

Bryn Mawr Classical Review

[BMCR 2025.02.19](#)

Natàlia Alonso, T. J. Anderson, Luc Jaccotey, *Querns and mills in Mediterranean antiquity. Tradition and innovation during the first millennium BC*. DAN@, 12. Pessac: Ausonius Éditions, 2023. Pp. 158. ISBN 9782356135421.

Review by Jared T. Benton, Old Dominion University. jtenton@odu.edu

[Open access](#)

[Authors and titles listed at the end of the review]

Querns and Mills in Mediterranean Antiquity (hereafter *QMMMA*) is the publication of an EAA (European Association of Archaeologists) session on querns held in Barcelona in 2018. The purpose of the session—and by extension the volume—was to fill a gap by studying the smaller, hand-operated millstones, which have received less attention than their larger Roman-era and medieval counterparts. A second aim was to begin a conversation about standardizing the study of millstones, and particularly querns, in terminology and methodology

The study of ancient millstones is an acquired taste. Millstone morphologies and typologies don't titillate every reader. The technical descriptions of rock compositions and images of thin sections can be an impediment for readers. It should probably come as no surprise that the sub-discipline's traditional heroes don't always gain high name recognition, but as an area of study it is remarkably well-developed and deserves more attention than it gets. It has come a long way from L.A. Moritz's (1958) initial foray into technological innovation in millstone morphology. Molinologists, a term introduced to me by *QMMMA*, are always trying to bridge the gap between dense datasets and higher-level questions about society, history, and the lived experiences of ancient peoples. For instance, O. Williams-Thorpe and R.S. Thorpe (1990) used petrology and sourcing of millstones from the shipwreck at el Sec to reconstruct the ship's route. Rafael Frankel (2003) speculated that that cultural exchange on the island of Sicily might have spurred new technologies. The 2011 volume *Bread for the People*, edited by David Williams and the late David Peacock, expanded the conversation beyond petrology and morphology into the intersections of molinology and other areas of the human experience, from foodways to collective identities. Since then, a great number of studies have tried to explore how milling affected the lives of ancient people. Natàlia Alonso (2015) has argued that Greeks long resisted adopting the rotary quern because it was an Iberian innovation. Vladimír Sládek et al. (2016) paralleled the innovation of the rotary quern with an increase in bilateral asymmetry in female skeletal remains. *QMMMA* is a worthy successor in this shift toward exploring how milling technologies were intertwined with social and cultural processes; each author deploys solid methods, creates robust datasets, and admirably seeks to make that data relevant to our understanding of past realities.

The food that these mills processed were the staple of the ancient diet in almost every corner of the Mediterranean world and in almost every period. Innovations highlighted in this volume not only increased productivity, but they also improved the quality of lives. The volume represents an important step in exploring early Iron-Age innovation in millstone morphology, but especially the transition from traditional saddle querns to more efficient rotary mills, emphasizing the technological innovations and their socio-economic impacts from the Neolithic through to the Iron Age. As Dominique Garcia, a protohistorical archaeologist perhaps best known for his work on Celtic or Gallic communities on the pre-Roman Mediterranean, points out in the foreword, the productivity that rotary mills offered fueled urbanization. Notable also in Garcia's foreword is a heartfelt homage to his colleague Marie-Claire Amouretti, who could be considered one of the mothers of Mediterranean foodways studies, fitting for this volume. Similarly, throughout the volume are references and tributes to David Peacock, whose fingerprints are evident in every molinological study.

QMMMA is organized into three sections: Central and Eastern Mediterranean, Western Mediterranean, and Methodology. The three studies addressing the Central and Eastern Mediterranean focus on Greece and Israel. The four studies in the Western Mediterranean address querns and mills from France and Spain. Finally, one chapter at the end explores methodological approaches to data management, presenting a model for data standardization and compilation.

Section One considers new work from Central (Greece) and Eastern (Israel) Mediterranean areas. In Chapter One Sophie Duchêne identifies non-local volcanic rocks among millstones found at the ancient mining town of Thorikos, using macroscopic analysis of 40 artifacts. She posits extensive trade networks and deliberate selection of materials for their superior grinding properties. David Eitam, in Chapter Two, explores the transition in Israel from traditional to-and-fro motion querns to more advanced rotary querns introduced during the Hellenistic period. Eitam highlights local production, noting a preference for local sources in a wide variety of stones. In a similar vein, Aaron Greener, Ron E. Tappy, and Danny Rosenberg analyze 107 grinding stones and other stone tools from the site of Tel Zayit, which is associated with the Iron Age II period (10th to 7th centuries BCE) in Israel. They found that most of the tools were made from very local stones, in particular beachrock, which is less durable and leaves grit in flour. Greener et al. also note that a significant portion of the tools were made from basalt from far-away outcrops, but the advantages of this material made its costly transport worthwhile.

Section Two primarily concerns querns from southern France and northeastern Spain. Authors Luc Jaccotey and Sylvie Cousseran-Néré trace the evolution of milling technologies from hand mills to hopper rubbers and rotary querns at the Greek colony of Olbia in the centuries before Roman occupation. Perhaps their most interesting discovery is that the Greek population of Olbia resisted adopting rotary querns, which they posit might be explained from "a cultural standpoint, more specifically, along the lines of cultural identity" (84). In a similar study the same authors, joined by Tatjana Gluhak, Isabelle Daveau, and Éric Gailledrat, examine the progression of grinding tools in two significant coastal settlements in southern France, La Cougourlude and Lattara, at an early period, from the 7th through the 4th centuries BCE. Notably, they find that the mills of Cougourlude were made from local stones exclusively, but at Lattara, which had been founded by Etruscans, the mills were at least initially imported from Italy. After the "destruction of the Etruscan phase" (107), local stones and types were reintroduced and then replaced with imported mills of largely Greek origin.

Moving to the Iberian peninsula for Chapter Six, Natàlia Alonso, Luc Jaccotey, Daniel López, Alba Castellano, and Tatjana Gluhak examine the evolution of to-and-fro milling technologies at the Fortress of Els Vilars and Turó de la Font de la Canya. They study the various technological innovations that foreshadowed the invention of the rotary quern and the hopper rubber in the middle of the first millennium BCE. In particular, they highlight the evidence that the rotary mill was probably as "a fully indigenous phenomenon" (127). Sticking with the Iberian peninsula, Jaime Vives-Ferrándiz Sánchez, Carlos Ferrer García, Pablo García Borja, David López Serrano, Guillem Pérez-Jordà, Guillermo Tortajada Comeche, and Ana Valero Climent use the millstones from La Cervera, Spain from the 6th to the 4th centuries BCE to parallel local population growth and urbanization with the advent of the rotary mill and the exploitation of new source outcrops, establishing increasing demand as a driver of innovation and increasing productivity.

Section Three consists of a single chapter in which Chloé Chaigneau, Luc Jaccotey, Sylvie Cousseran-Néré, and Sabine Nodin propose a standardized framework for documenting hopper rubber mills—sometimes called the Olynthus mill. They propose a precise lexicon and standardized drawing directives for these mills. This initiative aims to facilitate comparative studies and enhance understanding of the distribution, typology, and technological evolution of hopper rubber mills across different regions and time periods.

The innovations highlighted in *QMMMA*, from variations in to-and-fro milling to the invention of rotary querns and hopper rubbers, had a real impact on how people lived their lives in antiquity. The scholars who organized and wrote these studies deployed sound methods, created good data, and made relevant inferences. All that is to say, they make these rocks interesting and give historians and archaeologists new data to help us understand important phenomena, not only economic concerns like population size, urbanization, and productivity, but also the lived experiences of the peoples who used these tools.

Indeed, the most exciting aspect of *QMMMA* is its ambition. The editors set out some very broad and noble objectives, from exploring the cultural significance of innovations—or rejections of them—to standardizing approaches and terminology for an entire area of study. In that, I found that I yearned for more theorizing of molinology. Would epistemological and methodological uniformity actually be healthier for the study of millstones? It would confer obvious advantages in terms of standardized jargon and uniform datasets that would facilitate larger *longue durée* studies. On the other hand, conformity to an enforced standard might discourage new approaches and methods, leading to intellectual stagnation. I also think an opportunity was missed to engage with archaeological theories of inference, such as middle-range theory or *chaînes opératoires*, and broader overarching frameworks, such as foodways, investment, or theories of making and craft. There are points in the book when patterns in the data are interpreted in facile ways, for instance simplistic correlation of hopper rubbers with Greek identity. That said, one gets the sense from the authors and editors that this is merely a first step in a series of future studies and similar volumes. As such, the volume leaves the reader hungry for more rather than disappointed.

Bibliography

Alonso, N. "Moliendo en ibero, moliendo en griego: aculturación y resistencia tecnológica en el Mediterráneo occidental durante la Edad del Hierro", in: *Dossier Sociedades de frontera. Colonización, aculturación e impacto económico / Border societies. Colonization, acculturation and economic impact*, Vegueta, *Anuario de la Facultad de Geografía e Historia*, 15 (2015): 23–36.

Frankel, Rafael D. "The Olynthus mill, its origin, and diffusion: typology and distribution." *American Journal of Archaeology* 107 (2003): 1–21.

Moritz, L.A. 1958. *Grain-Mills and Flour in Classical Antiquity*. Oxford: Clarendon Press.

Sládek, V., Martin Hora, Kristýna Farkašová, Thomas R. Rocoek. "Impact of grinding technology on bilateral asymmetry in muscle activity of the upper limb." *Journal of Archaeological Science* 72 (2016): 142–156.

Williams, D.F. and D.P.S. Peacock, eds. 2011. *Bread for the People: The Archaeology of Mills and Milling: Proceedings of a Colloquium Held in the British School at Rome, 4th–7th November 2009*. Oxford: BAR Publishing.

Authors and Titles

Foreword (Dominique Garcia)

Preface (Natàlia Alonso, T. J. Anderson, Luc Jaccotey)

CENTRAL AND EASTERN MEDITERRANEAN

Provenancing the grinding stones of Thorikos (Attica, Greece). Preliminary observations (Sophie Duchêne)

Iron Age grinding stones in Israel (David Eitam)

The Iron Age grinding stones and other stone objects from Tel Zayit, Israel (Aaron Greener, Ron E. Tappy, Danny Rosenberg)

WESTERN MEDITERRANEAN

The milling stones of the Greek colony of Olbia (Hyères, Var, France) (Luc Jaccotey, Sylvie Cousseran-Néré)

The evolution of grinding tools in the Lez Valley (La Cougourlude and Lattara) from the 6th to the 4th Centuries BC (Hérault, France) (Luc Jaccotey, Sylvie Cousseran-Néré, Tatjana Gluhak, Isabelle Daveau, Éric Gailledrat)

Early Iron Age milling in the Northeast of the Iberian Peninsula (Natàlia Alonso, Luc Jaccotey, Daniel López, Alba Castellano, Tatjana Gluhak)

Saddle and rotary mills from the Iron Age site of La Cervera (La Font de la Figuera, Valencia, Spain) (Jaime Vives-Ferrándiz Sánchez, Carlos Ferrer García, Pablo García Borja, David López Serrano, Guillem Pérez-Jordà, Guillermo Tortajada Comeche, Ana Valero Climent)

METHODOLOGY

A database for hopper rubber mills (Chloé Chaigneau, Luc Jaccotey, Sylvie Cousseran-Néré, Sabine Nodin)