Christophorus Henricus Diericus Buys Ballot
1817-1890

Buys Ballot was born on 10 October 1817 in the little town of Kloetinge in the province Zeeland, the son of Antonie Jacobus Buys Ballot, a Dutch Reformed minister, and Geertruida Françoise Lix-Raaven. He attended the gymnasium in Zaltbommel and enrolled at the University of Utrecht in 1835, where he studied liberal arts and philosophy. His professors in science were the chemist Gerrit Jan Mulder and the physicist Richard van Rees, under whom he took his doctorate in 1844, on a dissertation *De Synaphia et Prosaphia.* The following year, he was appointed lecturer in mineralogy and geology at the University of Utrecht, adding theoretical chemistry in 1846. In 1847, he was appointed professor extraordinarius of mathematics; in 1857 he became ordinarius. He lectured on theoretical chemistry, mathematics, astronomy, and, from 1867, experimental physics.

During his early years as a faculty member, Buys Ballot worked on a mathematical theory of matter, in which atoms attracted each other but the surrounding ether particles repelled each other. He published the theory in 1849 under the title *Schets eener physiologie van het onbewerktuigde rijk der natuur* (Sketch of a Physiology of the Inorganic Realm of Nature). The book was met with little interest and was not endorsed by Mulder or Van Rees. Disappointed, Buys Ballot abandoned physics and chemistry and concentrated on meteorology, which could hardly be called a science at the time. On 1 December 1848, together with F.W.C. Krecke, Buys Ballot initiated regular, continuing, meteorological observations at a site on one of the bastions in the city wall, Sonnenborgh, where in 1853 the university's astronomical observatory was founded. With help from Johan R. Thorbecke, the liberal prime minister, in 1854 Buys Ballot founded the (later: Koninklijk) Nederlandsch Meteorologisch Instituut ([Royal] Dutch Meteorological Institute). He remained its director until his death. (The KNMI was moved to nearby De Bilt in 1897.)

Because of the telegraph, the receiving and distribution of widespread simultaneous meteorological observations became possible, with the hope of better weather predictions. Buys Ballot's energy and organizational abilities made him a leader in this field. He published the observations which he received through the ever larger network of observers he developed in yearbooks, starting in 1851. In 1857, at a meeting of the Royal Academy of Arts and Sciences (of which he

had been a member since 1855), Buys Ballot revealed the law named after him: 'if one lies down in the direction of the wind, with one's back to the place from which it comes, then one has the place of lowest [pressure] on one's left-hand side, just as in the case of hurricanes.' (For a similar observer on the southern hemisphere, low pressure is to the right.) Buys Ballot's law (in which he had been anticipated by James Henry Coffin and William Ferrel) brought order to the study and prediction of weather and promoted international cooperation in meteorology. Buys Ballot's *Suggestions on a Uniform System of Meteorological Observations*, published in 1872, laid the groundwork for the foundation of the International Meteorological Committee in Vienna, in 1873, and he served as its president until 1879. At home, he chaired the physics division of the Royal Academy for some time and edited the *Archives Néerlandaises des sciences exactes et naturelles* of the Hollandsche Maatschappij der Wetenschappen from 1866 until his retirement. He also edited the *Nederlandsch Meteorologisch Jaarboek*, beginning in 1873.

Buys Ballot was a modest and deeply religious man. He was a lay preacher in the Walloon Church and was twice married and had eight children. He retired from his chair at Utrecht in 1888 but remained the director of the KNMI until his death on 3 February 1890.

Primary works

Poggendorff, vol. 1, 353-354; vol. 3, 222-223; vol. 4, 211. *Schets eener physiologie van het onbewerktuigde rijk der natuur* (Utrecht, 1849); *Eenige regelen voor aanstaande weersverandering in Nederland* (Utrecht, 1860); *Suggestions on a uniform system of meteorological observations* (Utrecht, 1872); *A sequel to the suggestion on a uniform system of meteorological observations* (Utrecht, 1873).

Secondary sources

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[A.v.H.]