

OBITUARY.

HORACE BELL was born in London on the 17th June, 1839, and was educated in France and at Louth in Lincolnshire. At the age of 15 he was placed as a pupil with Mr. John Wilson, a civil engineer in Westminster; but recognizing, even at that age, the need of thorough grounding in the profession he wished to follow, he left very soon and went to Glasgow, where he entered the firm of Messrs. D. Cook & Co. as an apprentice; afterwards he worked in the Caledonian Railway shops as well as on surveying. In 1859 he was employed on the London, Chatham and Dover Railway as an Assistant Engineer under Mr. Mills. After more than eight years of railway work in England, at the age of 23, he was successful in an open competition held in London in May, 1862, for an appointment as an Assistant Engineer in the Indian Public Works Department. He joined the service in India in December, 1862, and was posted to the Central Provinces, then under the Chief Commissionership of the late Sir Richard Temple, and was employed under Mr. J. S. Heyman on the construction of the Great Deccan Road, which formed part of the main line of communication between Calcutta and Bombay. While thus employed Horace Bell received several steps in promotion, becoming Fourth Grade Executive Engineer in April, 1866, Third Grade Executive Engineer in September, 1867, and Second Grade Executive Engineer in March, 1869.

His services during this period received frequent recognition and commendation in the Central Provinces Annual Administration Reports. In January, 1870, he was sent on Railway survey work to the Wardha Valley, and was enlisted in the new State Railway Service initiated by Lord Mayo's Government in May, 1870, and posted to the Indore State Railway, receiving promotion to First Grade Executive Engineer in March, 1871. In April, 1873, he went home on furlough, returning to India in December, 1874, when, after a short term of service on the Punjab Northern State Railway, then under construction, he was transferred in July, 1875, to the Rajputana Malwa Railway, then to the Sindia State Railway, and subsequently to the Rutlam Neemuch Nusserabad Railway, and it is with those lines that his name will be long and honourably identified.

He was appointed Superintendent of Way and Works of the Rajputana line in August, 1875, and officiated as Manager in addition to the other duties in May, 1876. While thus employed he was promoted to Third Class Superintending Engineer in May, 1877, and to the Second Class in June, 1880. Once more taking leave to England in July 1880, during which time he had charge of the students on the practical course at the Royal Indian Engineering College at Coopers Hill, he returned to duty in November, 1881, and was appointed Engineer-in-Chief of the Dacca Mymensingh State Railway, and early in 1884, was transferred to the Tirhoot State Railway, first as Engineer-in-Chief, and then as both Manager and Engineer-in-Chief. With the exception of a short interval from July to October, 1881, when he officiated as Director of the North Western State Railway, Horace Bell was employed on the Tirhoot State Railway until March 1888, and received the thanks of the Government of India for his services in connection with the construction of the Gunduck Bridge on that line in 1887. He then took six months' leave to England, and on his return was appointed Engineer-in-Chief of the Great Western of India Railway Survey, and in February, 1889, was posted in a similar capacity to the Moghal Serai Railway Survey.

In August, 1890, he was appointed Consulting Engineer for Railways, Calcutta. While holding these various appointments he received promotion to Third Class Chief Engineer in November, 1889, Second Class in June, 1891, and First Class in January, 1892. After a further four months' leave to England in May, 1892, Horace Bell returned for a final term of service, as Consulting Engineer for State Railways to the Government of India, which office he held till his retirement in June, 1894. During that period he also acted for a short time as Director General of Railways in India.

This rapid promotion to one of the highest posts in the Public Works Department was an acknowledgment of his technical ability and high administrative capacity. His talents as a writer were great; he was the author of "Laws of Wealth," a work on political economy, and also of a "Primer on the Government of India," both written for natives of India, and his "Railway Policy in India" has long been recognised as a standard work on that subject. A fluent French scholar and a frequent speaker on Indian railway work, it was natural that his interest in India should not cease with his career in the service of Government. He therefore commenced practice, on leaving India, as Consulting Engineer in London, and, among other works, the Nilgiri-Hill metre-gauge

rack railway and the Southern Punjab 5-foot-6-inches-gauge Railway were constructed under his guidance.

His varied talents and sterling qualities endeared him to his many friends, and his bodily activity seemed to promise a long life after his arduous work in India, but an attack of influenza in the autumn of 1902 developed heart disease, and he died on the 10th April, 1903.

Horace Bell was elected an Associate of the Institution on the 5th March, 1867, and was transferred to the class of Members on the 30th January, 1872. In 1897 he was elected a Member of the Council, on which he served till his death.

JOHN CHAMPNEY BOTHAMS, born on the 25th January, 1822, at Upton, Bucks, was educated at University College School, London, and was subsequently articled to Mr. Henry Austin, under whom he was engaged on the construction of the London and Blackwall Railway. Residing with his master, he frequently met Charles Dickens, a sister of whom Mr. Austin had married. On the conclusion of his articles he was employed from 1844 to 1846 in preparing surveys, plans and sections for various lines of railway, and in 1849 he entered the service of the Metropolitan Commissioners of Sewers. He acted as Resident Engineer on the construction of the Amsterdam Waterworks in 1852 to 1853, and from 1853 to 1855 in a similar capacity on the Salisbury Water and Sewerage Works.

On the completion of the latter works in 1855, Mr. Bothams was appointed Surveyor to the City of Salisbury, which post he held until his death. In that capacity he carried out, in 1884, sewage-disposal works at a cost of £10,000, the process being precipitation by lime, and a new main sewer of concrete to the lower part of the city, to exclude subsoil water. In his private capacity he designed works for the Fisherton Water Company to supply a suburban district. For the last fifteen years the greater part of his duties was discharged by his son, Mr. A. C. Bothams. He died at his residence in Churchfields, Salisbury, on the 14th March, 1903, at the age of 81.

Mr. Bothams was elected a Member of the Institution on the 3rd February, 1880.
