SAMSON FOX, born on the 11th July, 1838, at Bradford, Yorkshire, went to work at about ten years of age at a cloth mill in Leeds, where his father was also employed. Showing an early aptitude for mechanics, he was afterwards apprenticed to the firm of Smith, Beacock and Tannett, machine-tool makers, Round Foundry, Leeds, where he became foreman and ultimately traveller. Whilst in the employ of Smith, Beacock and Tannett he designed several special tools for the machine cutting of bevelled gear and for the manufacture of trenails, and for several of those machines he took out patents. In 1862 he was in charge of the machine-tool exhibit of Smith, Beacock and Tannett at the London Exhibition. Later he started a small engineering works in Leeds —the Silver Cross Works—for the manufacture of special machine-tools.

In 1874 Mr. Fox founded the Leeds Forge Company for the manufacture of iron, boiler plates, and general forging works. In 1877 he took out his first patents for the manufacture of the Fox corrugated boiler furnaces, the material for which originally was best Yorkshire iron, the corrugations of the furnaces being hammered by means of swage blocks under a steam-hammer. The advantages of the Fox corrugated furnaces led to the practical application of triple expansion engines, machinery for rolling the furnaces in place of hammering them was undertaken in 1882, and a Siemens steel plant was laid down for manufacturing the material for plates for the production of the furnaces. From 1877 Mr. Fox took out a large number of patents for various details connected with the manufacture of corrugated furnaces.

In 1887 and 1888 he took out patents for the manufacture of pressed steel underframes for railway wagons, etc. The works of the Leeds Forge Company were further extended in 1889 for the manufacture of this new form of railway rolling stock. In 1888 Mr. Fox started works for the manufacture of steel frame rolling stock at Joliet, near Chicago, and made there the first pressed steel cars used in America, and large numbers of the Fox pressed steel bogie truck, which was principally used for freight cars and met with great success. The extension of the business in America led to works being built at Pittsburg, and these were merged in 1899 into the Pressed Steel Car Company. He was also identified with extensive experiments in connection with water-gas.

Mr. Fox was the greater part of his business life at Leeds the Managing Director of the Leeds Forge Company, and had

succeeded to the Chairmanship of the Company just before his death, which took place at Walsall on the 24th October, 1903.

Mr. Fox was a member of the Corporation of Leeds for several years and three years in succession Mayor of Harrogate, where he resided. He was a life governor of the Yorkshire College and Justice of the Peace for Leeds and Harrogate. A great lover of music, he made through the King (then Prince of Wales) a munificent gift to the Royal College of Music at South Kensington. He was a member of the Legion of Honour of France.

Mr. Fox was elected a Member of the Institution on the 5th April, 1881.

JAMES MORRIS GALE,[1] who, for a period of fully forty years, was the Engineer-in-Chief to the Glasgow Water Commissioners, died on the 7th September, 1903, at his residence at Aberfoyle, which lies in the district of the famous Loch Katrine water scheme, by which his name will be known to future generations of water engineers. He retired from his post at the end of 1902, with the respect and esteem of his employers—the Water Commissioners. Before his retirement took place he had been relieved from active duty on account of general weakness; but his work was so thoroughly organized that his department went on without making great demands on him. Had he been less anxious about it, probably his life might have been extended considerably.

Mr. Gale was a native of Ayr, where he was born in the year 1830. After receiving his education at the academy there, he joined the engineering staff of his elder brother, William Gale, who constructed the works of the Gorbals Gravitation Water Company, the gathering ground of which lies from seven to ten miles on the south side of Glasgow. While thus employed with his brother, Mr. Gale attended the engineering classes of Professor W. J. Macquorn Rankine in the University of Glasgow, and the mathematical classes of Professor Laing in Anderson's College. Later, for eight years he occupied the position of Assistant Engineer to his brother, and in the year 1855, when the great Loch Katrine scheme was put into operation under Mr. J. F. La Trobe Bateman, Past-President, who was then one of the leading water engineers in the kingdom, Mr. Gale was appointed Resident Engineer on the city section of the works which depended on

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[1] This notice, with some modification, has been reprinted from *Engineering*, 11 September, 1903, by permission of the Editors.