

well argued. I was surprised that the excellent work on disarticulated burials by Rosalind Wallduck (2013) was not cited more extensively: Wallduck has demonstrated that disarticulation was often the end-point of a much longer and complex operational chain than the burial of complete bodies.

The general interpretation that Borić offers is that Lepenski Vir changed functions, and its populations had different diets and origins in each of the four main phases of occupation: 1) local persons establishing a fishing camp in the Early Mesolithic but with some mixed aquatic/terrestrial diets; 2) continuing as such in the Middle Mesolithic but with some special burials of local persons with mostly aquatic diets; (?) abandonment for no obvious reason in the Late Mesolithic; 3) a central place for 100–200 years in the Mesolithic to Neolithic transition phase, with an elaborate built environment, some social ranking, intensified contacts with communities outside the gorge and the on-site burial of most residents—a high proportion being locals with a mixture of terrestrial and aquatic diets; and 4) the occupation by early farmers with overwhelmingly terrestrial diets, whose burials featured women from beyond the gorge.

It will take another generation of scientific research to overthrow these main conclusions, which set Lepenski Vir in a much more secure place within the study of global hunter-gatherer archaeology. The idea that the site was a central place exhibiting a fusion of different cultural traditions that were ultimately incompatible sounds like good, old-fashioned Balkan culture-history. But this volume is much more than that—it provides fundamental contextual information and excellent archaeological science to justify that Balkan culture-history. Srejšović would have been proud of this volume!

References

- NANDRIS, J.G. 1968. Lepenski Vir. *Science Journal* 1: 64–70.
- SREJŠOVIĆ, D. 1969. *Lepenski Vir: nova praistorijska kultura u Podunavlju*. Beograd: Srpska Književna Zadruga.
- SREJŠOVIĆ, D. & L. BABOVIĆ. 1983. *Umetnost Lepenskog Vira*. Beograd: Jugoslavija.
- WALLDUCK, R.J. 2013. Post-mortem body manipulation in the Danube Gorges' Mesolithic and Neolithic: a taphonomic perspective. Unpublished PhD dissertation, University of Cambridge.

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THOMAS X. SCHUHMACHER. *Elfenbeinstudien Faszikel 3: Elefanten und Elfenbein auf der Iberischen Halbinsel und in Nordwestafrika* (Iberia Archaeologica 16.3). 2016. 275 pages, numerous colour and b&w illustrations, Spanish and English summaries. Berlin: Wasmuth; 978-3-8030-0243-3 hardback €64.



This volume is the last of three fascicules presenting the results of a major, long-term research project on all aspects of ivory and ivory-carving in Iberia and north-west Africa from the Neolithic to

the Bronze Age. This final contribution is concerned with the prehistoric finds from Morocco, Algeria and Tunisia, complementing the presentation of the corresponding material from Portugal and Spain in the previous fascicule (Schuhmacher 2013).

The volume opens with an overview of research on the prehistory of north-west Africa from the late nineteenth century to the present, and offers a useful compilation of the rather dispersed literature. Next, Schuhmacher gives a concise summary of the regional environment, both ancient and modern, including climate change during the Holocene. This provides the necessary background required for the discussion of the elephant and its habitat, and hence the question of ivory resources; in particular, the 'African Humid Phase' (c. 10 500–6000 cal BP) offered favourable conditions for the elephant, permitting a far wider distribution than commonly thought.

The following chapter discusses the archaeological chronology from the Neolithic to the (Early) Bronze Age in Morocco, Algeria and Tunisia; here, a synoptic table would have been helpful. This chronology is followed by a list of the individual archaeological sites at which ivory artefacts and materials have come to light. This partially repeats earlier sections, but here Schuhmacher concentrates on the specific findspots and their dates. It is particularly surprising to note the small number of ivory objects (99) known from north-west Africa in comparison with the 1988 objects of similar date known from Iberia,

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a point addressed by Schuhmacher in his concluding discussion. The finds are presented by object type and typologised by formal characteristics. The differentiation of categories, such as spatulas ('*Spatel*') and small knives ('*Messerchen*'/'*couteaux*'), or simple discs ('*Plättchen*') and pieces of raw or unworked material ('*Teilweise bearbeitete Stücke*'), is notoriously difficult. Here it is unfortunate that the project did not encompass bone-working, as well as ivory-carving, as the specific material of many objects could not be precisely determined. Spatulas, for example, are almost exclusively made of bone (ribs). Pins and needles, however, can be made of either material—ivory or bone—but due to their small size, they can rarely be distinguished by macroscopic analyses. The presentation of the finds is hampered to some extent by the limited number of illustrations. Although, as stated in the foreword, all the objects retrieved from museums and storerooms were drawn and photographed, not all are illustrated here. In particular, section drawings of the more complex pieces such as the *pyxides* (cylindrical boxes) would have been useful.

Focusing largely on the secondary literature, Schuhmacher very briefly describes the various sources of ivory, besides the African and Indian elephant, exploited across north-west Africa, including the hippopotamus, walrus, sperm whale and narwhal. But, reflecting his principal focus on the Western Mediterranean, he relies on older literature when it comes to Egypt and the Near East. Here, however, both the hippopotamus and the Syrian elephant have been well studied and discussed in recent years (e.g. Fischer 2007).

Of great interest for the archaeometrist is Schuhmacher's description of the varied analytical techniques, mostly based on spectroscopy and isotope analyses, developed by the interdisciplinary research group (INCENTIVS) at Mainz University. These methods are of importance for the wider research community, offering the potential to differentiate categories of ivory and their origins, and hence contributing to discussions on resource procurement and management. In general, archaeological finds are compared with modern reference materials. But the degradation of archaeological ivory, both in its organic and inorganic components, provides a major obstacle for these kinds of procedures. This issue can be addressed by expanding the amount of comparative data, as Schuhmacher does here with 68 newly analysed samples. The results are quite astounding, pointing to the use of African (*Loxodonta*) as well

as Indian (*Elephas*) ivory and, unusually, sperm whale—the latter possibly from animals stranded on the African shore. In contrast, hippopotamus teeth, which were frequently used in the Levant and Egypt, seem to have been uncommon in the Maghreb.

With these results in mind, Schuhmacher sketches a model of inter-regional exchange for each period, considering the Maghreb as more focused on the export of unworked ivory (and ostrich-shell), at least in the Chalcolithic and Early Bronze Age, than on the production of finished artefacts. The resulting exchange seems to have contributed to the construction of social elites both north and south of the Straits: ivory moved north, and pottery and metal artefacts moved south. Ivory artefacts were never as popular in the Maghreb as they were in Iberia.

This volume is an excellent example of interdisciplinary research combining traditional archaeological questions with modern analytical methods, leading to new observations and conclusions. It adds to the many recent studies that treat the subject of carved ivory holistically, not simply from an art-historical perspective. The results open new avenues for future research on objects made of ivory, bone and other materials. More generally, the volume will undoubtedly become indispensable for anyone interested in the prehistoric archaeology of Iberia and north-western Africa.

References

- FISCHER, E. 2007. *Ägyptische und ägyptisierende Elfenbeine aus Megiddo und Lachisch* (AOAT 47). Münster: Ugarit.
- SCHUHMACHER, T.X. 2013. *Elfenbeinstudien: Faszikel 2: Chalkolithische und Frühbronzezeitliche Elfenbeinobjekte auf der Iberischen Halbinsel* (Iberia Archaeologica 16.2). Darmstadt: Philipp von Zabern.

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ÁLVARO FERNÁNDEZ FLORES, LEONARDO GARCÍA SANJUÁN & MARTA DÍAZ-ZORITA BONILLA (ed.). *Montelirio: un gran monumento megalítico de la Edad del Cobre*. 2016. 553 pages, numerous colour and b&w illustrations. Sevilla: Junta de Andalucía; 978-84-9959-236-7 paperback €20.