

OBITUARY.

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CHARLES NAPIER BELL, son of the late Mr. James Stanilaus Bell, was born at Rothesay in Scotland on the 14th September, 1835, and passed his early years on the Mosquito Coast of South America, where his father had acquired extensive interests in the mahogany forests. The family returning home in 1857, the subject of this notice was articled to Messrs. Bell and Miller, Engineers of Glasgow, under whom he obtained a varied experience of engineering work during the term of his pupilage. In 1860, he was sent to Brazil by the late Sir James Brunlees, as an assistant on the location and survey of the São Paulo Railway, on the construction of which he afterwards acted as one of the resident engineers. He was subsequently employed in explorations and surveys for railways in the Rio Grande do Sul and Pernambuco. Before his return to England in 1869, he also made a survey and designs for the Rio Grande waterworks and a marine survey of the harbour of Buenos Ayres. Between 1869 and 1871 he was employed on the Continent in the construction of the Baptele and Wesel railway, and in preparing designs for gas- and waterworks at Bereditcheff in South Russia.

In 1871 he left England for New Zealand, where he was destined to spend the remainder of his life, and commenced to build up that extensive and important practice which in after years brought him to the forefront of the profession in Australasia. So numerous are the undertakings, schemes and other matters, with which Mr. Bell was connected during the course of his long and active career in the Australian colonies that a brief reference to the more important of them is all that may be attempted within the limits of this notice. Taking up his residence in Christchurch, he designed and carried out drainage and sewerage works for that city, and also reported upon sewerage works for Wellington and Napier and a supply for Auckland. For many years he held the appointment of Engineer to the Lyttleton Harbour Board, designing and constructing a graving dock, wharves and other structures for that authority. When the provincial system of government was abolished in New Zealand, Mr. Bell acted as one of the valuers of the railways in the South Island taken over by the central Government. About this

time the Tasmanian Government decided to investigate the harbour accommodation on its coasts, and Mr. Bell was chosen to examine and report upon the conditions obtaining at various points on the north and west coasts. In connection with this investigation he designed and subsequently carried out harbour works for Launceston, Macquarrie, Emu Bay, Circular Head and Devonport, and works for improving the navigation of the Tamar, Huon and other rivers. In Tasmania, also, he built the ship-canal at East Bay Neck,<sup>1</sup> and designed a graving dock at Hobart and improvement works at Duck Bay harbour.

Between 1885 and 1893 he carried out important works for the Westport Harbour Board, including a breakwater and training works, a large bridge over the river, and a railway line, improvements which greatly assisted in the development of the coal-fields and other resources of the district. He also reported upon the breakwater for Napier, and designed a graving dock and wharfage accommodation for Wellington. During this period and subsequently he reported upon the harbour works at Dunedin, Timaru, Napier, Wanganui, Greymouth, New Plymouth, Nelson and many other places. He made an important investigation of the causes of floods in the Hunter River, New South Wales, and reported upon the improvement of the Brisbane, Burnett and Fitzroy Rivers, besides acting as chairman of the Royal Commission appointed to consider proposals for the construction of an outer harbour at Adelaide.

In connection with railways, he served on the Royal Commission appointed to investigate and report on railway communication between the east and west coasts of South Island, New Zealand, and subsequently carried out surveys and prepared plans and estimates for the proposed line through Arthur's Pass and the Otira Gorge. He also acted as Chief Resident Engineer for the New Zealand Midland Railway, and constructed about 80 miles of the line before operations were, for financial reasons, suspended. On account of his knowledge and experience of colonial railways, he was subsequently commissioned to examine the permanent-way, works and rolling-stock of the entire system of the New Zealand Government railways, and his investigations and conclusions were embodied in an important official report.

In the sanitary branch of engineering, Mr. Bell was consulted in connection with sewerage and waterworks at Parramatta, Dunedin, Hobart, Perth, Fremantle and other towns in Australia and New Zealand.

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<sup>1</sup> Minutes of Proceedings Inst. C.E., vol. clxii, p. 370

During the last five years of his life his health began to fail, and he was in consequence obliged to restrict the scope of his labours. He nevertheless retained until the last the appointment of Consulting Engineer to the Mersey Marine Board, Tasmania, and occasionally undertook other consulting work. By his death, which took place at Derby, Tasmania, on the 3rd January, 1906, in his seventy-first year, the profession in Australasia has suffered an irreparable loss. During the 35 years of his life in those colonies, his name and reputation became familiar to all, and he was universally respected for his high character and undoubted professional ability, whilst his attractive personality endeared him to a large circle of friends. Apart from engineering, he was a man of wide culture and information, and took a keen interest in the general progress of science. His love of nature, and knowledge of natural lore, are well displayed in the vivid and interesting account of his life and adventures among the Mosquito Indians which he published in book form in 1899, under the title of "Tangweera."

Mr. Bell was elected a Member of the Institution on the 2nd April, 1867. In 1904 he was elected to represent Australasia on the Council of the Institution, retaining his seat until his death.

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JOHN BROWN, formerly Engineer-in-chief of the Cape Government Railways, died at his residence, The Thatch, Rondebosch, Cape Colony, on the 11th July, 1905, aged 61. Born at Marlborough, Wiltshire, on the 27th April, 1844, he was privately educated and served a pupilage to the late Sir John Coode, by whom he was employed on the construction of the Portland breakwater. After serving temporarily as an assistant engineer on the Bristol and Exeter Railway, he was appointed by Sir John Coode to take charge of the improvement works then being carried out at the mouth of the River Bann, Ireland, a post which he retained until the suspension of the works in September, 1872. In the following year, on the recommendation of his former chief, he received an appointment to the staff of the Cape Government Railways, and proceeded to South Africa. After acting as an assistant engineer for two years, he was promoted early in 1876 to the rank of District Engineer, and became Engineer-in-chief in 1884, on the retirement of Mr. H. J. Pauling. Under his able direction, the railway system of Cape Colony attained a high level of efficiency, and its capabilities were fully tested during the anxious time of the South African war. For services rendered during the war Mr. Brown received the distinction