

JOSEPH HARRISON, born at the important manufacturing village of Swalwell, near Newcastle-on-Tyne, on the 7th of January, 1826, was the second son of Mr. Edward Harrison, a farmer, and both father and mother were natives of Durham County. He served his apprenticeship with Mr. James Grey, a colliery viewer of local celebrity, at Marley Hill colliery, four miles from Newcastle, and on the completion of his term was engaged at the Stublock colliery, a pit somewhat remarkable, as from it were drawn coal, ironstone and lead—a very unusual combination. He was also for a time at Urpeth colliery in order to obtain a knowledge of the best methods of ventilating fiery coal-pits, under Mr. Edward Boyd, who was viewer-in-chief at that colliery. In 1848 he entered the service of Mr. William Cowen, contractor, and was placed in charge of the works of a railway from Haltwhistle to Alston, on which he acquired a practical knowledge of railway and bridge work.

When the late Robert Stephenson received instructions from His Highness Abbas Pasha, the then Viceroy of Egypt, in the year 1851 to lay out a railway from Alexandria to Cairo, a large staff of assistants was sent by him to survey the line and to superintend its construction, and Mr. Harrison was one of those selected, at the recommendation of Mr. George Robert Stephenson, the chief of the staff being Mr. Henry J. Rouse. The Egyptian Railway occupied some years in construction, and soon after its completion it was found that the large steam ferry which conveyed the trains across the River Nile at Kafr Zayat, on the Rosetta Branch, about midway between Alexandria and Cairo, was unable to cope with the increase of traffic which developed very rapidly after the opening of the line. It was therefore decided in 1856 to construct a bridge with a double swing opening across the river near the site of the steam ferry and thus to overcome the difficulties and avoid the loss of time caused by the conveyance of the trains by ferry. Mr. Stephenson had at this time, on the death of the Viceroy Abbas, retired from his position as consulting engineer of the railway, and Mr. George Robert Stephenson, who had already, under his cousin, designed swing-bridges for the railway at Benha and Birket-el-Saba, now submitted to the Viceroy, His Highness Saïd Pasha, a competitive design for the new bridge which was approved. The contract for its construction was let to Mr. Price, who had laid the permanent way of the main line, and Mr. Harrison was specially appointed to

superintend the work under Mr. Rouse, who, after Mr. Robert Stephenson's retirement, had taken service directly under the Viceroy.

On the completion of the bridge towards the end of 1859, Mr. Harrison returned to England, and soon afterwards obtained the appointment of Engineer-in-chief of the Scinde, Punjab and Delhi Railway, Mr. G. P. Bidder being Consulting Engineer. Mr. Harrison held that appointment for fifteen years, and during that time carried out works of great magnitude and difficulty. He was highly esteemed and thoroughly trusted by the company, and at a time when the office of General Agent became vacant they indicated their confidence by proposing that he should accept that important post. Thus for some years he carried on successfully the responsible work of General Manager of the railway in addition to the heavy duties of Engineer-in-chief. Finding his health failing after fifteen years of service in a trying climate he resigned his position in 1875, and returning to England retired from further practice of the profession. Privately Mr. Harrison was universally liked for his generous character and for his kind and genial disposition. He was a keen sportsman and an excellent shot, and nearly to the end of his life he had no greater enjoyments than those afforded by the shooting season. His death took place at the Hôtel des Anglais, Mentone, after a rather long illness arising from heart disease, on the 24th February, 1899, in his 74th year.

He was elected an Associate on the 7th April, 1857, and was transferred to the class of Members on the 12th April, 1864.

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JEREMIAH HEAD, born in 1835 at Ipswich, was a son of the late Mr. Jeremiah Head, J.P., who belonged to a Quaker family well known in that neighbourhood. He received his first instruction at home, and subsequently went to a private school at Ipswich, and afterwards to the Friends' School at Tulketh Hall, Lancashire. At an early age he was articled to Robert Stephenson, and served his time at the well-known locomotive and marine engineering works at Newcastle-on-Tyne, subsequently being promoted to a position on the civil engineering staff. In 1856 he was entrusted with the design and superintendence of the construction of a large pair of condensing engines, for driving the Priestgate Woollen Mills at Darlington, belonging to the firm of Henry Pease and Co. These engines were fitted with a para-