

## Appendix A (continued)

*Pyracantha coccinea* M.J. Roem.  
*Raphiolepis indica* (L.) Lindl.  
*Rubus trivialis* Michx.

## RUTACEAE

*Citrus limonia* 'Meyer' Osbeck  
*Citrus sinensis* (L.) Osbeck.  
*Zanthoxylum americanum* L.

## SALICACEAE

*Populus sargentii* Dode.  
*Salix nigra* L.

## SOLANACEAE

*Brunfelsia australis* Benth.

## THEACEAE

*Camellia japonica* L.

## ULMACEAE

*Celtis laevigata* Willd.  
*Ulmus parvifolia* Jacq.  
*Ulmus rubra* Muhlenb.  
*Ulmus* sp. Mirb.

## VERBENACEAE

*Callicarpa americana* L.  
*Lantana montevidensis* (K. Spreng.) Briqu.  
*Vitex trifolia* L.

## VITACEAE

*Vitis labrusa* L.

## BOOK REVIEW

**Beyond Domestication in Prehistoric Europe: Investigations in Subsistence Archaeology and Social Complexity.** Graeme Barker & Clive Gamble, eds. Studies in Archaeology Series. New York: Academic Press, 1985. Pp. xx, 282. \$58.50.

The stated objective of this volume is "to investigate how subsistence theories and techniques that were developed for the earlier periods of prehistory up to the first farmers, can be applied to more complex societies in later prehistoric Europe" (p. 2), a goal that is admirably accomplished, to a greater or lesser extent, by each contributor. Virtually all of the authors are well steeped in scientific archaeology, demonstrating an extensive knowledge of scientific procedures and the application of relevant material and studies from non-archaeological sources in their analyses.

In addition, these studies are noteworthy for a variety of reasons. First of all, they deal with a period and a geographical area which are poorly understood and often neglected in the archaeological literature. Second, the scope of each contribution is broad and/or regional—there is not a single site report here; rather, these are synthetic, comparative studies drawing on a multitude of published and unpublished reports and studies for data and analyses. Each brings together information from many sites to formulate models or draw conclusions which have significance well beyond the borders of the regions under consideration. Third, most focus on the relationships between subsistence and aspects of social complexity, particularly social stratification and the roles of elites, important subjects generally ignored by archaeologists who are usually content to make vague statements about status based on the differential quality of grave goods and the presence or absence of monumental architecture. And finally, one is impressed by the extent to which the authors demonstrate familiarity with the ethnographic and ethnological literature and their ability to utilize the ethnographic analogy in their analyses. All of this and more is covered in the editors' introductory essay, "Beyond Domestication: A Strategy for Investigating the Process and Consequence of Social Complexity."

"Patterns in Faunal Assemblage Variability," by J.M. Maltby, is a comprehensive look at factors affecting the variability of animal bone assemblages in archaeological collections. Maltby correctly points out the consistent neglect of food exchanges by archaeologists otherwise concerned with trade, and he calls for greater attention to the implications of animal bones for trade. In a critique of existing studies he argues persuasively that many interpretations are far too simplistic and fail even to take into account logical alternative explanations, to say nothing of more imaginative solutions. While he does not explicitly offer a formal model for the study of animal bones, he manages to provide, indirectly, a comprehensive scheme for faunal analysis which, if widely adopted, would certainly yield valuable results. In his enumeration of problems facing the bone specialist he mentions several which appear insurmountable, but overall his approach makes good sense and it could revolutionize paleozoology. Ultimately he demonstrates that faunal remains can be the basis for understanding aspects of social organization and culture rarely linked to such data: settlement pattern, modes of production, trade and redistribution, and even value systems.

Roger Cribb's "The Analysis of Ancient Herding Systems: An Application of Computer Simulation in Faunal Studies" is also concerned with faunal remains, but it is much narrower in scope. Cribb describes a computerized simulation model for the study of ancient herding systems, demonstrating it with several sets of data. The model, called FLOCKS, can be used to predict herd sizes and certain aspects of herding strategies on the basis of animal bones and teeth recovered archaeologically. Although there are serious limitations to this model—which may be addressed in Cribb's planned refinement—and a full understanding of it requires some knowledge of higher mathematics and the fundamentals of computer simulation, it represents a fascinating new departure and shows considerable promise.

Of all the contributions, perhaps the one of most interest to the readers of this journal is Martin Jones's "Archaeobotany Beyond Subsistence Reconstruc-

tion." Although he is primarily concerned with demonstrating that the proper unit of archaeological analysis should be the total environment of a site rather than just the immediate area of settlement, Jones bases his arguments on studies of botanical remains recovered from the excavation of fields and other non-traditional contexts usually overlooked by archaeologists. He maintains that important aspects of human behavior can be determined from an understanding of the relationships between human beings and plants, and demonstrates this with case data from sites in the upper Thames River valley of southern England. He offers substantive conclusions based on the analysis of this material and ends up with a suggestion for additional applications of this approach. Among other highlights of this chapter is a useful sketch of a cereal plant showing those components which survive carbonization and are identifiable in archaeological analyses.

"Land Tenure, Productivity, and Field Systems," by Andrew Fleming, relies on the ethnographic analogy more than most of the other studies in this volume, drawing from, among others, the famous work of Arensberg and Kimball on rural Ireland. It is also a highly quantitative analysis. Using archaeological data from a sizeable region in southern England, Fleming shows how aspects of land use and labor organization can be developed by looking at field systems in the larger picture, thus echoing some of Jones's points. He makes a convincing case for collective farming in late Neolithic Britain and suggests that later cultural developments in northwestern Europe can be linked to the relative prosperity engendered by this efficient cooperative economy, rather than as a result of outside influences.

By examining the role of internal social (as opposed to cultural) factors in the transition from the Neolithic to the Iron Age in northeastern Europe (a region often considered a social and cultural backwater in this period), Marek Zvelebil attempts to fill an important gap in the archaeological literature with "Iron Age Transformations in Northern Russia and the Northeast Baltic." He divides the period under consideration (500 B.C.-A.D. 1200) into four segments and develops a profile of social and economic structure for each, based on aspects of subsistence suggested by the archaeological record. The result clearly illustrates major evolutionary developments and suggests that core-periphery factors (with the exception of the introduction of iron), including the occasional presence of the Romans, were of less significance than internal factors, such as social complexity and economic intensification, for such developments as craft specialization, surplus production, regional markets, and, ultimately, social and political hierarchies—all hallmarks of later Iron Age society.

In "Regional Survey and Settlement Trends: Studies from Prehistoric France," Nigel Mills recognizes that most environments can (and often do) support a variety of subsistence systems. Mills calls for a broader geographical perspective in archaeology in which the distinction between simple and complex societies is subordinated to a regional approach where emphasis is placed on understanding human interaction with the environment. He applies this framework to two case studies: a group of Neolithic sites in southern France, and a set of Iron Age sites in central France. In the first case he is able to show that demographic and cultural variations conventionally attributed to environmental changes are more likely to have occurred as a result of internal social and cultural developments unrelated

to changes in climate and other environmental factors. In case two he clarifies the issues and provides new explanations for the appearance of large political/social/economic centers in the later Iron Age. In both cases he draws extensively from the modern ethnographic and scientific records and suggests that modern demographic and other cycles have clear parallels in antiquity.

"Social Factors and Economic Change in Balearic Prehistory, 3000-1000 B.C.," by James Lewthwaite, looks at the "marginal" area of the Balearic Islands, evaluating the utility and validity of four models of social differentiation and population increase. Lewthwaite reviews virtually all the archaeological research carried out in the islands and constructs an impressive profile of settlement evolution there. In the end he rejects most of the features of the four models, arguing that equal attention must be paid to subsistence and on-subsistence factors in any analysis. Of particular importance, in Lewthwaite's opinion, are maritime connections with the rest of southern Europe (including such islands as Sardinia and Sicily) as well as entrepreneurial activities, both internal and external.

Working with very sparse data (animal bone fragments and carbonized grains), Klavs Randsborg, in "Subsistence and Settlement in Northern Temperate Europe in the First Millennium A.D.," correlates herding and agricultural practices with aspects of the environment and such social and economic factors as the impact of the Romans over an enormous area—most of northern and part of central Europe. He is able to determine some general trends in the cultivation of five grains—wheat, barley, rye, oats, and millet—and correlates each with various environments and chronological periods. Transformations in settlement pattern are linked to subsistence strategies and environmental factors such as climatic change and soil types. He also reviews briefly some of the problems related to differential preservation of botanical remains in archaeological contexts.

This important collection is enhanced by the generally high quality of editing and printing. Each article is well-organized and well-written. There are good maps, tables, graphs, and drawings throughout, as well as a comprehensive and very useful index. Although its appeal is limited, this volume should prove invaluable to archaeologists working in western and northern Europe, and it is a model of good synthetic analysis.

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