

most of this is by German doctors idealizing Paracelsus as a forerunner of their own practices. Heinz Schott takes this further by arguing that the occult and religious content of Paracelsus's writings is reflected in modern psychosomatic medicine. By contrast, Herbert Breger focuses on leading "Paracelsians" of the seventeenth century and suggests that their willingness to identify with a Paracelsian (i.e. non-mechanistic) style of thought may have something to do with their individual personalities and ways of dealing with their emotions.

While several authors (mostly in Grell) question the possibility of ever knowing the "real" Paracelsus, others (particularly in Schott and Zinguer) seem to have no difficulty in studying what this historical figure believed and wrote about. Lucien Braun (Schott and Zinguer) takes Paracelsus's concept of "matrix" as a way into analysing his rhetorical style and structure of thought. Gunhild Pörksen (Schott and Zinguer) argues that Paracelsus considered vision the most important sense, the eye being the central organ of scientific knowledge, while Ute Gause (Grell) examines the relationship between his understanding of God's light and its implications for heavenly magic. Hartmut Rudolf (Grell) shows how Paracelsus's concept of the Eucharist provides a context for his anthropology, which according to Udo Benzenhöfer and Karin Finsterbusch (Schott and Zinguer), was distinctly anti-Semetic in tone.

Authors in both volumes appear to agree that later reactions to "Paracelsianism" (however this may be construed) can be properly understood only in ideological terms. Hugh Trevor-Roper (Grell) provides an extremely useful overview of the European political and religious context which suggests why it was chiefly Calvinist doctors who identified with the Paracelsian cause between 1600 and 1650. Allen Debus (Grell) names the best-known of these figures, as well as drawing our attention to

Spanish and Turkish physicians who came to Paracelsian ideas in the latter part of the century. All but two of the remaining articles focus on individuals at the level of city and court. Stephen Bamforth, Ilana Zinguer and Didier Kahn (all in Schott and Zinguer) take a fresh look at chemical medicine in the French court, Bruce Moran (Grell), Frank Hieronymus, Joachim Telle and Joseph Levi (Schott and Zinguer) consider the impact of Paracelsian doctrine in German-speaking cities, while Grell himself shows how Danish doctors stripped Paracelsianism of its radical elements before taking it on as a state orthodoxy. The two articles which do not fit neatly into this overall summary are Roland Edighoffer's study of a Paracelsian enigma in the *Chemical wedding* of Christian Rosenkreuz (Schott and Zinguer), and Francis McKee's account of the influence of Paracelsianism on seventeenth-century cookery books (Grell).

In sum, these collections demonstrate the lively state of Paracelsus studies at present and the important contribution that historians of medicine are making to this field.

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**Michael Hunter** (ed.), *Archives of the scientific revolution: the formation and exchange of ideas in seventeenth-century Europe*, Woodbridge, Boydell Press, 1998, pp. xiii, 216, £45.00, \$78.00 (0-85115-553-7).

What we know about the history of science and medicine depends on how we know it. We are necessarily reliant on surviving records. Those historians who work on the period conveniently called the Scientific Revolution are relatively fortunate in this respect, since they benefit from a rich seam of archival resources, many of which have been made widely available by means

of expertly edited standard editions, and more recently on microfilm and CD-ROM. As a result, it has been possible to conduct substantial research on institutions like the Royal Society of London and the Académie Royale des Sciences, and on individuals like Galileo Galilei, Robert Boyle, and Isaac Newton. But as much as we benefit from the preservation of these precious records, we are also bound to them—and in ways that we all too frequently fail to notice. Not only the existence of archives, but also their content and organization, constrain our opinions about the past.

Modern archives are the result of centuries of decision, indecision, and accident. For every Royal Society, there is a Royal College of Physicians, most of whose seventeenth-century records were lost to fire in 1666. For every Newton, there is a Harvey, whose personal papers disappeared during the Civil War. Nor did these misadventures necessarily cease after the securing of an archive in scholarly hands. The deliberate weeding-out by executors and librarians determined to preserve only the “significant” has sometimes, to modern eyes, done even more damage than the depredations of thieves, insects, or flood-water. As Dryden put it, it was all too easy for apparently inconsequential papers to end up as “martyrs of pies, and relics of the bum”.

We clearly need to make the effort to recall how our knowledge of early modern science and medicine is affected by these processes. Michael Hunter’s volume is designed to help us do so. The collection derives from a conference held at the Royal Society in 1996. Its objective is to compare the history and constitution of some of the most important archives of what Hunter unfashionably calls “the heroic age of the Scientific Revolution”—that is, the generation from Galileo to Newton. This being done, Hunter argues, we gain a “crucial” insight into the structure of individual and collective scientific endeavours in the seventeenth century, and

into the changing attitudes to the period adopted by succeeding generations.

The contributions to the volume cleave to this programme remarkably consistently. Most focus on the archival remains of major individual figures: Galileo, Petty, Huygens, Malpighi, Boyle, Newton, and Leibniz all get chapters to themselves. Two—Mark Greengrass’s discussion of Samuel Hartlib and Robert Hatch’s of Ismaël Boulliau—begin with individuals, but use these as foils to discuss the character of collective interaction in the Republic of Letters. And two concluding chapters examine the formation of institutional archives, by the Royal Society and the Académie Royale des Sciences respectively. These last papers usefully close the collection by relating the processes of archival production to the differing philosophical and civil conventions being developed at such early modern institutions. But each of the chapters also has its own argument to make. Hatch’s, for example, contains a bravura piece of detective work reconstructing the successive manipulations that have happened since the early modern period to Boulliau’s manuscripts, while Rob Iliffe’s characteristically pointed telling of the story of Newton’s papers makes it clear how much such manipulations mirror transformations in attitudes to science and its history. It is distinctly sobering to discover that we are not as original as we think in our concentration on theological concerns: Newton’s religious manuscripts were very much the centre of attention in the early eighteenth century, only to fall into neglect rather later.

The contributors are generally reluctant to draw specific conclusions from their case-studies for our understanding of processes of knowledge-making in the seventeenth century. Readers interested in these questions are encouraged to consider them, but left with much of the work still to do. However, the chapter most likely to attract the interest of readers of *Medical History* also happens to be the one that comes

closest to an answer to this question. Domenico Bertoloni-Meli's investigation of Malpighi's *consulti*—written diagnoses supplied for distant patients, and hitherto omitted from consideration among Malpighi's correspondence—shows very elegantly how apparently small curatorial and editorial decisions can have considerable consequences for our view of a medical practitioner. Hitherto, indeed, Malpighi has scarcely been regarded as a practitioner at all, but as a theorist. This image was cultivated by Malpighi himself, who insisted on his *consulti* remaining unpublished, and has been sustained ever since by the overseers of his archive. But Meli is able to reconstruct something of his medical practice by examining the composition and structure of these fascinating documents. Reconsideration of the practices pursued by figures like Boyle and Petty seems equally possible in this light. Indeed, this interesting and valuable collection should encourage scholars to ponder the connections between scientific and archival practices in general.

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**Roger King,** *The making of the dentiste c. 1650–1760, The History of Medicine in Context*, Aldershot and Brookfield, Ashgate, 1998, pp. xii, 231, illus., £49.50 (1-84014-653-2).

Dentistry has been an unjustly ignored part of the history of medicine, studied mostly by interested amateurs. Roger King's book stands out as the first serious investigation of an important topic in the medical, social and cultural history of early modern France. He aims to correct the misconception of previous historians, influenced by images and descriptions of men who appear to perform varieties of treatments on the teeth, that a practice of

dentistry existed before the eighteenth century. King demonstrates that the surgeons who coined the term *dentiste* for themselves in the early eighteenth century described an entirely new occupation created as a result of the vast increase in surgical techniques during the previous fifty years.

King begins with an interesting section on the individuals who have often been mistaken for early dental practitioners. He focuses on the fairground life of the itinerant mountebanks and charlatans who used showmanship to draw a crowd. Most often it is the image of these men with their carnivalesque parody of the village toothdrawer which has confused historians. The purpose of the charlatan's performance was not to provide real dental treatment for his audience (the subjects of his outlandish methods of surgery were always his accomplices) but to gain the crowd's attention in the competitive atmosphere of the fair in order to sell prepared medicines of dubious quality.

Prior to 1700, most treatment on the teeth was performed by general surgeons. Without any real scientific knowledge about the teeth and mouth, most of the procedures surgeons could render at this time simply involved cleaning or extracting diseased teeth. Below the level of the general surgeon there also existed an underclass of practitioner, the *experts*, who were authorized by the surgical hierarchy to provide treatment on the teeth alone. King argues successfully that dentistry did not arise from an increased knowledge on the part of these lowly figures. He cites that the *experts*, despised by true eighteenth-century *dentistes*, were not specialists in the modern sense of the word, but basically artisanal practitioners who possessed only a limited empirical knowledge of their field.

During the reign of Louis XIV surgery was transformed into a field of endeavour with a scientific base underpinning surgical techniques. King argues that the rapid growth in the number of procedures