

## Obituary.

SIR CHARLES DOUGLAS FOX.

ONE of the last representatives of a generation of distinguished engineers, Sir Douglas Fox died on November 13 in his eighty-second year. His father, Sir Charles Fox, had assisted Ericsson in building the "Novelty," one of the three locomotives which competed at Rainhill in 1829, and as a member of the firm of Messrs. Fox, Henderson and Co. constructed the Crystal Palace in Hyde Park in 1850-51.

Articled to his father at the age of seventeen, Sir Douglas Fox acted as resident engineer of the Witney and Ramsey railways. In 1863 he was taken into his father's firm, which still subsists with the title Sir Douglas Fox and Partners. In this relation he was responsible for the construction of the London, Chatham, and Dover, and the London, Brighton, and South Coast Railways. He became consulting engineer to the Queensland Government Railways and to various railways in South Africa. Amongst the latter may be mentioned the Beira Port and Railway, and the Rhodesian railways, and the remarkable bridge over the Zambesi river at the gorge below the Victoria Falls. With Mr. Brunlees Sir Douglas was engineer for the Mersey Tunnel, and with Mr. Greathead for the Liverpool overhead railway, a new type of construction in this country. In the Argentine he was consulting engineer for several railways. When the Manchester, Sheffield and Lincolnshire Railway became the Great Central, Sir Douglas's firm was responsible for the works on the Southern and Metropolitan divisions and the Marylebone terminus. Sir Douglas was interested in the London traffic problem, and constructed the Great Northern and Hampstead tube railways. His firm are consulting engineers to the Channel Tunnel Co.

Sir Douglas Fox was president of the Institution of Civil Engineers in 1899-1900, and received the large party of American civil and mechanical engineers who came to England in that year. He contributed papers to that institution (in collaboration with his brother, Sir Francis Fox, and some of his chief assistants), and took part in important discussions on excavating machines; long-span bridges; broad-gauge, narrow-gauge, and light railways; Indian tramways; break of gauge; resistances on railways; and other subjects.

Sir Douglas Fox took an active part in the foundation of the British Standards Committee (now Association). This is doing an immense work in preventing waste of effort and facilitating production in engineering manufacture.

W. C. U.

PROF. A. S. DELÉPINE.

PROF. AUGUSTE SHERIDAN DELÉPINE, whose death was announced in NATURE last week, was educated in Paris, Geneva, and Lausanne, graduating in science at the last-named. He then proceeded

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to the University of Edinburgh, where he pursued medical studies, graduating with first-class honours in 1882. His interest from the first centred in pathology and in the then new science of bacteriology, and after acting for a time as demonstrator in these subjects at Edinburgh he settled in London, and soon afterwards was appointed demonstrator of pathology and curator of the museum at St. George's Hospital, where he did excellent work. In 1891 Delépine was appointed the first Procter professor of pathology and morbid anatomy in the University of Manchester. Here he organised the pathological department and designed the new buildings of the department. During his tenure of this professorship he carried out many investigations of a public health character, so that when, twenty years later, a department of public health was established at the University, he resigned the chair of pathology and was appointed to the new chair of public health and bacteriology and to be director of the public health laboratory, posts which he retained until his death.

At the laboratory Prof. Delépine gave instruction to a large number of graduates proceeding to the diploma of public health, some of whom assisted in conducting research work, while others surveyed the health of the district by inquiries and reports upon the incidence and spread of preventable disease. In this way close co-operation was maintained between the laboratory and the public health department of the city.

Among his researches may be mentioned his report to the Local Government Board in 1908 on the prevalence and sources of tubercle bacilli in milk, the connection between summer diarrhoea and food-poisoning (1902), and his report to the Manchester City Council on the conditions necessary to obtain a clean milk supply (1918).

During the war Prof. Delépine did good work in a consultative capacity as sanitarian and bacteriologist, and in particular investigated the nature and prevention of trench-foot, a malady which in the early days of the war was costing the Allied Armies many lives and an enormous amount of disability, and which he showed was due to a combination of damp, cold, and constriction.

Prof. Delépine was a warm and genial friend, and his place will be hard to fill. The tragedy of the loss of his only son during the war doubtless conduced to the ill-health from which he suffered of late.

R. T. H.

M. HENRY BOURGET.

WE regret to announce the death last September, after a long illness, at the age of fifty-seven years, of M. Henry Bourget, director of the Marseilles Observatory. After taking his degree, in which he gained distinction both for literary and mathematical studies, M. Bourget