

in 1866 he assumed charge of the joint lines of the London and North Western and Great Western Railways in the Shrewsbury district. After an association with these railways extending over 53 years, he retired in December, 1908. During this long tenure of office he carried out a variety of important work, including the construction of a tunnel between Birkenhead Town and Woodside, the widening of the line between Birkenhead and Ledsham, the erection or alteration of a number of stations, the enlargement of Chester Station, and the construction of various branch lines. A notable undertaking was a difficult extension of Shrewsbury Station and approaches, successfully carried out without interruption to the traffic. He was elected President of the Liverpool Engineering Society in 1892, his address dealing with the development of railways and improvements in their construction and operation.

Mr. Johnston was elected a Member of The Institution on the 5th March, 1867.

LEWIS HENRY MOORSOM, born in London on the 22nd December, 1835, died at Bournemouth on the 10th March, 1914. After serving a pupilage under his father, the late Captain W. S. Moorsom, M. Inst. C.E., he was employed on railways in France, England and Brazil. Between 1862 and 1867 he carried out the reconstruction of London Road Station, Manchester, and, after a few years' experience as Surveyor-General of Trinidad and Hong Kong respectively, he designed and constructed for the Cheshire Lines Committee the Manchester Central Station and Railway, completed in 1880. In the following year he commenced private practice in Manchester, and, besides carrying out the Cheshire Lines deviations for the Manchester Ship Canal Company, he was associated with a great variety of work, including reservoirs and river-diversions in Wales, surveys at Manchester, Wigan and Goole, and work for the Lancashire and Yorkshire Railway Company near Wakefield. He retired owing to ill-health in June, 1911.

Mr. Moorsom was elected a Member of The Institution on the 8th January, 1867.

THOMAS NEWBIGGING, D.Sc. (*Leeds*), born in Glasgow on the 30th September, 1833, died at Knutsford on the 1st June, 1914. Trained in the gas industry, with which his whole professional career was associated, he was appointed in 1857 Secretary and Manager of the Rossendale Union Gas Company, Lancashire, relinquishing this position in 1870 to become Manager of the gas

undertaking at Pernambuco, Brazil. In 1875 he established a consulting practice at Manchester, which he carried on until his death. He was recognized as one of the leading authorities on gas engineering, and was the author of a standard text-book and other technical memoirs, as well as of various literary works in prose and verse. He was a founder and past-president of the Institution of Gas Engineers.

Mr. Newbigging was elected an Associate of The Institution on the 5th April, 1870, and was transferred to the class of Members on the 30th April, 1878.

BERNARD BROTHERTON HARKER, born on the 19th October, 1862, at Poole, Dorset, died at Hong Kong on the 4th December, 1913. On completing an apprenticeship with Messrs. Waring Brothers, of Westminster, he was engaged on railway and waterworks contracts in Argentina and Brazil. In 1894 he went to Hong Kong, where, at first under Mr. Danby, and later independently, he carried out extensive architectural and engineering works, remaining in practice until his death.

Mr. Harker was elected an Associate Member of The Institution on the 7th April, 1903.

COSMO REYNOLD JONES, born at Llanfyllin, N. Wales, on the 9th August, 1877, died on the 16th March, 1914, at Aliwal North, Cape Colony. After serving a pupilage to the late Mr. George Owen, he was engaged for several years on the Cambrian Railways. In 1903 he entered the service of the Capetown Corporation and was employed on the new waterworks scheme, but relinquished this work in 1909 to join the staff of the Central South African Railways, assisting in the survey and construction of various branches of that system until his death.

Mr. Jones was elected an Associate Member of The Institution on the 8th January, 1907.

WILLIAM GEORGE KIRKALDY, who died at Aberdare Gardens, Hampstead, on the 10th April, 1914, was the son of the late Mr. David Kirkaldy,¹ the pioneer of systematic testing of engineering materials. Born on the 6th July, 1862, he was

¹ See Memoir, Minutes of Proceedings Inst. C.E., vol. cxxviii, p. 351.