Busard, H. L. L., *Campanus of Novara and Euclid's Elements* (Stuttgart: Franz Steiner Verlag, 2005), 2 vols. 768 pp. hc. EUR 115. ISBN 3-515-98645-5.
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When handing in the last part of the manuscript for his monumental *Introduction* – so the story goes – an exhausted George Sarton muttered "nevermore". This last part appeared 22 years after the first volume. H. L. L. Busard could have said as much when finishing the manuscript for the present work, not because of personal exhaustion (there is no sign of that) but because the task is as finished as it can ever be. Beginning 39 years ago with books I–VI of Hermann of Carinthia translation, Busard has now given us all the previously known high-medieval translations and redactions of the *Elements*, plus one which he discovered himself. Only single manuscripts containing uninfluential personal adaptations (or commentaries) of unidentified scholars remain unpublished.

The present two volumes contain the redaction of Campanus de Novara, which remained the version used by working mathematicians until it was displaced in the later sixteenth century by Clavius's editions, equally well adapted to the context where they were used (the marginal annotations in sixteenth-century printed editions containing both the Campanus version and Zamberti's translation of an inferior Greek manuscript shows that Campanus was preferred). For this redaction we possess not only information about its author and the approximate date of its preparation – (presumably late) 1250s – but also two very early manuscripts possibly prepared under Campanus's supervision. Busard's edition is based on the earliest of these (Florence, Bibl. Naz., magl. XI 112, from 1259), collated systematically with New York, Columbia University, Plimpton 156 (from before 1261 and possibly a gift from Campanus to the Patriarch of Jerusalem) and with the earliest printed edition (Venice, Erhard Ratdolt, 1482). Eight other manuscripts from the thirteenth (in three cases, possibly the fourteenth) century have been consulted less systematically (in total, 131 manuscripts are known). The notes reveal that Busard has also controlled the printed Paris edition from 1516, which combines the Campanus text with Bartholomeo Zamberti's translation from an (inferior) Greek manuscript.

The edition itself covers 478 pages, the critical apparatus 146. The edition is preceded in vol. I by an introduction of 52 pages, and the critical apparatus in vol. II by 80 pages "Notes and commentaries" and 8 pages bibliography.

40 pages of the introduction are taken up by presentation of the complete set of Greco-Latin and Arabo-Latin translations of the *Elements*, starting briefly by that of Boethius and the Verona- and the ninth-century fragments but concentrating on the twelfth- and thirteenth-century versions – thus not only on Campanus. All questions of date, authorship and mutual relations are discussed together with the character of the single versions, as are the influence of other works on the various redactions as well as use of them in later writings. Obviously much of this draws (at times verbatim) on the author's earlier editions of the single texts, but having it all drawn together from the vantage point of the completed project is very useful; some arguments of importance are also new.

What is said about the Campanus version is obviously not drawn from earlier editions; but it confirms and expands the analysis made by John E. Murdoch and others concerning the didactical adaptation of the work. Close attention is given to the influence of Jordanus's *Arithmetica* and Johannes de Tinemue's redaction ("Adelard III"), both documented beyond any doubt, and to the probable influence of the Greco-Latin translation and the al-Nayrīzī's commentary as translated by Gherardo da Cremona.

Next follows a section "The Man and his Works", providing in 10 lines the barest biographical facts and then discussing in precise detail the arguments favouring Campanus's responsibility for redactions of Theodosios's and Menelaos's *Sphaerica*, of Aḥmad ibn Yūsuf's *De proportione et proportionalitate* and of the anonymous *De figura sectore*, and for additions to a number of manuscripts of Jordanus's *Arithmetica*. Campanus's involvement in a *Quadratura circuli* ascribed to him by Albertus Saxonus is rejected.

The "Notes and Commentaries" in volume II analyze the relations of a large number of propositions (an abundant half of all) and definitions to the corresponding propositions etc. in other medieval redactions of the *Elements* and to al-Nayrīzī's commentary (at times also to other works belonging to the Latin, Arabo-Latin or Arabic traditions). In cases where Campanus innovates radically (e.g., in his discussion of the non-Archimedean character of horn angles in an addition to III.15), the innovation itself is also taken up together with its further impact.

Some ten years ago the present reviewer asked Busard, who had then begun the work on "Adelard III", whether he intended to take up Campanus after that. Busard's answer was no, he saw no reason – the Campanus edition was already available in sixteenth-century print. Everybody interested in medieval Latin science should be grateful that he changed his mind.

Jens Høyrup