

THE ARCHAEOLOGY OF BERINGIA. By FREDERICK HADLEIGH WEST. New York: Columbia University Press, 1981. 268 p., 40 figs., 10 tables, bib., author and subject indices. US\$30.00.

This is the first archeological monograph devoted to a synthesis of the late Pleistocene-early Holocene prehistory of Beringia, the vast region including the Bering Land Bridge which once linked Asia and the Americas. It is written from the valuable perspective of a researcher who has spent winters as well as summers in eastern Beringia. Although eastern Siberian data are utilized, emphasis is on the late Pleistocene and early Holocene prehistory of interior Alaska. While there is some discussion of West's own work in the Tangle Lakes region of central Alaska, the monograph is not, even incidentally, a site report. The ultimate objective is "a contribution toward a comprehensive theory on the peopling of Beringia and the New World" (p. 163). As such it invites the attention of most Americanist archaeologists as well as northern specialists.

Chapter One is an excellent synthesis of contemporary environments in northeastern Siberia and Alaska, one which I suspect will contribute to a number of lectures in the next few years. Chapter Two reconstructs Beringia between 25 000 and 8000 B.C. as a unique, now-extinct, cold dry steppe tundra capable of supporting a diverse fauna including many large herbivores. The serious reader will have to integrate this familiar reconstruction with the various views expressed in the recently published *Paleoecology of Beringia* (Academic Press, 1982), a work unavailable to West.

Chapter Three introduces the heroes of the book, the Beringians. Although the author appears reluctant to provide a full-face characterization, these are eventually revealed to be terrestrial arctic hunters adapted to the exploitation of large herbivores of the arctic steppe Beringian biome. The hallmark of their technology is sharp-edged parallel-sided flakes (blades, more commonly microblades) struck from specially prepared cores or microcores. Some regional variation is noted in Beringian tool inventories with varying emphasis on retouched flake tools, burins, and large lenticular bifaces which are thought to have functioned as knives. Blades and microblades, while often broken, are seldom shaped or retouched. Absence of obvious stone weapon tips leads to the plausible inference that seldom-preserved tools of antler, bone, and ivory were significant. The Beringians are reasonably viewed as a late Pleistocene eastern extension of a widespread Eurasian Upper Paleolithic technology. A close historical relationship between eastern Siberian and Alaskan final Pleistocene technologies is indicated. The term "Dyuktai culture" includes most pertinent Siberian assemblages, and the term "Denali culture" most (not all) Alaskan Beringian assemblages. More technological diversity is seen in Siberia than in Alaska and a key role is postulated (plausibly but on minimal evidence) for the now-drowned heartland of central Beringia. The coming of man to eastern Beringia is seen as late, perhaps not much earlier than 11 000 years ago. Candidates for an earlier human presence in far northwestern North America are dismissed. One major exception is made to the simple formula that northern core and blade technology equals Beringian. Quite reasonably excluded is the Arctic Small Tool tradition which appeared on the tundras and coasts of arctic America between 4000 and 5000 years ago.

Core and blade technology is thus basic to the concept of a Beringian tradition. The author presents a rough form categorization (misleadingly termed a *formal classification*) of cores. As is true of other illustrations in this book, the core drawings are so reduced in size that they almost require study under magnification. Nineteen pages of tables provide a summary of over 165 microblade sites (ca. 137 from eastern Beringia and 28 from western Beringia) known up to 1980 with references, dating, inventory description, and comments. Any specialist can find something to complain about in tabulations of this kind. I merely note that more detailed published descriptions than those utilized here are available for sites on the Alaska Peninsula, Anangula Island, and the southwest Yukon Territory of Canada. Also, some unlikely candidates (for example, Tuku in Anaktuvuk Pass) are incorporated in the Beringian tradition by mechanical equation of early microblades with this entity. Tuku is later explained (p. 226) as a contact phenomenon between relict Beringians and Northern Archaic (West terms them "Boreal Archaic") users of side-notched projectile points, but since the Tuku inventory is dominated by Northern Archaic forms its inclusion in the Beringian tradition on the basis of the presence of a microblade industry seems dubious taxonomic procedure.

About 30 pages are devoted to a general discussion of the author's work in the Tangle Lakes. Twenty Beringian tradition sites are known here, but none is described in detail. Those interested in using this material for comparative purposes will be frustrated by failure to provide site provenience for the majority of the illustrated specimens and confused by the transposition of most text references to Figures 14 and 15, an unfortunate editorial lapse. There are also 15 figures of diagnostic artifacts from other Beringian sites. Unfortunately, references to Figures 29 and 30 have also been transposed.

In the final three chapters the author turns to his primary purpose, a discussion of the origin, history and fate of the Beringians. Maintaining that central Beringia was environmentally the richest subprovince, West postulates a dense population buildup there between 22 000 and 10 000 B.P. This plausible but undocumented position is subjected to unintentional parody by use of a purely hypothetical curve (Fig. 37), complete with an uncalibrated population axis. Rising sea levels submerged ca. 1 million km² of central Beringia by 10 000 years ago. West suggests that dislocations associated with this event led to the first significant population of eastern Beringia only after 12 000 years ago, as well as to the severing of connections between eastern and western Beringia. The eastern Beringians held out in isolated patches of upland steppe tundra until postglacial warming eliminated their ecniche by ca. 7000 B.P., whereupon they passed from the scene with minimal contribution to later cultures of the area. Abetted by another unlabelled population graph (Fig. 38), West makes the doubtful assertion that the early Holocene human population of interior Alaska was greater than at any later time. Indeed, while a number of authors have invoked the impact of population dislocation associated with rising sea levels in final Pleistocene times, we must admit that in Beringia this remains undemonstrated. While the thin factual base is easy to criticize, there is much in West's argument that is plausible and provocative.

This is also true of his discussion of the relationships between Beringian prehistory and the southward movement of Clovis culture, which he sees as the first proven human occupation of southern North America. In his view, buttressed by only casually described comparisons, Clovis technology is essentially a Beringian technology in which stone projectile points have been substituted for organic points. In this view the Clovis movement south was a rapid long-range migration through difficult terrain indirectly caused by the drowning of central Beringia. This leads to the logical but arresting claim that the peopling of the New World was an accidental byproduct of the drowning of central Beringia. Fluted points were invented on the way south, perhaps when Beringian-Clovis peoples ran out of caribou antler for organic weapon heads. The scattered finds of fluted points in eastern Beringia are seen, implausibly in my view, as unrelated independent inventions. The correctness of West's scenario depends, among other things, on acceptance of the conservative view that the Western Hemisphere was not successfully entered by humans until final Pleistocene times, a position that can neither be proven nor disproven with the data at hand. A more systematic and detailed demonstration of substantial similarity in inventory between Clovis and Beringian technologies would have strengthened the author's case.

This is an attractive book, although its small (octavo) size results in many maps and illustrations being too small for convenient use. For example, the Tangle Lakes artifacts are presented with unusual sophistication in both photographs and line drawings, but certain referencing errors and inappropriately small size of the illustrations render this treatment less valuable than it might have been. In addition to a detailed subject index there is an author index, allowing those with tunnel vision to determine rapidly which of their favorite oxen have been gored (or ignored). The extensive bibliography serves as a useful guide to a diffuse literature. The many provocative, and upon occasion controversial, points clearly outlined in this work require the attention of serious students of northern prehistory and early man in the Western Hemisphere.

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ARCTIC ARTHROPODS: A REVIEW OF SYSTEMATICS AND ECOLOGY WITH PARTICULAR REFERENCE TO THE NORTH AMERICAN FAUNA. By H.V. DANKS. Ottawa: Entomological Society of Canada, 1981. 608 p., 114 figs., 109 tables, references. Can\$37.00 (\$26.50 to members of the Entomological Society of Canada). (Order from ESC, 1320 Carling Avenue, Ottawa, Ontario, Canada K1Z 7K9.)

Non-entomologists, read on! This excellent book will be useful to all those

with a general interest in the Arctic. The first part, approximately 100 pages in length, is a background piece on arctic environments, including chapters on physiography, climates and microclimates, permafrost, soils, botany, vertebrates, and invertebrates other than Arthropods and Crustacea. To my mind this is the best, and certainly the most up-to-date, summary on arctic environments that is available. The section has its own bibliography and could easily stand alone as a separate publication.

The second part of the book (264 pages) is focused more on arthropods, but in a manner that allows easy entry for a wide range of arctic specialists. The section is particularly rich in examples of biogeographic and ecologic interest. The low diversity of the arctic biota apparently conceals a considerable degree of complexity. As Danks points out, insects are an important part of arctic food chains. Because they are the most taxonomically diverse element of the arctic biota, knowledge of their repertoire of adaptations to arctic conditions provides a better insight to the real complexity of arctic ecosystems than can be gained by study of other organisms. But this is so only if the fauna is adequately known. A thread woven throughout Danks's text concerns the problem of dealing with a partially known fauna. Only about half of the estimated arthropod fauna (4000 species) of the Arctic has been described, and some of the common groups that extend furthest north are among the most poorly known taxonomically. Any reader who questions the need for further baseline faunal and taxonomic work would be well advised to read chapter 13 on needs for future work and chapter 10.1 on difficulties of interpretation.

One chapter in Part II is an overview of arctic arthropods. It includes a synopsis of the life history and status of knowledge of each family found in tundra regions. For the non-entomologist this is an extremely valuable section. But it also points up one of the major deficiencies of the book — lack of a taxonomic index. I expect that few people will read the entire book from cover to cover. A reader will more likely be looking for information on a specific group. Danks's text is peppered with examples that refer to named taxa, but without a taxonomic index, a reader will have difficulty locating the references to his/her target group. A subject index would also be of great help to the non-entomological reader.

Other important chapters within Part II deal with Adaptations of Northern Arthropods, Ecosystem Structure and Function, and Historical and Ecological Determinants of Distribution. It was particularly refreshing to note the balanced approach the author takes in the historical-ecological section. His statement, "The facts that underpin interpretation of historical events for arthropods are exceeded by speculations based on taxonomic and distributional evidence" is especially timely in view of the accumulating fossil record that reveals drastic changes of the North American Coleoptera fauna over the last 15 000 years.

The final section of the book (153 pages) is a checklist and will probably be of interest only to entomologists. It is similar in format to the list developed for arctic beetles by the late W.J. Brown. Brown's manuscript was widely circulated and cited by Coleoptera specialists, but unfortunately never published. At one time there were plans to publish Brown's manuscript posthumously. Danks's comprehensive checklist makes that unnecessary, but it is regrettable that Brown's seminal thinking on the subject of arctic insects was not acknowledged.

There is a tendency for books of this type to be slanted in favour of the author's particular special interest. It is a credit to Danks that this book is so evenly balanced. The organization of the text is excellent and there are few typographical errors. Many of the chapters contain brief point-by-point conclusions which provide the reader with ready clues as to where to search for specific data.

Arctic Arthropods is the latest book to be produced under the auspices of a National Museum of Natural Sciences project entitled "Biological Survey of Canada (Terrestrial Arthropods)". A companion volume to the one reviewed here is *A Bibliography of Arctic Arthropods of the Nearctic Region*, and an earlier Entomological Society of Canada Memoir dealt with the entire insect fauna of Canada. Together these three books constitute a comprehensive statement on the status and history of the northern North American fauna. Of the three, *Arctic Arthropods* is the one that will be of interest to the widest audience. Unfortunately the original press run was small, so it will probably be out of print by the time that the "wider audience" becomes fully aware of its existence.

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AN ACCOUNT OF A VOYAGE TO THE NORTH WEST COAST OF AMERICA IN 1785 & 1786. By ALEXANDER WALKER. Edited by ROBIN FISHER and J.M. BUMSTEAD. Vancouver and Toronto: Douglas and McIntyre, and Seattle: University of Washington Press, 1982. 319 p. incl. 7 maps, 7 line drawings, notes, bib., index, Appendix: "A vocabulary of the language of Nootka Sound", edited by B. Carlson, J. Thomas and F. Charlie. Hardbound. Can\$24.95.

In 1786 Alexander Walker, a young ensign of the Bombay Army, participated in one of the earliest private trading voyages to the Northwest Coast of North America. Commanded by Capt. James Strange, this expedition hoped to collect scientific information and establish a permanent shore facility, as well as trade for sea otter pelts with the Indian inhabitants. Although their more grandiose plans did not come to fruition and Walker was not left on the Northwest Coast in charge of a small military garrison as originally intended, he did manage to make copious observations about the aboriginal inhabitants and their customs, particularly during a ca. one month's stay in Nootka Sound on the west coast of Vancouver Island in July 1786. Only the journals of the Cook expedition in 1778 provide an earlier, equally detailed, ethnographic account of this area. Like Cook, Strange sailed his ships north to Prince William Sound, Alaska, after their stay at Friendly Cove, where Walker collected further ethnographic data on the Chugach. In his later life as a military officer and administrator in India and St. Helena, Walker maintained his interest in what today would be clearly labelled anthropology and continued to edit and prepare his Northwest Coast manuscript for publication. Unfortunately he never finished this task and after his death in 1831 the journal lay unnoticed until its acquisition by the National Library of Scotland in 1952. Thus, its final publication in 1982 is the long overdue culmination of the effort, thought, and ambition of a man dead for over 150 years.

Walker's descriptions of the native cultures of Nootka and Prince William Sound result from one of the earliest intensive contacts with those people and should therefore represent a source of baseline data about Pacific Coast aboriginal lifeways as valuable as any that exists. As the editors, Fisher and Bumstead, point out in their introduction, anthropologists are not always noted for their effective use of primary historical documents. For archaeologists at least, an account such as Walker's ought to be as priceless a trove of new information about aboriginal culture as any assemblage of excavated tools. Anthropologists and archaeologists are prone to uncritical recitation of normative generalizations about ethnographic cultures; and one turns to documents such as Walker's with the hope of obtaining new insights or widened vistas on native cultures at time of contact, not previously integrated in standard contemporary ethnographic generalizations. In fact, it is clear that some of Walker's specific observations are of unique interest, such as his long Nootka word-list, which is one of the earliest substantial vocabularies from the Northwest Coast. This may prove of value to scholars studying rates of post-contact change in native languages, and origins of the Northwest Coast ("Chinook") trade jargon. Alaskan archaeologists may also be intrigued by Walker's detailed description of a large abandoned native village in Prince William Sound, replete with "winter" semi-subterranean houses connected by covered passages to "summer" pole-frame, thatched-roof dwellings. However, in sum one must be just a little disappointed by what seems to be little in Walker's account — of Nootka culture, at least — that is significantly new or different from already published and deeply ingrained perceptions of those people as they were at time of contact. This is not to dispute the undoubted value of Walker's work; but, in general, his overall observations simply complement and confirm those of many others from Cook to Drucker, rather than modifying or greatly amplifying them.

Walker's overall agreement with extant ethnographic generalizations about Nootka culture could be taken simply as a verification of their validity — a new voice from the past confirming that we've been exactly right all along! However, satisfaction with this unlikely state of affairs must be tempered by consideration of an apparent problem with the Walker account. That is the fact that the original diaries were lost shortly after the expedition, and the final published manuscript was reconstructed from rough notes, diligently worked and reworked as late as 1828 — i.e. up to 42 years after the actual voyage. In addition Walker was obviously inclined to scholarly endeavour and he incorporated in the final manuscript published and unpublished opinions and observations of other explorers dating as late as the 1820s. Although the contributions of others are often carefully acknowledged by Walker and in some cases he even points out how his own opinions differ, one can not help feeling that his account, as published, may be in many ways more a perception of the Northwest Coast as seen in the 1820s, near the climax of the maritime fur trade, than of that in the 1780s, during the earliest contact events. It is a great pity that his original journal could not have been published immediately after the voyage, in which case it unquestionably would have become famous as one