

OTTO LOEWI

The British Pharmacological Society was particularly proud that Professor Otto Loewi was one of its honorary members; his death in New York on Christmas Day, 1961, has brought sorrow to his friends all over the world.

He was born in 1873 in Frankfurt am Main and attended the gymnasium in that town, where he studied the classics; he said later that this had a permanent



Photograph of Otto Loewi taken at Oxford in the summer of 1940. Reproduced by kind permission of Lady Simon.

good effect upon him. He spent his holidays on his father's estate in the Haardt mountains, where he learned to love the country where the wine is grown. He wanted to spend his life studying the history of art, but his family sent him to Strasbourg University to learn medicine. There he met Naunyn, Schmiedeberg, Minkowski, Cushny, Spiro, Straub, Miescher and Hofmeister. Alsace-Lorraine had recently become German, and the University of Strasbourg had received privileges which enabled it to attract many famous men. A short experience in hospital convinced Loewi that more fundamental knowledge was needed, and he

became a pharmacologist because he believed that drugs could be used as tools to reveal the secrets of living matter.

He went to work with Hans Horst Meyer in Marburg in 1898 and followed him to Vienna in 1905. During this time he made his name by experiments which showed that dogs could be kept in nitrogen equilibrium on a diet in which the proteins had been completely digested. In 1902 he came to England, where many of the world's greatest physiologists were working at that time. He went as a student to Starling's laboratory and met Bayliss and Elliott, and Dale, who became his lifelong friend ; this visit left him with a warm feeling for England.

In 1909 he became professor of pharmacology in Graz, and he worked happily there till 1938, when he was suddenly arrested by Nazi stormtroopers and eventually banished as a Jew. In 1940 he went to America and spent the last 20 years of his life as professor in the New York University medical school, spending some months each year at Woods Hole, where he devoted his great gifts to helping the younger generation.

Loewi's published papers cover a wide range of subjects—digitalis and the kidneys, calcium and strophanthus, adrenaline and cocaine, insulin and carbohydrate metabolism, and many other things—but his greatest work was the proof of the chemical transmission of nervous impulses. He had discussed this theory in 1903 without knowing how to prove it, and then in 1920 he woke up in the night, went down to his laboratory and did an experiment which showed that stimulation of the vagus in a frog's heart liberated a substance which inhibited a second heart. Other people failed to confirm this observation and Loewi wrote several papers before he convinced the world that he was right. He knew that the substance must be acetylcholine, but was too cautious to say so. He showed that it was destroyed by an enzyme and so discovered cholinesterase. Ten years earlier he had shown that eserine increased the action of parasympathetic nerves and he soon showed that eserine inhibited the enzyme. This work was confirmed and extended by Dale and his colleagues, and the Nobel prize was awarded to Dale and Loewi in 1936 for this work. He was awarded various honorary degrees and was a foreign member of the Royal Society. The world is a lesser place without him.