

satisfaction that the Borough Surveyorship of Warrington was his first public appointment.

Mr. Vawser commenced business on his own account in Manchester, immediately after relinquishing his appointment at Warrington, and soon acquired a large and lucrative practice, more especially in sewerage and sewage works, and at the time of his death was engaged upon important works at Swinton, Milnrow, Reddish, Tyldesley, Royton, &c. He did not, however, devote himself exclusively to sanitary engineering, and amongst other works was engaged upon the extensive system of tramways, known as the Manchester, Bury, Rochdale and Oldham Tramways, the Barrow-in-Furness Tramways, &c.

Mr. Vawser took an active interest in the Association of Municipal and Sanitary Engineers and Surveyors, his connection with the Association dating from its formation, when he began his services as Honorary Secretary for the Lancashire and Cheshire District. In 1875 he became a Member of Council, in 1880 a Vice President, and in 1885 President. During his presidency the examinations of candidates for municipal engineerships were instituted. Mr. Vawser always evinced the keenest interest in the affairs of the Association, largely contributing to its proceedings, and his early death is deplored by the members generally.

Mr. Vawser was elected an Associate of this Institution on the 4th of April, 1871, and was transferred to the class of Members on the 26th of January, 1875.

His numerous engagements in this country did not, however, leave him many opportunities of attending the meetings of the Institution. He died, somewhat suddenly, on the 15th of September, 1889, after a long and painful illness.

WILLIAM MANN CROSLAND was born at Holbeck, Leeds, in 1824. Early manifesting a talent for engineering, he was in the year 1838 apprenticed to Messrs. Fenton and Murray, of Leeds, in whose factory he went through the usual routine of shops and drawing-office. In 1843 he was transferred to Messrs. Wren and Bennet, of Manchester, with whom he stayed until 1845, thus fulfilling the customary seven years. On completing his apprenticeship, Mr. Crosland entered the works of Messrs. Maudslay, Sons, and Field, of Lambeth, and with that eminent firm he passed the remainder of his professional life. His duties were to contrive,

adapt, and direct in the construction of marine and other engines. In this capacity he had to do with most of the large machinery turned out by the Lambeth firm during his connection therewith. Among the most notable work of the kind was the machinery for H.M.S.S. "Valiant," "Agincourt," "Lord Warden," "Viper," "Sirius," and "Druid," the engines of the White Star Liner "Atlantic," and other vessels; also similar work for the West India Mail Packet Company, the Union Company Cape Packet, the Russian Steam Navigation Company, and the Brazilian and Chinese Governments. He was also concerned in making the great chain-cable proving machinery for Lloyd's, and the pumping machinery for the drainage of the tunnel proposed in 1868 to be made under the Indus at Attock, but which was abandoned in favour of a bridge. Mr. Crosland was entrusted with the construction of a replica of Brunel's block-making machinery for the Portuguese Government, and introduced some simple improvements that added greatly to the power of the machinery by obviating friction. Although by no means proficient in mathematical or theoretical science, Mr. Crosland was a practical engineer. His knowledge of machinery was extensive, and he was frequently consulted by sanguine inventors. Of these, it might be said, that if their hopes were often dashed by his honest and outspoken criticisms, their pockets were saved in like manner.

For some years before his death Mr. Crosland retired from active professional work, though he continued to take a keen interest in all matters relating to machinery. He was also attached from the first to the Volunteer movement, in which service he held the rank of Captain. He died on the 14th of October, 1889.

Mr. Crosland was elected an Associate on the 2nd of December, 1851, and on the divisions of that grade into the professional and non-professional classes, became an Associate Member.

JOHN REES GEORGE, the son of a London solicitor, was born at Lewisham, Kent, and, on leaving school, entered the office of a tea-merchant. He did not take kindly to commercial pursuits, and, having a taste for mechanical drawing, he was transferred to the office of Messrs. Kennard Brothers, contractors, of Great George Street, Westminster, in which firm one of his brothers was at that time occupying a good position. Here he made such rapid progress that, before he was twenty years of age, he was