

Plant Exploitation on Epipalaeolithic and Early Neolithic Sites in the Levant.

Sue Colledge. 2001. British Archaeological Reports International Series 986. Archaeopress/John & Erica Hedges, Oxford. Pp. vii + 256, 125 figs., 14 plates. £48. ISBN 1-84171-190

Only a few years ago Near Eastern archaeologists thought we knew with certainty when the first plants were domesticated and how they impacted settled life. In recent years, new archaeological research in eastern Turkey, Jordan, and along the dam-threatened banks of the Euphrates has opened a new window on the early Holocene sedentary cultures, demonstrating the existence of a rich symbolic and social life. At the same time, new archaeobotanical research has brought us sobering recognition of problematic assumptions in recognizing the earliest domesticates and in interpreting ancient economies. Sue Colledge's book offers an important reassessment of existing data and assumptions, an exciting new approach, new data, and highly significant conclusions on the development of the earliest agricultural practices in the ancient Near East.

Colledge's book is a revised and carefully edited publication of her important 1994 doctoral dissertation. As is typical of her previous published work, this book reaches the highest standards of archaeobotanical research. Although some of her major conclusions have been published elsewhere, this volume now serves as an accessible source for her data and extensive statistical analysis of plant remains from a suite of epipalaeolithic and early neolithic sites in the Levant. After a brief introduction to contemporary environments, paleoenvironmental reconstruction, chronological periods and subsistence economies that marked different periods (Chapter 1), Colledge reviews the current debates on taphonomy that have so shaken archaeobotanical reconstruction of subsistence and plant economies (Chapter 2). To this debate, Colledge sheds new light on the ethnography of hunter-forager campsites and suggests interesting approaches for recognizing early agriculture through weedy rather than domesticated taxa. In Chapter 3, she provides details of site archaeology for each of the nine Jordanian and five Syrian sites included in the analysis. In a chapter explaining the methods of sampling and analysis, Colledge provides details of the inevitable discrepancies among sites, excavation strategies, assemblage sizes, and identification criteria (Appendix 1) when using samples acquired from different research projects. Her own collections include 145 samples from Jordanian sites, to which she has added the results of van Zeist's and Bakker-Heeres' well-published Syrian collections. To my knowledge, the resulting study of 390 samples from fourteen sites is the broadest study of its kind in the Near East.

In the analysis, Colledge uses basic exploratory statistics such as density indices to assess taphonomic differences among samples (Chapter 5). While she readily admits some limitations to these methods—for example one cannot always know whether pre- or post-depositional activities account for differences—her guesses are reasonably constructed based on ecological context and forager mobility. In Chapter 6 the reader learns what the presence of particular taxa, espe-

cially edible grains, nuts, and tubers, means in terms of diet, seasonality, and the spread of agriculture over time and space. The truly innovative core of this volume, however, is Colledge's exploration of taphonomic composition of weedy taxa (excluding cereals) in Chapter 7. Here she uses correspondence analysis to explore how landscapes and resources were exploited. Her efficient text surely disguises many hours of painstaking exploratory trials, the results of which clearly demonstrate influences of geography and chronology on weedy associations. The statistical arguments are easy to follow. Through Colledge's exciting analyses, one can actually recognize the evolution of weed floras through the neolithic and identify the first areas of cultivation. Colledge draws compelling conclusions about the earliest locations of cultivated fields in wetlands adjacent to sites and the expansion of cultivation to other habitats as occupation continued.

There is little that detracts from this volume. It is most likely to interest a special audience of archaeobotanists, but its conclusions are important for any scholar of agricultural origins. Unfortunately Colledge omits the bolder statement her work deserves, for this analysis represents a real breakthrough in tracing the early development of agricultural practices. The editing seems flawless (atypical of BAR volumes) with accurate correspondence between text and figures, although it is somewhat frustrating that figures appear at the end of each chapter. In short, this seems an overly modest summary of highly significant work.

In short, *Plant Exploitation on Epipaleolithic and Early Neolithic Sites* makes several very important points. First, (and buried in Chapter 6) one finds the earliest morphological domesticated glume wheat (emmer or einkorn) at the Jordanian site of Iraq ed-Dubb. Colledge rightly warns us about chronological implications of a single radiocarbon date. Nevertheless, the fifty-three fragments of diagnostic einkorn/emmer chaff from epipaleolithic and earliest neolithic contexts (pp. 153, 150) provide some of the most convincing evidence to date of a domesticated cereal at about 10,000 BP.

Second, the analytical techniques offer exciting new prospects. Colledge's work puts correspondence analysis at center stage in the statistical exploration of data. The approach is relatively new, especially in the Near East, and very appropriate for large data sets with many "missing" variables (zero occurrence of taxa) so typical in archaeobotany. Such data tend to be non-normally distributed, making the application of many statistical methods unreliable. Furthermore, by assigning ecological and economic codes to variables, Colledge has admirably succeeded in making her data reveal important patterns.

Finally, the results provide a wonderful breakthrough on the earliest development of agriculture. This analysis supercedes typical "origins of agriculture" studies about where and when people started to cultivate and domesticate plants. Colledge has been able to use archaeobotanical data to demonstrate cultivation practices and changes in practice, bolstering a hitherto speculative argument about which ecological habitats were first used and manipulated for planting and tending crops. Specifically, this study provides strong evidence for the long-held supposition that people used floodwater and high groundwater in seasonally inundated lands to grow crops adjacent to the earliest sites. The ramifications of

such conclusions await further study, but the analysis presented here will surely occupy an important place in the history of agricultural origins.

Joy McCorrison
Department of Anthropology
The Ohio State University
Columbus, OH 43210-1364

The Mammals of Ancient Egypt. Dale J. Osborn and Jana Osbornova. *The Natural History of Egypt: Vol. IV.* 1998. Aris & Phillips Ltd., Warminster, England. Pp. 224. \$75.00 (paper). ISBN 0-85668-510-0

This is the fourth volume of Aris and Phillips' *The Natural History of Egypt*. The volume synthesizes information from mammalogy, ecology, Egyptology, and archaeozoology to provide a comprehensive summary of our present knowledge of the mammalian taxa. Osborn is a mammalogist and systematic zoologist who co-authored *The Contemporary Land Mammals of Egypt*, the widely respected publication series of the Field Museum of Natural History. Although neither author is an Egyptologist, they have thoroughly researched the Egyptological literature. The result is a very strong effort and the best text of the series.

The discussion of each taxon begins with a segment on nomenclature. This is an important contribution in itself because significant confusion exists in the Egyptological literature over the names of various taxa. This volume establishes the nomenclature for the taxa of mammals known from ancient and contemporary Egypt, and, while minor disagreements still remain (e.g., *Dama dama* Brooke or *Dama mesopotamica* L.), it provides the scientific and common names that should be used in future publications.

Following each nomenclature segment is a description of the taxon. These descriptions form the basis of the authors' identifications and inform their critique of identifications made by previous authors of the taxa in rock carvings, tomb and temple representations, and sculptures. Although arguments in the literature concerning the identification of mammalian representation in the art of ancient Egypt are profuse, Osborn and Osbornova's detailed discussions and expertise inspire a rare sense of confidence in the reader. Only a handful of identifications (e.g., the representations of the oryx, gazelle, and of one feline) may arouse some skepticism.

The discussion on the various breeds of dogs and their artistic representation is fascinating and particularly useful. The treatment of the relationship between the shrew and the ichneumon in ancient Egypt mythology is intriguing. It leads the authors to suggest that confusion in identifying sculptures of the shrew and ichneumon may result from the purposeful blurring of the differences between the two taxa by the sculptors. Perhaps the most entertaining section is entitled "Errors and Discrepancies." In this section the authors catalogue misidentifications and errors in nomenclature in the literature. The longest list is for the oryx, but the errors and discrepancies for the canids, particularly the domestic dogs, are the most useful and interesting.