Obituary.

SIR GERMAN SIMS WOODHEAD, K.B.E.

WE regret to record the death of Sir German Sims Woodhead, professor of pathology in the University of Cambridge, which occurred suddenly on December 29. At the commencement of the war Prof. Woodhead was mobilised and became a colonel in the R.A.M.C. (T.), and was for some time head of a camp in Tipperary. He afterwards was appointed inspector of laboratories in the military hospitals in the United Kingdom, a post which involved perpetual travelling and discomfort, the strain of which no doubt conduced to the signs of serious over-work from which of late he suffered. In 1919 he was created K.B.E. in recognition of his valuable war work.

Born in 1855, Woodhead was educated at Huddersfield College, whence he entered the medical faculty of the University of Edinburgh, graduating in 1878. He then spent some time on the Continent, studying in Berlin and Vienna. In 1887 he was appointed superintendent of the research laboratories of the Royal College of Physicians, Edinburgh, resigning this post in 1890 on his appointment as director of the conjoint laboratories of the Royal Colleges of Physicians and Surgeons in London, which he held until his election in 1899 to the chair of pathology in the University of Cambridge in succession to the late Prof. Kanthack. Here it was largely due to his initiative and energy that the new medical school buildings were erected, including the memorial museum to Sir George Humphry.

Woodhead's activities were manifold and untiring; he was a strong supporter of the temperance movement, and was president of both the British Medical Temperance Association and the British Temperance League. He was an hon. LL.D. of Birmingham and Toronto Universities, fellow of Trinity Hall, Cambridge, hon. fellow of the Henry Phipps Institute, Philadelphia, member of the Executive Committee of the Imperial Cancer Research Fund and of the Scottish Universities Committee, and past-president of the Royal Physical Society, Edin. (1878), and of the Royal Microscopical Society (1913–16). It can scarcely be doubted that, had he attempted less, his output of original work in his own special department would have been greater.

Woodhead published in 1883 "Practical Pathology," which reached a fourth edition in 1910; in 1885, "Pathological Mycology" (with Hare); and in 1891, "Bacteria and their Products." He was founder of, and for many years conducted, the *Journal of Pathology and Bacteriology*. In 1894 he published with Dr. Cartwright Wood an investigation on the efficiency of domestic water filters, and during the war devised a method for the chlorination of drinking water. While director of the conjoint laboratories he published a report on diphtheria for the Metropolitan Asylums Board, and devoted much attention to the standardisation of diphtheria antitoxin. Tuberculosis was also a subject to which Woodhead devoted much attention. He drew up a report to the Royal Commission on Tuberculosis in 1895, and was a member of the Royal Commission on Tuberculosis of 1902. Just before the war he devised an apparatus for the continuous record of the temperature of animals, and published the results of investigations obtained by it. Of late the subject of colonies for the tuberculous occupied much of his time, and he was joint author of "Settlements for the Tuberculous." Woodhead was of a genial and kindly disposition, and he will be greatly missed by a large circle of friends and acquaintances. R. T. H.

PROF. G. S. BRADY, F.R.S.

PROF. GEORGE STEWARDSON BRADY was born in Gateshead on April 18, 1832. His father, Henry Brady, was a surgeon, and he himself was trained for the same career. He was a student of the University of Durham College of Medicine, Newcastle-upon-Tyne, and practised in Sunderland from 1857 to 1906. During the greater part of this period Prof. Brady was also professor of natural history in the University of Durham College of Science, now Armstrong College, Newcastle-upon-Tyne. He began his duties as professor in 1875, and on his retirement in 1906 was elected honorary professor of natural history. In 1906 he went to live in Sheffield, and died there on December 25 last.

Both Prof. Brady and his brother, H. B. Brady, were early interested in natural history, and it is worth remarking that during the time Prof. Brady was studying medicine Tuffen West was an apprentice to his father. All three afterwards attained distinction, Tuffen West as a naturalist artist, H. B. Brady as an eminent authority on Foraminifera, and Prof. Brady for his work on Crustacea, especially on Entomostraca.

Prof. Brady became a member of the Tyneside Naturalists' Field Club in 1849, not long after its inception as a branch of the Natural History Society. He was president in 1871 and again in 1892–93, and he contributed many papers to the Transactions of the Natural History Society. His early papers dealt with algæ and other plant groups, but it was not long before he determined to devote himself to Crustacea and especially to Copepoda and Ostracoda. This work was his hobby, and he devoted his spare time to gathering and to examining his own collections and collections sent to him. The results have been published in a long series of papers, and these brought him into intimate relationship with other workers in the same field here and abroad. But he advanced into a place of prominence when he described the *Challenger* collections of Copepoda and Ostracoda. His reputation was further enhanced when his work on the free and semi-parasitic Copepoda of the British Islands was published by the Ray Society. With the late

Canon Norman he published a monograph of the Ostracoda of the North Atlantic and North-western Europe, and also a catalogue of the Crustacea of Northumberland and Durham.

Prof. Brady's scientific work was done at home. Although he restricted his publications mainly to the results of his examination of Entomostraca from collections made in this and other countries—notably Australia and South Africa—his characteristically neat preparations show that he had interests in all groups which came into the field of his microscope. He was a pioneer in marine dredging, and took an active part in the Northumberland excursions of the early 'sixties, and in the 'nineties he was as keen as before.

It was a pleasure to know Prof. Brady, to be his friend, to watch him work and hear him talk on men and things, on politics and related subjects, and those who had not this privilege will find from his addresses to the Tyneside Naturalists' Club that he gave a critical and well-thought-out consideration to the important questions which arose during his long life and that he had decided opinions and was fearless in expressing them. A. M.

Notes.

WE are particularly glad to see the names of Prof. C. S. Sherrington and Prof. W. A. Herdman in the list of New Year honours. Prof. Sherrington, who has been appointed a Knight Grand Cross of the Order of the British Empire (G.B.E.), is the president of the Royal Society, and is to be president of the British Association for the meeting to be held in Hull in September next; and Prof. Herdman, who has received the honour of knighthood, vacated the presidential chair at the Edinburgh meeting last year. The two leading British scientific organisations are thus most appropriately represented in the honours list. Other honours included in the list are:—*Knighthoods:* Prof. G. E. Cory, professor of chemistry, Rhodes University College, Grahamstown; Dr. G. S. Buchanan, Senior Medical Officer Ministry of Health; and Dr. J. H. Parsons, F.R.S. *K.C.I.E.:* Sir John Biles, professor of naval architecture, University of Glasgow. *C.M.G.:* Dr. R. T. Paton, Director-General of Public Health and President of the Board of Health, New South Wales.

THIS week we begin the publication of a Calendar of Industrial Pioneers, which is intended to supplement the Calendar of Scientific Pioneers which appeared in our columns last year. It is not necessary here to point out the close association that exists between scientific discovery and industrial progress. The two are inseparable. Problems of communication, transport, mining, agriculture, and manufacture depend for their solution on the co-operation of the laboratory and the works. We believe, therefore, that our readers will welcome the series of biographical notes which will recall the great engineers, inventors, manufacturers, and captains of industry who, by the application of the discoveries of the pioneers of science, have extended existing industries, created new ones, or in some other way contributed to the advancement of civilisation.

A CONFERENCE which commenced on December 12 last was held by permission of the Government at the Ministry of Health, at which delegates from the Health Committee of the League of Nations discussed the international standardisation of therapeutic serums and the sero-diagnosis of syphilis. Prof. Madsen, of Denmark, presided, and Austria, Belgium, France, Germany, Italy, Japan, Poland, Switzerland, Great Britain, and the British Ministry of Health, the War Office, and the Medical Research Council were represented, and the business was conducted by sub-committees. As regards diphtheria and tetanus antitoxins, it was considered both possible and desirable that international units should be fixed for these serums, and a scheme of work to establish them was drawn up. As regards anti-meningococcic, anti-pneumococcic, and anti-dysentery serums, various criticisms were made of the present technique for standardising these, and a scheme of new investigations to obtain more uniformity was adopted. As regards the sero-diagnosis of syphilis, a scheme for comparing the results obtained by the Wassermann reaction with those of other methods was drawn up. An official luncheon was given by the Government to the delegates and guests, at which Sir Alfred Mond presided. It is understood that the conference will meet again in six months' time, probably at the Pasteur Institute, Paris, to report progress and to make further recommendations.

THE *Times* of December 24 published a telegram from Delhi announcing that Mrs. Aidie, who is the widow of the late Lt.-Col. Aidie, I.M.S., has discovered a parasite in the salivary glands of the bed-bug, which is probably a stage of the *Leishmania Donovani* parasite of kala-azar. If this important discovery is confirmed it will furnish the final proof of the truth of the theory of Sir Leonard Rogers that the common bed-bug is the carrier of the infection. The human stage of the parasite was first described by Sir William Leishman in 1903, and was found independently by Lt.-Col. Donovan, I.M.S., while in 1904 Rogers cultivated the organism *in vitro* and discovered the flagellate stage of the parasite. In the following year he recorded experiments showing that sterility and a neutral or slightly acid medium, such as he found in the stomach of bed-bugs, were most suitable for this development, while the plan he had advised as early as 1897, of moving healthy coolies out of infected into new lines only a few hundred yards away, had proved so successful in eradicating the disease from tea estates that the infecting agent was not likely to be a flying one, and he pointed out that infection through the ubiquitous bed-bug would explain all the known facts. Major Patton, I.M.S., in Madras next obtained the development of the flagellate stage of the parasite in the