

30th March, 1861.

FRANCIS FOX, second son of Mr. Robert Were Fox, was born at Plymouth on the 12th September, 1818, and was educated at the Friends' schools at Croydon and Sidcot. In October, 1835, he became a pupil of Mr. Edwin O. Tregelles, and was engaged on the erection of gasworks and other works of construction. Before the expiry of his articles he was taken into partnership by Mr. Tregelles, and this association continued until the retirement of the latter from active professional life in 1842. During this period Messrs. Tregelles and Fox were engaged in the construction of railway slips for raising vessels at Plymouth and Falmouth, the erection or reconstruction of gasworks, and other works. In 1839 Mr. Fox was associated with the project for the Cornwall Central Railway, and during the succeeding 4 years he was engaged on various engineer-

ing works on his own account, including taking sections for some of the numerous railway schemes of that epoch. In July, 1846, he joined the staff of Mr. I. K. Brunel, as an Assistant Engineer on the South Wales Railway, then in course of construction, and on the opening for traffic of the sections on which he had been engaged, he acted as contractor's engineer for the construction of a length of the same railway in Carmarthenshire: in 1854, after its completion, he acted in a similar capacity on the Falmouth branch of the Cornwall Railway, until the suspension of the contract works.

At the close of 1854, Mr. Fox was appointed engineer of the Bristol and Exeter Railway, which position he held until its amalgamation with the Great Western Company at the beginning of 1876, when he retired from the post. When Mr. Fox entered on his duties, the permanent way and ballast of the main line and branches were in an extremely defective condition. With characteristic energy and determination, Mr. Fox at once set himself to the improvement of the line, and the reconstruction or enlargement of the principal stations. The Chard Branch and the Cheddar Valley Railway were also constructed under his direction. The mixed gauge was laid on the main line, and, on Mr. Fox's recommendation, the block system was introduced, the South Eastern, and Bristol and Exeter Companies being the first to adopt the "absolute block" system. In 1860 he contributed a Paper¹ on "Iron Permanent Way" to the Proceedings, for which he was awarded a Telford medal.

The passenger stations of the Great Western and Bristol and Exeter Companies at Bristol had long been found altogether insufficient for the greatly increased traffic, and a joint station, in which the passenger traffic of those companies, as well as that of the Midland Company, could be accommodated and interchanged, was felt to be a pressing necessity. In 1865 Mr. Fox submitted a scheme for a joint station, which was eventually approved by the three companies and carried out under his supervision.

After ceasing to be engineer of the Bristol and Exeter division of the Great Western Railway, the Great Western Company entrusted to Mr. Fox the design and construction of the works of the Weston-super-Mare loop line and station, and those of the Exe Valley and Tiverton and North Devon branch lines. He also designed and carried out flour-mills, silo buildings, cocoa factories, etc. In more recent years Mr. Fox designed and constructed extensive flood-prevention works in Bristol for the Corporation, and later,

¹ Minutes of Proceedings Inst. C.E., vol. xx, p. 259.

an important improvement at Bristol in the substitution of a permanent stone bridge of ample width for the former narrow drawbridge over the Floating Harbour.

Mr. Fox withdrew from active professional life at the close of the year 1893. He was an enthusiastic lover of natural scenery, and many of his summer holidays were spent in pedestrian and other excursions on the Continent. On his retirement, Mr. Fox went to reside in Bath, whence he subsequently removed to Torquay, and later to Teignmouth. In these towns he spent a happy evening of life, interesting himself in the engineering work going on around and in young engineers who were starting in their profession. In spite of his age his faculties were exceptionally keen and active, and he was always ready to enjoy the company of his friends as well as to discuss the engineering and political problems of the day. He died at Teignmouth on the 13th March, 1914, at the advanced age of 95.

Mr. Fox was elected a Member of The Institution on the 1st May, 1860.
