in Great Britain, only a few weeks before his death.

Edward John Russell was born in 1872 at Frampton, Gloucestershire, the son of a school teacher who later became a Unitarian minister. His family was unconnected with either agriculture or science; but his father had unusually wide interests, extending from religion and social work not only into politics and philosophy but also into chemistry and biology, and these clearly influenced young John. His first formal contact with chemistry was at the Birmingham Technical School and so fascinated him that, when he had to leave the school to earn his living at the age of fourteen, he was "full of a desire to study chemistry" but "saw no hope whatever of doing so". However, to quote further from his autobiography, *The Land Called Me*, "thinking that chemistry was practised in chemists' shops, I decided to try and get into one and save up money to go to college". He got into one only to be disillusioned, but he was not easily put off and, with the persistence and energy that typified his whole life, he continued to study by attending evening classes and gained scholarships that took him in turn to the Presbyterian College, Carmarthen, to the University College of Wales, Aberystwyth, and, in 1894, to Owens College, Manchester.

Russell failed at his first attempt at the London B.Sc. degree, because his physics and mathematics were not up to standard. He then contemplated entering a theological college, but Prof. Dixon appointed him a research assistant at ten shillings a week, which allowed him to continue at Manchester, where to make ends meet he did other jobs as diverse as organist, reporter, lecturer, and coaching "some dull people through examinations that they never ought to have passed". At his second attempt he passed in the first division both the B.Sc. and the honours chemistry examinations, and then did research on various subjects, of which the most important was the oxidation of phosphorus, for which he was awarded the London D.Sc. degree in 1901. In addition to his chemistry, he was active as a social worker in the slums of Manchester, and, paradoxically, it was there that he first considered turning his attention to agriculture. He thought that many of those who failed to make good in cities would be happier and more prosperous in the country, and he had the idea of founding and leading a rural settlement where such people could be trained in agriculture. There were two major obstacles to implementing the idea: he had no money to found a settlement, and he knew nothing about agriculture. The second was the easier to overcome, so, against the advice of his seniors, who saw no future for a chemist in agriculture, when a lectureship became vacant at Wye Agricultural College, he applied for it, was appointed and started working there in January 1901. His social work played another important part in his life, for it was through it that he met Elnor Oldham, whom he married in 1903. They had six children, of whom five survive.

At Wye, Russell started the fruitful collaboration with A. D. Hall, principal of the College until 1902 when he moved to Rothamsted, that led among many other things to *The Soils and Agriculture of Kent, Surrey and*

Sussex, which provided the model for future surveys. As Russell saw more of practical agriculture, he increasingly appreciated not only the impracticability of his ideas about a rural settlement, but also that agriculture itself was woefully backward and urgently in need of research. His interests then changed and he turned his missionary zeal to getting scientific methods applied to agriculture; the career he was to follow so successfully had now begun. The course of lectures he gave at Wye on agricultural chemistry also formed the framework for his classic book *Soil Conditions and Plant Growth*, first published in 1912, which has passed through nine editions, the last two by his son, Prof. E. W. Russell, and has had a world-wide influence.

In 1907, Russell followed Hall to Rothamsted, where he was appointed Goldsmith's chemist, and in 1912 he succeeded Hall as director—a post he held with increasing distinction for thirty-one years. Hall did much to revive Rothamsted, where research had sadly declined from its peak in the earlier years of Lawes and Gilbert; but it was Russell who fashioned the comprehensive programme of research which now characterizes the Station. Russell was an able chemist and research worker and did some outstanding work on soils, particularly on partial sterilization, but his great achievements lie much more in the way he influenced the development of agricultural science than in his personal research. As a chemist interested in soils, it was to be expected that he would maintain and extend the work on crop nutrition that had made Rothamsted famous in the nineteenth century, but there were probably few other chemists who would have appreciated, as he did, the need for adding such diverse subjects as botany, physics, microbiology, entomology, pathology, biochemistry, statistics and the study of pesticides. Not the least of his qualities that helped to make his ventures succeed was his ability to judge people shrewdly and select able ones to act as leaders.

The extent to which he developed Rothamsted was all the more notable considering the spirit of the time when he did it. Except for a brief period after the end of the First World War, when neither the British Government nor people could fail to see the need for agriculture and the economic value of agricultural research, he got little official support for his proposals. In the 1930s when the Rothamsted Estate was up for sale, the Government was so uninterested that it did nothing to prevent it from being bought by a speculative builder; but Russell was undeterred by this lack of official backing, and with characteristic determination and enthusiasm raised the money to buy the Estate and preserve it for agricultural research. Similarly, he organized the centenary fund, which paid for the urgently needed new laboratories and glasshouses built in 1939. For these activities, all those who have since worked at Rothamsted and those still to come owe him an immense debt of gratitude.

In both World Wars, Russell served on many Government committees, dealing not only with agricultural subjects but also many others. His services as an adviser were also often sought by, and always willingly given to, many foreign Governments and organizations overseas. The value of these services to both agriculture and science is amply indicated by the list of honours and awards he received from British and foreign universities, academies, Governments and scientific societies—a list far too long to recount here. In all these, he took a due pride, but they left him free from conceit, never pompous or self-important, and always friendly and courteous.

Russell's memory, both for facts and people, was great. He seemed never to forget anyone he had

met or anything he had seen, read or heard. As he loved meeting people, travelled extensively and read widely, his knowledge was encyclopaedic, as is evidenced by his notable survey, *World Population and World Food Supplies*, published in 1954. An excellent lecturer and prolific writer, he dispensed information as readily as he acquired it. Always a keen supporter of the British Association, he rarely missed a meeting; he was its president in 1949, the first agricultural scientist to be elected to this position and perhaps of his many distinctions the one in which he took most pride.

A serious illness incapacitated him for a year shortly after he retired from Rothamsted; but he soon resumed a fully active life, not only continuing his writing and lecturing, but also his travelling. His interest in, and knowledge of, agricultural science was undimmed by age, and at ninety and more he was still asking the most penetrating questions, often dealing with subjects that had barely been born when he retired. His last visit to Rothamsted, to celebrate his ninetieth birthday, was an unforgettable occasion. He was his usual, lively self and without a note made a speech lasting more than forty minutes that was as memorable for his stimulating ideas about the current and future needs of agricultural research as it was for the wit and humour with which he recalled its history.

Only a man of exceptional ability, determination and energy could have achieved what he did, for during most of the first sixty years of his life he was continually battling to overcome difficulties and indifference to his aims. To have left school at fourteen and be elected to the Royal Society at forty-five is possibly unique, for self-made success is much rarer in research than in business or industry. But to have promoted agricultural research successfully in a period when a secretary of the then Board of Agriculture could say: "I cannot conceive the circumstances in which the board will be at all interested in scientific work", was a still greater achievement. The Royal Society of Arts awarded Russell the Albert Gold Medal—its greatest honour. The inscription reads, "For researches and leadership in agricultural science and services to husbandry in many lands"; although it fails to show that he also led a successful rebellion against ignorance and indifference, it is difficult to think of a more fitting epitaph.

F. C. BAWDEN

Dr. R. A. Alexander

RAYMOND ALBERT ALEXANDER died in Pretoria on July 8 at the age of sixty-six. He was born in Benoni, Transvaal, on July 29, 1899, and was educated at Jeppe High School, Johannesburg. After matriculating in 1915 he studied at the Potchefstroom School of Agriculture and was afterwards accepted for military training. In 1919 he went to the Transvaal University College and obtained the degree of bachelor of science, agriculture, in 1922. He then enrolled as a student in the newly formed Faculty of Veterinary Science under the renowned Sir Arnold Theiler and was awarded the degree of bachelor of veterinary science in 1925. In 1928 he joined the staff of the Veterinary Research Institute, Onderstepoort, and started his career as a virologist.

Having been awarded a fellowship by the Empire Marketing Board of Great Britain in 1931, Dr. Alexander studied at the Strangeways Institute, Cambridge, where he worked on tissue culture techniques under Dr. (now Dame) Honor B. Fell. During this time he also represented South Africa at the first Commonwealth Veterinary Conference in London. On his return to South Africa he continued his research work on virus diseases and produced original studies on the neurotropic virus of horse-sickness. As a result he was awarded a D.V.Sc. degree in 1935. In 1938 he again went overseas and worked for varying periods at the Rockefeller Institute, Harvard University, the Federal Bureau of Animal Industry and

the Canadian Veterinary Laboratory at Ottawa. When an extensive outbreak of horse-sickness occurred in Egypt and the Middle East during 1944, Dr. Alexander went to the assistance of the affected countries and was able to help control the scourge by means of the vaccine which he had developed at Onderstepoort.

He was appointed deputy director of veterinary services in 1949 and in that year took a leading part at the African Rinderpest Conference held in Nairobi, and the International Rinderpest Conference convened by the Food and Agriculture Organization of the United Nations. Later he served on a Commission appointed by the British Colonial Office to investigate veterinary problems and research in East African territories. In 1953 he was invited by the United States Government to visit America and to advise on the control of blue-tongue in sheep which was causing devastating losses.

Dr. Alexander was appointed director of veterinary services of the Union of South Africa in 1950 and served in this capacity for 11 years until he retired on superannuation.

He devoted his life to furthering veterinary science in general and virology in particular. As a result of his success in this respect he held many important posts, among which were the following: chairman of the Inter-African Bureau of Animal Health (1955-58); life vice-president of the South African Veterinary Medical Association; member of the Committee for Research into Medical Sciences of the Council for Scientific and Industrial Research; chairman of the Committee of the Virus Diseases Research Unit of the University of Cape Town; chairman of the Veterinary Board; member of the Technical Advisory Committee of the Poliomyelitis Research Foundation and of the Advisory Committee on Virology to the South African Minister of Health; consultant to the Food and Agriculture Organization of the United Nations/Office International des Epizooties at a world conference on emerging diseases held at Ankara.

Several honours came to Dr. Alexander. In 1955 he was awarded a D.Sc. (*honoris causa*) by the University of Cape Town and in 1957 he was elected a Fellow of the Royal Society (South Africa). In 1961 he was elected an honorary member of the Section of Comparative Medicine of the Royal Society of Medicine.

As a virologist, he gained a world-wide reputation and produced more than sixty scientific publications. He will be remembered for his enthusiastic participation in scientific meetings and his practical approach to animal disease problems.

B. C. JANSSEN

K. A. Vlasov

KUZMA ALEXEEVICH VLASOV, a prominent Soviet petrologist and geochemist, died on September 29, 1964. He was born in the Ryazan district of Russia on November 14, 1905. In 1931 he graduated in geology at the Timiryazev Academy and soon began field work on the Kola Peninsula under the guidance of A. E. Fersman. Starting with a study of beryllium minerals, Vlasov went on to investigate beryllium-bearing pegmatites, and this led in turn to an intensive study of granite-pegmatites in general. The results of his field observations were summed up in a comprehensive genetic-textural classification of granite pegmatites. His *magnum opus*, however, was his detailed work on the geology, petrology and geochemistry of the Lovozero alkaline massif on the Kola Peninsula. This was published in 1959. In 1953 Vlasov was elected a corresponding member of the Academy of Sciences of the U.S.S.R. and in the same year he was appointed director of the newly founded Institute of Mineralogy, Geochemistry and Crystallography of Rare Elements. The work of the Institute is being published in a three-volume edition (two volumes have already appeared), entitled *Geochemistry, Mineralogy and Deposits of Rare Elements*.

S. I. TOMKEIEFF