

MR1698404 (2000j:01009) 01A16

Clagett, Marshall (1-IASP)

★ **Ancient Egyptian science: a source book. Vol. 3.**

Ancient Egyptian mathematics.

Memoirs of the American Philosophical Society, 232.

American Philosophical Society, Philadelphia, PA, 1999. xii+462 pp. \$30.00.

ISBN 0-87169-232-5

This third volume of Marshall Clagett's *Ancient Egyptian science* is dedicated to the mathematics of the Pharaonic period, mostly to that of the second millennium BCE. Ancient Egyptian medicine and biology and the Egyptian ways to represent nature (including the rather mathematical use of square grids and proportion) have been postponed to a forthcoming volume.

This volume consists of four parts. Part I is a general discussion of the topic, whereas Part II consists of the major sources in Clagett's own translation (as in previous volumes, always made with an eye to the best extant translations, but at least adjusted in the interest of consistency). Part III contains the bibliography together with an index of Egyptian (more or less) technical terminology and another index of names and subjects; Part IV consists of illustrations which, as in earlier volumes, also encompass facsimile reproductions of sources, hieroglyphic transcriptions of these, and excerpts from earlier secondary literature on the topic.

Beyond the source material and the author's own interpretations (always well argued), the volume gives a very full presentation of the opinions and reasoning of earlier authors, from founding fathers like Lepsius, Eisenlohr, Griffith, Hultsch and Borchardt, over Sethe, Peet, Neugebauer, Gillings and many others, to those of the latest decade (Couchoud, Caveing, Guillemot, Ritter). Apart from presenting a fine overview of the history of the historiography of the field, it also serves the purpose of leaving ultimate judgement to readers while providing them with all available tools for informed decision.

Part I starts by summing up what can be concluded from Early Dynastic and Old Kingdom documents and practices about counting and measurement during these epochs, emphasizing also how little can actually be known. In contrast to what can be found even in serious Egyptological work (but in full agreement with Clagett's truly historical approach in preceding volumes), no claim is made that the mathematics of the second millennium must already have been present during the Old Kingdom simply because this is regarded as "the Golden Age of Egyptian knowledge and wisdom" (p. 6). Almost 95% of general discussion is therefore dedicated to the mathematics of the second millennium, from metrology and tables, over basic concepts and arithmetical techniques, to particular arithmetical and geometrical problem types. The Demotic period is not discussed (R. A. Parker's *Demotic mathematical papyri* [Brown Univ. Press, Providence, RI, 1972; Zbl 283.01001] renders it superfluous, and it is anyhow not central to Clagett's project), and the 7th–8th-c. CE Akhmîm papyrus is only referred to in a comparative note.

The sources presented in Part II are the following: the Rhind mathematical papyrus; the Moscow mathematical papyrus; the Kahun mathematical fragments; the Berlin papyrus 6619; the math-

emational leather roll; and, as a representative of the application of mathematical techniques in real-life scribal accounting, Sections G–I from Reisner papyrus I.

The translation of the Rhind papyrus follows Chace’s literal translation from 1929 closely; Chace’s corresponding hieratic text and hieroglyphic and phonetic transcriptions are rendered in full in Part IV (readers who are not strongly myopic may nevertheless need a magnifying glass: for understandable economic reasons, Chace’s large plates are strongly reduced); Struve’s entire hieratic text and hieroglyphic transcription of the Moscow papyrus are also reproduced; so are the texts and published transcriptions of the remaining smaller documents.

Even though the volume is not intended to displace preceding publications—often the reader is invited to take advantage of their discussions—it will provide anyone interested in ancient Egyptian mathematics with a very convenient vade mecum, and it may guide readers taking up the topic for the first time along a significant part of the route.

{Volume II has been reviewed [[MR1332718 \(96i:01007\)](#)].}

Reviewed by *Jens Høyrup*

© *Copyright American Mathematical Society 2000, 2007*