

Book Reviews

[OLAUS BORRICHIIUS (OLE BORCH)], *Olai Borrichii itinerarium 1660–65: the journal of the Danish polyhistor Ole Borch*, edited with introduction and indices by H. D. Schepelern, 4 vols. (I, Introduction, November 1660–October 1661; II, October 1661–May 1663; III, May 1663–June 1664; IV, July 1664–Summer 1665, and indices), Copenhagen, C. A. Reitzels; and London, E. J. Brill, 1983, Dkr. 1,000 or £60.00.

Olaus Borrichius (1626–90) was Professor of Philosophy, Poetry, Chemistry and Botany at the University of Copenhagen. He was twice elected Principal of his University, he personally knew the great European scholars of his day, and he published substantial works in many fields. Yet, for all of his fame in the late seventeenth and eighteenth centuries he is seldom referred to today. The present publication should do much to restore his earlier reputation.

Educated at the University of Copenhagen, Borrichius taught at the Metropolitan School of Copenhagen before taking a position as tutor to the sons of Joachim Gersdorff, the High Steward to the Court. In 1660, he received a royal appointment as Professor at the University, along with a leave of absence from his tutorial duties. He was to use this leave for a journey that was to last for six years and was to take him through Germany, the Netherlands, England, France, Italy, and Switzerland. From the date of his departure until the late summer of 1665 (a final volume on his Italian tour may be lost), he kept a detailed journal which has now been edited and given an introduction and detailed indices by H. D. Schepelern. The transcription of this Latin manuscript comes to over 1,500 pages in four volumes and it contains much information of interest for historians of science and medicine.

The *Itinerarium* offers the reader a wide variety of material. There are descriptions of the cities and towns Borrichius stayed in, lectures he listened to, and accounts of visits to scholars wherever he stayed. He wrote of Gronovius' lectures on Roman history and usury, he inserted a life of Cardinal Mazarin, and he frequently summarized information on recent geographical discoveries. Nevertheless, the bulk of his notes relate to anatomy, chemistry, and alchemy. He discussed at some length the current debate over the discovery of the circulation of the blood and he described many dissections that he witnessed on human bodies as well as a variety of animals ranging from dogs to bats. He listened to the lectures of a number of the great teachers at Leiden and he visited them in their homes. Because of his interest in iatrochemistry we find numerous references to Franciscus de le Boë Sylvius and J. A. van der Linden, as well as frequent accounts of conversations with other figures such as Johann Rudolph Glauber, Robert Boyle, John Wallis, and John Wilkins. Indeed, the index of personal names comes to seventy-two pages. In short, this journal should be viewed as an important source not only for scientific and medical information, but also for the new light it sheds on the scientists then living in England, France, and the Low Countries.

The interest of Borrichius in medicine was clearly related to his passion for chemistry, and his chemical notes go beyond medicine to alchemy and metallurgy. During his travels, he visited mines and collected information on dyeing procedures, but he also contacted alchemists. A visit to Baron Sonnenthal resulted in a detailed description of his chemical laboratory accompanied by a sketch of its layout. There are long discussions of the *aurum potable* and the alkahest, and he collected chemical recipes everywhere. Little wonder that he should have sought out the Dutch Helmontian and alchemist, Joachim Polemann, while he was in London! Many pages are devoted to his discussions with the Italian alchemist, F. A. Borri, and he recounted at great length the chemical laboratory of Dickinson and the chemical work of Peter Stahl at Oxford. The journal is also valuable for Borrichius' transcription of rare manuscripts. Martell's Latin manuscript on heat and fire, Duclos' French treatise on marling, La Peyrère's French manuscript on alchemical metallurgy, and Vargas' sixteenth-century Spanish work on metals all find a place here, along with numerous quotations and notes from his current reading.

The emphasis on chemistry in the *Itinerarium* corresponds closely with Borrichius' best known work, the *De ortu et progressu chemiae*, which was published in 1668, only two years after his return from abroad. Here he took to task the learned classicist of Helmstedt, Hermann Conring, who had attacked the chemical medicines of the Paracelsians as well as the historical

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existence of Hermes Trismegistus in his *De hermetica Aegyptiorum vetere et Paracelsicorum nova medicina* of 1648. Borrichius pointed to early evidence of chemical processes through biblical citations. Neither did he doubt that Hermes had lived or that he could rightly be called the originator of chemistry. Conring replied to Borrichius in a greatly expanded version of the *De hermetica . . . medicina* in 1669, and Borrichius was to answer this work five years later.

This debate was followed by European scholars through extended reviews both in the *Philosophical Transactions of the Royal Society of London* and the *Journal des Scavans*. Borrichius' *De ortu et progressu chemiae* was chosen by J. J. Manget to open his massive two-volume folio collection of alchemical treatises, the *Bibliotheca chemica curiosa* (1702), and it became a primary source of information for the many eighteenth-century chemists interested in the early history of their science.

Professor Schepelern's lengthy introduction presents the reader with a discussion of the manuscript and previous research based on it. He translates Borrichius' own short autobiography and expands on this to discuss in more detail his teaching and his travels. He has a special interest in the relationship of Borrichius to Steno, who was one of his students, but the point seems somewhat laboured because Steno does not feature prominently in the manuscript. Schepelern is admittedly less interested in the all-pervasive chemical and alchemical references. He believes that it is difficult to grasp their importance and that Borrichius risked his reputation by associating with alchemists. He suggests further that Borrichius was only collecting the raw material of science and that he did not really believe that the base metals could be transmuted to gold. Perhaps Schepelern is correct, but I do not think he is. Rather, I believe that the *Itinerarium* may best be understood in light of the author's ardent interest in chemistry, an interest that is borne out by his defence of the alchemical position on the antiquity of chemistry published shortly after his return to Copenhagen. Thus, while this journal may serve in a larger sense as a valuable source for all those interested in mid-seventeenth-century science, it serves chemical and medical historians best and gives us further documentation of the important role played by the Chemical Philosophy in the period of the Scientific Revolution.

Allen G. Debus
University of Chicago

DONALD R. HOPKINS, *Princes and peasants. Smallpox in history*, Chicago and London, University of Chicago Press, 1983, 8vo, pp. xx, 380, illus., £21.25.

In 1979, the World Health Organization was able to declare the world free of smallpox. It was the first time in history that a major infectious disease had been deliberately eradicated, and the WHO's ten-year campaign had been triumphantly successful, thanks to their powers of organization and to the individual dedication of large numbers of lay and medical staff. One of the physicians closely involved in the programme and still very active in other areas of infectious disease control, Dr Donald R. Hopkins, has managed to find the time to chart the influence of the disease on the history of the world – no mean achievement in any case, and all the more admirable in someone involved in full-time public health work.

Over the years, smallpox has had its share of attention from historians of medicine but, not surprisingly in view of the vastness of the subject, most authors have confined themselves to limited aspects of its complex history. Demographers have been preoccupied with the effects of the major epidemics on population densities, a difficult exercise at the best of times in view of the paucity of reliable mortality statistics available from previous centuries. Although Dr Hopkins takes some account of the impact of smallpox on populations in general, his main concern has been with the results of the ravages of the disease among the rulers of the world, across five continents and more than two millennia. And a very impressive catalogue of devastation and catastrophe it is. Although Queen Elizabeth I of England in 1562 and President Lincoln of the United States three centuries later, fresh from giving his Gettysburg address, both survived with faculties unimpaired, many others did not. Among the reasons for the Hanoverian succession to the throne of England were the inroads made by smallpox among the legitimate Stuart heirs prior to the death of Queen Anne. Elsewhere in Europe the toll of smallpox deaths among the royal families in the seventeenth and eighteenth centuries was equally