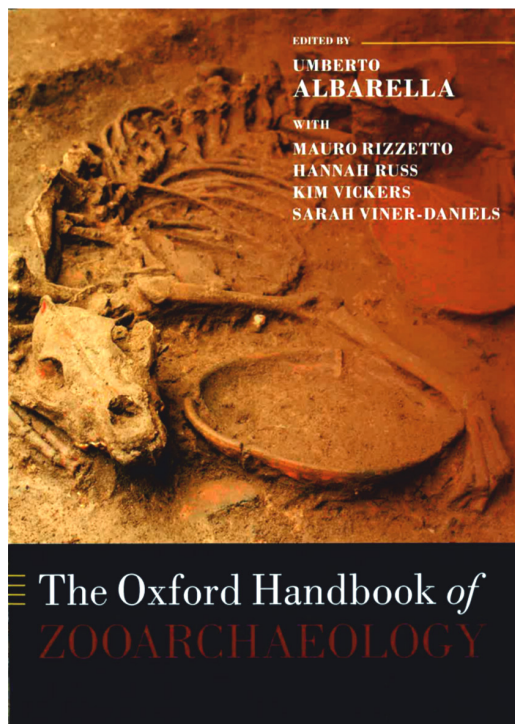


Umberto Albarella, Mauro Rizzetto, Hannah Russ, Kim Vickers & Sarah Viner-Daniels (eds.): *The Oxford Handbook of Zooarchaeology*. Oxford University Press, Oxford 2017. ISBN 978-0-19-968647-6. 839 pp.

*The Oxford Handbook of Zooarchaeology* is one of the most welcome compilations of a spectacular series published by the Oxford University Press. This volume is amongst the thirty-five archaeology-related titles listed in the Oxford Handbook web pages, and new titles for 2018 are yet to come. The work is a weighty two kilos and represents over 800 pages of expertise from all over the world, containing forty-seven articles and contributions from seventy-two authors.

The book consists of forty-six chapters which are grouped under the headings of Europe, Asia, Africa, North America, South America, and Oceania. These chapters are loosely arranged according to historical developments, and follow the themes of colonisation, animal domestication and farming, trade and contacts. Thus, the chapters explore the current state of the discipline as a part of archaeological research in general.

The book begins with an introductory part in which the term *zooarchaeology* is defined as ‘the study of animal remains from archaeological sites’. In practice, the general trends such as domestication, which the book aims to follow, have been based mostly on osteological remains of vertebrates with a few exceptions, such as the exploiting of shellfish (e.g. the paper on Brazilian shell mounds by Daniela Klokler). From this point of view, the book might as well have been titled *Osteoarchaeology*. References to other faunal remains, e.g. feathers, skins and furs and livestock dung can be found in the articles (see the papers by Mark Maltby on furs and feathers, and Shaw Badenhorst on dung), although their role is small. For example, the discussion of sheep wool (see the paper on medieval sheep breeding in Ireland by Finbar McCormick and



Emily Murray) would have benefited from the work done, e.g., by textile archaeologists. Major study fields like entomology and the study of invertebrates are handled only briefly. The potential of this field is discussed in Maltby’s paper on mammal exploitation in medieval north-western Russia, in which insect finds have been applied to investigate hide processing sites and horse stables.

For the readers of *Fennoscandia archaeologica*, we searched the Index for references to Finland (3 citations), Sámi (0), Sweden (3), Norway (1) and Norse (13). For Finnish osteologists, we found a total of five citations in the references. This perhaps shows that osteological material, knowledge and resources have through the decades been accumulated elsewhere. However, the training of Finnish osteoarchaeologists and the research conducted from the 1990s onwards has now produced a well-based general picture of the field, published in Finnish by Bläuer (2015) and Ukkonen & Mannermaa (2017). If

all geographic areas have been roughly covered in this book, it is surprising that the only article about Fennoscandia and northernmost Europe is the one dealing with Iceland and Greenland. Given the importance of, e.g., the works by the 19<sup>th</sup> century Danish zoologists and zooarchaeologists in the development of European osteoarchaeology and zooarchaeology as a discipline (Degerbøl 1927; 1942) it would have been a good idea to include one article from this particular area.

The decision to concentrate on world zooarchaeology has understandably led to excluding some other viewpoints. The geographical perspectives of the articles vary from local to more extensive, and the research problems vary from specific to general. The chronological perspectives are quite diverse. The decision to include articles with a somewhat narrow research topic is a good one as it allows a thorough analysis. However, this practice will inevitably exclude many important local and more general topics. But, whether looking on the local or global scale, or concentrating on one animal species or on hunting or husbandry in general, in all cases this book offers extremely interesting stories of human and animals from all parts of the world.

Louis Chaix's paper, for example, concentrates on the topic of cattle as a key constituent element of the civilisation of Kerma, Sudan (c 2600–1500 BC). The roles of cattle have changed during different Kerma phases (Early Kerma, Middle Kerma, and Classic Kerma), providing leather, e.g., for sandals, and meat and milk for nutrition, but cattle have also been an important social actor in culture and identity. An interesting example is the tradition of using a special device to bend the horns of young calves so that the horns point forwards. Such deformed bucrania (the top part of the cranium with horns) from adult cattle are found in Middle Kerma burials. The number of bucrania found in graves varies, but – almost impossible to believe – one of the burials contained the deformed bucrania of almost 5000 cattle! The importance of cattle is beautifully visualised by an ostrich (*Struthio camelus*) egg with an engraving of two cattle facing two people, found in the ancient city of Kerma.

A very interesting paper by John D. Speth concentrates on the hunting and utilisation of

bison ('buffalo', *Bison bison*) in western North America. The time span of the study – not less than 13000 years – gives good grounds for the reader to understand the importance of bison for hunters in the North American Great Plains. What is not so well known, perhaps, is that buffalo were also abundant in the boreal forests of Canada and the woodlands of eastern United States. The plains bison and the wood bison represent a different subspecies, *B.b bison* and *B.b. athabascae*, respectively. Bison originate from the Old World, the animals entering the new continent via Beringia between 300000 and 130000 years ago, the Beringian steppe bison (*B. priscus*) making this journey during the last interglacial period. While other Pleistocene Ice Age megafauna, for example mammoths (*Mammuthus* sp.), horses (Equidae), or camels (*Camelops* sp.), became extinct when the climate became warmer, the bison did not. So, the bison is a rare living example of the large ruminants of the Ice Age. Speth's article is an excellent compact overview of the 13000 year-long tradition of Holocene communal buffalo hunting in America, starting from the Palaeoindians (Native Americans) and continuing well into the 19<sup>th</sup> century. A photograph from late 19<sup>th</sup>-century Michigan, of an enormous pile of bison skulls awaiting processing to fertilizer witnesses the horrifying scale of recent hunting. Bone black or bone char, used in sugar refining as a decolorizing and deashing agent in cane sugar, was also made from bison skulls.

The paper by Li Liu and Xiaolin Ma on the zooarchaeology of the domesticates of Neolithic China offers a different perspective. The article presents an overview of the prehistory of the most important domesticates (pig, *Sus scrofa*; dog, *Canis familiaris*; sheep, *Ovis aries*; goat, *Capra hircus*; cattle; horse, *Equus caballus*; water buffalo, *Bubalus* sp.; zebu, *Bos* sp.; and chicken, *Gallus gallus*), and their most important uses during the Neolithic Age. Pig and dog are the first domesticated animals in the territory of China, and both were domesticated indigenously. Articles like this are very useful for zooarchaeologists, because they gather together the most recent information about the topic from a large area.

The exclusion of purely methodology-based chapters from the book is explained in the Edi-

tor's Preface by the availability of excellent methodology books. Fortunately, the reader can search for the methods which are described in individual articles from the Methodological Glossary at the end, and in the Index. Searching from the Glossary, the papers dealing with tooth microwear, organic residue and stable isotope analyses, to name but a few, can be easily found.

The history of osteoarchaeology is not a topic of any of the articles, which we find a bit disappointing. On the other hand, including research historical themes would probably have been too challenging a task given the geographically large scope of the book. The very early phases of zooarchaeology almost universally contained collaboration between archaeologists and biologists but today historical osteology or zooarchaeology are research fields in several universities. The development of zooarchaeology, including progress in material and methodological studies as well as using these in the deep understanding of human–non-human relations has been enormous during the last thirty years.

Most of the articles deal with mammals. Birds and fish are more marginal in the book. This reflects the situation today in which zooarchaeological research is largely focused on farming cultures and their animals. Taking into account the role of fishing in past cultures all over the world and fish as a staple food, or the various roles of hundreds of birds' species, particularly eagles and other birds of prey, this compilation of articles gives a somewhat simple view of animals' relationships with humans in the past.

Four articles deal with the uses of aquatic resources. Veerle Linseele's paper focuses on Holocene West Africa, Dale Serjeantson's paper deals with prehistoric and modern Scotland, and Lembi Lõugas's paper is on Mesolithic Estonia. In all these papers, the emphasis is on the utilisation of the variety of resources offered by rich water ecosystems. The paper by Melinda S. Allen on East Polynesian fisheries gives a detailed study of the spatio-temporal changes caused by indigenous people to the marine fishing and fish populations. In her conclusions, Allen uses the delicious recently-launched term 'archaeofish': 'Over the last decade the pace of Polynesian archaeofish studies has accelerated and methodologies are improving' (see also Giovas 2018).

The strengths of this book are the ability to

compare the research themes and questions between different geographical areas. The different strategies for producing furs and skins for international markets are discussed by Konrad Smiarowski et al. (Iceland and Greenland), Mark Maltby (north-western Russia) and by Heather A. Lapham (eastern North America). In the paper by Lapham, especially the osteological evidence of well-developed deer hunting and the processing of skins is of special interest. In the paper by Maltby, the locating of fur-hunting sites near medieval Novgorod gives valuable information about the acquisition of furs for trading centres. Finally, in the paper by Smiarowski et al., the different fur acquisition strategies between Iceland and Greenland evidence the variety of Iron Age and medieval hunting strategies in north-western Europe.

The authors are all merited scholars who have long experience in making zooarchaeological analysis. As a single volume, the book gives a very good overall picture of what the zooarchaeological research spectrum can contain. Zooarchaeology has very much to offer to archaeology and we are now in the very process of understanding better the potential how animals and their products have contributed to ancient cultures and their ideologies. Indeed, zooarchaeology is finding more and more ways to answer societal questions (see e.g. Sykes 2014; Overton & Taylor 2018; Pilaar Birch 2018). In this sense, more articles focusing on the roles of animals in the social and ideological life of humans would make a valuable contribution to complete the volume. Salima Ikram's article on animals in ancient Egyptian religion demonstrates the major roles of a variety of animal species in Egyptian society. She writes that mummified animals were mainly sacrificial victims serving as meat in offerings to the gods. Interestingly, she concludes that the animals used in these sacrifices were bred or imported, but then killed in brutal ways (e.g. by strangulation, having their skulls broken, or their nostrils slit). The Minimum Numbers of Individuals (MNI) of mummified animals found from diverse cemeteries c 600 BC to c AD 300 are astounding: for example, canids from Saqqara: MNI 7800000; ibis from Saqqara: MNI more than 4000000; raptors from Thebes TT 12: MNI 2000; and crocodiles from Tebtunis: MNI more than 10000. The breeding

of animals made it possible to have so many individuals for sacrificial purposes. Probably these cults also guaranteed the local survival of many species at that time. For example, the sacred ibis (*Threskiornis aethiopicus*) is now regionally extinct in Egypt, but lives in other areas in Africa.

The book is well written and presents an interesting compilation of articles. It would have been interesting to read about the current state of teaching, e.g. in Britain or France (which both have a strong and long tradition in 'academic zooarchaeology'), or to be able to compare the differences in methodological and research traditions in these areas. This review was jointly written by an established zooarchaeological researcher and a PhD trainee. The former will use the volume as an introductory book for zooarchaeological scholars and the latter found the book a treasure trove of up-to-date information which will be of great value in her writing process.

Oxford Handbook web pages: <https://global.oup.com/academic/content/series/o/oxford-handbooks-ohbk/>

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