

St. Margaret's, Westminster, testified to the regret felt at the passing away of one whose name had become as a household word to all connected with The Institution.

CHARLES AUGUSTUS HARRISON, late Chief Engineer of the North Eastern Railway, was born on the 27th March, 1848, at Vizianagram in the Madras Presidency, and died on the 28th October, 1916, at Hexham. On leaving Marlborough College in 1867, he became a pupil of Mr. Robert Hodgson, M. Inst. C.E., for a period of 2 years on the North Eastern Railway. He then entered the service of the Company as Resident Engineer in charge of dock works at Hartlepool, and afterwards on railway works. In 1888, on the death of his uncle, Mr. T. E. Harrison, he was appointed Engineer to the Northern Division of the railway, and he relinquished that position in 1914. From 1908 until his death he was Consulting Engineer to the Company.

During his charge of the Northern Division he carried out works of considerable magnitude for the provision and extension of railways and shipping facilities for mineral traffic in Northumberland and Durham—e.g., Dunston and North Blyth staithes, and the Annfield to Pelaw line—as well as the new Durham Coast line between Hartlepool and Seaham, and the Ponteland Branch, etc. His most notable works were the King Edward VII Bridge over the River Tyne (1902–1906) and the Queen Alexandra Bridge over the River Wear (completed in 1909), both of which have been described in the Proceedings.¹ He was also responsible for the necessary alterations and third-rail equipment for the electrification, in 1904, of the local lines between Newcastle and the coast.²

In 1910–1911 he served as Chairman of a Departmental Committee of the Home Office to inquire into the question of the danger to workmen involved in deep excavations.³ He was President of the Newcastle-on-Tyne Association of Students of The Institution for the Session 1894–1895. He was Lieutenant-Colonel in the Engineer and Railway Staff Corps (Territorial Force), and in 1906 he received the honorary degree of Doctor of Science from the University of Durham.

He was elected a Member of The Institution on the 10th April, 1877, and served as a Member of the Council from 1907 to 1914.

STEWART ANGUS, B.Sc., elder son of Mr. David Angus, M. Inst. C.E., was born on the 7th July, 1890, at Villa Rica, in Paraguay, and was killed in action near Hebuterne on the 1st July, 1916. Educated at Edinburgh Academy and University, he took his degree in 1912, in which year also he became assistant to Messrs. D. and C. Stevenson, MM. Inst. C.E., after having served a three

¹ Minutes of Proceedings Inst. C.E., vol. clxxiv, p. 158; and vol. clxxxii, p. 59.

² *Ibid.*, vol. clxxxix, p. 99.

³ Report of the Departmental Committee on Deep Excavations. Minutes of Evidence and Appendix. London, 1912.

years' apprenticeship with them. In February, 1913, he joined the staff of the Buenos Aires Great Southern Railway as assistant engineer. Returning to Scotland to join the Army in November, 1914, he acted as assistant to Messrs. J. M. Adam and Company, engineers, Glasgow, until he obtained his commission in April, 1915.

He served first in Egypt but was afterwards transferred to France. He was elected an Associate Member of The Institution on the 11th January, 1916.

FRANK WILLIAM CROLEY, born on the 23rd November, 1878, in India, died of wounds in France on the 14th August, 1916. He was educated in India, and after training under his brother on the construction works of the Hyderabad-Godavery Railway, from 1898 to 1900, he acted as assistant engineer on the Kalka-Simla Railway for Mr. H. S. Harington, M. Inst. C.E., until 1903, when he entered the service of the Bengal and North-Western Railway. From 1908 to 1911 he was Assistant Engineer on the State Railways, Kathiawar, becoming then Acting Resident Engineer at Rajkot, Kathiawar. He remained in this position until the outbreak of war, when he at once volunteered and came to England with the Indian Expeditionary Force. At the time of his death he held the rank of Captain in the Indian Army Reserve of Officers, and was attached to a Tunnelling Company of the Royal Engineers. He was elected an Associate Member on the 2nd April, 1912.

GEORGE ANDREW HOBSON, born at Leeds 29th March, 1854, died at Richmond 25th January, 1917. After leaving the Watt Institution, Edinburgh, in 1871, he was apprenticed for 3 years to Messrs. Hopkins, Gilkes & Co., and was then for some years with the Teeside Bridge and Engineering Company. In November, 1880, he became Chief Assistant to Sir Charles Fox and Sons, now Sir Douglas Fox and Partners, and afterwards became a member of the firm. He was associated with them in the design and supervision of the construction of numerous engineering works, including the Mersey Tunnel, the Liverpool Overhead Railway, the Hawarden Bridge, the extension of the Great Central Railway to London, involving the terminal works in connection therewith, and the construction of large grain-elevators in this country and in South America. In designing the Liverpool Overhead Railway he evolved the steel flooring with which his name is associated.

His work in South America and South Africa was principally in connection with railway construction, and in the latter country he was associated closely with Sir Charles Metcalfe, and was responsible for the design of the Victoria Falls Bridge over the Zambezi, for an account of which¹ he received the George Stephenson Gold Medal of The Institution. He also received the Telford Medal and Premium for a Paper on the London terminus of the Great Central Railway.

He was elected an Associate Member 1st May, 1883, and transferred to the class of Members 15th December, 1885.

¹ Minutes of Proceedings Inst. C.E., vol. clxx, p. 1.