seemed unaware of age, so full of the joy of life and far-reaching projects, has gone, that the tireless, wonderful intellect has ceased to exist.

N. N. Semenov
V. N. Kondratiev

Prof. C. W. Dannatt

Prof. Cecil William Dannatt, who died at his home in Blackheath on April 9, was born on August 2, 1892. He was educated at Colfe's Grammar School and the Royal School of Mines, where he graduated in metallurgy in July 1914. In August of the same year he enlisted in the Queen's Westminster Rifles. He received a commission in 1915 and served in France, Salonika and Palestine. On being demobilized in 1918, he joined the Ministry of the Interior, Cairo, as assistant director of the Technical Section of the Public Security Department. After two years of very varied experience in this post, he went to Trinidad as geologist to an oil company, but in 1923 he returned to the Royal School of Mines, to work as a research student in the Metallurgy Department. A few months later he joined the teaching staff of the Department, and the work was so much to his liking, and he so well fitted for it, that he remained on the staff for thirty-four years, first as demonstrator, then lecturer, reader, acting director and finally, from 1945 until his retirement in 1957, professor and head of the Metallurgy Department.

Throughout his long connexion with the Royal School of Mines and Imperial College, and particularly after his appointment as professor, he devoted himself to the advancement of the Department, and the training and education of his students, in every one of whom he took a personal and sincere interest. Under his leadership, the Department added continuously to its reputation as a centre of learning and research, and when he handed over to his successor in 1957 he was able to do so in the knowledge that its standing had never been higher. Although his interests and knowledge extended to all branches of metallurgy, and he was a vigorous opponent of specialization within his Department, his greatest interest was in fact in the scientific and technological aspects of the extraction of metals from their ores, and the achievement that afforded him more gratification than any other was the formation of the Nuffield Research Group in Extraction Metallurgy. He was largely responsible for the establishment of this group in his Department in 1950, since when, with his active support, it has developed into the leading academic research school devoted to the study of metallurgical processes at high temperatures.

Prof. Dannatt had a charming and gracious personality, and he was an unsparing worker. He was always anxious to help, and always reluctant to refuse any request for advice or information, or demand for his services. Scientific societies, professional institutions, educational and examining bodies, and Government, college and university committees made many such demands not just on account of his position but also because his wide knowledge, alert mind and ability to express himself lucidly and concisely were powerful assets in committee work. He particularly valued his long association with the Institution of Mining and Metallurgy, of which he was president during 1956–57, the Institution of Metallurgists, of which he was vice-president during 1953–57, the Sir John Cass College and Woolwich Polytechnic, as member of their governing bodies, and the City and Guilds of London Institute, as member of the General Advisory Committee and Moderating Committee for Metallurgical Subjects.

Shortly after his retirement, the title of professor emeritus of metallurgy was conferred on him by the University of London, and in 1960 he became a Fellow of the Imperial College. Although incapacitated by a prolonged and severe illness, he retained his interest in metallurgy to the end. He is survived by his widow and daughter.

M. S. Fisher

Prof. J. Bordet, For.Mem.R.S.

Jules Bordet, who died at his home in Ixelles in Belgium on April 6, was a pioneer in the science of microbiology and the allied one of immunology. The last twenty-five years of his life—he died at the age of ninety—were spent in retirement and he had used the early years of this period of leisure to prepare a second edition of his excellent text-book, *Traité de l'Immunité dans les Maladies Infectieuses*, which appeared in 1939. But in the closing years of the past century and the first thirty years of this one, Bordet's brilliant mind and experimental skill led to discoveries of fundamental importance and a flow of scientific papers which established for him an indisputable claim to fame.

Bordet was born in Soignies, Belgium, on June 13, 1870. Electing to enter the profession of medicine, he studied at the University of Brussels, graduating M.D. in 1892. Choosing a laboratory career, he went to the Pasteur Institute, Paris, in 1894, and worked there for seven years, being recalled in 1901 to become first director of the newly founded Pasteur Institute, Brussels. Six years later he was appointed to the chair of bacteriology in the University of Brussels, holding this post until his retirement in 1935.

Bordet's inquiring mind led to his study of many aspects of microbiology, among others, anaerobiosis, bacterial agglutination, the pleuropneumonia group of micro-organisms and the bacteriophages, on all of which he made valuable original observations. It was, however, his investigations into the ætiology of whooping-cough and his elaboration of the complement-fixation test, in both of which he had the assistance of his colleague, Gengou, that stood out above the rest. It was he and Gengou who, in 1906, discovered the causal agent of whooping-cough—*Haemophilus pertussis*—a discovery which has made possible the specific prophylaxis of this disease; and it was at the end of the last century, in 1895 to be precise, that he published his first paper on bacteriolysis, showing that lysis of a bacterium by an immune serum was the work of two serum components, specific heat-stable antibody and non-specific heat-labile complement. It was from this observation, of course, that the complement-fixation test emerged (1901), with its wide application in the diagnosis of disease.

Recognition of the value of these researches brought Bordet many honours. In 1911 he was given the Prix de la Ville, Paris, and two years later the Swedish Medical Society awarded him the Hansen Prize and the Pasteur Medal. He was made a foreign member of the Royal Society in 1916, and in 1919 he was given the Nobel Prize for medicine and physiology; the University of Cambridge conferred on him the honorary degree of M.D. Bordet was married and had three children, a son and two daughters.

S. P. Bedson