

Mr. FREDERICK EAST was born in London in the year 1819. He received some training as an architect under Mr. Thomas Finden, and afterwards became a pupil of the late Mr. I. K. Brunel. He was subsequently employed for some years on railway works in England by Mr. Brunel, Mr. Fowler, and Sir Morton Peto. In 1859 Mr. East was, on the recommendation of Sir Morton Peto, appointed a "second class" Engineer on the Punjâb railway; and in May, 1860, when the post of Chief Engineer became vacant, he was selected to officiate in that capacity by Mr. Raeburn, the agent, a nomination approved by the Government of India, and he continued for some months to act. The manner in which his duties were discharged on this occasion was characterised by the Chairman of the Company as satisfactory to the directors; and as the Punjâb Government also expressed a favourable opinion of Mr. East's services, he was promoted to be a "first class" Engineer. He resigned this appointment in the beginning of 1862, and returned to England. In June, 1863, he was appointed an Executive Engineer of the Madras Irrigation and Canal Company, and was sent to Nellore to mature a scheme for canals of navigation and irrigation through that district, from Somaswaram to the sea; and this work he completed in 1867. The Chief Engineer, in reporting on Mr. East's scheme, observed that "it bids fair to stand criticism of all kinds, and to stand as the best hitherto proposed;" but it was not carried out, owing to the financial position of the company. From this time until 1870, when he left the Company's service, he was engaged in the construction of works in the Cuddapah and Kurnool districts, and on surveys and investigations for large reservoirs proposed to be constructed in the Mysore district. At the end of 1870 Mr. East went to Kattyawar, and for about eighteen months was engaged by the State of Bhownuggur in designing and executing engineering works of considerable magnitude, and of a kind that had not been before attempted in that or any of the neighbouring states. The most important of those carried out was the supply of water to the town of Bhownuggur by means of masonry dams across two rivers, a large reservoir, and subsidiary works. As the supply of water to the town was an urgent want, the work was conducted with great rapidity, and this entailed extra anxiety and labour, under the pressure of which Mr. East's health was seriously injured. In 1872 he returned to England, and, his strength gradually failing, he died at St. John's Wood on the 15th of December, 1875, and was buried at Kensal Green Cemetery.

In addition to his skill as an engineer, Mr. East was a man of considerable natural ability and culture outside his profession. He

devoted much of his leisure to music, sketching, and literary composition; and these attainments, added to his lively and agreeable conversation, made him a most pleasant companion. He was also invariably kind and considerate to those with whom he worked. He was elected a Member of the Institution of Civil Engineers on the 5th of December, 1865.

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MR. THOMAS EMERSON FORSTER, who died at Ellison Place, Newcastle-on-Tyne, on the 7th of March, 1875, was well known during nearly half a century, first as an able and successful 'viewer' or manager of collieries in the districts near the river Tyne; afterwards, in addition to greatly extended practice as a mining engineer, he was consulted as to the general management of large mining concerns, and by his probity, practical skill, and intelligence, he attained high eminence in his profession. One of his intimate contemporaries described him as having been the hardest worker he ever knew, and few, if any, have exceeded him in the skill and vigour with which he applied himself to matters connected with practical mining. His ambition was to be "a thorough pitman," by which is implied the possession of every faculty, bodily and mental, that conduces to success in the practical working of coal-mines.

The birthplace of Mr. T. E. Forster was Garrigill, a small and retired hamlet on the left bank of the river South Tyne, only a few miles from its source on the eastern slopes of the mountain of Cross Fell, in Cumberland. This part of the county is well known as the Manor of Alston Moor, and is essentially a mining district, containing valuable lead-mines, with some inconsiderable beds of coal, which present a conspicuous feature in the aspect of the country. There is little doubt that the future profession of the subject of this memoir was influenced by circumstances surrounding his birthplace. Mining was the chief occupation of the inhabitants of this and adjacent places, and some of the family connections of young Forster were remarkable for advanced skill and knowledge. One of these, a cousin of his father's, was Westgarth Forster, whose name became a sort of household word among North of England lead-miners from his having, in 1816, published a book called "A Section of the Strata from Cross Fell to Newcastle-on-Tyne," of which a second and greatly improved edition appeared in 1821. Another connection of the family named Westgarth had, so long ago as 1771, gained high commendation