



CHICAGO JOURNALS



History
of
Science
Society

Patricia F. O'Grady: *Thales of Miletus: The Beginnings of Western Science and Philosophy*
Thales of Miletus: The Beginnings of Western Science and Philosophy by Patricia F. O'Grady
Review by: rev. by David Sherry
Isis, Vol. 96, No. 1 (March 2005), p. 103
Published by: [The University of Chicago Press](http://www.uchicago.edu) on behalf of [The History of Science Society](http://www.historyofscience.org)
Stable URL: <http://www.jstor.org/stable/10.1086/432987>
Accessed: 14/09/2015 17:33

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at
<http://www.jstor.org/page/info/about/policies/terms.jsp>

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.



The University of Chicago Press and The History of Science Society are collaborating with JSTOR to digitize, preserve and extend access to Isis.

<http://www.jstor.org>

suit that does not fit. It is also far more interesting.

JULIUS ROCCA

Patricia F. O'Grady. *Thales of Miletus: The Beginnings of Western Science and Philosophy.* (Western Philosophy Series, 58.) xxii + 310 pp., bibl., indexes. Burlington, Vt.: Ashgate, 2002. \$84.95 (cloth).

According to Aristotle, Thales was the first philosopher, the first to consider questions of metaphysics. According to Kant, Thales put mathematics on the sure path of science when he proved the equality of the base angles of an isosceles triangle. According to Patricia F. O'Grady, Thales accomplished even more—he was also the first Western scientist (p. 2). This claim is controversial enough (e.g., Kant disagrees) to merit attention from historians and philosophers of science. O'Grady's case is not entirely convincing, but this is unsurprising for a project that demands mastery of classics, ancient history, ancient philosophy, and history and philosophy of science. Experts from these disciplines will find that O'Grady misses certain subtleties. Yet her book will be interesting to anyone studying the emergence of scientific thought.

Chapter 1 lays out the book's plan. Two discusses the sources for our knowledge of Thales, contending that commentators probably had access to Thales' own writings. Three argues that Aristotle was correct to write, "Thales . . . says that the principle is water." However, Aristotle "probably misunderstood the problems which motivated Thales" (p. 41). Four supports this claim by criticizing Aristotle's account of the reasons for Thales' "watery thesis." Aristotle failed to appreciate the traditional cyclic theory of change, whereby "water is seen to be the causal agent which brings about all change" (p. 45). This chapter is filled with examples that illustrate (the author says "justify") the cycle (e.g., metal being transformed to a molten state). But the fundamental character of water, in contrast to that of air or earth, is never established. The cycle might as well begin and end with air as with water; that, of course, is Anaximenes' idea.

Five argues that Thales was not influenced by mythology and rejected any appeal to the divine. Exactly why he rejected theological explanations was not made clear, though it is crucial to the emergence of scientific thought. O'Grady observes that Thales was a practical man, and I hoped she might pursue this as a

reason for abandoning the gods. Six discusses physical hypotheses attributed to Thales (e.g., the earth rests on water). O'Grady does her best to make them seem plausible. Seven considers a thorny issue—water's being transformed into various states by an inherent force. Forces may not be gods, but, at least before it's been measured, a force has no explanatory advantage over a god. Moreover, forces lack instrumental advantage, since they can't be implored. O'Grady addresses this problem, but her treatment is question begging: "Although the power in neither the lodestone nor amber is observable, the result of the hidden force is readily perceivable" (pp. 240–241).

Eight provides the best glimpse of Thales' mind by discussing his investigations of eclipses, solstices, the calendar, and the sizes of sun and moon. O'Grady argues, convincingly, that Thales' eclipse prediction was based on a lunar-solar eclipse cycle of 23.5 months rather than a Saros cycle. Nine considers and rejects the story that Thales' engineering genius helped an army to cross the Halys. Ten defends Thales as the inventor of mathematical proof, a view I have criticized (D. Sherry. "Thales' Sure Path," *Studies in History and Philosophy of Science*, 1999, 31:621–650). The author fails to consider Seidenberg's work on ritual peg and cord (i.e., ruler and compass) constructions in the Indus River Valley circa 3000 BC (A. Seidenberg, "The Ritual Origins of Geometry," *Archive for History of Exact Science*, 1962, 1:488–527). One such ritual consists in constructing a square altar equal in area to a given rectangular one. This construction is, of course, the culmination of *Elements* I–II.

Eleven argues that Thales' was scientific because his watery thesis was falsified by Lavoisier in 1769 (p. 232). The experiment involved distilled water, heated over a long period of time and weighed. Invariance in the water's weight refutes the thesis that water can be transformed into earth. O'Grady doesn't explain why transformability entails a change in the water's weight. Aside from this, the alleged falsification conflicts with an earlier observation:

the ancient concept of water was quite different from a modern view. Water is now generally comprehended only as liquid that falls as rain . . . but there is another 'kind of water', a fusile kind. (p. 59)

The fact that "fusile kind" refers to molten metal (p. 60) undermines the relevance of Lavoisier's experiment.

DAVID SHERRY