

and intraspecific behavior patterns. In a very informative paper on mother-young relationships the author notes that the calf often misinterprets the alert stance posture as a nursing invitation posture. An effect of this is to ensure that the calf's attention is almost always on its mother. There is a "compleat" review of seasonal movements in moose in which the author presents an interesting categorization of migration patterns. Among the six papers on moose coactions with other species is a perceptive report of the effect of snow on wolf predation of moose on Isle Royale. The other papers are competent but mainly descriptive.

The next section, on population dynamics of moose, is the weakest, as that is a subject on which there are already many good papers in the literature. A shallow review of reproduction is disappointing in view of its author's previous contributions in the field. No comment is made about the absence of basic information (estrus length, estrous cycle length, length of gestation, and so on) from the paper. More significantly, no data are given on age-specific fecundity—a crucial piece of management information. A theoretical paper attempts to explain the incidence of twinning in moose in the light of varying selection pressures due to alterations in habitat. This paper would be more convincing if a better data base were referred to. The best paper in this section describes a significant experiment in Ontario in which deliberate overhunting was studied in some detail. However, the author reaches the remarkable conclusion that "since recovery from overhunting is likely to be quite rapid, moose can be harvested close to the annual surplus with confidence" (p. 539). Surely the vagaries of weather could prove this statement a dangerous tenet of management. Indeed, several other papers in the book describe highly significant effects of weather on moose populations.

The book closes with seven papers on moose management in different areas of the world. These papers show a remarkable similarity of approach in the North American scene but a considerably different approach in the U.S.S.R. and Scandinavia.

It was singularly appropriate that the keynote address and first paper have been presented by R. L. Peterson. In almost every paper reference is made to his pioneer book on North American moose published 20 years ago. This volume demonstrates the considerable increase in our understanding of moose ecology since that time. Despite this increase, however, there are considerable gaps in the data base for moose biology. Almost nothing is known

about detailed seasonal growth rates of adult moose, nor do we know much about the factors affecting calf survival. There is a real need for information on lactation phenomena. Astonishingly, in a species remarkable for its antler development, there appears to have been no study on calcium metabolism or on the ecology of calcium supply.

The volume is well produced, with clear type and good figures. There are some spelling mistakes, but the editing has ensured clear and readable papers. It is a pity that the editors did not see fit to include English captions for the figures in the single French article. Abstracts in Russian would have been a useful gesture.

R. M. F. S. SADLEIR

*Department of Biological Sciences,
Simon Fraser University,
Burnaby, British Columbia*

Site Locations

Archaeological Atlas of the World. DAVID and RUTH WHITEHOUSE. Maps drawn by John Woodcock and Shalom Schotten. Freeman, San Francisco, 1975. 272 pp. Cloth, \$17; paper, \$8.95.

This is intended as a reference book for both professional archeologists and amateurs. It lists, locates, and culturally and chronologically identifies "some 5,000 pre- and proto-historic sites" the world over. The format is compact and excellent. The 103 illustrations are maps, prepared to a high quality standard by John Woodcock and Shalom Schotten. They range in size from half-page (6 by 5 inches) to double-page (8 by 12 inches) layouts. They are done in white and sepia with the archeological sites superimposed in heavy black symbols. These symbols indicate various categories of sites (settlements, religious monuments, mineral sources, and so on, and combinations of these). The finding of site locations is facilitated for the reader by an index, alphabetically arranged, which keys into the page number of the map and the location of the site on a standardized grid.

After a brief introduction, which says something about the development of archeology, dating methods, and models or classificatory-developmental schemes for prehistory, the atlas is organized into seven major geographical sections: Palaeolithic Sites in the Old World; Africa; Western Asia; The Mediterranean Basin; Europe with Russia; South and East Asia, Australasia and the Pacific; and The Americas. In each section, which is led off with a little

synopsis of its archeology, are maps and subsections treating of the geographical, chronological, or combined geographical-chronological position of the sites.

A question that must be asked is, How useful is such a compendium? Speaking for myself, I can answer this positively. As an Americanist, I turn to it for locations of Old World sites and some general information about them. A specific case in point would be Siberian sites that are claimed to show relationships to early American lithic industries. From the atlas I will at least know where they are and have some beginning knowledge about them. At the same time, I am a little uneasy when I turn to the Americas section and find no references to early agricultural sites for the Intermediate area or Amazonia under the heading "The first farmers in the Americas." I realize the difficulties of definition here, and the authors have, in part, compensated for them with their map and discussion, farther along, of "The Intermediate area and Amazonia." This kind of criticism, I suppose, could be offered by specialists at any point in the book, and I do not mean to be carping about something the authors clearly cannot do, and did not set out to do, in a general reference of this type; nevertheless, the user of the atlas should realize that a work of this kind can provide him or her with only an entry into archeological information. From this point the reader can go to the general survey references that are listed for each section and subsection and from these proceed further. Given this stipulation and procedure, I think the *Archaeological Atlas of the World* scores as a success.

GORDON R. WILLEY

*Peabody Museum, Harvard University,
Cambridge, Massachusetts*

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