highlights the extent to which the Greek medical tradition has been assimilated, even at the level of popular and religious medical writing.

Unfortunately, Al-Akili's translation is wildly exegetical; in some passages more than half of the content of the translation is not to be found in the Arabic. On contagion, for example, one tradition simply states the following: "In the delegation of [the tribe of] Thaqīf there was a man afflicted by leprosy. The Prophet—may the blessing and peace of God be upon him—sent [word] to him: 'Go home; we accept your covenant.'" For this the translation has: "... a delegation from the tribe of Thuqaif [*sic*!] came to Medina to declare its faith, and to allege its loyalty to God's path. With them, they brought a man who was afflicted with a severe and incurable leprous condition. Prior to their presenting the man before him, God's Messenger—may the blessing and peace of God be upon him—sent a word to him, 'Return to your home, we have accepted your convenant.'"

The text is also peppered with anachronisms; wishing to stress the debt of modern medicine to that of medieval Islam, Al-Akili routinely translates as if Ibn Qayyim knew of such distinctly modern scientific notions as, *inter alia*, microsleep, and adds many "modernizing" headings and sub-headings not present in the original Arabic. Names and transcriptions of Arabic words are often inaccurate, the text lacks the explanatory notes required to elucidate the text for the non-Arabic reader, and much of the Introduction is dubious or irrelevant.

Prepared for the benefit of the non-Arabic reading Muslim and published as a pious Islamic contribution to modern medicine (both translator and publisher disclaim any responsibility for use of the book without professional medical advice), the translation highlights the central position of Ibn Qayyim's contribution to this literature over the past six centuries, and more generally, the important place that continues to be given to the Medicine of the Prophet in the contemporary Islamic world. More's the pity, then, that this English version cannot be considered an accurate representation of what Ibn Qayyim actually wrote on the subject.

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Zbigniew Szydlo, *Water which does not wet hands: the alchemy of Michael Sendivogius*, Warsaw, Polish Academy of Sciences, Institute for the History of Science, 1994, pp. xiv, 300, illus., £14.95 (83–86062–45–2). (Distributed by White Eagle Publications, 24B Broadlands Road, London N6 4AG).

The works of Michael Sendivogius enjoyed enormous popularity throughout the seventeenth century: they were often reprinted, translated into different languages and became the subjects of commentaries. Of their author, however, very little was known apart from various legendary accounts of his life. Modern historians, as for instance John Partington, have even questioned his very existence. It was the Polish historian Roman Bugaj who unearthed documentary evidence from archives in Central Europe and gave (in 1968) a detailed account (in Polish) of Sendivogius's life—which Szydlo often refers to in the present book.

The main events of Sendivogius's life are now well assessed: born in 1566 near Sacz in Southern Poland, he studied in different universities, including Leipzig, Vienna and Altdorf, was both a diplomat and an alchemist at the courts of Sigismund III Vasa at Krakow and of Rudolph II in Prague, and played a prominent role in the development of the chemical industry in seventeenth-century Poland. He also tried to promote a secret society of "Unknown Philosophers", for which he wrote the statutes, to be found in one of the appendices to the present book.

The thesis of Szydlo's book is that Sendivogius's "central nitre", though it was concealed in his writings, marked a significant rupture with alchemy and Paracelsian iatrochemistry. According to the author, Sendivogius's central nitre (which he has

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identified as potassium nitrate) played a prominent part in the history of chemistry, as it stimulated experimental investigation of the vital component of air. This research programme was carried out in England in the second half of the seventeenth century, mostly by Robert Boyle and John Mayow. The latter's theory of nitro-aerial particles as the component of air necessary to combustion and respiration is the object of two chapters of the present book, where the author explains Mayow's experiments and theories in the light of modern chemistry. He comes to the conclusion that Mayow's theory of nitre, which derived from Sendivogius, paved the way for the discovery of oxygen at the end of the eighteenth century.

Sendivogius is placed at the very beginning of a long period of research which started with the recognition of the role of nitre as a substance containing a "secret food of life" (p. 204) and brought about the discovery of oxygen. For Szydlo, Sendivogius was "fully familiar with practical chemistry, and was capable of describing his ideas in a manner that can be interpreted using the language and concepts of modern chemistry" (p. 97). He states that Sendivogius's chemistry was experimental and that it was free from the mystical connotations which can be found in Renaissance and early modern authors. Sendivogius's chemical ideas are summarized in three points: (1) the study of air and its role in life; (2) the identification of the "central salt" (nitre) as the vital ingredient of air; (3) the preparation, from that salt, of the universal solvent, necessary to the transmutation. Sendivogius's sources, like the *Tabula Smaragdina*, Theophrastus Paracelsus and Joseph Duchesne, are not neglected by the author. None the less, they are taken into account as a pre-history of the nitre theory, rather than as part of a larger scientific and philosophical background. The obvious links between the notion of nitre and the controversial doctrines of *anima mundi* and *spiritus mundi* are not investigated in the book, which focuses on "successful" scientific theories. Included, is a complete bibliography of Sendivogius's works (including translations) as well as summaries and English translations of several of his tracts.

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Piyo Rattansi and **Antonio Clericuzio** (eds), *Alchemy and chemistry in the 16th and 17th centuries*, International Archives of the History of Ideas No. 140, Dordrecht, Kluwer Academic Publishers, 1994, pp. xiv, 208, £72.50, $105.00, Dfl. 185.00 (0–7923–2573–7).

This collection of nine articles resulted from a conference held at the Warburg Institute in 1989 and represents the continuing exploration and revision of our understanding of the development of alchemy and its influence on philosophy and education in early modern Europe. The focus of study ranges from the Middle Ages to the early-eighteenth century, beginning with Michela Pereira's discussion of alchemical treatises attributed to Raimond Lull, which affirms the current scholarly understanding that in the thirteenth century alchemy already possessed a medical as well as a metallurgical side. She establishes the importance of a Lullian tradition in the work of Paracelsus and his followers, who in turn may have written Pseudo-Lullian tracts. Massimo Bianchi next shows how Paracelsus transformed the alchemy he imbibed from medieval sources, giving it an essentially medical identity and making it the basis for an alchemical epistemology: interpreting the relation between natural objects and their outward characteristics (signatures) was analogous to resolving a substance in the laboratory by applying fire. Both practising alchemy and writing about it are thus manifestations of *conversio*, the process by which the invisible text or essence is rendered meaningful and visible: "In principle, the achievement of the *lapis* is no different from ... the deciphering of a sign" (p. 27). But this abstraction reduces all alchemy to semiotics and requires a certain distance between signifier and signified that recent

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