

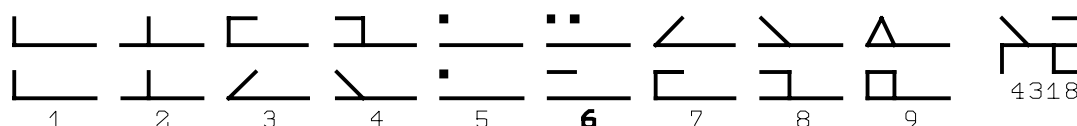
David A. King. *The Ciphers of the Monks. A Forgotten Number-Notation of the Middle Ages.* (Boethius, 44). Stuttgart: Franz Steiner, 2001. 506 pp. ISBN 3-515-07640-9.

At some moment in the earlier thirteenth century, John of Basingstoke introduced a notation for numbers between 1 and 99 based on a vertical stem provided with an appendage to the left (representing units) and another to the right (tens):



According to the Matthew Paris's *Chronica maiora*, he had learned these from a young girl Constantina from Athens, depicted (as far as her learning is concerned) as a Greek Héloïse. However, no such notation for numbers is known from neither ancient nor medieval Greece/Byzantium. What can be found are shorthand notations for letters using a similar principle – but even more similar is a shorthand described in a letter from the later twelfth century, written perhaps by John of Tilbury.

Basingstoke's ciphers are used for a variety of purposes in a late-thirteenth-century English Cistercian manuscript, along with Roman and Hindu-Arabic numerals. At the same time a similar system with quite a few variants turns up in Continental Cistercian manuscripts. It makes use of a horizontal stem, and appendages are added to the left (units above, tens below the stem) or to the right (for instance hundreds above, thousands below), and was primarily employed for indexing purposes, where its compactness was a great advantage. Two variants look as follows



In the following centuries divers variants of the system (some with a vertical stem) turn up in various manuscripts, often being just listed without being used; in one fifteenth-century manuscript containing astronomical tables the year numbers are written in such ciphers, being thereby clearly distinct from the remaining numbers. The ciphers are also used on an astrolabe from fourteenth-century Picardy. In the fifteenth century they were adopted by wine-gaugers in Flanders, where they remained in use at least until the early eighteenth century.

In 1533, Agrippa von Nettesheym included a description of a “vertical” variant of the ciphers in a chapter “De notis Hebraeorum et Chaldaeorum ...” of his *Occult Philosophy*, stating that he had seen them in two old astrological and magical books. From then on and until the nineteenth century, the ciphers when occasionally remembered were remembered as “Chaldaean”. In early twentieth-century Germany they turned Runic and Aryan.

This whole story is told by David King in the book under review, with detailed descriptions of all systems and variants and of all manuscripts and artefacts where they occur; he also treats the various code scripts that were constructed on the basis

of the ciphers over the centuries, as well as a number of notations that present accidental similarities with the ciphers. As King himself points out, most of the material has been described and discussed by Bernhard Bischoff, Guy Beaujouan, Jacques Sesiano and others (the chief exception being the astrolabe, whose discovery indeed spurred King's work), but the present synthesis may be said to have transformed the topic into a piece of solid *history*.

It might therefore astonish that King presents the book as "an idiosyncratic work, the account of a very personal journey of an antiquarian through some obscure episodes in Europe's intellectual history" (p. 272). But this is actually a most apt description. On many points the reviewer got the feeling of having in front of him a twentieth-century descendant of Athanasius Kircher; King not only leaves the main argument in long passages that instead pursue interesting tangential curves, he also follows "second-" and "third-order" tangents when these are interesting in themselves (in part within the main text, in part in the 160 pages' appendices). The ciphers on the astrolabe thus lead to investigation of the identity of Paschasius Berselius, a monk and humanist born in Liège who according to an inscription donated this astrolabe in 1522, and of Hadrianus Amerotius, also a humanist and born in Soissons, who received it; in addition, it makes King include extensive appendices on medieval astronomy and astrolabes, together with an appendix that describes a Virgin that belonged to Berselius and was perhaps decorated by him, and even tells us about the sculptor from Ulm who made the piece. As stated in the preface (p. 19), the book is meant "for a general reader, albeit one who is prepared to read about one medieval manuscript and Renaissance book after another, and one who likes foreign languages. So this book is not written specifically for medievalists, and neither is it written for historians of mathematics. Indeed I hope that it might be of interest to people who are not historians at all".

All these tours and detours are lavishly provided with footnotes, most of which are small (or not so small) annotated bibliographies for the single points (for the biography of the sculptor just mentioned we get 9 references, with two more for an altar he is known to have made, all in 8 lines). Whoever gets interested in one of the many points touched at will thus know where to start further work. "General bibliographical notes" are given in a six-page appendix.

Evidently, a book with such ample scope contains some of those errors that have somehow entered the scholarly tradition and which we all repeat in good faith (a type of error for which King chides his fellow-historians repeatedly). The reviewer thus noticed that Saxo Grammaticus's *Gesta danorum* is supposed (p. 207) to have been "composed in the latter (sic) half of the 13th century"; it antedates 1219. On p. 315 it is stated that arithmetic was still taught (in Florence in 1295) by means of the abacus; actually, the Italian "abacus schools" of the epoch taught computation with Hindu-Arabic numerals, *abbaco* meaning simply "computation".

A footnote on p. 19 relates the difficulties of computer composition, moving the manuscript in progress through several generations of expiring and non-compatible Macintosh programs. These difficulties may explain some minor infelicities in the

structure of the book – for instance:

- p. 188, n. 35, is a cross-reference to n. III.26, which however is merely another cross-reference (to the rather irrelevant n. I.11). Actually it should have referred to “text above n. III.26”.
- p. 316, n. 13 contains cross-references to nn. II.29 and II.39 – but n. II.39 is a mere cross-reference to n. II.29 and to the actual note.
- on p. 237, the beginning of Ch. 7 refers to the topic of Ch. 5 as immediately preceding (“these early printed books”).
- on p. 255, a reference to Fig. VI.11.5 should be to Fig. VI.11.4a, Fig. VI.11.6 should be Fig. VI.11.4b.
- between pp. 267 and 268, some words are missing.

Other similar slips could be listed, but on the whole the text is well made. The volume is plentifully and well illustrated and provided with indexes of instruments and manuscripts cited, with a 60 pages’ bibliography, and with brief indexes of topics and modern authors. Technically (printing, artwork, binding), the book is blameless.

Jens Høyrup

Section for Philosophy and Science Studies

Roskilde University

P.O. Box 260

DK-4000 Roskilde

Denmark

jensh@ruc.dk