upper plateau 30 km east of Cyrene, were clearly agrotowns. Here more than 60 uprights and 18 mill mortars were recovered, suggesting an industrial production processing the olives of the farms of the plateau. Wine, too, was produced here, as is shown by a group of sunken *dolia*. The town grew to a substantial size, including two churches and probable baths. Here, then, is evidence for a regional commercial network, redistributing the oil produced by local farms to the larger sites and cities in the province, probably sold at periodic *nundinae*. Other sites, with multiple presses, can be defined as oileries, while even the small farms have some evidence for presses. However, apart from a relatively flourishing agriculture on the slim strips of cultivable land, Cyrenaica does not seem to have produced much. Pastoralism on the Jebel Akhdar is probable, which would imply possibly intensive textile production. This may well account for some of the circular vats B. records, which could have been used for dyeing or tanning. The province was not particularly well defended either, which explains Synesius' continuing references to Libyan raids; it is unclear whether its tax revenue would have justified more troops and more investment in defences.

There is no evidence for élite housing in the villages. Indeed, while, as in Tripolitania, the rural settlement can be divided into open and fortified farms, large and small, there is as yet no evidence for a villa with a *pars urbana* in the entire province. The elite lived in the towns, not the countryside. We know nothing of the ownership of land, though of course substantial estates can hardly be ruled out. Struggles for land may have been constant: Synesius' letter 67 shows two local bishops fighting over a tract with vines and fruit trees, attached to a ruined fort. But these are the bishops of two small villages, and it seems unlikely that either was a powerful landowner. Synesius, indeed, is the only estate owner we know of from the period after the earthquake of 365 A.D.

The Appendices list, in perfectly documented detail, every single press element recovered, and, with full-colour photographs and clear plans, the sites recorded. The whole is a testament to B's tenacity and his long engagement with the archaeology of Cyrenaica. How many archaeological reports contain in their project history sentences like 'My house, in which the material was stored, was fired upon, which forced my family to flee and seek safe refuge in another part of the city. The house was partially destroyed and eventually ransacked, and most of the material was lost.'?

The book would have benefited from more careful proofreading — errors occur even in subtitles like 'Kiln Kites' (125) — but this is the only substantive criticism that can be made of the book, and like all the new BILNAS publications it is freely available online.

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MARTIN HENIG and JASON LUNDOCK (EDS), *WATER IN THE ROMAN WORLD: ENGINEERING, TRADE, RELIGION AND DAILY LIFE*. Oxford: Archaeopress, 2022. Pp. ii + 204; illus., maps, plans. ISBN 9781803273006 (pbk); 9781803273013 (e-PDF). £38.00.

GIOVANNI POLIZZI, VINCENT OLLIVIER and SOPHIE BOUFFIER (EDS), *FROM HYDROLOGY TO HYDROARCHAEOLOGY IN THE ANCIENT MEDITERRANEAN: AN INTERDISCIPLINARY APPROACH*. Oxford: Archaeopress, 2022. Pp. ii + 160; illus., maps, plans. ISBN 9781803273747 (pbk); 9781803273754 PDF ebook. £34.00.

Interest in the subject of water in the ancient Mediterranean now goes far beyond the traditional themes of hydraulic engineering, aqueducts and monumental baths. With the growing integration of archaeology and earth sciences, water is now understood in its environmental dimension. It is also seen in all its complexity, as much a resource as a danger, as much a material as a cultural object.

It is therefore somewhat surprising that Jason Lundock opens his introduction to *Water in the Roman World* by writing that there is a lack of 'material focused on theories regarding water in the Roman world' (1). On the contrary, as far as the materiality and symbolism of water are concerned, there is no shortage of papers, monographs and conference proceedings. The main problem scholars face is rather to navigate the maze of studies on the topic, whether about the iconography of water divinities, waterways or hydraulic infrastructures. It is true, however, that

no strong theoretical framework has yet been developed to unify all these studies, which is probably due to the nature of the subject. Water is a theme that permeates so many aspects of life, and of ancient life for that matter, that it can be addressed from a myriad of angles and studied by almost every discipline of modern sciences and the humanities, all of them dependent on their own methods and research objects. What L. perhaps expresses is, in fact, the difficulty of clearly grasping a total social fact.

Based on this observation, the editors of the book propose to study water both in its materiality and for its cultural value in the Roman world. The contributions therefore touch upon many aspects of water management and of its cultural meaning: the strategic use of river systems in warfare, the history of sensibilities, gender and social inequalities with regard to accessing water, religion (overall the best-represented theme in the volume), even a reflection on the construction of the site of Bath (UK) as an object of historical interest. Most chapters make a great effort to integrate material and symbolic aspects.

It is indeed essential to reconnect perception and use, and the editors' project is very welcome in that respect. However, the volume lacks a specific direction, and the papers therefore fail to answer a common question. Each contribution has its merits. The large variety of approaches (hydrology, archaeology, iconography …) is a very good thing, especially when it helps to shed different lights on a single object, but in this case the result is that the contributions are only loosely related to each other, and it is hard for the reader to discern a single thread. Nowhere is it strongly argued why sea water should be studied along with fresh water (ch. 2 and the conclusion). This would have been useful, because, while ancient philosophers and naturalists occasionally discuss the relationship between rain, rivers and the sea, the themes are generally set in different categories in modern scholarship. Some papers even fail to place water, either as a material or as a symbol, at the forefront of the discussion, focusing instead on peripheral aspects like the composition of river deposits or wider ones like the territorial organisation of Roman *civitates*. Martin Henig's concluding paper is very well documented, but brings little novelty to the field, nor does it open many new research avenues.

From Hydrology to Hydroarchaeology in the Ancient Mediterranean adopts a very different approach. It is narrower in scope, focusing on environmental issues of water management. It is also geographically more limited, since the contributions almost all centre on pre-Roman Sicily. It presents the results of an interdisciplinary programme on water management, developed in Aix-Marseille University (HYDRΩMED). The introduction outlines the themes the authors were asked to address: (i) strategies for the acquisition, storage and loss of water; (ii) quality of the water and its suitability for different usages; (iii) effects of seismic risks on all of these aspects. These are essential questions for understanding the nature of the relationship between water and human settlements, but also ones that can only be answered by a combination of perspectives.

The first question is considered in a wider context by different contributions, which examine how human settlements in Sicily during the Holocene were impacted not only by ancient climate and the availability of water, but also by sea-level changes, volcanism and seismicity, and the distribution of plants and animals (the first chapter offers a very extensive bibliography on all these topics). Hydrogeology proves an essential complement to archaeology in this, as it helps explain how different sites used underground or karstic resources to supplement poor rainfall. Geological, environmental and morphological information can also be used to recognise the essential elements of the system of collection and distribution of water by an aqueduct (i.e. the Greek aqueduct of Alesa). It is particularly fruitful when combined with archaeological prospections and the study of local toponymy. Studying the different characteristics of water in relation to usage shows the importance of hydrothermal springs, thermal or sulphurous. It can explain the success of a settlement, like that of Baia in the Bay of Naples, but also smaller sites in Sicily. Finally, the effect of seismic risks on water usages is a particularly stimulating theme. As has been noted since antiquity, the availability of the resource varies with time and with the movement of the Earth. In some cases, it can slightly modify the water flow. In others, it can create new risks. How these risks were dealt with is very significant for our understanding of ancient settlements. The last chapter shows that, in Delphi, a site characterised by a high seismicity and threatened by landslides, the strategy developed in Late Antiquity was to take advantage of the risks associated with water to create new opportunities for the sanctuary, notably by the creation of a thermal bath.

The book rests heavily on the methods and objects of geosciences. The title clearly indicates this approach. 'Hydroarchaeology' (a term that lacks a clear definition in the introduction) is understood as the study of ancient water management solutions. It is shaped by 'hydrology', i.e. the study of

movements, distribution and management of water more generally. The vocabulary and technical nature of earth sciences are often daunting for scholars coming from the humanities, a difficulty that the book seems to acknowledge by a real effort for clarity in the contributions. However, as is often the case in this type of publication, it may be hard for classical historians to identify clearly how they can reinvest some of the results presented here in their own research. The use of different time scales in geosciences (millennium to century) and in history (century to decade or year) often represents a particular obstacle.

Water is undeniably a topic that benefits from a manifold approach, but this approach is fraught with difficulties related to the increasing specialisation of each field. To produce useful results, it is necessary for specific questions to be asked, otherwise the risk is to get lost in the vastness of the theme.

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JEROME MAIRAT, ANDREW WILSON and CHRIS HOWGEGO (Eds), *COIN HOARDS AND HOARDING IN THE ROMAN WORLD*. (Oxford studies in the Roman economy). Oxford: Oxford University Press, 2022. Pp. xviii +350; illus., maps. ISBN 9780198866381 (hbk). £90.00.

This edited volume is fundamentally about a vast amount of quantitative data, how it has been collected and made publicly available, and how it may influence our knowledge of the Roman world, broadly conceived. Unfortunately, a portion of the audience for such scholarship harbours a reluctance to engage in statistical analyses and other quantitative methodologies, even as they value the results. The editors lean into this challenge by giving Kris Lockyear's essay, 'Simplifying Complexity', a lead position. It most certainly influenced how this particular reader approached all subsequent chapters. Lockyear points out that, as far as the most popular forms of data visualisation in numismatics are concerned, the bar graph first appeared in the late eighteenth century and the distribution map in the mid-nineteenth. Throughout the volume as a whole, bar graphs and distribution maps abound. Lockyear bemoans that even after some three decades of applying correspondence analysis (CA) to hoard data and publishing numerous discoveries as a result, his techniques still need explaining and are rarely adopted by others. His chapter ends with an appendix explaining the rudimentary practical steps. (This reader tested the instructions with at least a modicum of success. The challenge was not the application of the technique, but choosing data and preparing it appropriately.)

The majority of the volume is given over to regional studies, eight chapters in total, covering Britain, Burgundy, southern Greece and Macedonia, Dacia, Moesia Inferior, Palestine and Egypt. Each of these studies will be of most immediate interest to researchers focused on the specific regions under Roman rule. Here I hope to highlight those characteristics of individual chapters that might be of particular interest to a more general readership. Ghey's chapter on 'Hoarding in Roman Britain', for instance, puts particular emphasis on archaeological context for interpreting hoards. She compares data on both single-coin and select-site finds with hoard data to show that the peak in hoarding seen in the last third of the third century C.E. seems to parallel the overall abundance of coin in circulation, whereas the peak in hoarding during the last decade of the fourth century has no such correlation (62–3). Hostein and Nouvel, in their piece, also emphasise the distribution of hoards and the type of sites within the *civitas Aeduorum* where they are found. It is a great shame some of their maps illustrating change over time have been printed so small as to be hardly legible (e.g. fig. 4.4). They focus on coin hoards found at rural settlements as a potential proxy for estimating the wealth of ancient landowners.

Of regional studies within the volume, Mairat's on the Gallic Empire arguably covers the largest sweep of territory. He approaches the coinage of this breakaway state first by type and then by sub-region. Of perhaps greatest importance are his observations of coin circulation in Hispania