Prof. E. S. Salmon

AFTER a long illness, Prof. Ernest Stanley Salmon died on October 12 at the age of eighty-eight.

Anyone unfamiliar with mycology might be pardoned for thinking that his reputation rested on the breeding of new varieties of the hop (*Humulus lupulus* L.). Yet when he came to Wye College (University of London) in 1906, he had already established himself as the authority on an important group of fungi. Researches at the Jodrell Laboratory, Kew, had led to the publication, in 1900, of "A Monograph of the Erysiphaceae", a work which remains fundamental for systematic mycology and which was reproduced as microcards only a few months ago. After further study in the laboratory of Prof. Marshall Ward at Cambridge, he demonstrated the very highly developed specialization of parasitism in the same group; accounts of this may be found in the *Transactions of the Royal Society*, 1904 and 1905.

Salmon was appointed to Wye College to study diseases of plants and so was probably the first professional plant pathologist in Britain. There were then few helpful text-books, but it was not long before he had combined laboratory work and field experiments to good purpose. His first papers, which may even now be read with profit, describe in some detail a selection of the diseases of crop plants; the main emphasis being on apple scab (*Venturia inaequalis* (Cooke) Wint.) and other pathogens of fruit. Bordeaux mixture and lime sulphur, fungicides which are still in use, were introduced to Kentish orchards, while he conducted a vigorous campaign in the Press and elsewhere which led to the passing of the Destructive Insects and Pests Act in 1907.

He was elected president of the British Mycological Society in 1911; appointed reader in economic mycology in the University of London in 1912, professor of mycology in 1925 and emeritus professor in 1939. He was made Fellow of Wye College in 1948.

When, soon after the First World War, the specialist advisory service in Britain began, he was appointed advisory mycologist of the Wye Province. Until he relinquished this appointment in 1937, he led a series of investigations on diverse plant diseases. Particularly noteworthy are the contributions on fruit and hops with which are associated his colleagues, Drs. H. Wormald and W. M. Ware.

Salmon arranged a programme of hop breeding in 1907 and followed this without a break until his last illness. From the beginning, one of his main aims was to produce varieties with exceptionally high preservative values; such varieties would enable the British grower to compete with imported American hops. In order to have at command a wide range of diverse types, he assembled male and female plants from different parts of the world; this unique collection, together with selected progeny, for long occupied about an acre of ground at Wye College. Of the many thousands of seedlings raised, his earliest success was the English-grown American, Brewer's Gold. This was F1 from an English male hop and a wild hop from Morden, Manitoba. Paradoxically, the variety has been more widely grown in Canada and the United States than in Britain. The varieties Bullion and Northern Brewer which have become so popular with the British hop industry during the past decade are F1 and F3 seedlings, respectively, of parents from the same sources. Other seedlings of his raising proved to be tolerant to hop wilt (*Verti-*

cillium albo-atrum Reinke and Berth.) and these have been of great value for planting in infected soil.

In recognition of his work on hops he received in 1955 the Horace Brown Medal, the highest honour which the Institute of Brewing can bestow.

After the manner of the pioneer, Salmon was a strong individualist and, in his later years at least, showed little enthusiasm for gatherings, whether scientific or social. He found relaxation in literature and in his small garden of rare plants.

H. H. GLASSCOCK

Prof. J. Zenneck

PROF. JONATHAN ZENNECK, one of the earliest pioneers of radio science, died in Munich in April, a few days before his eighty-eighth birthday. Prof. Zenneck was born in 1871 in Württemberg, Germany, and studied mathematics and natural science at Tübingen, where he obtained his doctorate in 1894. In the following year he became an assistant in the Physical Institute in Strasburg; he moved to Dantzig in 1905 to become assistant professor, and later (1911) professor of physics in the Institute of Technology. His academic career was continued by his appointment in 1913 to the chair of physics at the Technical High School of Munich, where he remained until his retirement.

Most of the basic contributions of Prof. Zenneck were made in the days when spark transmitters were used for wireless telegraphy, concurrently with the development of high-frequency machines and arc generators to produce undamped oscillations for radio-telephony. Among the earliest of his achievements was the establishment of the first radio-link for navigational purposes between Cuxhaven and Heligoland in 1899-1900. His basic experimental and theoretical contributions to wave propagation were of great importance in the early development of wireless communications. He expounded the first theory on wave propagation along the Earth (Zenneck wave) which explained the effect of the ground constants on polarization and absorption of the waves. Also well known are his basic contributions to ionospheric research, which he initiated in Germany; and he was the founder of the first German ionospheric research station, Herzogstand, in Kochel, Bavaria, which was in operation until 1945.

Dr. Zenneck's interests were not limited to radio. He also contributed to other areas in the general field of applied physics such as acoustics and gas discharges. He was the author of the first German text-book on wireless telegraphy, "Electromagnetic Oscillations and Wireless Telegraphy", published in 1906, which was the classic work in this field for many years. He was also the editor of the *Hochfrequenztechnik und Elektroakustik*, the leading journal of the world during the early days of radio.

His second book, entitled "Wireless Telegraphy", was published in Germany in 1908, and a second edition appeared four years later. It was translated into English in 1915 by A. E. Seelig, and published in London and New York, forming one of the most useful text-books available to students at that time on the generation, propagation and detection of electromagnetic waves in the radio part of the spectrum.

He received many honours and medals from academic and professional societies, including an honorary doctor's degree from the Institute of Tech-