

In 1915 Ghosh published his first paper on the electrolysis of solutions by alternating electric current in the *Journal of the American Chemical Society*. During the First World War, Sneath (Z. phys. Chem., 90, 1, 139; 1915) published some papers criticizing the Arrhenius electrolytic dissociation theory. I pointed out the weakness of Sneath's views (*Medd. Nobel Inst.*, 3, No. 15; 1916), and later developed my views in a paper to the Faraday Society, and a general discussion on the present position of the theory of ionization was organized in London by the Faraday Society on January 21, 1919. In this general discussion Ghosh's contributions to the basic conception of total ionization of electrolytes were considered and discussed and were favourably received by leading physical chemists of Britain, and papers by him were published in the *Journal of the Chemical Society*, London. However, other physical chemists scrutinized the conceptions and arguments of Ghosh and pointed out that they were not valid. Although Sutherland (*Phil. Mag.*, 3, 161; 1902; 12, 1; 1906) and Milner (*ibid.*, 25, 742; 1913) introduced the conception of complete ionization, Ghosh's papers were mainly responsible for the development of this idea and its applications by Debye and Hückel in their theory of strong electrolytes. Later, Ghosh and his collaborators published some interesting papers on catalytic gaseous reactions and photochemistry, which have been followed up elsewhere.

During the Second World War, Ghosh was appointed director of the Indian Institute of Science, Bangalore, which expanded in various directions during his regime. In this period he was knighted, chiefly for his war services.

When Dr. Shyama Prasad Mukherji was appointed Minister in the Union Government, he took Ghosh to Delhi to assist in the expansion of technology in India. After a short stay in Delhi, he was sent to be the first director of the Indian Technological Institute at Kharagpur, West Bengal. Then he was appointed the first whole-time vice-chancellor of the University of Calcutta; but he had to give up this post after a short time on his appointment as a member of the Planning Commission for Science and Technology in India.

Lady Ghosh, three sons and two daughters survive him.

N. R. DHAR

Prof. W. Riddet

PROF. WILLIAM RIDDET, director of the Dairy Research Institute (N.Z.) at Palmerston North, New Zealand, died on December 30 at the age of sixty-two.

Prof. Riddet was born of farming parents in Ayrshire, Scotland. He graduated B.Sc. and N.D.A., N.D.D. (with honours) at the West of Scotland Agricultural College and the University of Glasgow. In 1921 he joined the staff of the West of Scotland Agricultural College, first as dairy instructor and later as lecturer. In 1925 he migrated to New Zealand to take up the then recently established Logan Campbell chair of agriculture at Auckland University College. In co-operation with Prof. G. S. (now Sir Geoffrey) Peren, then Walter Buchanan professor of agriculture at Victoria University College, Wellington, he organized the establishment, in 1927, of Massey Agricultural College, at Palmerston North, to which both professorships were transferred. At about the same time he played a leading part in the arrangements for the development of the Dairy Research

Institute (N.Z.), an organization set up under the aegis of the N.Z. Department of Scientific and Industrial Research to undertake scientific research work as a service to the rapidly expanding dairy products manufacturing industry. Prof. Riddet was appointed the first director of this Institute.

Thus it was in the dual role of dean of dairying (and later vice-principal) of Massey Agricultural College and director of the Dairy Research Institute (N.Z.) that Prof. Riddet made his outstanding contribution to the advancement of dairy science and dairy practice, and thereby to the general welfare and prosperity of his adopted country.

Prof. Riddet had from the outset that very important attribute of a leader in teaching and research, an original and ranging mind. His interests covered a wide field; and wherever his interest lay his mind was active in devising and fostering ideas for investigation and research. Endowed with what seemed to be an inexhaustible reserve of energy, he devoted himself to his duties with an astonishing persistency.

As a teacher he set for his students very exacting standards. The value of his teaching is shown in the calibre of the men who came under his influence—they are to be found occupying positions of high responsibility in New Zealand, in Great Britain, and in many other countries. His spirit lives in the training and inspiration he has passed on to these students.

It lives, too, in the organization which he controlled from its beginnings, the Dairy Research Institute (N.Z.). Under his guidance the Institute has gained an international reputation for its work on a number of aspects of dairying practice. While the publications describing this work do not often carry his name as author or co-author, all those who have worked under him will readily acknowledge their debt to him. With typical generosity he made no claims, and passed on his ideas without reservation. It was for him sufficient recompense that he could see the work being done and the Institute serving well the industry from which it drew its support.

The impact of Riddet's personality on the teaching of agricultural science, and on the dairy farming and dairy products manufacturing industry in New Zealand, will be evident for many years to come.

F. H. McDOWALL

Mr. F. W. James

ON January 27, Mr. Francis Wogan James, librarian to the Imperial College of Science and Technology, London, died after years of illness most bravely and cheerfully borne.

From Haverfordwest he went to the Royal College of Science as a Royal Scholar in 1930, and after taking his degree in 1933 he became a research student in inorganic chemistry. During 1936–38 he was research assistant to the professor of highway engineering in the Department of Civil Engineering of the City and Guilds College—a transfer from one to another of the constituent parts of the Imperial College which made it easy for him, in later years, to take a broad view of the needs of the whole College.

In 1938 'Frank' James asked the Dean of the City and Guilds College for permission to apply for the post of College librarian—an appointment which, academically and financially, was junior to the one he was holding—in order to be in a better position