Burchardus de Volder
1643-1709

Burchardus de Volder was born on 26 July 1643 into an Amsterdam Mennonite family. He studied philosophy at Amsterdam and Utrecht, where in 1660 he obtained his degree in philosophy. From Utrecht he moved to Leiden, where he studied medicine with Franciscus dele Boë, Sylvius. Under the influence of Sylvius he became a follower of Cartesian natural philosophy. In 1664 he received his doctorate in medicine on some theses *De Natura*, which he dedicated to Johannes Hudde. De Volder then settled in Amsterdam and practiced medicine.

In 1670, however, upon the intercession of Hudde, De Volder was appointed professor of philosophy at Leiden (in order to obtain this post, De Volder first had to become a member of the Walloon Reformed Church). His teaching, which included natural philosophy, was strictly Cartesian, but at the same time De Volder showed remarkable openess towards new developments. In 1674 he visited England, where he became acquainted with the scientists of the Royal Society.

After his return to Holland, he asked the Curators of Leiden University for permission to teach experimental physics as an aid to his teaching of natural philosophy. The curators provided him with the necessary funds and so in 1675 De Volder became the first professor at a Dutch university to teach experimental physics, in a socalled Theatrum Physicum. Shortly thereafter, De Volder became involved in the still unsettled dispute between orthodox Aristotelians and Cartesians. In 1676 he wrote a substantial part of the *Consideraties over eenige Saecken onlanghs voorgevallen in de Universiteyt binnen Leyden* (Considerations of some recent affairs that have occurred at the university of Leiden), which was critical of the politics of the university authorities. Nevertheless, the anti-Cartesian measures taken in the course of that year did not really affect De Volder. He was, however, cautious enough not to acknowledge the authorship of some anti-Aristotelian disputations, defended under his supervision, but published by his students without his consent.

His own publications were concerned with his pneumatical experiments, for instance his *Quaestiones academicae de Aëris gravitate* (1681). The air pumps he worked with were built by the firm of Samuel van Musschenbroek. De Volder did, however, not become a full-fledged

experimental natural philosopher; he remained a rationalist philosopher who used experiments only for demonstrating truths he had already found theoretically. He was therefore convinced of the value of a mathematical approach to science.

When he was appointed professor of mathematics, in 1682, he opened his courses with a lecture, *De conjungendis philosophicis et mathematicis disciplinis*, in which he argued that the separation between physics and mathematics had been responsible for the slow development of natural science in the past. As was shown by the science of mechanics, only the proper combination of mathematics and physics could lead to progress in the study of nature. His reputation as a mathematician was demonstrated by the fact that Christiaan Huygens entrusted to him and to the Franeker professor Fullenius the publication of some of the mathematical papers which remained unpublished at the time of his (Huygens's) death. In 1698 De Volder published Huygens's *Kosmotheoros* and in 1703, together with Fullenius, he edited and published Huygens's *Opuscula posthuma*.

Near the end of his career, De Volder began to doubt the adequacy of his Cartesian methodology. Although a correspondence with Leibniz, in 1698, did not win him over to the side of the German philosopher, and nothing supports the claim of his first biographer that he felt inclined to the Newtonian philosophy of nature, De Volder nevertheless distanced himself somewhat from the orthodox Cartesian quest for certain knowledge in science. When, because of ill health, he had to resign from his academic positions in October 1705, De Volder could therefore look back in his farewell lecture on his career and the debate around Cartesianism with some irony. He died on 21 April 1709.

Primary works

Disputatio medica inauguralis de natura (Leiden, 1664); *Disputationes philosophicae sive cogitationes rationales de rerum naturalium principiis* (Middelburg, 1681); *Quaestiones academicae de Aëris gravitate* (Middelburg, 1681); *Oratio de conjungendis philosophicis et mathematicis disciplinis* (Leiden, 1682); *Disputationes philosophicae omnes contra atheos* (Middelburg, 1685); *Exercitationes academicae, quibus Ren. Cartesii philosophia defenditur adversus Petri Danielis Huetii Episcopi Suessionensis Censuram philosophiae Cartesianae* (Amsterdam, 1695); *Oratio de rationi viribus, et usu in scientiis* (2nd ed., Leiden

1698). After De Volder's death his library, including his instruments, was auctioned off: *Bibliotheca Volderiana, seu Catalogus selectissimorum librorum D. Burchardi de Volder, Medicinae et Philosophiae Doctoris* (Leiden, 1709). The British Library has a notebook by Carolus Vinson, one of De Volder's students in 1676-1677: *Experimenta philosophica naturalia auctore De Valdo Lugd. Ann. 1676* (MSS. Sloane 1292; microfilm in University Library Leiden, Dept. of Western Manuscripts).

Secondary sources

J. le Clerc, 'Eloge de feu Mr. de Volder professeur en philosophie et aux mathematiques, dans l'academie de Leide', *Bibliothèque choisie, pour servir de suite à la Bibliothèque universelle*, t. XVIII, 346-401; A.J. van der Aa, *Biographisch Woordenboek der Nederlanden*, vol. 19, 316-317; J.A. Vollgraff, 'Leidsche hoogleeraren in de natuurkunde in de 16e, 17e en 18e eeuw', *Jaarboekje voor geschiedenis en oudheidkunde van Leiden en Rijnland (Leidsch jaarboekje)* 10 (1913) 167-190; C.L. Thijssen-Schoute, *Nederlands cartesianisme.* Avec sommaire et table des matières en français. Bezorgd en van aanvullende bibliografie voorzien door Th. Verbeek (Utrecht, 1989; first ed., 1954) 52-58; E.G. Ruestow, *Physics at seventeenth and eighteenth century Leiden. Philosophy and the new science in the university* (The Hague, 1973); C. de Pater, 'Experimental physics', in: Th.H. Lunsingh Scheurleer and G.H.M. Posthumus Meyjes, eds, *Leiden University in the seventeenth century. An exchange of learning* (Leiden: Universitaire Pers Leiden/E.J. Brill, 1975) 308-327; *idem*, *Petrus van Musschenbroek (1692-1761), een newtoniaans natuuronderzoeker* (Utrecht, 1979) 5-7; P. de Clercq, *The Leiden Cabinet of Physics* (Leiden: Museum Boerhaave, 1989); *idem*, *At the sign of the Oriental Lamp. The Musschenbroek workshop in Leiden, 1660-1750* (Rotterdam: Erasmus Publishing, 1997) esp. 134-137.

[K.v.B.]