

Book Reviews

based on the design of the Dutchman Willem Kolff that was widely adopted. Murray then moved to kidney transplantation, but in an era before the immunity of rejection had been researched his success was limited to say the least. From here on it was a story of failure. First he tried to raise antisera in horses to treat cancer but the medical community remained sceptical. Next he turned to suturing the spinal cord in humans in the hope of curing paraplegia. The medical community's suspicion of his work became outright condemnation, especially since his results were presented with a shoddiness, not to say sleight of hand, that was easily spotted in a world much changed from the one in which he started.

This book might also be subtitled 'The history of a paranoid'. Murray often behaved with a secretiveness and hubristic attitude to his colleagues that undoubtedly stymied his career at times. His brilliance as an operator and the recognition of his early research, however, carried him through, indeed to the receipt of the élite Order of Canada. Although his later work did not receive the same sort of recognition as did his earlier studies, McKeller is quite clear that methodologically nothing changed. There was always a cavalier attitude to laboratory experiment and a rush to the clinical situation. He was reluctant to work in a team, relied on the case history as evidence, and took a blinkered view of the clinical trial. All these things were passable in his younger days, but in the 1960s and 1970s they rendered him a dinosaur.

McKeller tells this tale well but she also tries to do something else which is most welcome. She shows how Murray's rise to fame was integral to the wider growth in the public domain of the language of surgery as the medicine of miracle cures. Indeed so feted was he by the press that his later work was hailed as promising great breakthroughs in cancer treatment and the cure of paraplegia. The media fostered the image of the surgeon as heroic individualist and it is hard to think this line did not foster the image in Murray himself. This is a plainly written account based on extensive research. Even more

perhaps could have been made of the public image of the surgeon but it is good to have a biography of a relatively modern surgeon that attempts to place him in a broader context.

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Rina Knoeff, *Herman Boerhaave (1668–1738): Calvinist chemist and physician*, History of Science and Scholarship in the Netherlands, vol. 3, Amsterdam, Koninklijke Nederlandse Akademie van Wetenschappen, 2002, pp. xvi, 237, €35.00 (hardback 90-6984-343-0).

Rina Knoeff's goal is to prove the influence of Calvin on Boerhaave, to show that his religious ideas vitally informed all areas of his work including his natural philosophy, his medicine, and his chemistry. As she puts it, "nothing in Boerhaave's life was more important than his religion" (p. 1). This study can thus be seen as part of the new scholarship in the history of science, which recognizes the importance of extra-scientific ideas on important scientific figures of early modern Europe. Knoeff isolates two essential Calvinist tenets of Boerhaave's science: first, an appreciation of the wisdom of God in creation and, second, a recognition of God's overwhelming power, especially as compared to the inherent limitations of human beings. She contends that Calvinism provided an impetus to science because Calvin's understanding of God, as having determined everything absolutely, obliged man to study nature as his creation. The pursuit of science was intended to indicate man's thankfulness to God and to detect God's will in his creations.

Knoeff focuses on four specific themes: the charge levelled against Boerhaave that he was a Spinozist; Calvin's ideas on creation, providence, and knowledge as a fundamental influence on Boerhaave; Boerhaave's chemistry as a practical application of his Calvinism; the relationship between Boerhaave's chemistry and medicine. Each claim yields some interesting

correlations between religion and science. For example, on the charge of Boerhaave's reputed Spinozism, Knoeff contends that, while Boerhaave, like Spinoza, wished to separate theology and science, Boerhaave separated the two to serve theology. Thus Boerhaave admired Spinoza's religious toleration and belief in the freedom of the mind (in essence, separating religion and science) but remained a committed Calvinist. Boerhaave's chemistry was intended to expunge it of an erroneous alchemy rooted in a false reading of the Bible. Both his theology and his chemistry are rooted in a desire to explore God's creation. Boerhaave retained occult ideas in his science as indications of the work of God's creation and appreciated Newton because of the comparability between Newton's ether and his own proposed occult qualities.

This book makes an important contribution to the scholarship on Boerhaave by taking the influence of religion on his science very seriously. But the connection is presented as so all-inclusive that, at some points, it is no longer entirely persuasive and seems instead overly and rather narrowly deterministic. Ideas are at times too readily conflated with Calvinism. For example, Boerhaave's appreciation of virtually any other thinkers—Spinoza, Newton, etc.—all become aspects of Calvinism. At one point Knoeff announces, "his ideas might look Cartesian, but they effectively resulted from his Calvinist convictions" (p. 89). If Boerhaave accepts Spinoza's ideas or appreciates Newton, Knoeff subsumes those views under his Calvinism. The notion that the study of God and his creation is a motive for science may well characterize Boerhaave's pursuit of science, but such a quest galvanized early modern figures of many religious persuasions. So too Boerhaave's interest in simplicity and truth in both theology and chemistry might express the early modern exasperation with theological division as much as adherence to a distinctly Calvinist point of view. Knoeff argues that, because Calvinism emphasizes the inability of man to come to knowledge by his own efforts, Boerhaave turned to experimentation. As man could not find truth through reason, experiment is meant "to reveal the incomprehensibility of

God's wisdom and power in his creation" (p. 212). Although Knoeff insists that Boerhaave is very indebted to Calvin and while she discusses at great length tenets of Calvinism, she also frequently acknowledges that Boerhaave is not a conventional Calvinist, and thus it is sometimes difficult for the reader to see a clear link between the two. This study makes Boerhaave's religious ideas central to his science and, as a result, adds a significant dimension to our understanding of him and his place in the scientific culture of the seventeenth and eighteenth centuries.

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Andreas Mettenleiter, *Adam Christian Thebesius (1686–1732) und die Entdeckung der Vasa Cordis Minima: Biographie, Textedition, medizinhistorische Würdigung und Rezeptionsgeschichte*, Sudhoffs Archiv, Beiheft 47, Stuttgart, Franz Steiner, 2001, pp. 580, illus. €96.00 (hardback 3-515-07917-3).

This book focuses on a medical dissertation, published in Leiden in 1708, in which the Silesian student Adam Christian Thebesius described his discovery of the "vasa cordis minima", small veins originating in the coronary veins and opening into the cavities of the heart. Somewhat earlier, in 1706, Raymond Vieussens had already described these vessels, but with less precision and he was concerned with their physiological function rather than with their anatomical structure. Until the mid-nineteenth century their existence was contested because often they could not be made visible in wax preparations. Nowadays, the function of these "Thebesian veins" is still a matter of dispute, although they are generally considered to be of minor importance.

The book contains a biography of Thebesius, an edition of both the dissertations of Thebesius and Vieussens with a German translation, a survey of the notions of the heart vessels before the eighteenth century, a description of the reception of Thebesius' discovery and a table which records the main results of