

RICHARD BARNLEY SANDERS, born on the 6th October, 1845, was educated at Queen's College, Belfast, and obtained in 1866 the diploma in Civil Engineering, with honours, of Queen's University, Ireland, the degree of Bachelor of Engineering being conferred voluntarily upon him by the Royal University of Ireland in 1878. He served a pupilage to the late Mr. James Thomson, afterwards Professor of Civil Engineering at Glasgow University; and was then engaged, first as an Assistant, and subsequently as Contractor's Engineer, on the construction of the Downpatrick, Dundrum and Newcastle Railway, in 1868-69. After acting as an Assistant on the construction of the Belfast Central Railway from 1870 to 1872, and being employed in 1873 on plans for Belfast Waterworks, he obtained in 1874, by competitive examination, the appointment of County Surveyor of King's County. That post he held until his death, which took place at Parsonstown on the 13th February, 1900.

Mr. Sanders was also engaged in private practice, and designed and carried out engineering works of varied character. He was a Member of the Institution of Civil Engineers of Ireland, of the Incorporated Association of Municipal and County Engineers, and of the Royal Dublin Society. To this Institution, of which he was elected a Member on the 2nd February, 1897, he contributed a Paper entitled "The Management, Maintenance and Cost of Public County Roads in Ireland under the Irish Grand Jury System."¹

HAMILTON SMITH, who died suddenly of heart disease at his residence in Durham, New Hampshire, U.S.A., on the 4th July, 1900, was born at Louisville, Kentucky, on the 5th July, 1840. In order to gain a knowledge of engineering he was employed at an early age—from 1854 to 1859—under his father, who was at that time the technical manager of the Cannellton Coal Mines in Indiana, on the Ohio River. He gave immediate evidence of ability, and rose rapidly to be chief of the engineering and accountant's departments. From 1859 to 1867 he was engaged in Indiana and Kentucky in developing important collieries and in superintending the construction of the necessary railroads and machinery. In 1869 he was appointed Engineer and Manager of

¹ Minutes of Proceedings Inst. C.E., vol. cxxxv. p. 258.

the North Bloomfield Gravel and Milton Mines in Nevada County, California, where he designed and carried out large and important works, and became the recognised authority on all matters relating to hydraulic mining in California. The outcome of this and similar experience was an able and well-known work on "Hydraulics."¹

Mr. Hamilton Smith was also engaged in connection with various other mines on the Pacific Coast, did much to bring about the cheap manufacture of high explosives on that coast, and took an active part in the establishment of the Vulcan Powder Works. In 1881 he reported on the El Callao Mine in Venezuela for Messrs. Rothschild, and as Consulting Engineer he subsequently designed and superintended the construction of the machinery and appliances for that mine.

In 1885 Mr. Hamilton Smith established himself as a mining engineer in London in partnership with Mr. de Crano, with whom he founded in the following year the Exploration Company. As Manager of that Company he was actively interested in gold mining in South Africa, and took part in the formation of the Consolidated Deep Levels, the Transvaal and General Association, and other enterprises. The results of his investigations on the Rand and those of Mr. H. C. Perkins led to the formation of deep-level mining companies, the working of which he described at some length in an article in the *Times* of the 17th January, 1893. He was also connected with the Alaska Treadwell Gold Mining Company and the Anaconda Copper Mining Company. After the death of Mr. de Crano in 1895 Mr. Hamilton Smith entered into partnership with Mr. H. C. Perkins, the firm having their head office in New York. At the time of his death he was engaged in the development of the Mariposa grant in California.

In 1890 Mr. Hamilton Smith associated himself with Sir Benjamin Baker and Mr. John G. Meiggs in the promotion of the Central London Railway, and continued to take great interest in the work, both from an engineering and financial point of view, until his death. The success of the undertaking was largely due to his untiring efforts in interesting powerful American and other financial institutions in the promotion of the line.

Some indication has been given here of Mr. Hamilton Smith's ability as an engineer. His success was due to untiring energy, firmness of will, and great self-confidence. But while seeking to shape his own career, he was ever ready to help others and to give credit to those with whom he worked. He was a Member of the

¹ A copy of this book is in the Library of the Institution.

American Society of Civil Engineers and of the American Institute of Mining Engineers.

Mr. Hamilton Smith was elected a Member of this Institution on the 7th February, 1888.

CHARLES TYLDEN-WRIGHT, youngest son of the late Rev. E. C. Wright, rector of Pitsford, Northamptonshire, and perpetual curate of Bradley, near Stafford, was born on the 24th April, 1832. After being educated at Marlborough College and at the Royal School of Mines, he studied at Freiburg in Saxony and at Liège. In 1857 he became Assistant to Mr. John Lancaster at the Kirkless Hall Collieries, Wigan, and in 1860 he was appointed by the Duke of Newcastle Resident Engineer and Managing Director of the Shireoaks Colliery, one of the deepest and most extensive collieries in the midland counties, raising half-a-million tons per annum. In the same year, on his marriage with Elizabeth, only child of Lieutenant-Colonel Sir J. M. Tylden, of Milstead Manor, Sittingbourne, he assumed the name of his wife's family in addition to his own.

Mr. Tylden-Wright remained at Shireoaks until 1886, when he was appointed Chief Agent of the Dudley Estate during the minority of the present Earl. He held that post until 1890. At the time of his death, which took place at Mapperley Hall, Nottingham, on the 8th August, 1900, he was Chairman of the Shireoaks Company, a Director of the Monckton Main Collieries, of Messrs. J. and G. Wells, Limited, and of the Sheffield and South Yorkshire Navigation Company, and Viewer to the Duchy of Lancaster in the West Riding of Yorkshire, to the Duke of St. Albans, and to Mr. Webb, of Newstead Abbey. He also served as a Justice of the Peace for the counties of Nottingham, Worcester and Stafford.

Mr. Tylden-Wright was elected a Member of the Institution on the 4th December, 1883.

SAMUEL UTLEY, born on the 27th May, 1836, was the son of Mr. Jonathan Utley, who conducted a private educational establishment at Sowerby Bridge, in Yorkshire, where he was also postmaster and registrar. After being employed for two years in an Engineering Tool Works, the subject of this notice served a