important but difficult aspect of tundra ecology.

In separate brief articles, S. S. Schwartz, Yu. I. Chernov and B. A. Tikhomirov of the USSR discuss the structural components including animals, productivity and stability of various tundra ecosystems. Conservation, man, and manipulation of tundra are briefly analysed by L. C. Bliss of Canada.

Part 2 of the Proceedings comprises half of the volume and is dedicated to a series of Soviet authors for the description of progress and preliminary data from four tundra study sites. These sites are: Harp at the forest-tundra margin 35 km. northwest of Saleklard (polar Urals) and Ary-Mas, a northernmost forest tract, Tareya and Agapa on the Taimyr peninsula. The soils, vegetation, and various animal groups along with selected biological processes are reported for these four stations by 37 Soviet authors. Three additional reports summarize tundra research at other sites concerned with the nitrogen cycle, tree rings and meteorological correlations, and algae found in polar deserts.

The value of these brief reports, apart from the selected data values, is probably the collective insight provided into approaches to tundra research in the Soviet Union. For this purpose, the brevity and excellent translation are superb and unparalleled.

Part 3 of the Proceedings comprises only 10 per cent of the volume and consists of brief synopses of national tundra projects in Austria, Canada, Finland, Ireland, Norway, Sweden, United Kingdom, and USA. The principal value of these reports is the overview and scope of the international IBP Tundra activity. Five of the national reports reference more detailed accounts of their research.

Names and addresses of the 100 participants are included, but there is no index.

Thus the unique and valuable contribution of this report on international tundra research is the extended coverage of Soviet projects. The Proceedings will be a key reference to tundra workers and an important set of summary data, albeit preliminary, for those interested in biological productivity generally. Clearly, we can anticipate more complete future accounts of IBP tundra research as well as joint efforts to integrate and further interpret this international activity as a basis for management of man's activities in the Arctic. At this time, there are indeed few succinct accounts of biological productivity in any biome for the price of this volume.

Philip L. Johnson

A SUMMARY OF ARCHAEOLOGY IN THE KATMAI REGION, SOUTHWESTERN ALASKA. By D. E. Dumond. *University of Oregon Anthropological Papers No. 2, 1971. 8½ x 11 inches, 61 pages, 1 table, 2 maps, 10 plates, 2 diagrams. $2.00.*

Dumond's work at Katmai National Monument, Alaska Peninsula, between 1960 and 1967 represents six field seasons in an area which should be a key to understanding Eskimo cultural developments. The purpose of this progress report is twofold. First, Dumond wishes to make available information regarding the characteristic lithic materials of two sequences representing different ecological adaptations prior to publication of two more detailed monographs. Second, the relationships between the sequences is shown; Dumond's juxtaposition of phases simplifies comparison between sequences.

The first sequence, derived from sites along the Naknek Drainage on the northeast side of the Alaska Peninsula, spans 4500 years. This area represents a system of salmon-breeding waterways flowing into Bristol Bay in the region of the southernmost extension of the Bering Sea winter ice pack. A second sequence, from the Pacific side of the Alaska Peninsula at Takli Island and Kukak Bay, extends over 6000 years in an ice-free region of fiords on the southeastern portion of the peninsula where sea mammals are plentiful. Change in the relative importance of ground slate objects to chipped stone is noted throughout the two sequences. Dumond provides summary information on characteristic stone artifacts, the ratio of chipped to ground implements, other artifact categories, the type of occupation, and dating. Accompanying photographs of characteristic materials are good.

In the Naknek Drainage, materials are divided into eight phases which are further grouped into four periods. The Kittewick Period (2500 to 1900 B.C.) has considerable ground slate as well as flaked lithic materials. To Dumond, the side notched points in the collection suggest affinities with Security Cove implements. These latter resemble side notched points and knives from interior sites and Palasades material to the north. He suggests the Kittewick Period represents either a coastal group who took some interior artifact types or an interior group who adopted some Pacific coastal traits. Dumond assumes the latter, suggesting that Alaskan ethnographic evidence indicates ". . . that the assumption of coastal practices by interior peoples is the more common acculturative

pattern" (p. 40). Dumond 1: 1110 has previously suggested that these were, specifically, Indians living at Brooks River. Attempts to credit a historic population, in an "either-or" situation (interior or coastal groups; Indians or Eskimos), with specific techniques of artifact manufacture 4000 years ago need to be treated with caution. Regardless of who these people were, the artifact assemblage (and perhaps the population) was totally replaced with materials of peoples represented in the Gomer Period (1900 to 1000 B.C.) relating to the Arctic Small Tool Tradition and, according to Dumond, may be evidence of the first Eskimoan speakers on the Alaska Peninsula. In the following period, Brooks River (200 B.C. to A.D. 1000), fibre tempered pottery is introduced which equates with Norton materials further north. The Naknek Period (A.D. 1000 to 1900), with gravel tempered pottery and a concentration on the ground slate industry, is suggested to relate to the recent Eskimos. There is some continuity between Gomer, Brooks River and Naknek Periods. Consequently, although Dumond sees indications of some migration, he does not postulate population replacement after the beginning of the Gomer Period.

Dumond defines five cultural phases on the Pacific coast at Takli Island and Kukak Bay which represent developmental sequences, not population replacements. The phases are: Takli Alder (4000 to 3000 B.C.), Takli Birch (1500 to 800 B.C.), Takli Cottonwood (A.D. 200 to 500), Kukak Beach (A.D. 500 to 1000), and Kukak Mound (A.D. 1000 to 1400). The major distinction between the Takli Alder and Birch phases is the appearance of a ground slate industry in the latter with its closest relationships to Ocean Bay II, Kodiak Island and the early component of Pedro Bay, Iliamna Lake. The transition to Takli Cottonwood is marked by the introduction of fibre-tempered pottery and a greater proportion of small chalcedony prosubstantial, but in the Kukak Mound Phase, the increase in the small projectile blades is substantial, but in the Kukak Mound Phase, this chipped chalcedony industry virtually disappears. The ground stone industry persists.

In interpreting the relationships between the Pacific Coast and Naknek Drainage people, Dumond suggests that between 2500 B.C. and A.D. 1000 no single people occupied these respective regions although contact occurred before 1900 B.C. Presumably "peoples" must be different ethnic and linguistic groups rather than different bands of one ethnic group, for Dumond suggests that by the beginning of the Christian era, some expansion to the North Pacific occurred; after A.D. 1000, contacts increased considerably and *Eskimoan* peoples began to spread to the North Pacific coast (p. 43).

After discussing the well-documented changes on the Naknek Drainage and the Takli-Kukak area of the Pacific side of the Alaska Peninsula, Dumond attempts to deal with earlier cultural manifestations. Takli Alder Phase (4000 to 3000 B.C.) is most directly related to Ocean Bay I, Kodiak Island of the same period. Further similarities are drawn from the site of Krugloi Point, Agattu Island, western Aleutians, 1,300 miles to the west dated at the beginning of the Christian era. In an appendix which is reproduced almost entirely from a previous work, Dumond provides a comparison between Takli Alder and Krugloi Point in which he finds striking resemblances between the two assemblages in just those ways in which each differs from intervening assemblages. Interweaving archaeological data with lexicostatistical studies, Dumond speculates that the Takli Alder-Ocean Bay I materials may represent ancestral Aleut populations which ". . . existed throughout most of the Pacific Eskimo area and the Aleutian Islands" (p. 45), while those from Krugloi Point are cultural persistences retained by the Aleuts for 3000 years subsequent to their move and relative isolation in the western Aleutians.

Noting Swadish's preliminary lexicostatistical studies on Wakashan, which seem to suggest those languages of the British Columbia coast are "... related to Chukotan and Eskaleutian in the same degree as those two languages are related to one another" (p. 46), Dumond questions whether there might have been a single people inhabiting the Northwest Coast and southern Alaska at an early time. These speculations on the early Aleut relationships and early peopling of the North Pacific rim are provocative. However, the establishment of relationships between linguistic stocks at this level of magnitude is extremely tenuous, and, as Dumond notes, the archaeological data have been stretched about as far as possible in their interpretation.

It must be borne in mind that these suggestions of a single people throughout the North Pacific Coast are speculations that *are not* yet founded in the data. Rather they are, as Dumond cautions, hypotheses to be tested. Unfortunately they are statements with little real evidence to support them and, in actuality, provide little real means of testing, since ascribing linguistic relationships

to populations thousands of years in the past who made a particular group of artifacts is hazardous at best. These last speculations, while interesting, are not really relevant to the preliminary report of archaeological sequences of and relationships between the Naknek Drainage and the Pacific archaeological materials.

The summary under review provides little new information since the sequences (periods for Naknek and phases for the Pacific) were summarized in an earlier paper 1: 1108-11 and certain aspects were debated by Aigner *et al.* 2: 87-88 and rebutted by Dumond 3: 88-90. The major addition, and the importance of the present work is the inclusion of photographs of the characteristic lithic materials and a more specific, though still summary listing of the characteristic artifacts and other pertinent data of each *phase* in both sequences. Dumond's 1969 article is directed to a wider, more general audience, while this work addresses those actively engaged in Alaskan archaeological research so that data may be more easily used for comparative purposes. In this sense, the work is of considerable value and Dumond must be commended for making the data available.

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A TOURIST GUIDE TO MOUNT McKINLEY. By Bradford Washburn. *Anchorage: Alaska Northwest Publishing Company, 1971. 8½ x 11½ inches, 80 pages, illustrated. $7.50 hardbound, $3.95 softbound.*

Who better than the author, now director of Boston's Museum of Science, could have written this very interesting and well documented monograph on "Denali"—"The Great One"? Bradford Washburn had with a party of seven made the third ascent of the South Peak, 20,320 feet (the North Peak is 19,470 feet) during the time the U.S. Army Alaskan Test Expedition spent two months in 1942 on and around Mount McKinley, carrying out accelerated cold tests of equipment for use by the U.S. and Canadian Armies and Air Force. He also co-led in 1951 with Dr. Henry Buchtel the first ascent from the West, pioneering this route which has now superseded the Muldrow Glacier as the more popular route. A large-scale map of the mountain was published in 1960, based partly on surveys which he led, completing also the 1953 Boston Science Museum survey of the North side of the McKinley massif. He and his wife have devoted a good part of their lives to the study of the mountain and its approaches and she is the only woman to have reached both summits.

In the first part of the book the author gives general considerations on the massif, its geology, its climate and the characteristics of the climb, the weather being by far the great obstacle with its big storms and rare fine days, due to the isolation of the massif as it rises out of level lowlands situated between 1,000 and 2,000 feet.

Mount McKinley had been first ascended in 1913 by the Stuck-Karstens expedition, while the first ascent of the North Peak had been made in 1910 by a party led by Thomas Lloyd who had believed the North Peak to be the highest. Earlier unsuccessful attempts had been made by different expeditions, including the ones led by Dr. Frederick Cook —the Polar explorer—who had claimed to have made the first ascent in 1906.

The author records succinctly the highlights in the history of the great mountain, noted first by the George Vancouver Expedition in 1794 from Cook Inlet, and of its 89 ascents to the date of publication of the book in 1971, including the climb in 1970 by a Japanese party with Kazuo Hoshikawa who made the first descent from the summit on skis—the second having been accomplished by the Swiss Sylvain Saudan the following year on the Southwest side. Climbs of surrounding peaks are also mentioned in the Guide. In addition there is an informative description of the 91 miles of the Denali Highway, crossing the Mount McKinley National Park, from the Anchorage-Fairbanks Highway to the Kantishna Landing Field, with excellent photographs of beautiful scenery, wild life, vegetation and views of the mountain.

A detailed bibliography and index make this book especially valuable for those wishing to have clear and reliable information on the mountain and its approaches.

Paul Blanc