

A Short Account of the History of Mathematics



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Some English Experimental Physicists

Cavendish

The Honourable Henry Cavendish was born at Nice on October 10, 1731, and died in London on February 4, 1810. His tastes for scientific research and mathematics were formed at Cambridge, where he resided from 1749 to 1753. He created experimental electricity, and was one of the earliest writers to treat chemistry as an exact science. I mention him here on account of his experiment in 1798 to determine the density of the earth, by estimating its attraction as compared with that of two given lead balls: the result is that the mean density of the earth is about five and a half times that of water. This experiment was carried out in accordance with a suggestion which had been first made by John Mitchell (1724—1793), a fellow of Queens' College, Cambridge, who had died before he was able to carry it into effect.

Rumford

Sir Benjamin Thomson, Count Rumford, born at Concord on March 26, 1753, and died at Auteuil on August 21, 1815, was of English descent, and fought on the side of the loyalists in the American War of Secession: on the conclusion of peace he settled in England, but subsequently entered the service of Bavaria, where his powers of organization proved of great value in civil as well as military affairs. At a later period he again resided in England, and when there founded the Royal Institution. The majority of his papers were communicated to the Royal Society of London; of these the most important is his memoir in which he showed that heat and work are mutually convertible.

Young

Among the most eminent physicists of his time was Thomas Young, who was born at Milverton on June 13, 1773, and died in London on May 10, 1829. He seems as a boy to have been somewhat of a prodigy, being well read in modern languages

and literature, as well as in science; he always kept up his literary tastes, and it was he who in 1819 first suggested the key to decipher the Egyptian hieroglyphics, which J. F. Champollion used so successfully. Young was destined to be a doctor, and after attending lectures at Edinburgh and Göttingen entered at Emmanuel College, Cambridge, from which he took his degree in 1799; and to his stay at the University he attributed much of his future distinction. His medical career was not particularly successful, and his favourite maxim that a medical diagnosis is only a balance of probabilities was not appreciated by his patients, who looked for certainty in return for their fee. Fortunately his private means were ample. Several papers contributed to various learned societies from 1798 onwards prove him to have been a mathematician of considerable power; but the researches which have immortalised his name are those by which he laid down the laws of interference of waves and of light, and was thus able to suggest the means by which the chief difficulties then felt in the way of the undulatory theory of light could be overcome.

Dalton

Another distinguished writer of the same period was John Dalton, who was born in Cumberland on September 5, 1766, and died at Manchester on July 27, 1844. Dalton investigated the tension of vapours, and the law of the expansion of a gas under changes of temperature. He also founded the atomic theory in chemistry.