that Adams in his report on the ceramics discusses an apparent elite-class funerary ritual, drawing inferences of a sociopolitical nature. So it is also that Willey, in the concluding report, ends with a short section dealing with questions of process. Indeed, as work proceeded at Altar, more descriptive goals were altered with more attention given to cultural matters. Thus, for example, an initial concern with the relation of the Altar sequence to those of other regions of the lowlands developed into a concern with Altar as a possible trading center.

The Altar reports are, then, a mix of the old and the new. Because of this they will, I think, disappoint a number of problem-oriented archeologists whose primary interests lie in the realm of cultural process. This will be unfortunate. While I, too, would like to see more done with the Altar data beyond description, it must be recognized that there is always a need in archeology for detailed data. It is only when such data are available that we are able to pose the right sorts of hypotheses, which then can be tested. Equally important, without such data we are in no position to examine, critically, conclusions about sociocultural processes drawn by others.

In sum, then, we have here a major contribution to the archeology of the Maya lowlands. It may not please every taste, but it establishes some valuable new precedents in Maya archeology. Further, it has already served to pose new hypotheses for further investigation, and it will be valuable for this purpose into the future.

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Sedimentology

Sedimentary Structures of Ephemeral Streams. M. DANE PICARD and LEE R. HIGH, JR. Elsevier, New York, 1973. xvi, 224 pp., illus. $27.50. Developments in Sedimentology 17.

Geologists interpret ancient sedimentary rocks with greatest accuracy when they can match rock outcrop or cores and modern sediments of known origin feature for feature. Information on specific modern sedimentary environments and processes is accruing, but many environments have received little attention. This book will be valuable to sedimentologists because it describes illustrates, and explains the origin of a large number of sedimentary structures in qualitative terms for an environment that has received little previous study. Inasmuch as ephemeral streams are more common than perennial ones in the 25 percent of the earth's surface that has an arid to semiarid climate, ephemeral streams are an important sedimentary domain.

Largely on the basis of data from ephemeral streams in the Uinta Basin of northeastern Utah, the authors describe 42 categories of erosional, transportational-depositional, and postdepositional structures and 14 bedding types. The following information is given for each: name and synonyms, description, a photograph (or photographs), abundance in each of 29 streams studied in detail, origin, likelihood of preservation in rocks, occurrence in other sedimentary environments, environmental significance, and important references. The book includes a description of vertical sequences typical of point bars and channel bars, and concludes with an overview of the significance of sedimentary structures of ephemeral streams compared with other sedimentary environments.

The 138 photographs are a major contribution of the book. Most are close-up views of excellent quality. Many of the sedimentary structures illustrated by Picard and High can be found also in the two atlases of sedimentary structures with English texts that have been published in the last ten years. However, this book is more useful than the atlases for its discussion of the origin, occurrence, and likelihood of preservation of each structure found in ephemeral streams. The authors are keen observers and have sharp eyes for detail. They are perhaps the first to stress the distinction between continuous and discontinuous horizontal lamination as principal bedding types, and astutely point out the common error of many workers who have confused primary streaming lineation with secondary parting lineation.

The book will not satisfy quantitative sedimentologists, because no data on hydraulic parameters, channel geometry, or sediment size are given. The authors make no apology for this omission, and in fact criticize some reports of quantitative laboratory studies as "sometimes clouded by jargon and excessive mathematics." Their qualitative treatment is strong enough to offset this omission, and they have drawn heavily on flume studies to explain the origin of various features.

In physical appearance the book is of high quality. An index is missing, but the table of contents is sufficiently detailed to make one superfluous.

The book will be very useful to the specialist in fluvial sedimentology, to the generalist interested in sedimentary structures, and to the student interested in the identification, description, and origin of some common and some uncommon sedimentary structures.

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Morphometrics

Form and Pattern in Human Evolution. Some Mathematical, Physical, and Engineering Approaches. CHARLES OXNARD. University of Chicago Press, Chicago, 1973. x, 218 pp., illus. $12.50.

Oxnard has produced an unusual and exciting treatment of the methodology of describing and analyzing biological shapes and patterns. His title is somewhat misleading in that human evolution is discussed only to the extent that most of the illustrative examples are based on the bones of primates. The methods and techniques he describes apply equally well to any discipline where the external shape or internal fabric of an object or set of objects must be described and interpreted. The book should thus be of value to a wide range of people who work with morphology in its broadest sense.

The methods to which Oxnard devotes most attention are those which he has personally found effective in his many pioneering studies of structure and function of the primate skeleton. They are basically the methods most useful in discerning patterns and relationships not readily assessable by the unaided eye or the unaided mind. Chapters are devoted to multivariate statistical analysis, clustering techniques, experimental stress analysis using photoelastic properties, and optical data processing. The presentation is definitely not in cookbook style, nor is there any pretense of being comprehensive in coverage. Rather, the reader is introduced to each general method by a reasonably nontechnical discussion of its basic objectives and strategy and is given ample geometric analogies and

graphical examples. This is followed by a more detailed presentation of one or two specific techniques, the purpose being to give the reader a basic understanding, excite his interest in using the method, and direct him through literature references to fuller and more comprehensive treatments elsewhere.

The section on multivariate methods includes principal component analysis, generalized distance methods, and canonical analysis. The chapter on clustering is dominated by Neely's neighborhood limited classification method, although the reader is given ample basis for working with other, more conventional techniques. The chapter on stress analysis mentions (and references) a wide variety of experimental approaches, but detailed treatment is limited to work in polarized light with plastic models. The optical data analysis section is dominated by discussion of Fourier transformations using optical techniques, but many other filtering and non-Fourier transform methods of image processing and pattern recognition are briefly yet enticingly introduced.

A particularly refreshing aspect of the book is that Oxnard has purposely included several methods that are as yet not fully tested and some that are frankly trial balloons. This is especially true of the section on optical methods, but examples are found throughout the volume. The effect of this approach is to challenge the reader to extend and develop the subject matter of the book—in sharp contrast to the effect many books of this sort have of freezing progress in methodology by putting it between hard covers.

The book also contains rather lengthy discussions of the problem and pitfalls of obtaining and working with morphometric data and of the strategies of biological interpretation of structure and function. In these areas, Oxnard beautifully complements and extends the classic works of such masters as Huxley, Fisher, and D'Arcy Thompson.

In summary, this is an optimistic and forward-looking treatment of the field of morphologic analysis. Though directed at primatologists and physical anthropologists, it will be appreciated by all those concerned with modern methods of interpreting form and pattern.

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Beetles

Biology of Coccinellidae. IVO HODEK. With keys for identification by co-authors. Junk, The Hague, and Academia, Prague, 1973. 260 pp., illus. + plates. 100 Dutch guilders.

The common, orange-red, often spotted lady beetles, ladybugs, or ladybirds are known and liked by nearly everyone. These familiar insects represent only a few of the more than 4000 known species in 500 genera in the family Coccinellidae. The worldwide distribution of coccinellids from the temperature region to the tropics, the biological and ecological diversity of the species, and the importance of lady beetles in the control of agricultural, forest, and garden insects and spider mites have attracted investigators from wide areas of biology and ecology.

Hodek has succeeded in compacting the essence of over 500 cited papers, including many in Russian, with information from his own years of experience with the biology and ecology of the Coccinellidae, into this small book, and he has made the presentation especially interesting and meaningful by viewing the subject in the light of current biological concepts in entomology and ecology. The chapter on adult morphology by I. Kovář, that on morphology and taxonomy of larvae with keys to their identification by G. I. Savoïskaya and B. Klausnitzer, and that on variability and genetic studies by A. Honěk are mainly descriptive, but they are informative and useful. The remaining chapters, all written by Hodek, on life history and biological properties, distribution of habitats, food relations, dormancy, enemies, and effectiveness and utilization of coccinellids emphasize the causal relationships, which makes for interesting and enlightening reading.

There are no keys to adult coccinellids, but four keys to the larvae are presented. The main key is to subfamilies, tribes, and genera that occur in the Palearctic region. It is the most comprehensive key to coccinellid larvae that exists today and will provide the basis for future larval keys for coccinellids of other regions. There are also a key to 82 Palearctic species and a simple key to 46 European species which requires only the use of a hand lens. Also included on three fold-out plates is a colored pictorial dichotomous key to the common genera and species of European coccinellids. A duplicate of this key is contained in a cover pocket for use in the field. Some Nearctic *Scymnus* and *Hyperaspis* larvae cannot be treated in the keys since they do not have wax exudations. In addition to the field key plates, there are 160 figures of larval structures. Elsewhere in the text there are 15 colored plates of adults, larvae, and pupae of the most common Palearctic species. In addition to the numerous tables and graphs in the text, there are 58 photographs, some in color, of various coccinellids, their anatomy, habitats, and aggregations.

Among the illustrations of the three species chosen to depict the variability of elytral maculation within a species is one of the color pattern variation found in *Hippodamia convergens* taken from Johnson's 1910 paper on coccinellid variation. There is an error in this figure, for Johnson's taxonomy was of the pre-genitalic-character era and he included at least two other species under the variation shown for *H. convergens*.

Anyone interested in migration, aggregation, or diapause of insects should consult Hodek's treatment of these phenomena. The applied entomologist or ecologist interested in techniques for evaluating the impact of entomophagous predators on prey populations will be brought up to date in this field. And anyone from the layman to the specialist who is just interested in lady beetles not only will find the reading enjoyable but will have a key to the world literature on the biology of Coccinellidae.

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Interspecific War

Man against Tsetse. Struggle for Africa. JOHN J. MCKELVEY, JR. Cornell University Press, Ithaca, N.Y., 1973. xviii, 306 pp., illus. $12.50.

Man's struggle against man makes up the bulk of our history books: events that lead one nation to take up arms against another and injustices that lead to internal strife. The great pestilences are rarely given more than passing notice and then usually only in the context of their economic or sociological impact.

There are exceptions, of course, and McKelvey's *Man against Tsetse* is one of them. It is a history book dealing