

OBITUARY.

JOHN JOB CREW BRADFIELD, C.M.G., was born at Sandgate, Queensland, on the 26th December, 1867, and died at Sydney, New South Wales at the age of 75. He was educated at Ipswich Grammar School, Queensland and at Sydney University. He received his practical training with the Queensland Government Railways, and in 1891 entered the Public Works Department of New South Wales. In 1912 he was appointed Chief Engineer, Sydney Harbour bridge and Metropolitan Railway construction. He designed the scheme of city and suburban railways for the city of Sydney and constructed the City Railway by day labour, at an approximate cost of £10,000,000. He was responsible for drawing up the specifications for the Sydney Harbour bridge and constructed the approaches at a cost of £2,000,000, and, as Chief Engineer of the New South Wales Public Works Department, he supervised the contract for the main bridge (cost £4,239,000). He also prepared the design for the Brisbane bridge and supervised its construction.

He was a lecturer and examiner in engineering at Sydney University, and in 1913 was appointed a Fellow of the Senate. During the war of 1914-18 he was a member of the Patents Investigation Board and a member of the Board which established the first Civil Aviation School in Australia in 1916. In 1933, he set up a consulting practice, and in the same year was appointed a Companion of the Order of St. Michael and St. George.

Dr. Bradfield was elected an Associate Member of The Institution on the 7th February, 1893, and was transferred to the class of Member on the 10th January, 1911. From 1936 to 1939 he was the Australian representative on the Council. From 1917 he acted as a member of the Advisory Committee for New South Wales. In 1914 he presented a Paper entitled "Electric Tramway: the Spit to Manly, N.S.W." ¹, and in 1934 a Paper on "The Sydney Harbour Bridge and Approaches" ², which was read and discussed together with Papers by Messrs. Ralph Freeman, M. Inst. C.E. (Design of Structure and Foundations); ³ Ralph Freeman and Lawrence Ennis, M. Inst. C.E. ("Manufacture of the Structural Steelwork and Erection of the Bridge"); ⁴ and J. F. Pain and Gilbert Roberts, Assoc. MM. Inst. C.E. ("Calculations for the Steel Superstructure").⁵ A Telford medal was awarded to Dr. Bradfield for his Paper. He served

¹ Min. Proc. Inst. C.E., vol. excix. (1914-15, part I), p. 422.

² *Ibid.*, vol. 238 (1933-34, part 2), p. 310.

³ *Ibid.*, vol. 238, p. 153.

⁴ *Ibid.*, vol. 238, p. 194.

⁵ *Ibid.*, vol. 238, p. 256.

on the Council of the Institution of Engineers, Australia, and was a member of other scientific societies in Australia.

He married Edith, daughter of the late J. V. Jenkins, of Llandaff, Wales, and had five sons and one daughter.

WESTGARTH FORSTER BROWN, C.B.E., was born at Cardiff on the 9th August, 1867, and died at Newcastle-on-Tyne on the 16th July, 1943. He was educated at Marlborough College and received his engineering training at the Newcastle College of Science and as a pupil with Messrs. Forster Brown and Rees, of Cardiff. After practical experience at Whitburn colliery, Durham, and on the construction of the Barry docks, he spent two years in New Zealand, where he acquired a knowledge of mining under various conditions. On his return, in 1889, he was placed in charge of the sinking and equipment of a large modern colliery for the North's Navigation Colliery Company. In 1892 he was appointed an assistant to the firm of Forster Brown and Rees, and in 1894 became a partner, being engaged on the design and execution of a colliery undertaking in Durham for Messrs. Bolckow, Vaughan & Co., Ltd. As a member of the firm, of which he became senior partner, he acted as Mineral Adviser and Agent for many important mineral estate owners, and in addition to making many investigations, reports, and valuations of properties and mineral undertakings in the United Kingdom he visited many foreign countries in the course of his work. He served on a number of Committees, including the Central Valuation Committee in connexion with the provisions of the Coal Act, 1938, and was a member of the Imperial Mineral Resources Bureau. At the time of his death he was the Regional Estates Manager for the Northern and Southern Regional Areas, on behalf of the Coal Commission. He also acted as Chief Mineral Adviser to the Crown, Mineral Agent for the Duchy of Cornwall, and Deputy Gaveler and Crown Receiver of the Forest of Dean. His public services were recognized in 1939 by his appointment as a Companion of the Order of the British Empire.

Mr. Forster Brown was elected a Member of The Institution on the 23rd April, 1901. For some years he rendered valuable assistance as a Referee in connexion with "Engineering Abstracts." He was President of the South Wales Institute of Engineers in 1931, and was also a Fellow of the Surveyor's Institution and a Member of the Institute of Mining Engineers.

He married Mildred Nash, who pre-deceased him, and had one son.

Sir JAMES FORTESCUE FLANNERY, Bart., was born at Liverpool on the 16th December, 1851, and died at Wethersfield Manor, Essex, on the 5th October, 1943.

In 1866 he served one year with Mr. David Campbell, Liverpool, and was then apprenticed to Messrs. James Taylor and Company, of Birkenhead