

Theobald Smith, For. Mem. R.S.

BY the death of Theobald Smith medicine and veterinary science have lost one of their greatest pioneers and discoverers. He started his scientific career in 1883 as a Doctor of Medicine of the Albany Medical College, U.S.A., but turning from human to animal medicine in 1884, was appointed to the pathological laboratory of the Bureau of Animal Industry. Influenced by the work of Koch, he devoted himself to the bacteriological and experimental study of animal diseases. At that time Texas fever of cattle was causing serious losses to the cattle industry in the United States, and to Theobald Smith fell the important duty of investigating the disease. His efforts were crowned with brilliant success. By 1893, after four years of intensive work in the laboratory and in the field, he had solved the problem of its ætiology and spread. He discovered the causal parasite, *Piroplasma* (or *Babesia*) *bovis*, and its transmission by the tick *Boophilus* (or *Margaropus*) *annulatus*. For the first time a protozoan infection had been shown to be spread by an arthropod vector, and this was undoubtedly the prototype of the later discoveries by other famous investigators who elucidated the causation of such insect-borne diseases as malaria and trypanosomiasis. Many other brilliant observations in animal pathology and more particularly in the field of bacteriology and immunity were due to him, but some of the most noted of these at first received little attention from contemporary workers, and he himself made little effort apparently to follow up his discoveries, leaving it to others to explore their possibilities. This was one of the outstanding features of his scientific work, and illustrates his great personal modesty and his pursuit of research for its own sake. It has come to light that along with Salmon, in 1886, he pointed out how a dead culture of a bacterium produced immunity against the related disease, but it was only after the lapse of several years that the immunising properties of killed bacteria were completely studied by Pfeiffer and others and applied in practice. Theobald Smith was the first to demonstrate (1895-96) the experimental production of a deficiency disease corresponding to scurvy. He made the primary observations which revealed the existence of serum-anaphylaxis, but contented himself by communicating his findings in a letter to Ehrlich. The first differentiation of the human and bovine types of tubercle bacilli may be attributed to him. He discovered the *Vibrio fœtus*, the causal organism

of a form of infectious abortion in cattle. Along with Reagh, in 1903, he showed that different types of antigen pertain to the flagella and bodies respectively of motile bacteria, but this most important observation was lost sight of for many years. It is unnecessary to refer to the many other researches of fundamental importance which he made during his career; his work has greatly enriched our knowledge of bacteriology and comparative pathology.

Theobald Smith occupied with great distinction several scientific positions in the United States, including professorships of bacteriology and comparative pathology and—his most important post—the directorship of the Department of Animal Pathology of the Rockefeller Institute, which he held from the foundation of the Institute in 1914 until he resigned in 1929. In this last position he built up a great research centre for the investigation of animal diseases and established himself as an inspiring leader. His life's work illustrates the close relationship of human and veterinary medicine.

Many well-deserved honours were awarded to him. He was a foreign member and Copley Medallist of the Royal Society of London, a foreign member of the Paris Academy of Sciences, and an honorary member of many other scientific societies. He was the recipient of honorary degrees in law, science, and medicine from American and European Universities, including the LL.D. of the University of Edinburgh, which was conferred on him *in absentia* in 1934.

He was elected an Honorary Fellow of this Society in 1934.

This distinguished veteran of science passed away on December 10, 1934, in his seventy-fifth year, but his name will live in the history of human and animal medicine. (See also *Obituary Notices of Fellows of the Royal Society*, No. 4, 1935, p. 515.)

T. J. M.