

wait for a few minutes. He then entered the room which he used as an office, and closed the door behind him. In a few seconds the report of firearms was heard. On investigation it was found that he had shot himself.

Mr. Langmuir commended himself to all with whom he came in contact by his modest estimate of himself. His manner was genial and pleasant, and those who knew him best will most regret his untimely end. He was elected an Associate Member on the 5th of May, 1885.

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RICHARD LONGLANDS was born on the 30th of October, 1830, at Sutton Bridge, in Lincolnshire, his father, Joseph Longlands, being an architect and surveyor at that place. His first employment was in the office of the late Mr. H. H. Fulton, M. Inst. C.E., in London. He afterwards returned for a time to his father as an assistant, and was engaged in the extensive reclamation and drainage works of the estuary of the Wash.

For several years, until 1852, he was occupied in numerous surveys for the railways projected at that time. He then returned to Mr. Fulton, and was employed under that gentleman on the West End and Crystal Palace Railway and other engineering works until 1856. After an engagement on the drainage of Lord Cardwell's estate in Lancashire, he left England in December, 1857, having been selected by the late Mr. Rendel, amongst a number of men sent out at that period, to recruit the staff of the East Indian Railway, which had suffered heavily during the mutiny.

At first he was stationed at Rajmahal, afterwards on the Soane district, and eventually spent the last six years of his service on the survey and construction of the Chord Line of the East Indian Railway. On the completion of the main line, and the consequent reduction of the staff, he quitted the service of the company, having been for some years in the position of District Engineer, and returned to England in 1872, after fourteen years' service.

In the year 1878, seeking employment in India, after a short engagement with the Local Government in Bengal, he was appointed on the staff of the Sind, Punjab and Delhi Railway, and was finally transferred to Karachi, where the experience he had gained in his youth amongst the fens of Lincolnshire was much appreciated, and was of great service in the work carried on by that Company in the harbour at Karachi.

Constant exposure to the sun, overwork, and anxiety, told the usual tale; and after several attacks of sunstroke, from which he

had temporarily recovered, his health finally broke down altogether, and he returned to England in April, 1885. After lingering a few months, he died on the 10th of October, 1885. His death was much regretted by the few of his companions on the East Indian Railway who still survive. He was universally liked, his genial, cheerful, and merry disposition being much appreciated; and no one was a greater favourite or more popular amongst his comrades.

Mr. Longlands was elected an Associate Member on the 1st of March, 1870.

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FREDERICK NEWMAN was born on the 6th of June, 1837. At a period when the education of young engineers was of the most happy-go-lucky nature, Frederick Newman's guardians had the prescience to endow him with a systematic training, much of the nature of the ideal one afterwards formulated by Sir John Fowler, Past-President Inst. C.E.<sup>1</sup> On completing his ordinary schooling, Mr. Newman was apprenticed for three years to a firm of mechanical engineers, Messrs. McGlashan & Field (the latter being the inventor of the well-known "Field" boiler). He then passed five terms (nearly two years) in the Applied Sciences Department of King's College, London, obtaining while there prizes for chemistry, and for manufactures, arts, and machinery. Finally, on leaving King's College he was articled for two years to Mr. James Simpson, Past-President Inst. C.E. On the completion of his pupilage, he at once obtained the position of Resident Engineer (under Mr. W. G. Brounger, M. Inst. C.E.) for the construction of the Patent Slip at Simon's Bay, Cape of Good Hope, remaining on those works till their completion in 1862. He then proceeded to Port Elizabeth, in the same Colony, and was for six months in the office of Mr. Robert Pinchin, a Government surveyor, during which time he passed the Government examination in trigonometrical surveying. In 1863 Mr. Newman returned to England, and rejoined the staff of Mr. Simpson, by whom he was sent to complete the Stockport District Waterworks, and he subsequently, in September 1864, took charge also for Mr. Simpson of the various operations necessary for the extension of the Bristol Waterworks. These works were completed in October 1867. In March 1868 the proprietors of the Montevideo Waterworks applied to their Consulting Engineer in England (Mr. Edward Woods, President Inst. C.E.) for an engineer

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<sup>1</sup> Minutes of Proceedings Inst. C.E. vol. xxv. p. 219.