

The Roman Agricultural Economy: Organization, Investment, and Production. By ALAN BOWMAN and ANDREW WILSON (eds.). Oxford Studies on the Roman Economy. Oxford: Oxford University Press, 2013. Pp. 333. Hardcover, \$150. ISBN 978-0-19-966572-3.

Preindustrial economies were firmly rooted in soil. In such “organic” economies the majority of people worked in agriculture in one way or another, and the bulk of trade depended on what came off the land, whether in raw material or manufactured goods. It is therefore fitting that the third volume resulting from the Oxford Roman Economy Project (OXREP) should be devoted to the Roman rural economy, c.100BC–AD 350. The book’s ambition is not limited to highlighting the importance of agriculture though. It “aims to move substantially beyond the simple assumption that agriculture was the dominant sector of the ancient economy, and to explore what was special and distinctive about the Roman economy ...” (1). It largely succeeds in achieving this aim by way of ten papers, the first of which, a helpful introduction by the editors, recaps the state of the field and revisits past approaches and macroeconomic models.

One of only two contributions not to target a specific geographical area is an important and timely chapter by Dennis Kehoe, who analyzes how the state defended its interests and met its fiscal goals. In a balanced discussion, Kehoe rejects as unsatisfactory the notion of a “predatory” or “tributary” Roman state, arguing instead that the state consistently instituted fiscal policies and legal instruments that protected not just large landholders but also small farmers.

In the next chapter, Helen Goodchild explains the use of GIS computer modeling applied to the Tiber Valley, successfully—though somewhat predictably—showing how different parameters lead to widely different results for agricultural surplus production.

Annalisa Marzano follows with two chapters, the first investigating the amount of wine and oil that Rome received from its hinterland, looking at numbers of recorded presses. Both the question and the approach are not new; they

were advanced most recently by Eric de Sena.¹ Marzano suggests that the importance of viticulture in Rome's vicinity was greater than previously thought, but stops short of proposing adjusted import figures. In her second chapter, Marzano extends her investigation of wine and oil production, shifting attention to Gaul, Iberia, and the Black Sea region. She detects an overall increase in multiple-press sites during the first two centuries ad followed by a decline after the third, attributing the pattern to rising and then falling population densities and standards of living.

These findings contrast with those of Mariette de Vos in an information-rich presentation of fieldwork undertaken in the Medjerda Valley (Tunisia). De Vos's survey data lead her to conclude that North-African oil and wine production saw a steady increase under the Empire, with a dramatic acceleration and peak in the Vandal and early Byzantine periods. De Vos ascribes this outcome to the breakdown of the *annona* so that "... export possibilities increased enormously and the benefits could be reinvested in the development of the region itself" (149). The apparently divergent economic trajectories of late-antique Mediterranean regions, including *annona* supply areas, is an interesting phenomenon, and it seems a pity that the volume does not make a greater effort to synthesize Marzano's and De Vos's findings.

Two chapters are devoted to Roman Egypt, the first by Alan Bowman endeavoring to estimate grain yield, tax income, and population size for a number of Middle Egyptian nomes. Bowman refuses to engage in pan-Egyptian extrapolations of his data, but does state with refreshing directness that they show "... an agrarian economy that is flexible, entrepreneurial, and deeply monetized, even at the village level ..." (246).

Katherine Blouin then somewhat complicates the picture drawn by Bowman with a study of land use in the Mendesian nome in the Nile Delta. Despite the relatively diverse hydrology of the Delta, grain cultivation seems to have been the nome's preeminent agrarian activity, with viticulture a distant second, and market gardening only a marginal third. Blouin suggests that this outcome in part results from documentary bias, but also reflects the desires of the economically powerful, most notably the Roman fisc.

¹ E.C. de Sena: "An Assessment of Wine and Oil Production in Rome's Hinterland: Ceramic, Literary, Art Historical and Modern Evidence" in: B. Santillo Frizell and A. Klynne (eds.), *Roman Villas Around the Urbs: Interaction with Landscape and Environment. Proceedings of a Conference Held at the Swedish Institute in Rome, September 17-18 2004* (Rome 2005) 135-149.

Weaving archaeological, literary, and papyrological evidence together, Myrto Malouta and Andrew Wilson investigate Roman water lifting devices, compellingly arguing that such instruments were used more widely and from earlier on than usually assumed. They go on to suggest that mechanical irrigation would have increased Roman agricultural productivity, and would thus have contributed to both population and *per capita* income growth. This is an attractive notion. However, even in preindustrial dry farming the bottleneck seems to have been a lack of fertilizer rather than moisture,² and certainly the temperate zones of the Roman world would not have benefited much from wetter fields. The argument would require a region-specific estimate of how much mechanical irrigation might have increased aggregate Roman crop yields.

Finally, in the closing chapter, Hannah Friedman demonstrates how the copper mining industry in the Faynan district (Jordan) changed the field system in the nearby wadi and how environmental damage from smelting reduced agricultural production, necessitating greater food imports. This is a valuable contribution, drawing attention to the interplay between seemingly separate economies.

In conclusion, *The Roman Agricultural Economy* contains wide-ranging and high-quality scholarship that, on the one hand, reflects the focus of current investigations and, on the other, provides fruitful material for future research. This balance renders it a welcome addition to scholarship on the Roman economy, and a worthy successor in the OXREP series.

TACO TERPSTRA

Northwestern University (taco.terpstra@northwestern.edu)

²P. Halstead: "Traditional and Ancient Rural Economy in Mediterranean Europe: plus ça change?" in: W. Scheidel and S. von Reden (eds.) *The Ancient Economy* (New York 2002) 53–70.

