

WILLIAM PRIME MARSHALL, who died at Edgbaston on the 27th March, 1906, at the advanced age of 89, was the only son of the Rev. William Marshall, of St. Albans. Born in 1816, the subject of this notice received an excellent education from his father, supplemented by attendance at King's College, London, and entered the office of Mr. Robert Stephenson in 1835, where he was employed on the working drawings for the London and Birmingham Railway. In 1839 he carried out for Mr. Stephenson the design and construction of stations on the North Midland Railway, and on the opening of that line, he was appointed locomotive superintendent, which office he held until the amalgamation of the line in 1843 with the present Midland Railway. In the following year, he carried out, in conjunction with the late Sir George (then Mr.) Berkley, a series of experiments in connection with the Dublin and Kingstown atmospheric railway, and subsequently, the alteration of the gauge of the Eastern Counties Railway. Later, on the recommendation of Mr. Stephenson, Mr. Marshall was appointed locomotive engineer of the Norfolk Railway.

In 1848 Mr. Marshall engaged in consulting practice at Birmingham. In the following year, on the nomination of Mr. Robert Stephenson, he was appointed Secretary of the Institution of Mechanical Engineers and held this office until the removal of the society to London, a period of 29 years, at the same time carrying on private practice. During this period, he was engaged on various special investigations and reports; amongst others, for the London and North Western Railway, on the working of locomotives between London and Rugby, and for the East Indian and Madras Railways, on the manufacture of springs for the rolling stock of those railways. He also undertook inspection of materials for the same companies at the principal engineering works in the provinces, and this work led to his being extensively employed in a similar capacity by the Crown agents for the Colonies. After his retirement from the secretaryship of the Institution of Mechanical Engineers in 1877, Mr. Marshall continued his inspection and other work in partnership with his son, Mr. W. Bayley Marshall, until 1904. Mr. Marshall was a member of various local societies at Birmingham, and he also took part in the formation of the Birmingham and Midland Institute. In 1898 he contributed to the Proceedings of The Institution a Paper on "The Evolution of the Locomotive Engine,"<sup>1</sup> for which

<sup>1</sup> Minutes of Proceedings Inst. C.E., vol. cxxxiii, p. 241.

he was awarded the George Stephenson medal and a Telford premium.

Mr. Marshall was elected an Associate of The Institution on the 3rd June, 1845, and was transferred to the class of Members on the 10th April, 1866.

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VITALE DOMENICO DE MICHELE, fourth son of the late Mr. Eastland de Michele, for many years British Consul at St. Petersburg, was born in London on the 11th November, 1848. He was educated at Westminster School, and manifesting a decided bent towards mechanical engineering, he was apprenticed at an early age to Messrs. Robert Stephenson and Company, of Newcastle-on-Tyne. He took a deep interest in his work and whilst at Newcastle he invented a new form of reversing gear for locomotives and marine engines. Before the expiration of his pupilage, he was selected to take charge of the extensive exhibit of the firm at the Paris Exhibition of 1867.

In 1868 Mr. Eastland de Michele, having retired from the consular service, acquired a large interest in the business of Messrs. Francis and Company, cement manufacturers, of Vauxhall and Cliffe, Kent, and the senior partner dying about this time, Mr. Vitale de Michele took over the entire management of the cement works at Cliffe Creek. Subsequently he became a partner in the firm, and the association with cement manufacture thus begun lasted practically the whole of his life and was productive of many important contributions to the advancement of the industry. During his management of the Cliffe Creek works, which were rebuilt and enlarged by him, he introduced various improvements into the methods and machinery employed in cement manufacture, which he found comparatively crude and uneconomical. To Mr. Michele is due an improved form of wash-mill, special hydraulic pumps, designed in conjunction with the late Mr. Platt, of Gloucester, for pumping the slurry to the drying floors, and a new system of drying the slurry by waste heat from the kilns. These and other improvements effected by him resulted in shortening and cheapening the process of the manufacture of Portland cement, and in rendering the product more uniform and reliable. The cement-testing machine which he invented marked a great improvement on the old system and has been extensively adopted. He also took a great interest in smoke prevention, and designed a special grate which produced good results.