

ALFRED PENNY was born on the 7th of March, 1841, and was the eldest son of the late Mr. Alfred Penny, who predeceased him by only one year. After receiving a technical education in the Applied Sciences Department of King's College, London, he obtained in July, 1860, an appointment in the Public Works Department of the Government of India, being one of the first nine successful candidates in open competition under the Stanley regulations. He arrived in Calcutta on the 18th of December, and spent some six months in the Thomason Civil Engineering College, at Roorkee, for the purpose of learning Hindustani. On the 1st of July, 1861, he was posted as an Assistant Engineer to the newly-acquired Province of Oudh, where he remained for more than eight years, during which time he was engaged as an officer of the Provincial Roads and Buildings Branch of the Department, first on surveys for, and then in the construction and maintenance of, some 200 miles of roads, in many cases involving embankments and bridges. He also constructed a bridge of boats, a quarter-of-a-mile in length, over the River Ghagra, building the boats and carrying out the river-training and bank-protecting works necessary for the safety of the bridge. In the meantime he had been promoted through the various steps to Executive Engineer, second-grade, in March, 1869, and had in addition acted as District Engineer of the divisions of Fyzabad, Goudah, and Bahraich, and also latterly as Municipal Engineer of the large town of Fyzabad and of the adjoining city of Ajoodhia.

In January, 1870, Mr. Penny was transferred to the Punjab Irrigation Branch Survey, and was engaged for a short time on the works of the Sirhind canal at Roopar. He was then posted to the Bari Doab canal, in executive charge of the construction of the third division, which consisted of the Kussoon and the Sobraon branches, aggregating about 120 miles in length. In September, 1872, he was transferred to the Military Works Branch, and was placed in charge of all military buildings, forts, and other works in the cantonments of Saugor in the Central Provinces and Nowgong in Bundelkhund. In March, 1877, he was promoted to Executive Engineer, first-grade, and in the following October was sent on special duty to the Province of Mysore to begin the construction, as a famine-relief work, of a narrow-gauge State Railway between Bangalore and Mysore, a distance of about 86 miles. On the completion of that work his services were specially commended by the Famine Commissioner, Sir Charles Elliott, and were brought to the notice of the Indian Government.

He then reverted to the Military Works Branch, and was in charge of the Meerut Division from November, 1878, until October, 1880, when he was transferred to the State Railway Branch, in which he was destined to pass the remainder of his life. His first work was to survey and construct a portion of the Nagpur and Chatisgahr Railway, of the second division of which he was placed in charge in September, 1881. In October of the following year he acted as Engineer-in-Chief of the Rewah Coal-field Railway, for which he had previously made surveys. He then constructed part of the South Indian Railway extension from Nellore to Renigunta and from Villupuram to Guntakal. In March, 1887, he went to England on furlough for a year; on returning to India he acted for six months as Deputy Consulting Engineer for Railways to the Government, after which he was posted in October, 1888, to the Villupuram-Dharmavaram Railway in the Madras Presidency.

In 1891, Mr. Penny again went to England on leave, and was staying in London with his family when they all suddenly developed symptoms of blood-poisoning, caused, it is supposed, by something they had eaten. He, being weakened by influenza, could not throw off the attack, to which he succumbed on the 7th of July. He was buried in the family grave at Beckenham. By his death the Indian Government lost a singularly careful, conscientious, and painstaking servant. Mr. Penny was elected a Member of the Institution on the 3rd of December, 1878.

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ROBERT RICHARDSON was one of the few surviving members of the Institution whose career was commenced before the general introduction of railways. He was born in the year 1812, and served a regular pupilage with Mr. Henry Robinson Palmer, a Vice-President and one of the founders of the Institution, who was then completing the gates for a new entrance to the London Docks, and carrying out the Blakeney Harbour improvements on the coast of Norfolk. Mr. Richardson contributed to the Institution some account of the first of those works, an Abstract of which was printed in the Minutes of Proceedings.<sup>1</sup> He afterwards became a paid assistant to Mr. Palmer, and was engaged on the works for converting the Mersey and Irwell Canal into a ship canal from Manchester to Liverpool, and also on the Neath Harbour

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<sup>1</sup> Minutes of Proceedings Inst. C.E., vol. ii. p. 59.