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which progressed into nearby areas resulting in epidemic waves, then a climatic stage in the form of an extensive core area, and finally spreading to previously spared areas of central Europe. Perhaps the most innovative component of the structural relationships is the proposition that "the usual outcome of the flow of plague during a cycle was that an area of terminal disease activity became a focal point serving as the origin of a new cycle of expansion" (p. 155). New periods of plague activity were more often traceable to selfgeneration within the central European area than to the alternative origins of maritime introduction or overland movement from the east or southeast.

Limitations of space preclude discussion of each of the eight periods of plague activity. But a summary of the demographic outcomes of the communal epidemics of 1622-31 will convey the quantitative parameters of all cycles except for the plague period of the 1630s, the intense phase of the Thirty Years War. Some 54 per cent of the communities suffered mortality greater than five times the normal burial rate, 31 per cent less than three times, and the remaining 15 per cent a loss ratio between those two outcomes. Based on an estimated population of 207,000 in 340 parishes, and assuming a normal death rate of 27 per 1,000, some 14.8 per cent of the inhabitants died during mortality crises. By contrast, during the subsequent plague period 1632-39, based on the full sample of 800 parishes, epidemic mortality was equivalent to burials in ten or more normal years in one-half of the parishes. Population losses of 40 per cent "were commonly approached or exceeded" (p. 149). The author found that the burials registered in his sample were of the same order of magnitude as the catastrophic German population loss proposed by Günther Franz in his controversial work, Der dreissig-jährige Krieg und das deutsche Volk (Stuttgart, 1961). Their parallel findings are presented in tabular form (p. 154).

As is well known, north-western and central Europe became essentially free of epidemic plague after the 1660s. This investigation demonstrates, however, that the generalization does not apply to central Europe as a whole, and also that it requires some modification. In westcentral as opposed to east-central Europe, plague epidemics in fact became infrequent and limited after 1640, with an enduring boundary remaining in place until 1713. The reader is of course interested in the specific developments that permitted western Europe to escape from plague during the second half of the seventeenth century. But the author is agnostic on this ultimate issue. For example, in referring to the experience both of Bavaria before 1630, during which time the region suffered only minimum plague mortality, and of the central European transformation after 1640, he writes, "In neither case do we know which factors were responsible for the resistance nor should it be assumed that the same factors were operative in both periods and areas" (p. 160).

It should be acknowledged that the study is not primarily concerned with the resolution of this issue. The promise of the most intensive analysis of plague based on quantitative data is fulfilled, and in the process the investigation has advanced our knowledge and understanding of epidemic plague to a quantum degree. Future investigators of the history of plague in the western world will overlook this impressive and invaluable work at their peril.

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Volker Zimmermann (ed.), Paracelsus. Das Werk—die Rezeption. Beiträge des Symposiums zum 500. Geburtstag von Theophrastus Bombastus von Hohenheim, genannt Paracelsus (1493–1541) an der Universität Basel am 3. und 4. Dezember 1993, Philosophie der Antike, Band 3, Stuttgart, Franz Steiner, 1995, pp. 227, DM/Sfr 76.00 (0-415–12410–7).

The number of contributions to this symposium is eleven, to which a preface by the editor and three introductory pieces have been added. One of these is by Gundolf Keil who also supplied two further articles presented at different symposiums. The overall theme could be described as "for and against Paracelsus". Gundolf Keil is violently against Paracelsus whom he accuses of being misshapen, unoriginal, a bad physician and a bad surgeon. He is also against Karl Sudhoff for being too enthusiastic about his subject. Other contributions deal with Paracelsus's life, including his inglorious departure from Basel which now ironically is celebrating the 500th anniversary of his birth. An indirect influence of Ficino and Neoplatonism on Paracelsus is defended by some and attacked by others. Benzenhöfer analyses a trilogy by Guido Kolbenheyer which makes Paracelsus into a truly German hero. But Benzenhöfer is mistaken when he describes the National Socialist Kolbenheyer, who was born in Budapest and lived in Tübingen and Munich, as a Sudeten German. Vivian Nutton and Bernhard Dietrich Haage deal with the problem of how far Paracelsus was an innovator of medicine comparable to Luther in religion. Hartmut Rudolph deals with the theology of Paracelsus, specially with regard to his accepting the possibility of free will about which he changed his mind during his lifetime. Wolf-Dieter Müller-Jahncke shows the special way Paracelsus uses the idea of the parallelism of macrocosm and microcosm. Volker Zimmermann reports on Paracelsus in literature, and two contributions deal with his medical ethics. The discussions are more arresting than helpful, but footnotes, including those of Gundolf Keil on medieval medicine and surgery in such works as Wolfram von Eschenbach's Parzival stimulate one to further reading, and cover most of the Paracelsus scholarship of the 1990s.

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Sieglinde Lieberknecht, Die Canones des Pseudo-Mesue: Eine mittelalterliche Purgantien-Lehre, Quellen und Studien zur Geschichte der Pharmazie, Band 71, Stuttgart, Wissenschaftliche Verlagsgesellschaft, 1995, pp. x, 278, DM 48.00 (3–8047–1382–3). According to Galenic humoral doctrine, the balance of four body fluids, called humours blood, bile, black bile and phlegm—is responsible for good health whereas excess of a particular humour, or corrupt humours, leads to disease. Corrupt humours which cannot be improved or an excess of a humour have to be eliminated from the body. Therefore purging, like bloodletting, was an important method of treatment in the tradition of Galen.

Die Canones des Pseudo-Mesue deals with a very influential medieval Latin text about purgatives, published under the name of Johannes Mesue of Damascus. While she could not trace the author of this work, Sieglinde Lieberknecht comes to the conclusion that the main writer may have been an Arabic author, probably not Mesue himself (Yuhanna ibn Masawaih, AD 777-859(?)). The text found its final form between AD 1260 and 1290, when a Latin-speaking scholar had it translated from Arabic. Then he extended and supplemented the translation, arranging the contents according to the Canon of Avicenna (Ibn Sina, AD 980-1037). Possibly even some of the text under examination was written in Latin with the help of Arabic sources.

The *Canones* themselves consist of two parts. The first part, *Canones universales* or *De consolatione medicinarum*, translated into German by Sieglinde Lieberknecht, deals with the rules of treatment in general. The second part, *De simplicibus*, is about the properties of various drugs.

In order to make comprehension of this very specialized text easier, Lieberknecht starts with a short description of the authors mentioned or quoted, shows parallels to the *Canon* of Avicenna and presents her research on the authorship of the *Canones*. Then she proceeds to the fundamental theoretical concepts of this work, theories about natural philosophy, physiology, pathology and pharmacology, especially the effects of cathartics. Two alphabetical lists of the drugs which are mentioned in the translated text show the difficulties in identifying Arabic drug names; species and even genus sometimes remain uncertain.