

## Obituary.

PROF. ITALO GIGLIOLI.

AMONG the famous band of workers who built up a scientific agriculture in the nineteenth century the name of Italo Giglioli will take a high place, not only for what he did himself, but also for what he inspired others to do. Both his father and his grandfather had become exiles from Italy in the turbulent days of the early revolutions; the father came to Edinburgh, took a medical degree, and then settled in London to practise. The revolution of 1848 attracted him back to Italy, where, in 1852, at Genoa, a son was born to him to whom the name Italo was given as the first to be born in the native land.

Italo Giglioli devoted himself to the teaching of scientific agriculture, which he believed to be his country's great need. He was elected professor at the age of twenty-four, and taught, first at Portici, and then at Pisa, where he stayed until his death, on October 1, at sixty-eight years of age, playing a great part in the development of these two schools to their present honourable position. For this work he was well fitted. He had an unusually good knowledge of English and of other languages besides his own, and was thoroughly familiar not only with the investigations of Lawes and Gilbert at Rothamsted and of other British agriculturists, but also with the French and German work. In 1888 he drew up a long report for the Italian Ministry of Agriculture on British agricultural education (*Annali di Agricoltura: Educazione Agraria Britannica*, Rome, 1888), written with full knowledge, and containing much information that the student could obtain elsewhere only with difficulty. He kept up his interest in English investigations throughout his working life, and was usually appealed to by English workers who desired information about Italian agriculture.

Giglioli's published work covers a wide range; on the physiological side it deals with the functions of essential oils in plants (*R. Accad. dei Lincei*, 1911, vol. xx.); the biological absorption of methane, in which he confirmed the conclusion of Söhngen and Kaserer that methane is oxidised by certain micro-organisms (*Studi e Ricerche*, Pisa, fas. 22, 1909-14); and the resistance of seeds to chemical agents. It is not, however, as a worker on abstract laboratory problems that Giglioli will be remembered. His more important investigations were on the agricultural side. He carried out experiments at the Experimental Station at Suessola on the cultivation of wheat, summarised in "Il Frumento: sue varietà e concimi" (Portici, 1888), and in later reports. In these he dealt with varieties, manuring, and such special cultural treatments as the effect of electrification, of manganese, etc. He also dealt with the cultivation of the cork tree ("La cultura del Sughero," Portici, 1902); the effects of chemical manures in arid climates; phylloxera; and silage—all important subjects in Italian agriculture.

Giglioli's best work was probably as a teacher, and some of the tributes paid by his students are very touching. His book, "Chimica agraria campestre e silvana" (Naples, 1884 onwards to 1902), was much used in Italy. The more general agricultural questions are discussed in his well-known "Malessere agrario ed alimentare in Italia" (Portici, 1903). This contains probably the best available summary of Italian agricultural conditions in comparison with those of other countries, and also an examination of the causes and possible remedies for agricultural distress.

Giglioli's death severs a link between British and Italian agriculturists, and is equally regretted in both countries. It is the hope of all concerned that the close relationship for which he strove may be maintained and strengthened.

E. J. RUSSELL.

DR. C. A. SADLER.

DR. CHARLES A. SADLER was a student at Liverpool in the early days of the University there. After graduating with honours in physics (1905), he joined Prof. Barkla—then lecturer in the University—in his investigations of the secondary rays emitted by substances exposed to Röntgen radiation. Sadler's introduction to the work was made in a detailed investigation of the absorption of the characteristic X-radiations.

The results of these researches were published by Barkla and Sadler in a series of papers in the *Philosophical Magazine* dealing principally with the laws of X-ray absorption, the homogeneity of the characteristic radiations, and the relation between the characteristic radiations and the atomic weights of the chemical elements emitting them. Sadler afterwards (while holding the Oliver Lodge fellowship) continued the investigation of the energy of the characteristic radiations by an accurate and detailed examination of these radiations from several elements. He also applied Townsend's method to a study of the secondary corpuscular radiation, and found that a certain portion of this radiation was associated with the characteristic X-radiation.

In 1911 Sadler was appointed lecturer in physics at University College, Reading. There he became interested in mechanical work, and in 1915 he turned his skill to good account by organising most successfully a training centre for munition workers. Shortly before the armistice he left academic work to undertake research of a technical character with Messrs. Allen and Simmonds, of Reading. This work was, however, cut short by a breakdown in health, followed by his early death on December 5.

Sadler's interest and skill in mechanical methods were exceptional. He was an able experimenter, an accurate observer, an indefatigable worker. These gifts were very highly esteemed by those with whom he collaborated.