

GERARD (GERRIT) MOLL
1785-1838

Moll was born on 18 January 1785 in Amsterdam. His father, Gerard Moll, was a well-to-do merchant, and his mother, Anna van Diersen was a poet. Moll was expected to follow a mercantile career, and for that reason learned English, French, and German, after which he was apprenticed to a prestigious merchant house. He had, however, no inclination for this business, and instead applied himself to the study of ancient languages and mathematics. By 1801, Moll was spending all his free time making astronomical observations, and in 1804, during a business trip to England, he saw the latest in precision instruments at the shop of Edward Throughton, from whom he bought a ten-inch sextant. At about this time, his father enrolled Moll in the Amsterdam Athenaeum only to protect him from conscription in the French army, but Moll drifted into the full-time study of science, and Jan Hendrik van Swinden convinced his father to let Moll leave the merchant business and concentrate on science. Moll now studied under Van Swinden, H.C. Cras and D.J. van Lennep at Amsterdam. In 1806 he aided the Utrecht astronomer Van Beeck Calkoen in his measurement of the longitude difference between Amsterdam and Utrecht; in 1809 Moll attained his 'candidaats' (Bachelor's) at the University of Leiden, and from 1810 to 1812 he studied in Paris (with, among others, Delambre).

In 1812, through the recommendations of Van Swinden and Delambre, Moll was appointed the successor of Van Beeck Calkoen at the Utrecht Observatory and obtained the chair of mathematics and astronomy; in 1815 he also became professor of physics. Moll renovated and modernized the Observatory and made numerous observations—a task for which in later years he was too busy. Moll served as rector magnificus of the university in 1819 and declined the chair of astronomy at Leiden.

Moll was one of the first in the Netherlands to realize the importance of Oersted's discovery of the connection between electricity and magnetism and performed a number of experiments on this phenomenon, among which his measurements of the magnetic force created by the galvanic current in iron were the most important. In 1823, Moll made measurements of the speed of sound, using an artillery battalion put at his disposal. His results compare favorably with modern measurements, differing from them by 0.2%. At this

time he also measured the temperature at which water has its greatest density and compared the kilogram with traditional Dutch and English weights.

Moll had a great interest in the practical applications of science: he therefore esteemed the practical English much more than the French whose purely theoretical approach he considered unbalanced. In reply to Charles Babbage's lament about the decline of English science, Moll wrote that the English should not feel inferior to any nation and that the highly praised patronage given by Napoleon to French scientists had usually been bought by a slavish subjection to Napoleon's will. Not surprisingly, Moll was liked by English scientists and was honored especially at the Edinburgh and Dublin meetings of the British Association for the Advancement of Science.

But he did think that Dutch science had been lagging and wished to fight 'the lethargy and inertia that had penetrated many'. He therefore worked hard to acquaint his countrymen with the scientific advances of other countries, e.g., a new diving bell at Plymouth, steamship design, the use of fire-resistant materials in buildings, central heating, artesian wells, and the usefulness of lightning rods. At the same time, he advocated Dutch interests in foreign learned communities, for instance, publishing an English account of Van Swinden's researches into the invention of the telescope.

Among practical matters Moll's greatest interest was in navigation and drainage. He was involved in several review committees on the river channels, setting standards for the training of sailors, and improving nautical maps. In 1835, he was in charge of the Dutch part of an international effort to measure the tides along the coasts of the North Sea.

For these efforts, Moll received many honors. In 1821 the King elevated him to Knight of the Order of the Dutch Lion; and foreign learned societies and universities honored him. He died of typhoid fever in Amsterdam on 17 January 1838.

Primary works

Poggendorff, vol. 2, 179. *Beschouwingen over de uitstrooming der Opper Rijn- en Maas-wateren door de Nederlandsche rivieren tot in zee, benevens de overwegingen dezer beschouwing van de Heeren Goudriaan, Van Utenhove, Moll en*

Donker Curtius (Amsterdam, 1819); 'An Account of Experiments on the Velocity of Sound, Made in Holland', *Philosophical Transactions of the Royal Society* 114 (1824) 425-456 (with A. van Beek); *Verhandelingen over eenige vroegere zeetogten der Nederlanders* (Amsterdam, 1825); *Bijdragen tot de geschiedenis der wiskundige wetenschappen in de Nederlanden, in de zestiende en zeventiende eeuwen* (Delft, 1826); *Electro-magnetische Proeven* (Amsterdam, 1830); *Geschiedkundig onderzoek naar de eerste uitvinders der verrekijkers, uit de aantekeningen van wijle den Hoogleeraar Van Swinden zamengesteld door G. Moll* (Amsterdam, 1831); *On the alleged Decline of Science in England, by a Foreigner*, ed. Michael Faraday (London, 1831); 'Über die Bildung künstlicher Magnete mittelst der Voltaschen Kette', *Annalen der Physik und Chemie*, 2nd ser., 29 (1833) 468-479; 'On the Transit of Mercury of May 5, 1832', *Memoirs of the Royal Astronomical Society* 6 (1833) 111-117. A number of results were published more or less simultaneously in the Netherlands (in Dutch) and in foreign countries. A reasonably complete list of Moll's publications can be found in the article in A.J. van der Aa, *Biographisch Woordenboek der Nederlanden*, V (1852) 291-94. See also, Royal Society, *Catalogue of Scientific Papers*, vol. 4, 433-434.

Secondary sources

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nal for the History of Science 6 (1973) 304-310; H.A.M. Snelders, 'The electromagnetic experiments of the Utrecht physicist Gerrit Moll (1785-1838)', *Annals of Science* 41 (1984) 35-55.
S.H. Dieke, in: *DSB*, vol. 9, 459-460.

[A.v.H.]