



Book Reviews

WILD HARVEST: PLANTS IN THE HOMININ AND PRE-AGRARIAN HUMAN WORLDS BY KAREN HARDY AND LUCY KUBIAK-MARTENS (EDS)

Oxbow Books. 2016. 368pp, 104 illus (B&W and col), 17 tables, ISBN: 978-1-78570-123-8, pb £30.00

This book is an interesting collation of papers by various authors, introduced and coordinated by K. Hardy and L. Kubiak-Martens, for the second volume of the series *Studying Scientific Archaeology*. This work should be a recommended read for diverse audiences, including the archaeobotanist, the archaeologist and, of course, the student. Archaeobotany is an underexploited topic in the general archaeological discourse and as a consequence very few books enter the review process: amongst the last hundred book reviews published in this journal, only one was devoted to archaeobotany (Herbig 2013).

The book is organised into three parts. The organisation of each part is briefly described at their respective beginning and a very useful index can be found at the end. There is a number of small quibbles. A list of tables and figures would be desirable after the table of contents and a conclusion or summary of the main contributions would have also been useful. Other minor issues such as surname misspellings suggest the book could have had been more thoroughly edited. The list of contributors is well justified, with many of the most relevant researchers producing substantial knowledge in the topic. The dedication is very opportunely addressed to the late Lydia Zapata, one of the most important researchers in hunter-gatherer archaeobotany, whose premature death is a great loss to the discipline.

The three parts can be broadly summarised as an introduction (Part 1, with four background chapters and a final chapter which, despite its enormous interest, does not entirely fit in this section), the methods (Part 2, with seven methodological papers, two of which repeat the topic of phytoliths) and a discussion (five varied papers with the common basis of the resource to ethnobotany, in Part 3). It is notoriously difficult to produce a book out of separately written papers and the editors have made a good effort. The collation of papers written by diverse authors from different backgrounds notably enriches the perspectives and discussions. However, the overall result lacks uniformity, as some papers are written in the form of handbook chapters whilst others as academic papers for scientific journals. In addition, the ordering of the chapters does not easily flow as in a progressive discourse.

The introduction begins with a short justification of the purpose of the book. The topic is well chosen, as wild plant use is a significant factor in the study of the evolution of humans and human societies which undoubtedly requires further multidisciplinary research. The relevance of this topic is also shown in the boom of interesting lines of research and debates which it provokes both in archaeobotany (eg, the

Quaternary International special issue edited by Antolín, Berihuete & López 2016 or the thematic session at the 16th Conference of the International Work Group for Palaeoethnobotany (IWGP) 2013 coordinated by Fuller & Valamoti 2013) and in modern ethnobotany (de Cortes Sánchez-Mata & Tardío 2016). Whilst this justification is very convincingly dealt with by the editors, an explanation of the delimitation of the topic is lacking. The explicit exclusion of agrarian societies is perhaps caused for limitations of space reasons, but the editors forget to mention how this omission is entirely artificial: gathering wild plants continues to be extremely important in agrarian societies, as many previous works have already highlighted (eg, Mason & Hather 2002; Colledge & Conolly 2014; Antolín & Jacomet 2015). In addition, an explicit explanation for the inclusion of approaches to the use of plants by non-human primates, including earlier hominin, would be desirable.

Next, follows a description of the organisation of the book. The introductory chapter ends with a review of the theories and evidence of plant use before agriculture. The structure of this last section is somehow concealed, and the reader could easily get lost. A neater separation between theories and evidence, perhaps further organised by type and chronology, would be appreciated. Although the review of the evidence is comprehensive, there are some missing references to Middle Palaeolithic evidence in the Iberian Peninsula, such as Nerja cave (Badal García 2001) and El Niño (García Moreno *et al.* 2014).

An introduction to plant biochemistry is given in Chapter 1 (*Food carbohydrates from plants* by Les Copeland) is probably very interesting and appropriate for specialised researchers with a pure archaeological background. It is however tough for the general reader, due to the superabundance of specialised terminology, particularly in the abstract, which does not encourage further reading. The highlight of the chapter is the alert to the dangers of drawing parallels between modern and ancient diets.

A very interesting Chapter 2 (*Why protein is not enough: the role of plants and plant processing in meeting human needs for dietary diversity* by Peter J. Butterworth *et al.*) argues why plants are physiologically essential for human life since the beginning of the genus *Homo* and how the evolution of plant processing activities is closely linked to human evolution, regardless of whether theoretically food processing is seen as a driving factor or as a consequence.

Chapter 3 (*An ape's perspective on the origin of medicinal plant use in humans* by Michael A. Huffman) may become a seminal paper in aid of archaeobotanists who often face problems when hypothesising about the potential uses of plants present in archaeological sites, because of the uncertainties of attributing plant medicinal knowledge to "archaic" societies. There is a frequent bias in archaeobotany to interpret all plant evidence as food remains.

Chapter 4 (*Plants as raw materials* by Karen Hardy) offers a suggestive review of the multiple uses of plants as raw materials and their evidence in the archaeological record. New work on the topic of fibres is providing fascinating results (Stone 2011).

A very thorough review of plant use by the last hunter-gatherers and early farmers in South West Asia, just one of the several world centres of plant domestication, is given in Chapter 5 (*Hunter-gatherer plant use in*

south west Asia: the path to agriculture by Amaia Arranz-Otaegui, Juan J. Ibáñez and Lydia Zapata-Peña). Table 5.1 brilliantly shows the evidence behind the arguments supporting the interpretation of pre-domestication cultivation.

An expanded introduction would be desirable at the beginning of Part 2 to introduce the student and general reader to two issues which make the comprehension of this section difficult. In the first instance, the intermingling of papers with approaches to human and non-human hominin plant exploitation generates confusion. The practices performed by these types of hominins have little in common beyond their absence of agriculture, and there is not only a theoretical dichotomy between the two, but also a methodological one. Whilst the use of plants by most hominins is largely dictated by physiology (either driving, or as a consequence of evolution), choice as a factor influencing plant use was very likely an influence not only for modern humans but also Neanderthals, but probably not pre-*Homo* species. In addition, the types of evidence, and their potential to approach the study of the diet of earlier hominins in a fossil state, cannot be compared to the ones used for “subfossil” remains, even though there are types of evidence (such as phytoliths, see Chapter 9) which might act a link between the two. Rather, the separation between the two topics could be made clearer.

Secondly, a review of plant macroremain archaeobotany, with special consideration on its potentials and shortcomings, would be useful, given it is the most widely used method to approach past plant use in archaeology. This could very well serve to explain how the ‘alternative’ approaches, which aim to be the focus of the book, come to meet the shortcomings of plant macroremain evidence. Although this topic is briefly addressed in the introduction to the book, a more thorough discussion or at least a provision of references to direct the reader to the most suitable works, with particular reference to taphonomy, would have been helpful.

The enlightening Chapter 6 (*Scanning electron microscopy and starchy food in Mesolithic Europe: the importance of roots and tubers in Mesolithic diet* by Lucy Kubiak-Martens) reviews the methods and results of parenchyma studies and gives an insightful recommendation (the necessity of an archaeobotanist on site advising on sampling) worth being given a higher importance within the book.

Chapter 7 (*Tools, use wear and experimentation: extracting plants from stone and bone* by Annelou van Gijn and Aimée Little) is an interesting review of the indirect approach to past plant use through the analysis of lithic tools. One of its strongest points is in the stress of the interpretative nature of use-wear analysis based on the similarities between archaeological objects and modern experimental products.

Although its position within this part of the book is somehow confusing, the interesting Chapter 8 (*Buccal dental microwear as an indicator of diet in modern and ancient human populations* by Laura Mónica Martínez, Ferran Estebarez-Sánchez and Alejandro Pérez-Pérez) provides an interesting review of how hominin diets can be indirectly inferred from dental wear, and provides all the arguments for and against this type of approach, allowing the reader to make their own judgement.

A very insightful Chapter 9 (*What early human populations ate. The use of phytoliths for identifying plant*

remains in the archaeological record at Olduvai by Rosa María Albert and Irene Esteban) considers three key developments in the evolution of plant exploitation (gathering, fire and agriculture) which could be the much needed conducting thread under the structure of the chapter. It also provides a link between approaches to non-human hominin and human past plant use, with a neat explicit distinction between availability and potential use.

Another phytolith study is presented in Chapter 10 (*Phytolith evidence of the use of plants as food by Late Natufians at Raqefet Cave* by Robert C. Power, Arlene M. Rosen and Dani Nadel), with a thorough description of phytolith extraction methods, but lacking some discussion on taphonomy, particularly in regards to the identification of digested phytoliths, which are suggested as an interpretative possibility for some of the assemblages.

An interesting and methodologically robust multi-proxy paper in Chapter 11 (*Evidence of plant foods obtained from the dental calculus of individuals from a Brazilian shell mound* by Célia Helena C. Boyadjian *et al.*) provides insightful discussions of the potential of different archaeobotanical proxies to inform about past diets, microremain extracting methods and taphonomical processes.

The principles of stable isotope analysis are very well explained in Chapter 12 (*Stable isotopes and mass spectrometry* by Karen Hardy and Stephen Buckley) and the authors make informed comments on how the future development of the methods might progress to a detection of plant input in past diets.

Part 3 of the book is described as an 'ethno' (ethnographical, ethnobotanical, ethnohistorical and ethnoarchaeological) section in which one expects modern ethnobotanical observations to be brought forward to understand the archaeological record and past societies. This theme is however, not fully developed and several of the chapters are mere ethnobotanical studies which might have been better placed in the first part of the book.

The first paper of Part 3, chapter 13 (*Prehistoric fish traps and fishing structures from Zamostje 2, Russian European Plain: archaeological and ethnographic contexts* by Ignacio Clemente Conte *et al.*) gives a fascinating account of the use and manufacture, drawing parallels from ethnographical observations, of extremely well preserved archaeological wooden structures.

Chapter 14 (*Plants and archaeology in Australia* by Sally Brockwell *et al.*) offers a good explanatory introduction to the different types of archaeobotanical remains and how to interpret their significance from ethnobotany and experimental archaeology. This paper could have been usefully placed earlier in the book.

Even when plants are scarce due to climatic constraints, their important role in human societies is shown in the ethnobotanical review brilliantly presented in Chapter 15 (*Plentiful scarcity: plant use among Fuegian hunter-gatherers* by Marian Berihuete Azorín *et al.*). Another highlight of this paper is showing how a critical review of the accounts of individual writers, in this case early ethnographers, is necessary for a correct appraisal of past human societies.

Chapter 16 (*Ethnobotany in evolutionary perspective: wild plants in diet composition and daily use among Hadza hunter-gatherers* by Alyssa N. Crittenden) presents ethnobotanical uses by a group of modern hunter-gatherers which could serve as a basis for the understanding of some practices carried out by past human groups. The highlight of the chapter is its emphasis on the critique of the concept of 'the Palaeolithic diet' popular in the current media.

The final paper of the book, Chapter 17 (*Wild edible plant use among the people of Tomboronkoto, Kédougou region, Senegal* by Mathieu Guèye and Papa Ibra Samb) is an ethnobotanical study that does not establish a link to the archaeobotanical record.

To summarise, this book is a noteworthy attempt to bring archaeobotany into the archaeological discourse and is useful for the student, the non-specialised archaeologist and the general reader. Whilst the individual papers are thoughtful and of enormous interest individually, the book as a whole sometimes lacks a natural flow and would have benefited from a more thorough editorial process.

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Review submitted: January 2017

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