

SABINE, Edward (1788–1883)

In: (B. Lightman, ed., 2004) *The Dictionary of Nineteenth-Century British Scientists*. Thoemmes Continuum, Bristol. v. 4, 1753-1754.

Edward Sabine was born in Dublin on 14 October 1788 and died in Richmond, Surrey on 26 June 1883.

Edward was the ninth child of Joseph Sabine, gentleman, of Tewin, Hertfordshire and his wife Sarah (née Hunt). Commissioned, aged fifteen, as second lieutenant in the Royal Artillery, Sabine saw action in the American War of 1812-14, returning to England, a Captain, in 1816.

Already skilled in navigation, Sabine now studied astronomy, geomagnetism and ornithology, under his brother-in-law Henry Browne, FRS. Appointed astronomer to Arctic expeditions under John Ross (1818) and Edward PARRY (1819-20), Sabine obtained near-polar magnetic data and was elected FRS in 1818. He next determined variations in gravity and magnetism around the Atlantic (1821-23) and between selected European observatories (1827-30). Under the auspices of the British Association for the Advancement of Science (BAAS), Humphrey LLOYD, James Clarke ROSS and Sabine undertook magnetic surveys of southern Ireland and Britain in 1834-38 (Sabine and Lloyd repeated the latter in 1858-61). Sabine also collated existing, mainly northern-hemisphere, geomagnetic data. This enabled Carl Gauss, in 1838, to verify his *General Theory of Terrestrial Magnetism*. By 1840, lobbying by Sabine, Lloyd and Alexander von Humboldt, resulted in establishment of British geomagnetic observatories at Toronto (Canada), St. Helena, the Cape of Good Hope and Hobarton (Tasmania). Sabine, aided by War Office staff (1841-61), collated and analysed the data. The results were published both as special reports and as fifteen 'Contributions to Terrestrial Magnetism', with maps drawn by the Hydrographic Department of the Admiralty.

As General Secretary (1839-52, 1853-59) and President (1852) of the BAAS, and President of the Royal Society (RS) (1861-71), Sabine became adroit at influencing both bodies to support his causes. Strongly believing that collection of copious data was the sole route to reliable geomagnetic theory, his views were at variance with those of John HERSCHEL. Nevertheless, when the King's Observatory in Kew, Surrey, was offered by the government to the Royal Society in 1842, a committee of Herschel, Charles WHEATSTONE and Sabine recommended its adoption as a base for geophysical observation and instrument calibration. Surprisingly, the Society's Council rejected their proposal. Sabine, the guiding spirit, then ensured Kew's future under BAAS management. He joined its steering committee (1849); provided magnetic instruments from his Department at Woolwich (1850); and, until 1877, arranged for War Office staff to collate and analyse geomagnetic data. The observatory, now the principal geophysical observatory of the Empire, passed to Royal Society management in 1871. Sabine's scientific work essentially ended in 1876.

Sabine married Elizabeth Juliana (née Leeves) (1807-1879)* in 1826. Under her husband's 'superintendence,' she translated Gauss's *General Theory* (1841) and Humboldt's *Cosmos* into English. In March 1852, Sabine saw, in page-proofs of the German edition being sent to them for translation, Heinrich Schwabe's observations

* The date of death is erroneously given as 1829 in the printed version.

of annual variation of sun-spot numbers and astutely drew attention to their probable relationship to changes in geomagnetic phenomena.

Author of over 100 scientific papers, and an able scientific administrator, Sabine received the Lalande Gold Medal of the Institute of France (1826) and the Copley and Royal Medals of the Royal Society (1826, 1849). He was appointed KCB in 1869 and general in 1870.

BIBLIOGRAPHY

‘Contributions to Terrestrial Magnetism (parts 1-15)’ *Philosophical Transactions of the Royal Society* of London (1840-78).

‘Terrestrial Magnetism’, in J.F.W. Herschel (ed.) *A Manual of Scientific Enquiry*, 2nd edn (1851), pp. 14-51.

Other Relevant Works

Humboldt, Alexander von. *Cosmos*. ed. E. Sabine, trans. E.J. Sabine, 4 vols. 2nd edn, (1851-8).

Further Reading

Scott, R.H. *The History of Kew Observatory* (1885).

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