

Research Organisation because he wished his assistants to receive the maximum credit. It remains, however, to say that every investigator had been helped to the full by his wise and able guidance.

F. S. SINNATT.

Mr. L. A. Boodle

THE death of Mr. Leonard Alfred Boodle, formerly assistant keeper of the Jodrell Laboratory, Royal Botanic Gardens, Kew, on August 22, has removed from our midst a very learned botanist and a most conscientious and devoted public servant.

Boodle started his botanical career at the Royal College of Science, and after taking his A.R.C.S. he was for seven years demonstrator at the College under the late Dr. D. H. Scott. Soon after Dr. Scott went to Kew as honorary keeper of the Jodrell Laboratory, Boodle joined him as his private assistant, and it was then that Boodle's valuable work on plant anatomy commenced. Before that he visited South Africa and worked on marine algae, with the late Mr. George Murray. The genus *Boodlea* was named after him.

When Dr. Scott resigned his honorary keepership of the Laboratory in 1906, Boodle was put in charge, having been appointed an assistant at Kew in 1904. He was appointed assistant keeper of the Laboratory in 1909 and retired under the age limit in May 1930.

Boodle was blessed with a splendid memory and had a remarkable knowledge of botany and botanical literature; he was a very valuable critic. Diffident of his own powers and most meticulous in all he undertook, he spared no pains in working out fully any problem presented to him, but his published work was not very large and much first-class research work he carried out, unfortunately, was never published. His papers on the vascular structure of the Pteridophyta are a worthy memorial of his careful and exact methods.

Prof. E. J. Salisbury writes: "He was a man of whose profound anatomical knowledge and sure-footedness we all had the greatest respect. His extreme modesty and retiring nature led to many not appreciating to the full his great gifts."

ARTHUR W. HILL.

Dr. M. Benjamin

WE have learnt with deep regret of the death in a recent aeroplane accident of Dr. M. Benjamin, while engaged on work for which he was seconded from industry to the Ministry of Supply. He was a physicist of great promise who had begun to make his mark in pure science as well as in applications to industry.

His work in pure physics consists of a number of careful and interesting studies of electron emission from various types of surfaces. The earliest (Benjamin and Rooksby, *Phil. Mag.*, 15, 810; 16, 519; 1933) cleared up in a remarkable way the peculiar features of the emission given by coatings of mixed oxides of strontium and barium. Then followed studies of the migration of barium and thorium ions over various surfaces, the resulting changes in thermionic emission

being used to indicate the migration (and evaporation). Quite recently, in collaboration with Jenkins, Benjamin was engaged in the study of electron emission from metal points as a function of direction of emission and surface conditions, studies which are in course of publication by the Royal Society. The observed emission patterns were of great variety and complexity; they promise to provide new and important information for the electron theory of metals, and of the nature and properties of a metal point formed on a single crystal.

There was another side of Benjamin's life and character. He was one of those who took kindly to the practice of maintaining frequent personal contacts with the industry which, in effect, gave men such as him their chance. Although this left only part of his time and energies for his researches, it provided a fund of knowledge on recurrent but unexplained phenomena demanding inquiry. For him, however, the main urge was probably rather in the fact that, in the making of thermionic valves in thousands, the slightest misunderstanding leads to waste and delay; of these he was most impatient, and difficulties increased his activities in factory and laboratory to a fury. Nevertheless, his actual approach was always one of friendly interest, and he was as apt to learn as to teach. This attitude encouraged in all manner of people responsiveness and trust, so that his interventions were not merely accepted but were often claimed with insistence. His most recent work brought out his qualities to the full, with results which will be far-reaching.

That his colleagues in the Laboratory feel his loss to be most grievous goes without saying, but there will be many elsewhere who will miss him and will know the reasons for these feelings.

Prof. C. Bartel

News has reached his friends in Britain that Prof. Casimir Bartel, the distinguished mathematician and former Polish prime minister, was recently executed by the Germans for alleged co-operation with the Russians. His death, at the age of fifty-nine, deprives Poland of a man who would have been most useful to the nation in the future reconstruction after the country's independence is restored.

Born at Lwow, Bartel received a technical education before entering the University of Munich to study mathematics. When he returned to Lwow he taught mathematics (in particular geometry) at the Polytechnic High School, becoming in turn lecturer, assistant professor, full professor, rector and finally principal of this institution of university rank.

In science, Prof. Bartel was the most eminent of contemporary Polish mathematicians. After the War of 1914-18, when Poland regained its liberty, the nation depended upon its men of science and learning to undertake its leadership, and Prof. Bartel was among those who responded to the country's call. In 1919 he accepted the post of minister for railways and communications in Prof. Paderewski's first government, and he was therefore largely