

with that thoroughness which characterised him, he minutely inspected the whole of the line and introduced such changes in the management as he considered desirable. He was, however, obliged to give up all work early in 1882, and proceeded to the Isle of Wight in the hope of regaining strength; but, unfortunately, his weakness increased, and he died at Freshwater on the 9th July, 1882, at the comparatively early age of fifty-six.

He was elected a Member of the Institution on the 28th of May, 1861, and at all times took an active interest in its affairs. He was zealous for the honour of his profession, and was much respected by all classes for his frank and honest character, while his indomitable energy and perseverance, professional ability and sterling integrity inspired confidence in all works he undertook. He was always ready to assist a junior member of the profession by his advice, and his generosity of heart and just and kind treatment of the large number of workmen at various times under his control, gave him an unusual influence over the native workmen of Bombay. The announcement of his death was received with universal regret in Bombay, and an influential committee was appointed at a public meeting, largely attended by native gentlemen, to take steps to commemorate the services he rendered to that city.

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MR. WILLIAM POWELL was born at the village of Hoyland, near Barnsley, in 1824. When little more than a boy he was placed under Mr. John Hawthorn, engineer and manager of the Milton Ironworks, near Sheffield, where he is said to have been first employed at one of the rolling-mills, but was afterwards promoted to the drawing-office. Leaving Milton in 1846, he removed to Rotherham, and was employed on the staff of the late Mr. Charles Bartholomew, engineer to the South Yorkshire Railway, and in the service of that gentleman ample scope was afforded him of acquiring practical knowledge of the profession, which he availed himself of to the utmost extent. In 1854 he left Rotherham to occupy a position of great responsibility as engineering assistant to Mr. John Towlerton Leather, contractor, upon the great Breakwater works at Portland. In the construction of this important national undertaking he was engaged about a dozen years. During the conduct of the work he came much into contact with Mr. (now Sir John) Coode, M. Inst. C.E., who so appreciated his services that he offered him the appointment of Resident, or Superintending Engineer, on the works then about to be com-

menced by the Government of the Isle of Man. From 1867 to 1879 Mr. Powell was employed in the construction of the breakwater at Port Erin; the new landing-pier, breakwater, and quays at Douglas; on the harbour works at Ramsay, Peel, and other places in the island, and of the sea promenade at Douglas. The Weymouth Waterworks were constructed under his supervision.

Mr. Powell was a thoroughly trustworthy practical engineer, of unblemished character, and held in esteem by all who knew him. He was elected an Associate of the Institution on the 1st of March, 1870, and transferred to Member on the 13th of February, 1872. He died on the 22nd of May, 1882.

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MR. MIDDLETON RAYNE was born at Rayne's Park, near Kingston-on-Thames, on the 1st November, 1830. It was assumed he would devote himself to farming, and after an excellent early training in the school of Mr. Whitehead at Ramsgate, he entered the Hoddesdon Training School (Herts), where he took the first prize, a gold medal, for general proficiency.

He afterwards developed a great taste for mechanics and engineering, and in 1858 he determined to make engineering his profession. In 1859 he went to India on the staff of the Great Southern of India Railway in a subordinate position, and worked his way, under Mr. G. B. Bruce and Mr. M. W. Carr (MM. Inst. C.E.), to an appointment as Executive Engineer in 1863. He was then given charge of a district, and remained on the Great Southern of India Railway for seven years in all. The works of that railway were executed departmentally, and Mr. Rayne had engineering and executive charge of the construction of bridges over the Noyel and Ambrawatty rivers. These bridges have an aggregate of 1,300 feet of waterway, and are works of some importance.

In 1866 Mr. Rayne—employed for that purpose by Messrs. Waring Brothers and Hunt—examined the route of the then projected Indus Valley Railway and reported in detail thereon. He was then specially employed by the same firm to erect the iron-work of the girder bridges on their Jubbulpore contract. This work had some features of novelty and demanded judgment, skill and energy in no ordinary degree for its successful accomplishment. Spread over a distance of some 200 miles, through jungle without roads, numerous gaps had to be spanned by girders, in twelve months. Among many other openings, were fourteen of 110 feet span each and 40 to 50 feet high. The peculiarity of