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Science and Mathematics in ancient Greek culture. Selected papers of the conference on 'Science Matters: the role and achievement of science in Greek antiquity', Liverpool, UK, July 1996. With a foreword by Lewis Wolpert. (English)

Oxford: Oxford University Press. xvi, 379 p. £ 50.00 (2002).

The articles of this volume will not be reviewed individually.

The volume contains in total 17 articles treating of various aspects of Greek exact and natural science, all well written and well argued and all innovative or surveying recent development. Some are concerned with the history of mathematics proper, others with topics belonging within the range of the quadrivium, others finally with topics that have little to do with mathematics.

Mathematics proper is dealt with by (1) Reviel Netz, whose "Greek mathematicians: a group picture" argues that the total number of "mathematicians" throughout Antiquity – defined as those who at least once made a mathematical proof – may have been around 1000, and that comprehension of even basic theoretical mathematics did not reach far beyond those familiar with Aristotelian and Platonist philosophy; (2) Edward Hussey, whose "Aristotle and Mathematics" argues that mathematics was seen by Aristotle as providing "fundamental limitations on the structure of the natural world", for instance through the structure of the continuum, and that Aristotle was thus moving toward (but not constructing) a mathematical physics; (3) Marinus Taisbak, whose "Euclid's *Elements* 9.14 and the Fundamental Theorem of Arithmetic" analyzes why an extension of this proposition (the smallest number measured by some primes $p_1, \ldots, p_n$ is not measured by any other prime) was not obvious from the perspective of Greek arithmetic.

Other topics belonging within the range of the quadrivium and related areas are treated by (1) Andrew Barker, whose "Words for Sounds" treats the impact of the general-language connotations of technical terminology for pitch on acoustical theory; (2) John Lennart Berggren, whose "Ptolemy's Maps as an Introduction to Ancient Science" discusses the pedagogical opportunities offered by these maps; (3) Alan C. Bowen, whose "The Art of the Commander and the Emergence of Predictive Astronomy" suggests that the ability of planetary astronomy to predict eclipses precisely was a literary topos (produced by Cicero and Livy through transformation of Polybius) well before it was made a reality; (4) Robert Hannah, whose "Euctemon's *Parapēgma*" suggests that this stellar calendar was not yet based on zodiacal stars; (5) Liba Taub, whose "Instruments of Alexandrian Astronomy: The Uses of the Equinoctial Rings" describes this instrument, its lack of precision (which Ptolemy pointed out) and its possible uses; (6) J. J. Coulton, whose "The Dioptra of Hero of Alexandria" shows that this instrument was *not* an equivalent of a theodolite, that it was sometimes less adequate than the *groma* and indeed more suited for astronomical purposes than for surveying (whose practicalities Hero did not take much into account, writing rather for *dilettanti* of mechanical intricacy than for practitioners); (7) Serafina Cuomo, whose "The Machine and the City: Hero of Alexandria's *Belopoeica*" discusses the aim of this treatise on (somewhat outdated) war machines in a similar vein.

Other aspects of ancient science are treated by T. E. Rihl ("Introduction: Greek science in Context"); Harry M. Hine ("Seismology and Vulcanology in Antiquity?"); Vivian Nutton ("Ancient Medicine: Aclepius Transformed"); Teun Tieleman ("Galen on the Seat of the Intellect: Anatomical Experiment and Philosophical Tradition"); T. E. Rihll and J. V. Tucker ("Practice Makes Perfect: Knowledge of Materials in Ancient Athens"); and C. Anne Wilson ("Distilling, Sublimation, and the Four Elements: The aims and Achievements of the Earliest Greek Chemists").

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