

OBITUARY.

Captain MATTHEW HENRY PHINEAS RIALI SANKEY, C.B., C.B.E., R.E. (retired), the son of General W. Sankey, C.B., was born at Nenagh, Co. Tipperary, on the 9th November, 1853. He was educated in Switzerland and at Mr. Rippin's school at Woolwich, and in 1871 entered the Royal Military Academy, Woolwich, where he passed out at the head of the list and won the Pollock Medal and the Sword of Honour. He received his commission in 1873, and in 1874 proceeded to the School of Military Engineering, Chatham, where he showed marked aptitude for mathematics. During his course at the School, he was appointed to assist in the conduct of the trials of continuous railway-brakes, carried out by the Royal Commission on Railway Accidents at Thurgarton, and he was subsequently engaged in the office of the late Mr. Edward Woods, Past-President, on calculations in connection with the trials.

On leaving the School of Military Engineering, he was first employed at the War Office on architectural design, and was sent later to Manchester, in charge of a drawing-office employing sixteen draughtsmen. Thence he proceeded to Gibraltar to superintend the construction of works and erection of barracks in connection with the Military Telegraphs and Signal Station. While at Gibraltar he was appointed, in 1879, as an instructor at the new Royal Military College, Kingston, Canada. He did valuable work in initiating additional courses of instruction, and during this period he published a text-book on electrical measurements.

In 1882 he was recalled and sent to the Ordnance Department at Southampton, where he at once encountered a technical problem in connection with the electrical deposition of copper in the process of duplicating the plates from which maps were printed. Attempts had been made to substitute a dynamo for the costly primary cells which supplied the current for the process; but these had proved disappointing. Captain Sankey was able to surmount the difficulties, and he was also responsible for the introduction of power presses, which, by obviating the necessity for damping the paper, enabled the maps to be printed quite true to scale. In the course of his work at Southampton he required a high-speed steam-engine, and his search for a suitable design led to his acquaintance with the late Mr. P. W. Willans, M. Inst. C.E., which subsequently had so marked an influence on his life. In 1889, at Mr. Willans's suggestion, he resigned his commission and joined the board of Messrs. Willans and Robinson. He was placed in charge of the erection and running of all the engines produced by the firm, and he took a leading part in the important thermodynamical investigations which formed the subject of the second of Mr. Willans's

two communications to The Institution on Steam-Engine Trials. As a result of occasional, and at that time mysterious, crankshaft failures in the engines, he was led to the investigation of crankshaft stresses. He published later,¹ in collaboration with Dr. C. Chree, F.R.S., and Mr. W. E. W. Millington, M. Inst. C.E., the results of these researches, for which he was awarded a George Stephenson Medal.

On the death of Mr. Willans in 1892, Captain Sankey became responsible for the design of the engines and steam-turbines which the company were then producing. In conjunction with Mr. Willans, he designed comprehensive testing equipment, which was practically pioneer work at that time, and he was responsible for improvements in apparatus and in methods of calculation which have since been widely adopted. The old Thames Ditton works of the company being inadequate, the selection of a site for new works became necessary, and Captain Sankey was mainly responsible for the layout of the Victoria Works at Rugby which were completed in 1898. In 1904 he resigned his appointment to take up consulting work in steam and internal-combustion engineering. In 1909 he joined the boards of, and was appointed consulting engineer to, Marconi's Wireless Telegraph Company and the Marconi International Marine Communication Company, which appointments he held until his death. He was also a director of various other companies, including the Spanish and General Corporation, the Wireless Press, the Marconi International Code Company, the Relay Automatic Telephone Company, the British Niclausse Boiler Company, Eastwoods, the Never-Stop Transit Company, and the Still Engine Company.

He was elected a member of The Institution in 1895, became a Member of Council in 1915, and was elected Vice-President in 1925, but did not live to take office as such. He was Honorary Secretary of the Committee appointed in 1896 to consider the Standards of Efficiency of Heat-Engines, and wrote the introductory note² to the Committee's report. He succeeded Sir William Anderson as Chairman of the Committee, appointed by The Institution in 1897, on Steam-Engine and Boiler Trials, and was a member of the Committee on Internal-Combustion Engines. At the time of his death he was Chairman of the Heat-Engine Trials Committee, which since 1922 has had under consideration the revision and extension of the work of the previous Institution Committees on Heat-Engines.

In addition to the Paper already mentioned, he presented in 1896 a Paper on "The Thermal Efficiency of Steam-Engines,"³ for which he was awarded a Telford Medal. In 1897 he contributed a Paper on "The Decimal System in Engineering Measurement."⁴ He delivered a lecture to the London Students' Association in

¹ Minutes of Proceedings Inst. C.E., vol. clxii, p. 371.

² *Ibid.*, vol. cxxxiv, p. 278.

³ *Ibid.*, vol. cxxv, p. 182.

⁴ *Ibid.*, vol. cxxx, p. 218.

1923 on "Recent Developments in Wireless Telephony," and in 1925 he gave the James Forrest Lecture on "Heavy-Oil Engines: Some Outstanding Questions relating to Large Engines of the Self-Ignition Type."

He was admitted to membership of the Institution of Mechanical Engineers in 1894, became a member of council in 1910, and was President in the Sessions 1920 and 1921. In addition to the several Papers he presented to that Society, he delivered the Thomas Hawksley Lecture in 1907 on the subject of Heat-Engines. He was Chairman of two standing committees and also of the special committee on Steam-Nozzle Research.

His earliest association with a scientific society was his admission to membership of the Society of Telegraph Engineers and Electricians (now The Institution of Electrical Engineers) in 1885, in which year he was awarded the first Fahie Premium of the Society for an account of his work in the Ordnance Department at Southampton. He was also a member of the Institution of Naval Architects, of the Iron and Steel Institute, of the Institution of Gas Engineers, of the Junior Institution of Engineers (of which he was President in the Session 1922-23), and of the American Society of Mechanical Engineers. He served on the General Board of the National Physical Laboratory, and was a member of several sub-committees of the British Engineering Standards Association, as well as of the Wireless Telegraphy and Gaseous Explosions Committees of the British Association.

On the outbreak of war in 1914 he volunteered his services and was appointed Honorary Engineering Adviser to the Director of Fortifications and Works. In this capacity he was engaged in a wide range of important duties, of some of which mention is made in his Presidential Address to the Institution of Mechanical Engineers. He went to Flanders in 1915 to devise a scheme of trench drainage, which was adopted with success, and again in 1918 he proceeded overseas to report, in conjunction with the late Sir Maurice Fitzmaurice, Past-President, on the possibility of inundating certain portions of the western front. He was made a Companion of the Bath in 1916, and in 1920 his services as member of the Honorary Valuation Committee were recognized by the conferment of the C.B.E.

Besides contributing to the Proceedings of numerous scientific societies, he found time for other literary work of a technical nature. He translated, from the German, Ritter's work on "Bridges and Roofs," wrote "The Energy Chart and its Practical Application to Reciprocating Steam Engines," and was the anonymous author of Part IV of Rivington's "Building Construction." In collaboration with Mr. W. J. Marshall he wrote a work on "Gas Engines."

He married in 1876 Elizabeth Mary, eldest daughter of General E. L. Pym, Royal Marines. Of their five children, two were sons. The younger son died in infancy, and the elder, Colonel C. E. P.

Sankey, D.S.O., R.E., Assoc. Inst. C.E.—who at one time assisted him in his consulting practice—survives him.

Captain Sankey was peculiarly well endowed for a wide range of professional scientific work and he devoted himself with the utmost generosity to the advancement of his profession in every possible way. To the many who were so fortunate as to know him, his death was a great personal loss. His ability and tireless energy gained their respect as fully as his courtesy, charm of manner and humour won their affection. He passed away suddenly from heart failure at his residence at Ealing, on the 3rd October, 1925, in the midst of the activities that thronged his busy life.