statements about "the cuneiform intellectual world" inevitably flatten out local and temporal variation. Yet Rochberg's formidable command of ancient sources and modern theoretical literature yields convincing arguments for specific continuities and discontinuities, shedding new light on the conceptual frameworks of Mesopotamian scholarship. Highlights include the case for the rationality of analogical reasoning (pp. 140–163); the demonstration that formal similarities between "if P, then Q" statements in Mesopotamian omens and Stoic philosophical texts conceal a deeper disparity in the conceptual connection between P and Q (divine agency versus mechanistic causation; pp. 169–176); and the analysis of omen divination in terms of intuitive prediction (pp. 235–237).

Before Nature is at once an innovative analysis of the intellectual output of a specific culture and a thought-provoking take on a perennial question: How can we approach the knowledge traditions of societies that conceive of the world in a fundamentally different way from ourselves? Its nuanced exploration of "how to understand cuneiform knowledge in relation to science without recourse to later ideas of nature" (p. 2) leaves all three looking different. As such, it will be important reading not only for specialists in ancient scholarship but for all intellectual historians.

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Jean-Michel Delire. *Les mathématiques de l'autel védique: Le* Baudhāyana Śulbasūtra *et son commentaire* Śulbadīpikā. (Hautes Études Orientales—Extrême-Orient, 15.) xiv + 626 pp., figs., bibl., indexes. Geneva: Librairie Droz, 2016. €100.23 (paper).

The Belgian historian of mathematics Jean-Michel Delire's *Les mathématiques de l'autel védique: Le* Baudhāyana Śulbasūtra *et son commentaire* Śulbadīpikā, the result of two decades of research, is a landmark publication in the history of mathematics in ancient India, especially its still little-explored preclassical era, conventionally stretching from the late Vedic period to the celebrated Āryabhaṭa (ca. 500 C.E.). The *Śulbasūtras*—literally, collections of aphoristic formulas (*sūtra*) on the science of cords or threads (*śulba*)—are India's earliest extant texts of mathematics and deal specifically with the geometry behind the construction of fire altars with bricks of various shapes (square, triangular, trapezoidal, etc.). The procedures follow certain constraining norms, such as the need to maintain a given surface area for the altar even as its shape may change: it may be a simple square or a circle, a triangle, a tortoise, a falcon, a chariot, and so forth. Such constraints lead to intricate mathematical transformations of one figure into another, which laid the foundations of Indian geometry. Unexpectedly, therefore, the Vedic philosophy and practice of sacrifice, as an essential component of a purposeful human life, had profound implications for the development of mathematics in India. Delire's discussion of the Vedic philosophy of sacrifice is brief and to the point but may be supplemented, especially for Francophone readers, by Olivier Keller's treatment in *Archéologie de la géométrie* (Vuibert, 2006).

There are four principal *Śulbasūtra* texts, estimated to date back to the sixth to eighth centuries B.C.E. The most important one, by Baudhāyana, is the object of Delire's work, accompanied by *Śulbadīpikā*, a commentary by Dvārakānātha, a scholar of the medieval era, which throws much light on the terse original and shows sustained interest in these geometric procedures even after some two millennia.

Part 2 of the book, 320 pages long, consists of a new critical edition of the two texts together, with the French translation followed by the original Sanskrit. This edition is based on up to thirteen manuscripts, many more than previous editions of the work have used, in particular that edited by S. N. Sen and A. K.

Bag (Indian National Science Academy, 1983). Delire's meticulous edition and translation, enriched by Dvārakānātha's *Śulbadīpikā*, displays impeccable scholarship and will no doubt become the new standard.

The book's first part, leaving aside a chapter detailing the manuscripts obtained and collated, is a 160-page discussion on the nature and properties of the fire altars, the geometrical procedures involved in their construction, the linear units used to measure them (and their bricks) out, and the mathematical implications of those procedures. In a long discussion on the so-called Pythagoras theorem, which Baudhāyana expressed differently (as the property of the diagonal of a rectangle rather than the hypotenuse of a right-angled triangle), both with specific dimensions and in a general formulation, Delire makes a praiseworthy attempt to grasp the *Śulbasūtras* on their own terms rather than through the prism of either Greek or modern approaches. It is clear that the very concept of a "theorem" was not part of the early Indian geometers' approach, as they were interested in effective methods and procedures rather than conceptual frameworks. Let us keep in mind, however, that the *Śulbasūtras* are essentially collections of *procedures and results*, not discussions on how those were worked out, much less demonstrations of "theorems."

Detailed calculations applied to the various shapes of altars follow, involving, among others, the transformation of a square into a circle, a rectangle, and a lozenge—and often vice versa. Those procedures are intricate but can be followed with no more than elementary maths, provided one is willing, again, momentarily to put aside current methods and approaches, especially of the Euclidian kind.

Delire refers briefly to the U.S. historian of science Abraham Seidenberg's study of the *Śulbasūtra* geometry but refrains from commenting on his observation, in a much-quoted 1977 paper ("The Origins of Mathematics"), that "a common source for the Pythagorean and Vedic mathematics is to be sought either in the Vedic mathematics or in an older mathematics very much like it. . . . I think [this older] mathematics was very much like what we see in the Śulvasūtras." Seidenberg argued that this older mathematics could not be more recent than about 1700 B.C.E. Given Delire's suggestions of antecedents of the *Śulbasūtra* geometry in the Indus civilization and his mention of astronomical configurations traceable to the same period (they were used in several Vedic texts for the determination of the eastern point and the east–west axis, the main orientation of the fire altars), it is tempting to suggest that Seidenberg's insight might have been taken further.

A useful addition to the book's already extensive critical apparatus would have been a glossary of technical Sanskrit terms. An English translation of Delire's book is an urgent necessity so as to bring it to the attention of the wider scholarly world.

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Joyce van Leeuwen. *The Aristotelian* Mechanics: *Text and Diagrams*. (Boston Studies in the Philosophy and History of Science, 316.) ix + 253 pp., figs., app. Cham, Switzerland: Springer, 2016. $129 (cloth).

The last twenty years have witnessed a renewal of interest in a text attributed for most of its history to Aristotle—namely, the *Mechanics* or *Mechanical Problems*. Joyce van Leeuwen's book is an analysis of the manuscript and print tradition of the *Mechanics*. The author offers guidance and caution concerning what should be included or omitted in a new critical edition of the Greek text. This book is not itself that edition. While its subject may sound dry, in fact the book is a good read for any graduate student dealing with variant readings of texts with a long manuscript or print history. It is a case study that makes transparent the discernment and inference involved in establishing a text, which is always a bit like detective work.