

Book Reviews

as a paperback. If this book has a second edition, and one hopes that it will, perhaps additions along the lines indicated above can be included. Finally, one may note that the book is well produced and has a useful index.

Johannes Walaeus. Zijn betekenis vor de verbreiding van de leer van de bloeds omloop [Johannes Walaeus. His significance in the recognition of the doctrine of blood circulation], by J. SCHOUTEN, Assen, Van Gorcum, 1972, pp. viii, 260, illus., Dfl. 46. Reviewed by Walter Pagel, 58 Millway, London, NW7 3RA.

Walaeus [Jan de Wale] (1604–1649) was the first to confirm and amplify by original experiments and observations Harvey's discovery of the circulation of the blood. At the time the latter was still widely contested—no less than twelve years after its publication in 1628. Nevertheless Walaeus has remained a cinderella of medical histories. Sprengel's account is quite good, but Haeser dismissed him in a few lines. Moreover he may well have misled into belief in an editio princeps of Walaeus' salient two letters to Th. Bartholin outside the latter's *Institutiones anatomicae* of 1641. We may add that belief in this ghost could have been fed by Primrose's *Animadversiones* "against Walaeus", already published in 1640. They were, however, really prompted not by any publication of Walaeus, but the thesis of Roger Drake which had been defended *sub auspiciis Joh. Walaei* in the same year. Nor has Haller's judicious verdict "eximii pretii" appended by Haeser anything to do with the price of this ghost in the bookshop, but it gives in two crisp words the praise which is indeed due to Walaeus. Even worse, his name fails to occur in any of the three volumes of the *Handbuch* or in Sudhoff, whilst Baas and Diepgen devote to him just a line of praise.

On 4 February 1640 Walaeus presided when his pupil Roger Drake (1608–1669) propounded his *Disputatio medica de Circulatione naturali seu cordis et sanguinis motu circulari pro Cl. Harveio* in sixteen chapters corresponding to those of Harvey's *De motu* of 1628. The reproduction of this *rarissimum* in facsimile is a valuable feature of Schouten's book (pp. 175–192). Earlier on, Walaeus should have met Thomas Bartholin who stayed at Leyden from 1637 to 1640 and elicited from him the "two letters" as a contribution to his new edition of his father's *Institutiones Anatomicae* (Leyden, Fr. Hackius, 1641). Their contents are carefully analysed in the present book and the changes and additions which Walaeus made in the subsequent edition of the *Institutiones* examined. As these are largely relevant to the motion of the blood little attention is paid to the *momentous quantified account of acid gastric digestion* followed up in the live dog which Walaeus added in the new edition of the *Epistolae* in 1645.

In 1641 Harvey and Harvey alone had been accorded the palm of the discovery and its significance by Walaeus. In 1645 he gave much space to the supposed ancient forerunners and the to us funny story of Sarpi as the original source from which Harvey was rumoured to have derived the secret. Bartholinus had been at Padua whence he reported the story (heard from Vesling) to Walaeus on 30 October 1642, with the rider that he was probing into it further—but nothing seems to have come of his effort. In 1643 the Padua edition of Harvey's *De motu* had appeared (under the auspices of Bartholinus) to which for the first time the Walaeus letters were appended—still in the original version and without Sarpi, probably in view of possible further

information. All stages and circumstances of the short life of Walaeus—a friendly and amiable man, as we hear from Bartholinus—and his family, his final appointment as full professor of clinical medicine, his aspirations in this subject which form an anticlimax to the brilliant *Epistolae*, his frustrations and death, are meticulously presented from first-hand documentary sources. This chapter includes detailed biographies of friends and contemporary workers in the field close to him, as for example Drake. The subsequent section on the pre-history to Harvey from Aristotle down to the Primrose–Drake controversy is of necessity sketchy; here the main point in Cesalpino, namely consideration of a centripetal flow of all the venous blood, as occurring in the *Quaestiones medicae* of 1593, is ignored, whereas his use of the term *circulatio* for the pulmonary transit is given attention—it is now common knowledge (and given as such by the author) that it was meant in the chemical sense of distillation and had therefore no more than minor relevance to Harvey's discovery. It is true that a similar connotation is conspicuous in writers immediately following Harvey (including Walaeus in particular) and to a much lesser extent in Harvey himself. This, however, cannot justify missing the truly relevant point in Cesalpino—a feature also found in the literature where reliance is placed on hearsay as a substitute for an admittedly exacting study of his original work. By contrast and in accordance with the general tenor of the book as a first-class documentary presentation, the analysis of the Walaeus letters and of Primrose, Riolan, Drake, the Cartesians and the rest of the controversialists, for and against, is profound and penetrating. Collating Walaeus with Harvey, Schouten finds differences. The former restricted, he says, the significance of heat inborn in the heart, the sun of the microcosm, and the ebullience of blood therein—but so did Harvey. Walaeus stipulated a stronger impetus closer to the heart and diminishing in the periphery to zero—a point not touched upon by Harvey in 1628. Walaeus located the transit of arterial to venous blood flow in extremely peripheral arterio-venous anastomoses. He emphasized the analogy of circulation of the blood with distillation (as already expressed in the fourth thesis of Drake and attacked by Primrose). He finally had more concrete data on the frequency of the pulse and the blood volume emitted from the heart—probably based on real observation in rabbits as against Harvey's calculations. It seems to the reviewer that further points can be found in which Walaeus differed, but they all pale into insignificance in view of the beautifully designed ligature experiments in the dog and the conclusively argued considerations which he could adduce in favour of circulation. Moreover it is convincingly argued (following de Feyfer) that Harvey relied upon Walaeus' experience concerning Galen's supposed experimental "proof" of the *vis pulsifica* (as discussed in Harvey's second letter to Riolan). Walaeus also anticipated Harvey's final proof of the impermeability of the interventricular septum by applying a ligature in the realm of the pulmonary transit, with the difference that he ligatured the pulmonary vein and Harvey the pulmonary artery. This latter experiment is also described in the second letter to Riolan of 1649 whereas in *De motu* ligature had been merely applied to the systemic blood flow. Walaeus finally used the analogy with a blown-up passage of gut to illustrate the elastic wave of the pulse accounting for its simultaneity everywhere in the body.

This, then, is an excellent, timely, useful book. Additional to its virtues mentioned

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it has a full bibliography of all the works, editions and translations of Walaeus, text variants, a synoptic time-table, a full list of references of the secondary literature and fine plates including iconographic *exemplaria* which have probably influenced Walaeus' illustrations. Alas, there is no index. Nor are the numerous and important footnotes where they would help the scholar without molesting the amateur, namely at the foot of the page, being as they are painfully and short-sightedly divorced from the text—minor blemishes, however, which, we hope, will soon be remedied in an English translation of a welcome and desirable work.

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Teufel-austreibungen: die Praxis der katholischen Kirche im 16. u. 17. Jahrhundert, by CÉCILE ERNST, Berne, Hans Huber, 1972, pp. 147, S.Fr.29/DM.26.

This extremely interesting book deals with the practice of exorcism for cases of diabolical possession during the sixteenth and seventeenth centuries. Most of the documents used are French, because the French sources are more complete and richer in detail than those of other countries. The study falls into three parts, the first dealing with the social conditions of the times, the second giving vivid summaries of ten day-to-day reports, and the third assessing the evidence in terms of modern psychiatry.

The kind of people subject to diabolical possession appear to have been the lowlier members of society, farm-labourers, shepherds, maidservants or nuns whose background belonged to the simpler classes. In times of famine, pestilence and war they were the first to suffer and, having no state or ecclesiastical organization to care for them, they roamed the countryside as beggars and vagabonds, husbands becoming separated from their wives and children, and the children succumbing to want and disease. Uneducated and uncared for, they had no means of drawing attention to themselves except by unorthodox means and in a milieu dominated by religion, whether Catholic or Huguenot, the devil seemed as good a pretext as any for the explanation of their sufferings. This, added to their suggestibility, accounts for much of the diabolical possession of those days.

The accounts of actual cases are fascinating. The examinations of the possessed people, carried out not merely by ecclesiastics, but also by physicians and surgeons, are described in detail. It is surprising to learn that the exorcisms attracted thousands of people to the cathedrals where they were carried out and led to extraordinary scenes.

Of the many conclusions that the writer draws from an examination of the evidence two in particular are worth noting, in view of the fact that wide acceptance is given to the opinion that during the sixteenth and seventeenth centuries most possessed people were treated as witches and burned, and that most witches, like the possessed, were mental cases. The author disputes both these theses and says that according to the evidence most possessed people are exorcised, not burned, and that most witches were not mentally sick, but were social outcasts who had got caught up in the mill of the Inquisition.