

VARLEY, Cromwell Fleetwood (1828–1883)

Telegraph engineer and spiritualistic investigator, Cromwell Fleetwood Varley was born on 6 April 1828 in Westminster, Varley was the son of the artist and inventor, Cornelius Varley, and nephew of the artist and astrologer, John VARLEY. He was educated at St. Saviour's School, Southwark and developed electrical skills in his father's workshop and in William Robert GROVE'S lectures at the London Institution. In 1846 he was hired as engineer for the London lines of the leading British telegraph firm, the Electric Telegraph Company (ETC). Varley rose through the ranks of the ETC, becoming its Chief Electrician in 1858 and its Engineer-in-Chief 1861. When the British telegraph industry was nationalised in 1868 Varley retired from the ETC and earned a living as a private consultant engineer.

Varley's success at the ETC owed much to several electrical inventions and techniques that enabled the company to run its network more efficiently and profitably. These included a double-current key (1854) and translating relay (1855-56), which enabled direct telegraphic connection between Britain and the Continent; a 'loop-test' (1859) which permitted accurate location of faults in submarine cables; and an 'artificial' submarine line (1862) which displayed the intimate relationship between cable design and signalling rates.

In late 1858 Varley became electrician to the Atlantic Telegraph Company (ATC), then reassessing itself following the costly failure of the first Atlantic cable. He was closely involved in the design, testing, and laying of the ATC's successful cables of 1866 and this secured him international fame. He also formed a lucrative business partnership with William THOMSON and Fleeming JENKIN which built and marketed sophisticated telegraphic apparatus. As an ATC employee, Varley participated in an official enquiry into submarine telegraphy (1859–61) and there emphasised the connection between profitable telegraphy and the adoption of higher standards of cable manufacture and testing. Varley implemented some of these ideas as a member of the British Association Electrical Standards Committee (1861–

69). From the mid-1860s Varley became an ardent promoter of electrical engineering and in 1871 helped found the Society for Telegraph Engineers.

In 1853 he began investigating table-turning and spiritualism. Séances with his wife, who developed mediumistic skills, and such star mediums as D. D. Home, gradually convinced him of the objective reality and spiritual provenance of spirit 'manifestations'. He broadcast his views on this topic in the *Spiritualist* (run by his friend William HARRISON) and other spiritualist forums. Varley lent powerful scientific credibility to spiritualism and his evidence for 'manifestations' was widely cited throughout the late Victorian period. He frequently treated spiritualism as a problem in electrical engineering: he tested (1874) the genuineness of the materialisation medium Florence Cook by inserting her into a circuit used for testing submarine cables, and in 1871 he adapted a Geissler electrical discharge tube to show the blurred boundary between the material and spiritual worlds.

In the 1870s Varley was involved in further submarine cable enterprises and patented several inventions including a dynamo, an electric light, and a 'cymaphen' (1870) which turned telegraphic pulses into sounds. He died in Bexleyheath, Kent, on 2 September 1883.

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