

programme in June 1974. Indeed the manuscripts of some chapters of the book date from October 1973 (others being submitted up to February 1980). It is not surprising, therefore, that some authors took steps to publish accounts of part of their work in advance of this volume. Under the circumstances the editors are to be congratulated for producing such a well-rounded and coherent report.

Interactive processes in desert ecosystems are dealt with in detail (soil-vegetation-atmosphere; plant-plant; animal-animal; plant-animal) and these lead on in a logical fashion to an overall account of the population dynamics of ecosystems in deserts. Arid land ecosystems are so variable, temporally and spatially, that these systems test to the limit the theories developed in this field. Wagner stresses this in his account of patterns of fluctuation, mechanisms of equilibrium and constraints limiting density for a range of desert species. Much of this work is incorporated into the models of arid ecosystem dynamics (Goodall), spatial effects in modelling (Noy-Meir) and the simulation of plant production in arid regions (van Keulen and de Wit). In all of this, Goodall contends that attempts "to understand the dynamics of an ecosystem without taking biological individuality into account are doomed to failure". His chapter, and that of Noy-Meir, are succinct essays on the realities of modelling ecosystems.

The limitations, both scientific and geographical, on the use of models for land management strategies in the arid zone are evident from the final chapters of the book. These deal with management for domestic livestock forage, for dryland and irrigated crops, for recreation and tourism, of water resources and the social aspects of managing arid ecosystems. A final chapter attempts a synthesis. The real synthesis is for the years ahead. □

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Unearthing the past

Patty Jo Watson

A Complete Manual of Field Archaeology: Tools and Techniques of Field Work for Archaeologists. By Martha Joukowsky. Pp.630. Hbk ISBN 0-13-162164-5; pbk ISBN 0-13-162156-4. (Prentice-Hall: 1980.) Hbk \$29.95, £22.45; pbk \$14.95, £11.20.

MARTHA Joukowsky has produced a good, sturdy field manual in an attractive format. The author's training and experience are principally in Old World Mediterranean archaeology, and the book reflects this bias. Although New World prehistory is

not entirely unrepresented, the author is not at home with American archaeology nor the terminology and techniques characteristic of it.

As the title indicates, emphasis is on field recording and — to a lesser extent — recovery techniques. There are chapters on surveying, stratigraphy, record forms and record books for a variety of data categories, and on the analysis of pottery and several other artifact types. But there are also short chapters on archaeological staff, ethics in archaeology, dating processes, publication, fieldwork opportunities, financial aid and a longer discussion of field conservation. With the exceptions noted below, the text is well written and clear with abundant line drawings illustrating the descriptive material.

No such volume can be or should be entirely encyclopaedic, but there are some unfortunate omissions or inadequacies. A summary of dry-screening methods is provided (written by Junius Bird), but there is very little attention given to water-screening and only a brief discussion of flotation/water separation techniques. Botanical recovery in general is more briefly covered than that of faunal and human skeletal remains. Several definitions in the glossaries provided here and there in the text are cursory, misleading or vague. For example, on p.171 mud-brick is listed synonymously with adobe and pisé, then defined as unbaked or sun-dried brick. But many archaeologists use pisé to mean architecture of coursed, sun-dried mud, or (sometimes) beaten earth. The New World synonym is puddled adobe; a common Near Eastern synonym is *tauf* (Arabic) as distinct from *libn*, which is mud brick. The definitions of layer, level and locus on the same page are also rather confusing. Similarly, many of the definitions given for various chipped stone tool types (pp.320-321) are vague or misleading; they were not prepared by a lithics specialist.

Another weakness is the bibliography. The subjects treated are categorized in a somewhat idiosyncratic way ("Culture Studies" is the least comprehensible heading, but there are others that are also arbitrary, such as "New World Mounds"), and references are often missing or seem randomly distributed among the headings.

Although there is no detailed discussion of problem definition or research design, the few paragraphs devoted to these vital topics (p.38) are clear and well phrased.

In spite of the inadequacies of the book for use by New World prehistorians, every professional archaeologist should be aware of it and most of them should own it. By and large, it is a worthy successor to Wheeler's *Archaeology from the Earth* (Penguin, 1954) and Kenyon's *Beginning in Archaeology* (Praeger, 1953). □

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