Bibliography of Peter Guthrie Tait

Chris Pritchard & David O Forfar

Tait’s biographer, Knott, catalogues some 365 papers, articles, laboratory notes, reviews and obituaries, together with two volumes of collected papers. The books which Tait wrote, in whole or in part, are also listed (see below: Knott, 1911, 351-365). This remains the most authoritative guide to the primary material of one of the nineteenth century’s most colourful scientists, though the biography which precedes it is uncompromisingly Whiggish. The Royal Society Catalogue of Papers is another useful source. Although Tait’s correspondence has not been gathered together, the letters and postcards received from his lifelong friend, James Clerk Maxwell, held in the Maxwell Collection in Cambridge University Library, are published in Harman (1990, 1995), with footnotes carrying many of Tait’s tidings. Other sources include Knott (1911), the Stokes Collection, also in Cambridge University Library, and the Kelvin Collection at the University of Glasgow.

In contrast to his illustrious compatriots, Maxwell and William Thomson (Lord Kelvin), the life and scientific work of Tait has been the subject of relatively little research. He was certainly a man who courted controversy, differing publicly with many leading scientists, including Clausius, Tyndall and Gibbs (Daub, 1970, 1975; Cardwell, 1971; Bork, 1966; Crowe, 1967). Yet, as well as being Thomson’s collaborator on A Treatise on Natural Philosophy and the writer of a host of other university texts, Tait should be remembered for his steadfast promotion of quaternions, in pursuit of a notation for physics which was co-ordinate free (Bork, 1966; Stephenson, 1966; Crowe, 1967; Pritchard, 1998a & 1998b), his pioneering exploration of the topology of knots (Brown & Pritchard, 1993; Hoste et al, 1998) and, perhaps above all, his golf ball aerodynamics (Denley & Pritchard, 1993).

Simon Schaffer drew our attention to the sources relevant to Tait’s debate with Todhunter on the subject of the Cambridge Tripos.

General


Tait P.G. *Encyclopaedia Britannica*, biographical details.


**Tait's Books**

Tait, P G & Steele, W L (1856) *A Treatise on Dynamics of a Particle*, London: Macmillan.


Stewart, B & Tait, P G (1875)  *The Unseen Universe: or Physical Speculations on a Future State*, London: Macmillan. [Originally penned anonymously.]


**Notes of Tait's Lectures taken by his Students**

Barrie, J M (1880-81)  *Notes on Tait’s Lectures, 1880-81*, National Library of Scotland, MS 6654.

Easterbrook, P P (1885-86)  *Notes on Tait’s Lectures, 1885-86*, Edinburgh University Library, Gen 1821.


Haldane, E S (1876)  *Notes on [Tait’s] Lectures, 1876*: location not clear (see Wilson, 1991, above, p 232, note 78).
Golf Ball Aerodynamics


Low, L J (1902) F G Tait: A Record.


"Q. E. D." (1893) ‘Mr Tait’s drive’, Golf, 10 February and 3 March, 348, 396.


"Veteran" (1893) ‘Mr Tait’s drive’, *Golf*, 17 February, 364.

**Topology of Knots**


Tait, P G (1867) ‘Translation of Helmholtz's paper on Vortex Motion’ [Ueber Integrale der hydrodynamischen Gleichungen, welche den Wirbelbewegungen entsprechen], *Phil. Mag.* [4], **34**.

Tait, P G (1876) ‘Applications of the theorem that two closed plane curves intersect an even number of times’, *Proc. Royal Soc. Edin.* **9**.


Recreational Mathematics and Graph Theory


**Quaternions**

Tait wrote *An Elementary Treatise on Quaternions* (1867) and coauthored *Introduction to Quaternions* (1873): details are given above.


Thermodynamics

Tait wrote Sketch of Thermodynamics (1868) and Heat (1884): details are given above.


Tait, P G (1863) ‘Reply to Prof. Tyndall’s remarks on a paper on "Energy" in Good Words’, Phil. Mag. [4], 25.


Tait, P G (1868) ‘Physical proof that the geometric mean of any number of positive quantities is less than the arithmetic mean’, Proc. Roy. Soc. Edin. 6, 309; Scientific Papers I, 83.


Tyndall, J (1873) ‘Tyndall and Tait’ (with editorial note), Nature 8 (18 September), 399.

**Kinetic Theory**


**Atmospheric, Meteorological and Astronomical Phenomena**


Tait, P G (1875) ‘Cosmical astronomy’ (series of lectures), Good Words.


Tait, P G (1883) ‘State of the atmosphere which produces the forms of mirage observed by Vince and by Scoresby’, Nature 28 (24 May), 84-88; reprinted in Knott, 1911, 321-328.
Tait, P G (1884) ‘On various suggestions as to the source of atmospheric electricity’, *Journal of the Scottish Meteorological Society* 8; *Nature* 29 (27 March), 517; *Scientific Papers II*, 107-109.


**Education, including the Cambridge Mathematical Tripos**


Tait, P G (1866) ‘On the value of the Edinburgh degree of M. A.’ (address to the Graduates in Arts, 24 April 1866), Edinburgh: Maclachlan and Stewart.


Warwick, A (expected 2000) *Book on the Cambridge Tripos* (title and publisher unknown), especially Chapter 2. The author lectures at Imperial College of Science, Technology and Medicine, London.

**Tributes to other Scientists**


Tait, P G (1866) ‘Sir William Rowan Hamilton’, *North British Review; Encyclopædia Britannica*, vol. 6, 1880; *Scientific Papers II*, 440-444.


Tait, P G (1883) ‘Notice of J. B. Listing’: detail given in the section above on the topology of knots.


Tait, P G (1887) ‘Dr Balfour Stewart, FRS’, *Nature* 37 (29 December), 202-203.


**Miscellaneous**

Clifford, W K (1879) *Lectures and Essays*, 2 vols., London (for a critique of *The Unseen Universe*).


