

a slightly different view, identifying the current barriers to data distribution in palaeoanthropology as sociological, logistical and due to lack of standards (p. 111). The Open Research Scan Archive (ORSA) project (Monge & Schoenemann) actually encourages data sharing by requiring anyone using their data to 'agree' to deposit data of their own when (or if) they create any. While this is impossible to enforce, it is the kind of requirement that can influence and ultimately change deep-seated attitudes towards data sharing. Webber and Bookstein on the other hand take issue with partially open schemes like the you-show-me-yours-and-I'll-show-you-mine arrangements ORSA offers (p. 106).

Unfortunately this volume suffers from some unusual choices of articles in a collection about databases. The pedants amongst us would argue that in many articles the term 'database' often describes a larger system which includes a database, or the term was simply misused. In the ORSA paper the terms database and archive are used interchangeably with no clarification, and archiving standards or long-term preservation go completely unmentioned. The choice of some proprietary formats (e.g. ESRI shapefiles and MS Word documents) to store data (Märker *et al.*), or of Gilbert & Carlson's choice of proprietary database software (e.g. FileMaker) also causes concern for the long-term usability of some of the data.

These rather minor criticisms aside, there were some excellent examples of database systems in this volume. The Ancient Human Occupation of Britain (AHOB) database was comprehensive, and interoperability taken so far as to make the data of the AHOB database compatible with the nascent PaleoAnth Portal [<http://www.paleoanthportal.org/>]. The web interface provides basic interrogation capabilities and the ability to drill downwards and upwards within the data. For example, one could search for a site, select a specific species and retrieve its detailed information, then drill back up into other sites containing that species. This functionality will be most welcome by users.

It was also possible to export data from some of these systems. The AHOB system enables users to download data in spreadsheet form, and export the spatial data for inclusion in Google Earth. This was also a capability of the Out of Africa database (ROAD, see <http://www.roceeh.net/roceeh/>), which allows users to navigate and interact with the data locally on their own PC. As many will know, performing high-level analysis of data through a web

GIS can be tedious and frustrating. In addition, the ROAD system is capable of importing data, allowing users to create PDF maps that include user-provided data, something that few systems can accomplish.

It was also nice to see reuse cases among the papers: the AHOB database used to study the implications of mammalian palaeofaunas for climate interpretation; the ROAD data used to describe the spatial distribution of Neanderthals; and ORSA listed other good examples of successful reuse. Data reuse should be seen as the ultimate goal of anyone creating databases like these.

Data publication and citation were also important topics mentioned by some, such as Pastoors and Weniger, Weber and Bookstein and the ORSA project. Services like the Journal of Open Archaeological Data (JOAD; <http://openarchaeologydata.metajnl.com/>), which is trying to establish a viable data publication model, and data citation from DataCite (<http://datacite.org/>) are being developed. The ambitious BEFORE project (presented by Coppa) is also worth mentioning: it is an attempt to create a pan-European strategy for the long-term management of Europe's cultural and biological heritage, specifically of prehistoric and historic human skeletons. Another interesting paper, by Montet-White, discusses the difficulties of archiving digital data from projects between 1967 and 1998, which covers the beginning of the significant transition from the pre-digital to the digital era.

There was plenty of material for the Pleistocene and palaeoarchaeologists amongst us, including some good examples and arguments for the 3-D recording of palaeo-archaeobiological material (Pastoors & Weniger, Brown *et al.*, Bayle *et al.*) but anyone looking for an exhaustive discussion of databases in those fields (probably a very select few) will be left wanting. Many conversations in this volume have taken place for years at Computer Applications in Archaeology (CAA) conferences and other IT-specific gatherings. However, the likely benefit of a volume like this is to take the conversation to the archaeologists and data creators, something that more IT-oriented practitioners have unfortunately been less successful at achieving.

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MARIUS ALEXIANU, OLIVIER WELLER & ROXANA-GABRIELA CURCĂ (ed.). *Archaeology and anthropology*

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of salt: a diachronic approach (Proceedings of the International Colloquium, 1–5 October 2008, Al. I. Cuza University, Iași, Romania) (BAR International series 2198). viii+226 pages, 175 b&w & colour illustrations. 2011. Oxford: Archaeopress; 978-1-4073-0754-1 paperback £65.

One of the distinct traits and major strengths of European archaeology is that it encompasses



multiple regional research and academic traditions, each providing a different input into the study of the past. Sometimes thematic, sometimes chronological, these

traditions contribute to the development of a European archaeological pluralism, multivocality and flow of ideas, building bridges between east and west, north and south, and even further across the Atlantic Ocean. The book under review is one such contribution from the eastern outskirts of Europe, the result of a fruitful collaboration between Olivier Weller (CNRS, France) and Marius Alexianu and Roxana-Gabriela Curcă of the “Al. I. Cuza” University of Iași in Romania. All three have a long-term involvement in the study of salt and were instrumental in convening a three-day colloquium addressing the multiple approaches to salt as a resource of ‘primordial reference’ to human communities from prehistory to the recent past and the rural present. The proceedings come with a succinct foreword that sets the agenda and identifies the major directions of research, and a welcome speech by N. Ursulescu, a pioneer in the identification of the archaeological vestiges associated with salt extraction from salty spring water in the county of Suceava, Romania. The book is organised in five parts dealing with ethnography, archaeology, ancient texts, historical approaches and linguistic and philological studies. The book’s heart beats to the rhythm of a truly interdisciplinary approach.

The meeting brought together thirty-three scholars from different European countries and Mexico. A closer look at its anthropogeography, however, reveals certain trends in the spatial distribution of salt places around the world and in methodological perspectives on the study of salt-related activity. Many of the authors come from the Balkans (Romania, Moldavia, Bulgaria), where there is still a living tradition of salt production and consumption whose roots can be traced back to Neolithic times, feeding research

on this topic with insightful ethnoarchaeological accounts of salt-related practices (Part I) and a valuable body of archaeological evidence (Part II). Likewise, Spanish and Mexican authors present similar data records and food for thought on the beginnings of salt exploitation, which appears to emerge somewhat later in the Iberian Peninsula, during the Chalcolithic and Early Bronze Age (Part I). They also study oral history and ethnoarchaeology in order to shed light on salt production as a social practice (Part II). Colleagues from Italy, Spain and France examine texts by ancient authors referring to salt in ancient Greece, Rome and Egypt (Part III), a valuable historical contribution in itself and also a record of ancient ethnography, extremely informative for prehistorians too. Spanish, Italian and Portuguese scholars trace salt production around the Mediterranean and the Atlantic from late antiquity to modern times and raise the issue of the language of salt. The three chapters completing the collection (Part V) are written by linguists and philologists and treat this topic from the point of view of toponymy and aphoristic phrase etymology.

The volume contains a wealth of information for all those interested in the ‘white gold’ derived from land or sea. More importantly, this book marks a turning point in salt study in the humanities. Unlike previous conferences over the last twenty years, which have been purely historical or archaeological in scope, it brings together archaeologists, historians, philologists and linguists under the same umbrella. This is, of course, but the first step, in which different authors present their work in monologue form, and from this point of view a closing discussion at the end of each section or at the end of the book would have been desirable in order to tie together the different strings of salt-related research. Content aside, the pluses of the publication include its rich illustration with monochrome and colour photographs and maps; on the negative side, the volume might have benefited from some extra copy-editing before going to press.

As many of the authors repeatedly point out, salt places attract animals and birds and are thence ideal hunting or trapping grounds. Salt is also used to preserve game, fish and edible plants, and hunter-fisher-gatherers would certainly have found it to be a great ally in a food-collecting economy (*sensu* Binford). On reading the volume, we are left with the sense that the current lacuna in research on ‘salt as a resource to hunter-gatherer communities’ of the recent as well as the distant (Palaeolithic, Mesolithic)

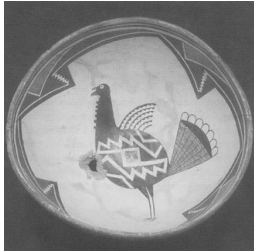
past must be filled and the topic given priority. The same applies to ethnoarchaeological research focusing on sea salt collection. It is hoped that Alexianu *et al.*'s volume will not only be a reference collection but also a source of ideas and paradigms that will inspire further systematic research into the archaeology and ethnoarchaeology of salt-related activity by hunter-gatherers, farmers and herders.

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JULIET CLUTTON-BROCK. *Animals as domesticates: a world view through history*. xii+189 pages, 64 illustrations. 2012. East Lansing (MI): Michigan State University Press; 978-1-61186-028-3 hardback \$44.95; 978-1-61186-064-1 paperback.

This is the first volume to be published in the series *The Animal Turn*, edited by Linda Kalof. The series



aims to document the full range of human-animal relations and interactions now and in the past, and our domesticated livestock and companions are an appropriate place to

start. After all, as James Serpell points out in his Foreword, livestock constitute an estimated 65 per cent by weight of all terrestrial vertebrates. Juliet Clutton-Brock is an internationally-renowned researcher and author on the subject: her book gets the series off to a fine start.

The structure of the book is straightforward and clear. After an Introduction, successive chapters discuss the emergence of sedentism amongst Eurasian peoples, and its connection with the emergence of domesticatory relationships. Having put people and livestock together, Clutton-Brock then examines those relationships in more detail, essentially by geographical region. Almost inevitably, 'Classical Greece and Rome' gets as much space as 'The Americas', reflecting the scale of available evidence rather than that of geography or chronology. A second edition in ten years' time will be able to remedy that. Within each of those chapters, some sub-sections deal with particular taxa, with the consequence that, for example, dromedaries feature both in Ancient Israel (p. 63) and in Sub-Saharan Africa (p. 115), and others are short essays on, for

instance, Xenophon on horsemanship (pp. 76–77). Faced with the difficult choice of whether to structure the book chronologically, or by species, or by region, Clutton-Brock has arrived at a compromise that works rather well in providing a coherent and readable flow-through whilst remaining comprehensive enough to act as a textbook.

Animals as domesticates subjects its topic to the Five Ws of journalism: who, what, where, when and why. The regional chapters deal with the first four quite thoroughly. Taken together, they chart the evolution and dispersal of widespread domesticates such as cattle and pigs, bringing to bear whatever iconographic, osteological or, to a lesser extent, biomolecular evidence as may be available. There is nothing particularly new or surprising in these accounts. However, as the research literature focuses ever more closely on the specific population genetics or morphometry of this or that species, a global overview from such an experienced author is welcome, especially from one who can work with the full range of evidence. Alongside the global livestock, species particular to different regions are discussed, such as turkey, New Guinea Singing Dog and goldfish. Such diversity means that the treatment for some species is distinctly concise. Guinea pigs, for example, are given less than a page (p. 129), with no mention of the fascinating mummified examples from Chincha and El Yaral in prehispanic Peru. For all that, Clutton-Brock conveys more information per kiloword than most authors.

As to the fifth W—*why* domestication?—discussion early in the book tackles this rather contentious topic. Although the biological species concept is given prominence, presenting domestication as a form of speciation consequent upon human activities, Clutton-Brock rightly acknowledges that animals were (are?) active in the process: "A domestic animal is a cultural artefact of human society, but it also has its own culture. . ." (p. 6). The relationship between *taming* of individual animals and *domestication* of animal populations is reviewed. Clutton-Brock makes an interesting link between Sarah Blaffer Hrdy's argument that humans show an instinct for nurture and domination, and Galton's views on the connection between nurturing and domestication, before going on to outline the views of other key authors such as Ingold and Budiansky. Colleagues in search of a definitive statement on the 'why' of domestication may find this part of the text too brief, and more descriptive than critical. In the author's (and

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