

and he retired to Oxford. He died suddenly on 1913 May 3, leaving two sons.

He was elected a Fellow of the Society 1881 March 11.

EDWARD TYER was born at Kennington on 1830 February 6. He was educated first at the City of London School and afterwards at the private school of Mr. Dempster near Chiswick, where scientific studies appear to have received unusual attention. Mr. Tyer was especially attracted by experiments on electricity, and he turned his knowledge to good account in later years in the development of telegraphic signalling for the regulation of railway traffic. He became manager of the Railway Electrical Signals Company in England and of Winkworth & Cie in France, and made many inventions in the course of his work. The "tablet" system invented by him was widely adopted at home and abroad, and he is said to have probably done more than any man of his time to secure the safety of railway passengers.

Mr. Tyer also took a prominent part in the development of telegraphic inter-communication in London. It is interesting to recall that before 1859 the people of London could not communicate with each other by telegram, and could only make use of the trunk lines by taking their messages to central offices. This state of things was remedied by the London District Telegraph Company, of which Mr. Tyer was appointed electrical engineer. The laying down of underground and overhead wires by this Company laid the foundation of the system afterwards perfected under the management of Sir William Preece.

Mr. Tyer's interest in astronomy was aroused when his professional work brought him in contact with Sir George Airy, in connection with the establishment of telegraphic communication between the Royal Observatory and the outside world. His interest took a practical turn, and for many years he had a well-equipped private observatory. He was an Associate of the Institution of Civil Engineers, a member of the Institution of Electrical Engineers, a Fellow of the Royal Microscopical Society, and a Fellow of the Royal Geographical Society.

He died on 1912 December 25, leaving two daughters, a son, and a grandson.

He was elected a Fellow of the Society 1864 November 11.

EDWARD JOHN WHITE was born at Bristol on 1831 December 8. He was educated at Queen Elizabeth Hospital, and went to Australia in 1853. He was an engineer by profession, and superintended the erection of some of the earliest mining machinery in Bendigo, Victoria. He subsequently became Chief Assistant at the Melbourne Observatory, and it was largely due to his labours that this institution took so conspicuous a place among Australian observatories. Mr. White was chiefly responsible for the Melbourne star catalogues, and was the author of many papers on astronomical subjects. In 1875-76 he was Acting Government

Astronomer of Victoria, and he was in charge of the party for observing the Transit of Venus at Hobart in 1882. He retired from observatory work some years before his death, but continued to reside in close proximity to the Observatory.

He died on 1913 August 2, leaving a widow and family.

He was elected a Fellow of the Society 1869 January 8.

HUGH WILLIAMS was born at Wallasey in 1874. He chose the sea as his profession, and secured his master's and extra-master's certificates as quickly as the Board of Trade regulations would allow. In 1905, as a lieutenant in the Royal Naval Reserve, he was appointed for twelve months' training to H.M.S. *Venus*, then attached to the Mediterranean Squadron under Lord Charles Beresford. He became especially interested in astronomy when the *Venus* was despatched to Palma, Majorca, to assist Sir Norman Lockyer's party in securing observations of the Total Eclipse of the Sun on 1905 August 30. Lieutenant Williams took charge of the arrangements for observing the "shadow bands," and interesting records of the phenomena were secured.

On his return to Liverpool in 1906, Lieutenant Williams was appointed assistant to the chief surveyor of the Liverpool Salvage Association, in which capacity he served with great ability and distinction. He was engaged upon many important salvage cases, including those of H.M.S. *Montagu* on Lundy Island, H.M.S. *Gladiator* in the Solent, the Cunard liner *Ivernia* in Queenstown Harbour, and, finally, the R.M.S.P. Co.'s steamer *Agadir* near Mazagan, Morocco. It was through the operations on the *Agadir* that he lost his life. In spite of much suffering caused by poisonous gases liberated from saturated grain forming part of the general cargo, Lieutenant Williams remained hard at work, and eventually succeeded in floating the vessel and getting her to Gibraltar. He then collapsed, and was conveyed to the civil hospital. Complications ensued, and he died on 1913 June 9th. He leaves a widow and three young boys.

He was an Associate of the Institute of Naval Architects and a younger Brother of Trinity House.

He was elected a Fellow of the Society 1909 November 12.

JULIUS HEINRICH G. FRANZ died after a long and painful illness from heart disease on 1913 January 28. He was born at Rummelsburg in Pomerania on 1847 June 28, the son of a distinguished physician. His university studies were made at Greisswald, Halle, and Berlin, and he devoted himself to natural science and mathematics, specialising in elliptic functions. During the Franco-Prussian War of 1870, being unfit for military service, he turned his energies to teaching, finally becoming an assistant-master at Berlin. There also he attended the lectures of Tietjens and calculated the orbits of minor planets. His first astronomical appointment was that of assistant to Professor Foerster at Neuchâtel in 1874, where he devoted his attention mainly to