

EDITORIAL

This issue of the *Revue d'histoire des mathématiques* introduces a slight editorial change. In order to improve the reception of our journal in the English-speaking world, we have added an English subtitle, *Journal for the History of Mathematics*, on the flyleaf, while the official title on the cover will remain unchanged. Moreover, we wish to offer our non-French-speaking readers an English version of the editorial. We hope that this will help to make better known the papers published in French in our journal. It strikes us as important that French-speaking historians of mathematics have the opportunity to express themselves in their own language – with all the nuances that only the mother tongue allows. At the same time, it is equally important that exercising this option neither penalize nor marginalize them within the scientific community. The *Revue d'histoire des mathématiques* stands ready to address this issue.

Leafing through the pages of this issue beyond the bilingual editorial, the reader will discover a wide range of themes: surveying in ancient Mesopotamia; the literary genre of the question, peculiar to the medieval universities, applied to a geometrical problem; the calculation of life annuities in eighteenth-century France; and a discussion of the best way to characterize mathematical texts from late antiquity.

The first paper in this issue, written with great didactic skill by Jacques Quillien, contributes to a better understanding of two, third millennium cuneiform tablets. On one side, each tablet bears irregular geometrical shapes describing a field, the area of which was calculated by the scribe. Taking François Thureau-Dangin's analysis of one of the tablets as his point of departure, Quillien systematizes and completes the analysis in order to give his own reading and interpretation of the inscriptions. He offers, in particular, an ingenious reconstruction of the calculations purportedly done by the scribe. Quillien's geometrical interpretation accounts for the notational particularities of the inscriptions and thus lends much plausibility to his reconstruction. Applied to a quadrilateral, the calculation is equivalent to a well-known rule that was diffused throughout Mesopotamia, the surveyor's rule. This fact increases even further the plausibility of Quillien's reconstruction. Quillien's study concerns a history that has largely been lost to us, but his analysis shows that a careful

examination – mobilizing the mathematical knowledge of the surveyor – of the surviving material traces permits the reconstruction of a procedure more than four thousand years old.

The next paper in this issue focuses on a medieval commentary, a prime example of what has been called a “deuteronomic text” and engages in a methodological debate that has taken place in our section *Notes & Debates*. The debate started with a paper by Reviel Netz², who coined the expression “deuteronomic texts” for mathematical texts of late antiquity that are fundamentally dependent on another text, like those of Pappus, Proclus or Eutocius with their numerous passages from older texts and associated commentaries, reformulations, completions, etc.

In his note in this issue, Alain Bernard takes up the question of the best characterization of such texts. He explores it alternately on two levels: the reading of texts dating from the first centuries and the critical scrutiny of the more general historiography concerning late antiquity. He begins by undermining the negative judgment of such texts often found in the latter. The notion of decline militates against studying mathematical texts from this period on their own terms. Indeed, they have generally been read with an eye toward collecting information on even older classical texts. The usual reading of the *Mathematical Collection* by Pappus, as a source of information on prior mathematics, is a typical example of such an approach. In his note, Bernard stresses the importance both of analyzing texts from this period in context and of examining the actual conditions in which their authors were working. They were Roman citizens of Greek culture, who tried to maintain the latter culture. Using examples taken from his own research, Bernard emphasizes the rhetorical practices, which are of paramount importance in this particular context. In his view, these practices merit attention in order not to mistake the aims particular to the texts under consideration. Taking into account the categories developed by Greek rhetoricians also alters how mathematical works of late antiquity are judged. When analyzed via these categories, these texts appear to have produced a form of mathematical invention based on the idea of variation.

Edmond Mazet also pays close attention to rhetorical context in his contribution on the medieval *Questions on Euclid's Elements* (circa

² Reviel Netz, Deuteronomic Texts: Late Antiquity and the History of Mathematics, *Revue d'histoire des mathématiques*, 4(1998), p. 261-288.

1350) in the present issue. These *Questions* have been discussed in the framework of Nicole Oresme's teaching at the University of Paris, but Mazet links them further with the literary genre of the question, which Oresme adapted to the study of mathematical problems. Mazet thus puts Oresme's questions in the context of Aristotelian commentaries, of which the question is a particular form. This allows him to uncover the physical background common to the first two questions, to establish the links between them, and to highlight the originality of Oresme's results. Indeed, while the first two questions are celebrated today for containing a "theory of series", Mazet shows that they are, in fact, an in-depth study of the two Aristotelian notions of "the infinite by division" and "the infinite by addition". The second question is a translation of the first in terms of the infinite by addition. In what Mazet qualifies as the "mathematical core" of the second question, Oresme considers geometrical series – if by series one understands not a mathematical object, but a mental procedure consisting of adding a new magnitude to one already obtained – and establishes the formula for the sum of a convergent geometrical series as well as the divergence of the harmonic series. In his interpretation, Mazet goes much further than his predecessors, notably John Murdoch, in claiming the greatest generality for the results obtained. He also offers an important methodological lesson by explaining in detail the choices he was forced to make to translate – or not to translate – into modern terms some of the medieval formulations of the problems, in order never to misrepresent the approach of the medieval commentators.

Yuri Biondi, the author of the last paper in this issue, makes the opposite choice and adopts deliberately a comparative and somewhat anachronistic point of view. The mathematical field to which his contribution belongs, financial mathematics, is not well represented in a journal like this one. Equally little known is the text on which his paper is based, *Recherches sur les rentes* (1787) by Emmanuel-Étienne Du villard, which can be situated in Condorcet's tradition of "social mathematics". Instead of studying the genealogy of this text, Biondi prefers to compare Du villard's approach to analogous techniques of modern financial analysis. Indeed, one can find in Du villard's calculations mathematical methods developed by twentieth-century authors. These calculations have however been misunderstood by authors who failed to take into account the intel-

lectual and financial context, in which Duvillard worked. Concerned by State loans from an academic and administrative perspective, Duvillard developed a logic of financial optimization without any reference to the market and its prize formation. This paper also offers an opportunity to publish some extracts of previously unpublished letters illustrating the relations between Duvillard and Charles Bonnet, who introduced him to the Paris Academy of Sciences. They document in a straightforward manner the role played by personal relations in the evaluation of scientific memoirs inside the Academy.

The Editors-in-Chief