Prehistory of the Aleutian Region

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Prehistoric inhabitants of the Aleutian archipelago occupied a unique setting unlike that of other Arctic or Subarctic Eskimoid populations. Stretching for 1,050 miles into the northern Pacific, this chain of approximately 100 islands of one-half mile or greater size is isolated by the Pacific Ocean and Bering Sea. Natives entered the archipelago by way of the attenuated Alaska Peninsula, spreading to the chain's western end, and reaching a contact-period population of 12,000–15,000 (Lantis 1970). Despite the rugged island terrain and infamous weather, large human groups were capable of being sustained there in the past because of varied and productive coastal habitats (McCartney 1975; Yesner 1980).

The islands become smaller and farther apart from east to west. The dozen large and many smaller islands are clustered into five major groups beyond the tip of the Alaska Peninsula: the Fox Islands, the Islands of the Four Mountains, the Andreanof Islands (including the Delarof group), the Rat Islands, and the Near Islands (fig. 1). The following summaries of archeological research are organized according to these five groups plus the southwestern half of the Alaska Peninsula (west of 159° west longitude), because of their clear geographic separation from one another. This six-fold division presumes no cultural significance in the past, as there is little archeological evidence for where major or minor cultural divisions occurred. For example, it is not known whether the native cultural and linguistic regions of the early Russian period had much prehistoric time-depth (see Veniaminov 1840; Bergsland 1959; Black 1980).

The Aleut province is neatly bounded by water except at the Alaska Peninsula. The cultural demarcation between Aleuts and Peninsular Eskimos is not clearly known (Oswalt 1967). At the time of Russian contact, Aleuts lived in the archipelago proper and possibly in the Shumagin Islands and on the southwestern end of the Alaska Peninsula. Anthropologists have no direct evidence that Aleuts inhabited much of the peninsula in 1741 (Dumond 1974; Dumond, Conton, and Shields 1975). Early Russian explorers (e.g., Krenitsyn in Glushankov 1973) reported natives along the peninsula shores, but their cultural and linguistic affiliations were often not ascertained. By the second quarter of the nineteenth century, Lütke (1835–1836) noted three Aleut villages on the southern coast (Morzhovoi, Belkofski, and Pavlofski) and Veniaminov (in Hrdlička 1945:38, 41) cited their population totals. Ivan Petroff's Aleut–mainland Eskimo dividing line, from Port Heiden on the north to Pavlof Bay on the south at approximately 159° west longitude (U.S. Census Office 1884), suggests the easternmost occupation of mid-nineteenth-century Aleuts. But this boundary may be the result of the Russian-American Company's having moved Aleuts eastward from the island chain in order to exploit rich sea mammal hunting grounds. Russian colonists deliberately dispersed Aleut hunting groups into areas never previously occupied by those natives. Between 1741 and 1850, for instance, Aleuts were relocated in the Commander (Komandorskiye), Kuril (Kuril'skie), and Pribilof islands, possibly on Kamchatka Peninsula, and in southeastern Alaska and California (see Stejneger 1895; Jochelson 1925; Baba 1943; Hrdlička 1945; Bank 1962; McCartney 1969). Further confusing any ethnohistoric reconstruction of a precontact Aleut boundary is the fact that Russian period references often fail to discriminate among Aleuts, Peninsular Eskimos, and Koniags.

Although the possibility of a sharp boundary is supported by an Aleut-Eskimo linguistic separation somewhere on the Alaska Peninsula, archeological studies suggest that a cultural continuum existed during the late prehistoric period throughout the archipelago and the peninsula (McCartney 1974a; Dumond 1974). That continuum may have had great time-depth.

Models of Prehistory

A century of archeological investigation into past Aleutian culture reflects changing prehistoric models that parallel developments in anthropological thought. Outlined here are some theories of prehistoric change.

The first explicit prehistoric model set forth for the New World Arctic or Subarctic was Dall's (1877) evolutionary scheme of three periods or stages. The first, or Littoral Period (lowest strata), was characterized by a collecting subsistence (no fire, lamps, houses, clothing, ornaments, weapons, fishing or hunting equipment) and small communities. Next, the Fishing Period (middle strata) showed evidence of a fishing and collecting subsistence (chipped and ground stone imple-

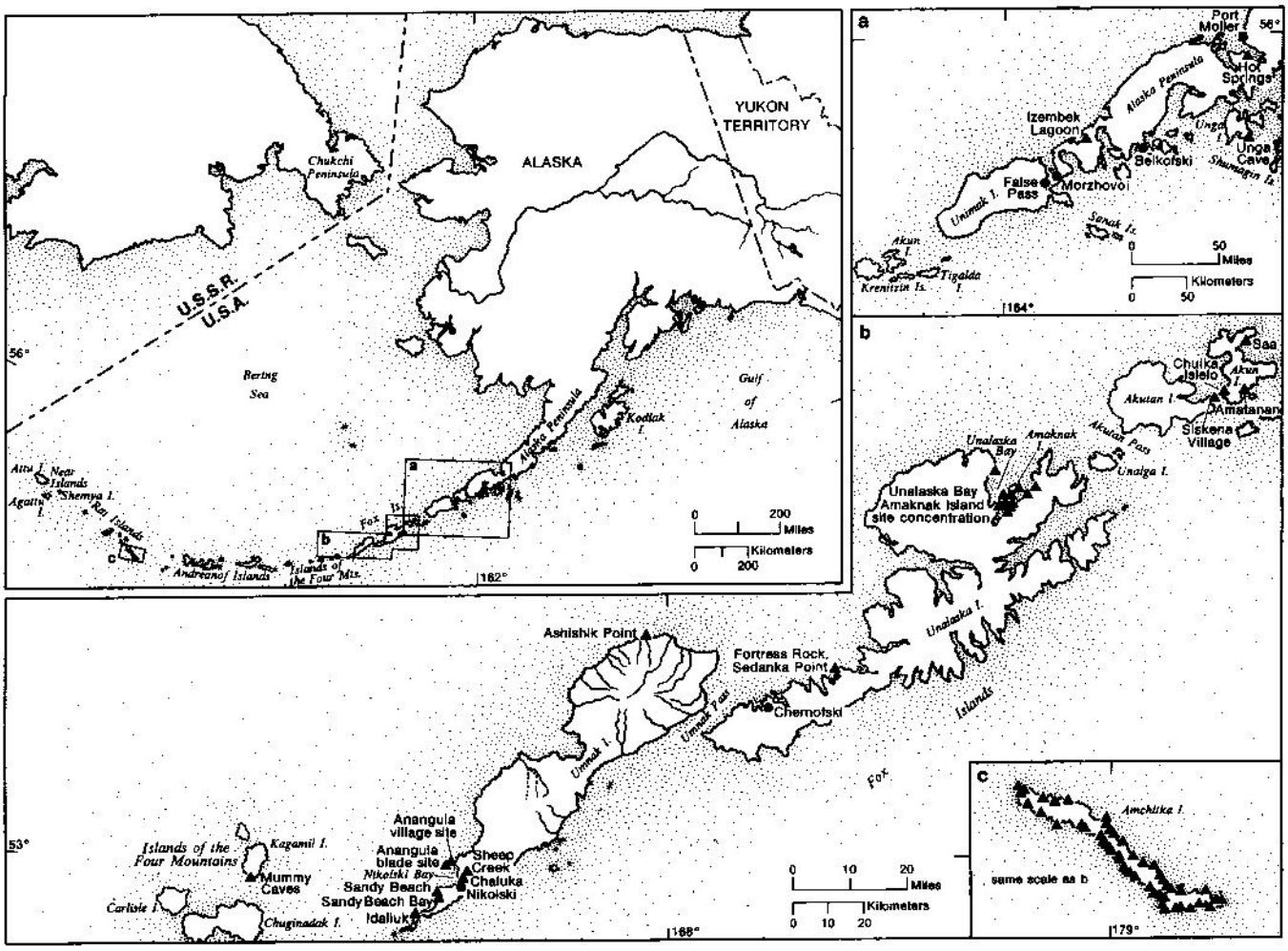


Fig. 1. Archeological site concentrations in the Aleutian region: a, Alaska Peninsula; b, Fox Islands; c, Amchitka Island (more than 70 sites).

ments, bone and ivory implements, skin boats, temporary huts, burials in wooden sarcophagi) and large communities. Finally, traits of the Hunting Period (upper strata) consisted of hunting, fishing, and collecting subsistence (harpoons, lamps, bow drills, labrets, anthropomorphic carvings), large whalebone houses with roof entries, and mummification.

Dall pointed out that despite these stage divisions, the midden succession indicated basic cultural continuity over time. This sequential, evolutionary scheme clearly derived from contemporary nineteenth-century stage or age models used for European prehistory and world ethnology. Dall claimed that multiple migrations from the east peopled the chain, with early occupants appearing culturally more similar to Eskimos than did historic Aleuts.

Another three-stage model (Quimby 1945, 1948), based on artistic decoration of bone projectile heads and other incised objects, is flawed by a mixed artifact sample and by using decoration that is not independent of artifact types (McCartney 1967).

Jochelson (1925) refuted the three-stage scheme of Dall and replaced it with one stressing greater cultural uniformity. The earliest Aleuts had a "relatively high primitive culture," and cultural changes were slight over their long occupation. In part, these gradual changes were due to the Aleuts adapting to their unique archipelago environment. Continuity was supported by the similarity between ancient midden site implements and those of the early historic period. Jochelson found no confirmation for isolated development of the Aleut but rather theorized that the archipelago was populated by migrants from the mainland. No temporal subdivisions based on human skeletal or cultural remains were postulated for the Aleutian area.

Hrdlička (1945) provided temporal and skeletal subdivisions for Jochelson's uniformity model. He suggested that the chain was occupied by two major populations with their attendant cultural peculiarities. Paralleling his earlier Kodiak sequence of pre-Koniag and Koniag (Hrdlička 1944), longheaded pre-Aleuts made up the early population and were followed by

later Aleuts who had broad heads. Neither population was regarded as biologically close to mainland Eskimos. Whereas the pre-Aleuts entered the chain in "the earlier part of the Christian era," the Aleuts appeared within the last "few hundred years" and gradually spread westward (Hrdlička 1945:586). While hypothesizing skeletal differences, Hrdlička noted that there existed no clear cultural separation between these prehistoric natives. Each group possessed "the same classes of objects, though differing in form and other details" between them (Hrdlička 1945:474). However, cultural separation between the two populations was unlikely to be detected since Hrdlička divided skeletons from midden sites on the basis of morphology rather than stratigraphy (Laughlin and Marsh 1951).

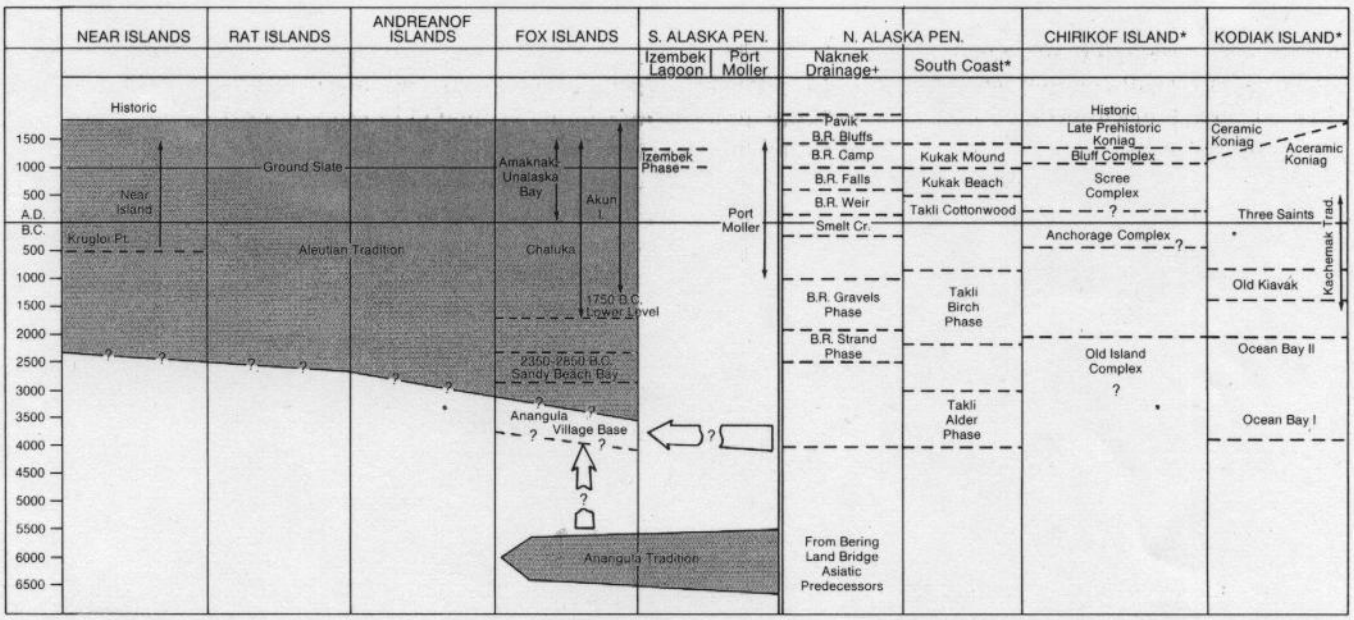
A slightly altered version of this two-stage model was proposed after World War II. The term pre-Aleut became Paleo-Aleut and Aleut became Neo-Aleut (Laughlin and Marsh 1951; Laughlin 1952, 1963a). This model emphasizes that Aleuts are basically Eskimoid in physical type, language, and culture. Further, Neo-Aleuts only replaced Paleo-Aleuts in the eastern islands, while longheaded natives derived from earlier Paleo-Aleuts survived until Russian contact in the western islands. Whereas there is no exact fit among race, language, and culture, strong artifactual continuity is found throughout the midden sites, and there is no meaningful cultural break corresponding to Paleo- and Neo-Aleut populations.

A significant addition to the Aleutian cultural sequence was added with the excavation of the Anangula core and blade site (Laughlin 1951a, 1963; Laughlin and Marsh 1954; Black and Laughlin 1964; McCartney and Turner 1966a; Aigner 1974). It has been argued that technologic continuity exists between this 8,000-year-old site and later ones, in much the same way that midden sites of the past 4,500 years exhibit an unbroken sequence up to the Russian period. This technologic continuity is based on the occurrence of Anangula's unifacially flaked stone tools that are similar to those from the lower strata of Chaluka midden nearby. Other artifacts from 1960s Anangula excavations, such as stone vessels, pumice abraders, and ocher grinders, are seen as further evidence of continuity (Laughlin 1967).

Since the 1970s, Aleutian prehistory has increasingly been viewed within ecological and systemic frameworks (McCartney 1975, 1977; Laughlin and Aigner 1975; Yesner 1980; Yesner and Aigner 1976). Food and raw material procurement, predator-prey impacts, and biomass estimates have become the focus for archeological research. Pan-Aleutian animal censuses conducted by the U.S. Fish and Wildlife Service (for example, Sekora 1973) and in-depth ecological studies of marine and terrestrial animals and plants (for example, Merritt and Fuller 1977; Love 1976) have provided a quantitative background for the interpretation of archeological materials.

Overview

Aleutian culture history can be summarized as follows. The midden period (2000 B.C.-historic period) is marked by cultural continuity but a racial dichotomy (Turner



+ See "Prehistory of the Bering Sea Region," this vol. for complete discussion.
* See "Prehistory of the Pacific Eskimo Region," this vol. for complete discussion.
B.R. = Brooks River

Fig. 2. Prehistoric cultures of the Aleutian Islands and adjacent areas.

1974). In spite of Hrdlička's (1945) questionable field procedures used in dividing early longheaded peoples from later broadheaded ones, physical anthropologists still support this two-population model. In fact, Hrdlička's contention that Aleuts were late prehistoric or early historic people is supported by study of midden stratigraphy during the 1960s and 1970s (Turner, Aigner, and Richards 1974).

The 4,000 years of Aleutian midden occupation are marked by strong cultural ties over time and space. Whereas little attention has been given to interisland artifact comparisons, almost all Aleutian investigators have been impressed with the lack of marked artifact changes in midden stratigraphy (Dall 1877; Jochelson 1925; Laughlin and Marsh 1951; Laughlin 1963, 1967; Bank 1953a; McCartney 1967; Aigner 1976a). But assemblage comparisons between islands and island groups also reveal strong horizontal relationships. Reasons for cultural homogeneity within the archipelago include a common insular environment, common marine-oriented procurement systems used to acquire the same species found throughout island groups if not the entire chain, movement of styles through exchange and the movement of people for social, economic, political, and warfare purposes, and geographic isolation of the chain from external cultural influences except along the eastern extremity.

This unbroken cultural sequence may, in part, reflect the nature of the midden matrix in which artifacts are found. Mixed, even reversed, stratigraphy results from natives living on these refuse mounds for long periods and digging graves, house foundations, and other excavations into the ever-rising surfaces. Only major vertical divisions are possible to detect across a midden site, and three or four meters of accumulation may correspond to several thousands of years. Very few single-component, short-term features are known, such as late prehistoric and historic sarcophagi, which permit a precise statement about contemporaneous cultural materials.

Aleutian artifacts, while basically Eskimoid, are often of particular styles found only in southwestern Alaska and sometimes only in the archipelago proper. Artifact functions and their use contexts cannot always be identified, but the major deficiency is the lack of even cursory typological studies prerequisite to establishing major time-space divisions for the chain. Within the middens, slow changes in artifact styles occurred, but few horizon markers are known save the introduction of ground slate grinding during the first millennium A.D. or the spread of artifact styles such as long, unilaterally barbed bone points and long, rodlike socket pieces during the second millennium A.D.

No archeological phases have been defined for the area considered here, except for the Izembek phase at the tip of the Alaska Peninsula (McCartney 1974a). This phase has been compared to a sequence of archeological phases at the base of the peninsula (Dumond 1971a).

Anangula: Earliest Evidence of Occupation

Ananiuliak or Anangula is a small island at the northern edge of Nikolski Bay, Umnak Island (Laughlin and Marsh 1954; Turner 1963; McCartney and Turner 1966a). A large site found there in 1938 reveals a unique core and blade assemblage with cultural affinities to a few early Alaska mainland sites (fig. 2). A thin artifact stratum is sealed beneath multiple ash layers from regional vulcanism; only a few burned bone fragments and no typical midden debris of shells and urchin spines have been found. The deeply buried and protected cultural stratum and the large size (approximately 90 by 250 meters) make the site one of the most important places to study early Alaskans.

The Anangula core and blade assemblage is the oldest known evidence of human occupation in the Aleutian chain. About three dozen radiocarbon dates cluster around 6000 B.C. for the thin cultural layer, making this site the most abundantly dated Aleutian site (Laughlin 1974–1975, 1975; R.F. Black 1976; Aigner 1976). The cultural layer measures only about 20 centimeters thick and suggests a relatively short occupation span of perhaps a century or less.

Excavations at the Anangula site exposed part of a depression in the original living surface that McCartney and Turner (1966a) called an "occupation pit" rather than a house because the possible feature had not been fully excavated. Six depressions were discovered during 1970 amid scattered lithic artifacts and debris, and these have been referred to as "houses" (Laughlin 1974–1975; Aigner 1974). Structural particulars have not been published for comparison, and therefore these depressions cannot be evaluated in relation to stone-walled houses dating from 2000 B.C. to the historic period (Turner, Aigner, and Richards 1974; Aigner 1978).

The Anangula assemblage is dominated by small to large blades struck from polyhedral cores of wedge and other shapes, and flakes and platform tablets from this manufacturing technique. Transverse burins/scrapers and spalls and obsidian end and side scrapers are also typically found (fig. 3). Although some artifact classes such as stone vessels, grinding slabs, rubbing stones, hammerstones, and scoria abraders are similar to those from later Aleut midden sites, no other site less than 4,500 years old is known to share in the core and blade technology, the burinated scrapers, and the exclusive use of unifacial retouch flaking of blades and flakes (McCartney and Turner 1966; Laughlin and Aigner 1966; Aigner 1970). No bifacially flaked projectile points or knives have been found among thousands of artifacts retrieved. Also, the general artifact classes mentioned

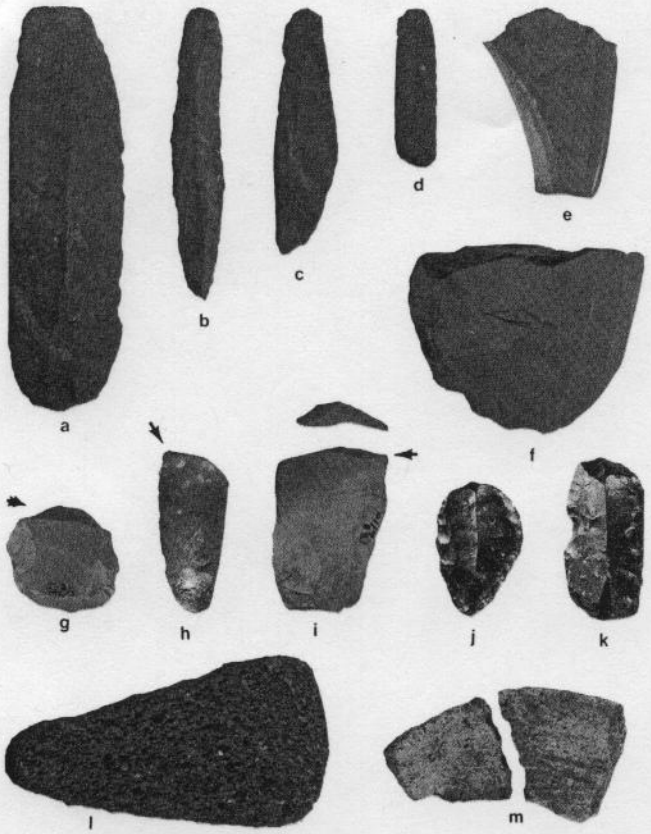


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Fig. 3. Stone artifacts, Anangula (Fox Islands), Alaska, about 6,000 B.C.: a–d, small to large blades showing secondary edge retouching; e–f, polyhedral cores with blade scars seen at the right edges; g, double-ended transverse burin, ventral view; h, single-ended transverse burin made from a blade, ventral view; i, single-ended transverse burin made from a blade, showing a typical burin spall above, ventral view; j–k, unifacially flaked end and side scrapers of obsidian; l, scoria abrader; m, carved bowl fragments that fit together. Length of a, 11.7 cm; rest same scale.

above are common to most southwestern Alaska sites and do not distinguish Aleutian from non-Aleutian sites. These artifact classes are highly related to the availability of particular raw materials such as pumice for abraders, welded tuff for bowls, and obsidian for end scrapers.

Whether Anangula and nearby Umnak were islands when first occupied, requiring the presence of watercraft, or were attached to the other eastern islands to form an expanded Alaska Peninsula depends on the interpretation given to sea level fluctuations. A previous interpretation held that the ancient sea level was approximately 8–20 meters below that of the mid-twentieth century. The Fox Islands would have consisted of fewer but longer islands with only narrow passes between them, if not a solid peninusla (Black and Laughlin 1964; R.F. Black 1966; McCartney and Turner 1966a). Natives could have reached Anangula from the northeast by following the then-exposed Beringian coast ultimately from the Kamchatka–Sea of Okhostk (Okhotskoe More) region (Chard 1963; Laughlin 1967). Deglaciation of this region occurred at about 11,000–9,000 B.C. (R.F. Black 1976). Mainland terrestrial mammals such as caribou could also have expanded along this peninsula or the closely spaced islands to form a distribution similar to that of the historic period on the Alaska Peninsula and Unimak (McCartney and Turner 1966a).

However, R.F. Black (1974, 1976) has reinterpreted the sea level of 8,000 years ago as having been essentially what it is in the mid-twentieth century A.D. Hence, early natives would require boats to reach Anangula. The location on the Bering Sea coast, of course, suggests that Anangula people were marine-oriented, but there is no direct evidence that they possessed boats or the degree of maritime expertise expressed by later Aleuts. Unlike the previous interpretation, which limited terrestrially oriented early man to Anangula and the peninsula formed to the east, the possibility of boat travel opens up all parts of the archipelago to these early colonists. However, no other Anangula-type site has been found anywhere in the chain.

The Anangula site was likely abandoned as a result of being buried by a thick blanket of volcanic ash (Black and Laughlin 1964; McCartney and Turner 1966a).

Dual Tradition Model

A century of archeological scholarship has shown the basic relatedness of Aleut midden site cultures, but the relationship of Anangula to the midden cultures is far from resolved. There are three broad explanations that might apply to the connection between early and late period sites. First, Anangula peoples were the first occupants of the chain and their culture developed in isolation into that of recent Aleuts, thus yielding an 8,000-year cultural, racial, and linguistic continuum. Second, recent Aleut culture is a blend of later Eskimoid influences from the Alaska Peninsula and the older Anangula substratum; thus both external and in situ influences joined together. Or, third, Anangula peoples died out after their initial occupation of the chain; recent Aleuts derive from a second or later major occupation of the chain beginning at least 4,500 years ago.

The first and second alternatives conform closely to the previously stated model of cultural continuity. The third alternative, that of minimal congruence between Anangula and the later midden cultures, has been referred to (Laughlin 1951a; Turner 1963; Dumond 1971; McCartney 1971, 1974) but has not been fully explained. In the briefest form, this dual tradition model states that the basic stone technology differs from Anangula to later industries and that different technologies

reflect distinctive cultural traditions not closely related. Race and language of these culture bearers may have been equally unrelated, especially because of the apparent 3,500-year gap separating the two traditions. The lack of bone implements or human skeletal remains and all but a few scraps of charred faunal elements from Anangula preclude direct comparisons of these materials with more recent sites.

The two distinguishable traditions are the Anangula tradition and the Aleutian tradition. The Anangula tradition, dated about 6000 B.C., is known only from the Anangula site in the Fox Islands. It is a core and blade tradition consisting of small to large prismatic cores, blades, core rejuvenation tablets (struck horizontally rather than vertically as blades), preparatory flakes, and blade-derived tools such as transverse burins, edge-retouched knives, steep end scrapers, and side scrapers. Unifacial edge retouch predominates; no bifacially flaked projectile points are known. No bone industry has been found. Influence of core and blade technology out of northeastern Asia is strong.

In contrast, the Aleutian tradition dates to about 2500 B.C.–A.D. 1800 and is known from throughout the archipelago. This is an irregular core and flake tradition that includes bifacially trimmed implements made from flakes such as projectile points, tanged and untanged knives and scrapers, and drills. Chipped and ground adz and ulu blades are found, as is an elaborate bone industry. Alaska mainland Eskimo influences are strong.

It is the general lack of core and blade evidence in the older midden sites such as Chaluka that supports a model of cultural discontinuity. The tool manufacturing complex of prismatic cores, unretouched blades, transverse burins, burin spalls, and core tablets have never been found to date as recently as 2500 B.C. Excavations during 1974 at a midden site located almost adjacent to the older Anangula core and blade site (referred to as the Anangula village site) produced an assemblage that may be a mixture of the two sites' artifacts. Only a brief description of this village site collection has been published (Laughlin 1975, 1980). Included in this collection are two bifacially flaked projectile points with contracting bases that appear typologically to date after the core and blade period. These points are very similar to projectile points from Port Moller or to those of the Takli Alder and Birch phases of the Shelikof Strait area (G.H. Clark 1977). This collection's position in Aleutian culture history awaits a detailed analysis.

Whereas unifacial versus bifacial tool percentages have been compared between these traditions (Laughlin and Marsh 1954, 1956; Denniston 1966; Aigner 1970), confusion of stone technologies has often resulted. Anangula *and* some midden tools (knives and scrapers) are unifacially flaked. Yet the former are made from blades of polyhedral cores whereas the latter are extensively retouched irregular flakes from non-polyhedral cores. By edge retouch, nonparallel-sided flakes may be shaped into parallel-sided scrapers and knives. Therefore, while the resulting Aleutian tradition implements are sometimes similar in shape to those from the Anangula tradition, they represent a different series of manufacturing steps. Lack of bifacially flaked tools at Anangula and lack of core and blade derived tools at midden period sites suggest a significant cultural separation.

Whenever people occupied the Aleutians, a full maritime subsistence adaptation was required. The same general environmental limitations existed for both Anangula and later natives (R.F. Black 1974, 1976). Both early and late natives likely utilized comparable implement classes in similar procurement and preparation systems, but the styles or types were distinctive if the evidence of stone tool technology and resulting tools are an adequate measure.

Although the Anangula tradition appears to have been brief when compared with the Aleutian tradition, it is actually the isolated remnant of a much older, Asiatic tradition with few expressions in the New World Arctic and Subarctic (McCartney and Turner 1966; Laughlin 1967, 1975). This tradition derived from the great Upper Paleolithic traditions of late Pleistocene age that swept into Siberia about 15,000–20,000 years ago (Müller-Beck 1967; Chard 1974). While the parental tradition in the Old World is called the Siberian Paleolithic, some Alaska core and blade finds are grouped as the Paleo-Arctic tradition (Anderson 1970a; cf. Dumond 1977a). However, there is no uniform application of this latter term by Alaska archeologists, so the more specific label Anangula tradition is preferred for the Aleutian Island core and blade culture. Just as the Aleutian tradition is distinctive among later Alaska culture groupings, so too the Anangula tradition appears, on current evidence, to be distinctive among early core and blade finds.

When the Anangula assemblage is compared with other Alaska core and blade site assemblages of 8500–5000 B.C., broad similarities may be noted as well as peculiarities (see Anderson 1970a; Dixon 1975; Henn 1978; Dumond 1980). The most important differences between Anangula and other assemblages (for example Akmak, Gallagher Flint Station, Ugashik Narrows, and Koggiung) center on the absence of bifaces at Anangula, the absence of transverse burins at some other sites, and the presence at Anangula of a wider size range of blades produced from polyhedral cores.

It is true that Anangula peoples are the oldest known occupants in the archipelago and hence are "Paleo-Aleuts" or perhaps even "pre-Aleuts." However, terms such as pre-Aleut, Paleo-Aleut, Aleut, and Neo-Aleut have established connotations. Therefore, Anangula and Aleutian are better rubrics to differentiate these major traditions.

Areal Summaries

Alaska Peninsula

The southwestern half of the Alaska Peninsula, an attenuation of the mainland, is distinctive in having a mixture of continental terrestrial fauna and rich marine fauna. Caribou, brown bear, porcupine, wolf, wolverine, and other small mammals extend to the end of the peninsula and, in some cases, onto Unimak Island (O.J. Murie 1959). Walruses frequent the winter drift ice along the peninsular shore, and salmon streams are more numerous than in the adjacent islands. This half of the Alaska Peninsula shows a vegetational gradient in which alder, willow, and dwarf birch thickets decrease in size and frequency from northeast to southwest, expressing the transition from continental to marine climate.

The only sites excavated in this area are at Port Moller and Izembek Lagoon, the only two embayments on this low Bering Sea coast (fig. 1). No archeological testing has occurred on the mountainous Pacific shore west of Chignik.

• PORT MOLLER The Hot Springs village site covers a headland that faces a shallow bay some 20 miles inland from the Bering Sea coast (Weyer 1930; Oka, Sugihara, and Watanabe 1961; Workman 1966). One of the largest southwestern Alaska sites, it has over 200 possible dwelling depressions pockmarked over the surface. These oval, semisubterranean dwellings have internal hearths and clay-lined and stone-lined storage pits. Most lack entrance passages, and they may have had whalebone or wooden supports for a roof (Okada and Okada 1974; Okada et al. 1976).

A suite of radiocarbon dates suggests that the site was occupied over three periods: 1500–1000 B.C., A.D. 500–600, and A.D. 1300–1500 (Okada 1980). Faunal remains from the thick midden strata represent over 50 species of sea and land mammals, fish, birds, and invertebrates. Caribou and fox bones are the most common evidence of land mammals found throughout the site (Kotani 1980). The twentieth-century caribou range extends westward only to Unimak Island, the first Aleutian Island. Large numbers of notched and grooved sinkers, fishhooks, and leister barbs suggest that summer fishing was an important subsistence activity.

A rich bone and stone industry reflects an intermediate cultural position between the Aleutians on the west and the mainland on the east (figs. 4–5) (Workman 1966; McCartney 1969; Dumond, Conton, and Shields 1975). Harpoon heads, arrowheads, adz heads and blades, labrets, projectile points, knives, and scrapers are some of the important artifact classes. Thick gravel-tempered pottery is known at Izembek Lagoon, just to the west of Port Moller, at about A.D. 1000 (Yarborough 1974), and similar pottery is contemporaneously known at the base of the Alaska Peninsula in the Brooks River Camp and Kukak Mound phases at about A.D. 1000–1400 (Dumond 1971a). Why no pottery has yet been discovered at the Hot Springs site remains an enigma.

Some of the Port Moller flaked stone knives and projectile points (fig. 4) are similar to those of the Takli Birch phase on Shelikof Strait, near Kodiak Island (G.H. Clark 1977). The Takli Birch phase dates to 2100–800 B.C. and is therefore contemporaneous with the early Hot Springs site.

Red ocher is associated with half of the burials found at the site, and human remains have been identified as expressing either Aleut (Laughlin 1966a) or Eskimo physical characteristics (Okada and Yamaguchi 1975).

• IZEMBEK LAGOON Several prehistoric village sites, similar to the Hot Springs site, dot the shores of this coastal indentation near the peninsula tip. Over 100 dwelling depressions are known that appear to have served as spots for light shelters or tents. These villages were probably occupied during the summer when salmon ran and during the autumn when large flocks of migratory waterfowl congregated on this shallow lagoon. The only known permanent house structure, constructed of whalebones and boulders, is located on a low knoll at the inner lagoon shore (McCartney 1974a). It measures eight by nine meters and has a collapsed superstructure of at least 32 large whale mandibles. A low wall of boulders outlines the structure; no entrance was located. A large hearth and small stone-encircled storage pits were found dug into the house floor.

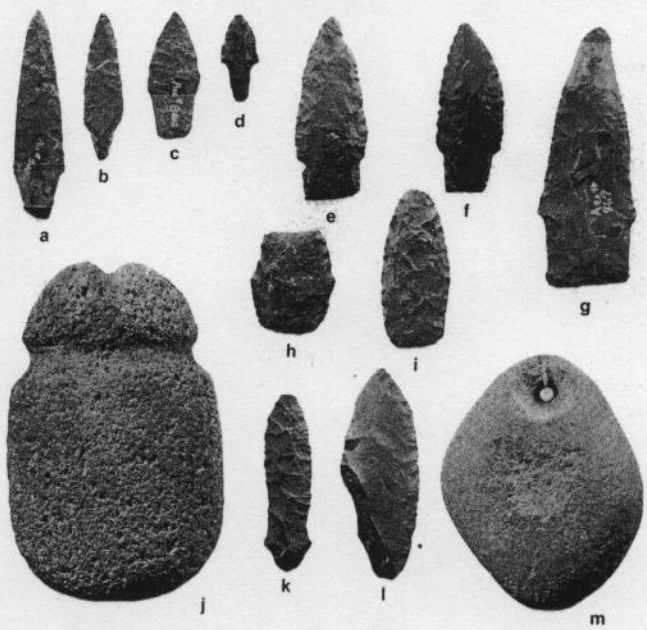

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Fig. 4. Stone artifacts, Port Moller, Alaska Peninsula, 1000 B.C.–early first millennium A.D.?: a–d, flaked projectile points; e–g, flaked knife blades with tangs; h, flaked knife or scraper blade with tang; i, flaked knife blade lacking a tang; j, pecked stone weight with lashing grooves; k, flaked knife blade; l, knife blade made from a large flake; m, beach cobble weight with double-drilled line hole. Length of a, 9.1 cm; rest same scale.

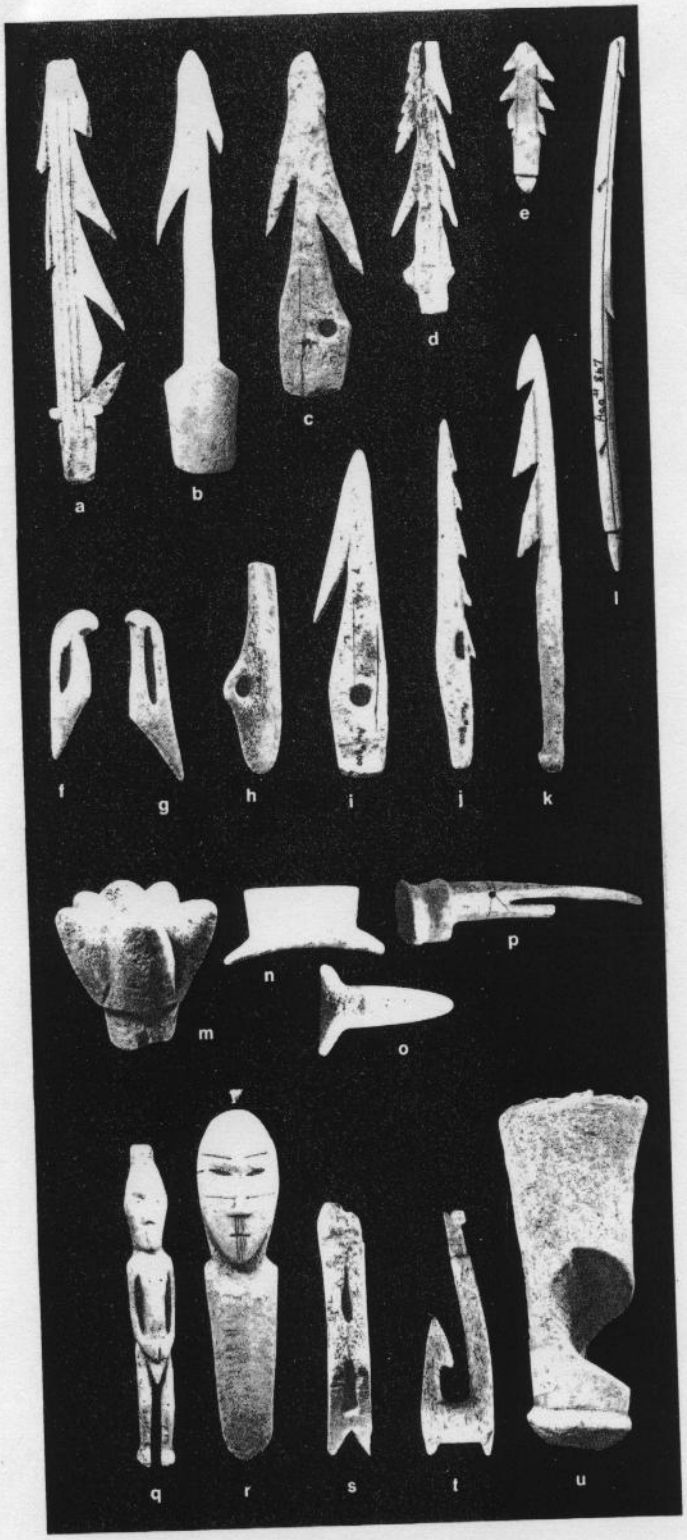

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Fig. 5. Bone artifacts, Port Moller, Alaska Peninsula, 1000 B.C.–early first millennium A.D.?: a–e, bilaterally barbed harpoon points; f–g, fish spear barbs; h–k, unilaterally barbed harpoon points (h is missing the barbed tip); l, unilaterally barbed arrowpoint (warped); m, star-shaped dart bunt; n–p, ivory labrets; q, carved human figurine; r, carved human head and attached thorax, with cheek and chin lines indicating tattooing; s, toggle harpoon head; t, simple fishhook; u, side-notched adz head. Length of a 12.8 cm; rest same scale.

Dates from the whalebone house and two nearby sites cluster at about A.D. 1000. Because the sites found thus far along Izembek Lagoon have similar surface features, they probably all date to the early second millennium A.D. However, just as the Hot Springs site reflects several periods of occupation, the Izembek sites may be shown to have older lower strata as well.

Bone artifacts are infrequent and poorly preserved due to lack of thick, buffering midden layers. The poor bone implement sample precludes meaningful comparisons with either Aleutian or Port Moller and other Alaska Peninsula bone assemblages. Unlike the Hot Springs site, the Izembek Lagoon sites sampled thus far reveal gravel-tempered pottery and abundant ground slate projectile points and knives (fig. 6). Pottery and ground slate spread, perhaps separately, down the peninsula from the Naknek-Kodiak region just before

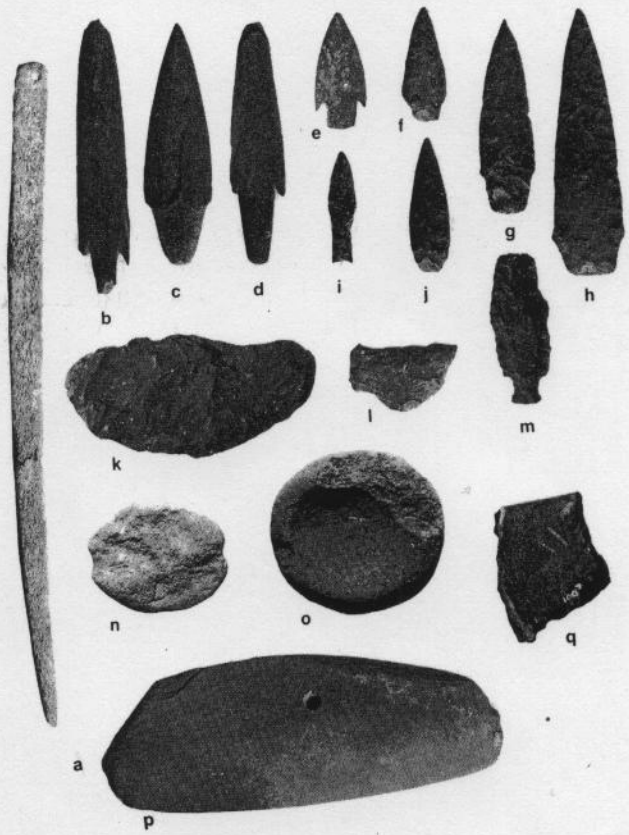

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Fig. 6. Artifacts from Izembek Lagoon, Alaska Peninsula, about A.D. 1050: a, large bone "needle" with drilled eye; b, ground slate projectile point with diamond-shaped cross-section; c–d, ground slate projectile points with lenticular cross-sections; e, ground stone projectile point; f–h, flaked projectile points; i, flaked "fishtail" projectile point; j, flaked projectile point lacking a shouldered tang; k, large flaked knife blade; l, flaked asymmetrical knife blade with tang; m, flaked knife blade with tang; n, beach pebble weight with notches for lashing; o, small carved stone lamp; p, ground slate ulu blade with double-drilled lashing hole; q, gravel-tempered pottery rim sherd. Length of a, 26.2 cm; rest same scale.

A.D. 1000 (see Dumond 1971a). Conversely, most of the flaked stone industry shows strong similarity to Aleutian assemblages. Notched stone sinkers are very numerous at both Izembek Lagoon and Port Moller, and they suggest the primacy of seasonal fishing at both locales. Other major artifact classes include flaked projectile points, knives, and scrapers, ground adz blades and slate ulu blades, scoria abraders, and small to large stone lamps. Pottery has not been located in the Aleutian chain, and the Izembek Lagoon pottery stands as the westernmost on the Alaska Peninsula (McCartney 1970; Yarborough 1974).

The intermingling of western and eastern influences in the Izembek phase suggests its intermediate position between dominant Aleutian and mainland cultural spheres. No sharp cultural division appears between the Aleut and the Alaska Peninsula Eskimo in the late prehistoric period, based on limited materials for study. This model of cultural intergradation parallels Laughlin's (1951:113, 1952:73, 1958:525) view of racial intergradation in the same region where "what data do exist indicate that no line can be drawn separating Aleuts from western Eskimos."

• SHUMAGIN ISLANDS Investigations into the prehistory of this island group lying south of the Alaska Peninsula are few. Pinart (1875), Lot-Falck (1957), and Dall (1875, 1880:28–31) collected and described late prehistoric or early historic period mummies and wooden artifacts from a site on Delarof Harbor, Unga Island. These burials were assumed to have been of Aleut origin but this cultural association remains conjectural. Besides providing the first archeological evidence of mummification and cave or rockshelter burials referred to in Russian period literature (for example, Veniaminov 1840), the painted masks (fig. 7) and other artifacts of wood show a facet of material culture not preserved in middens. Only in caves and rockshelters such as those on Unga or Kagamil are wooden artifacts, baskets (fig. 8), and mats well preserved. The excellent state of preservation is clear evidence of their late prehistoric or early Russian period age.

No other organized excavations have occurred in the entire Shumagin group. A boat survey around most of the islands in 1973 located a few sites (McCartney 1974b). No large middens comparable in size to those commonly found in the Aleutian archipelago were found. A detailed surveying and site testing program will be required to establish the cultural sequence in this island group and its relationship to those of Kodiak, the Alaska Peninsula, and the eastern Aleutians.

Fox Islands

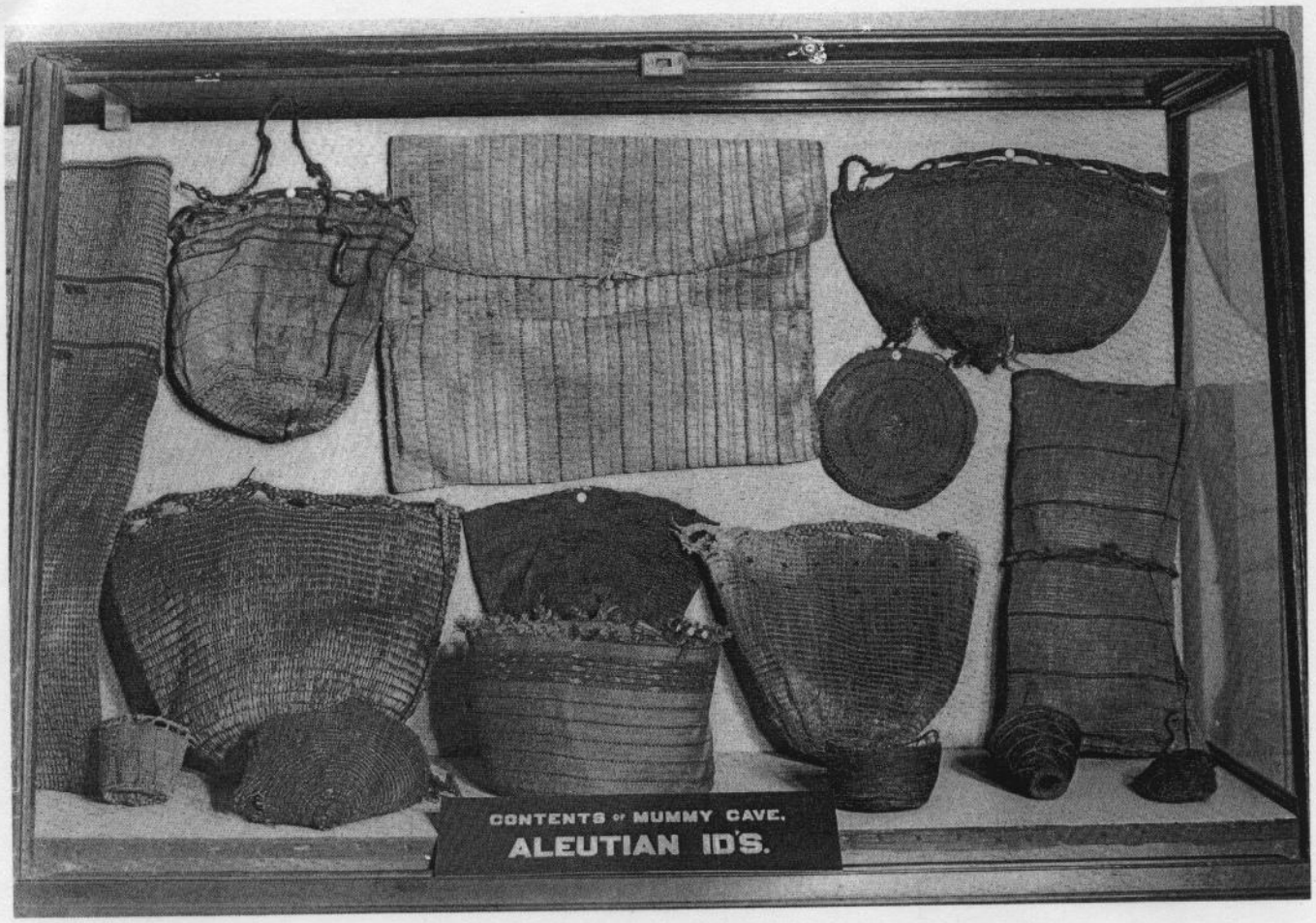
The easternmost group of islands contains three of the largest islands in the chain, Unimak, Unalaska, and Umnak. The following overview is arranged geographically by major islands from east to west.

Smithsonian, Dept. of Anthr.: 7,604.
Fig. 7. Wooden mask with light traces of coloring remaining; one ear is missing as are the teeth, which were single pegs. Height about 32.0 cm. Collected from a cave at Delarof Harbor, Unga I., Alaska, 1868.

• TIGALDA-AKUN Archeological investigations of the Tigalda site on Tigalda Island showed that this midden site includes a precontact occupation from the first millennium A.D. up to Russian contact, which is evidenced by manufactured trade goods (Grayson 1969). Several flaked-stone artifact types are similar to the Izembek assemblage, and the Tigalda specimens are very similar to those from Akun (Turner and Turner 1974).

The Chulka site on Akun is dated to A.D. 780–1870, with both Russian and American trade goods found; this site was ancestral to the modern village of Akutan on Akutan Island (Turner 1972; Turner and Turner 1974). The prehistoric assemblage is typical for the Fox Islands but has a large proportion of ground slate ulu blades from throughout the dated sequence. Other common artifacts include flake scrapers, whetstones, abraders, projectile points, adz blades, bird bone awls, needles, bone wedges, and harpoon heads. Fragments of bottles, china, plate glass, and iron implements are abundant among the historical artifacts (Turner 1975). With the exception of pottery and long, ground slate points, the Chulka-Izembek comparisons are very close.

Islelo is a site made up of a thin horizon of charcoal and artifacts covering a small promontory. The cultural horizon dates to 1155 B.C. Testing at Siskena village on nearby Akutan reveals both aboriginal and trade items (Turner and Turner 1974). Of nine additional Akun sites, two, Saa and Amatanan, are large middens (Turner 1973). These midden sites along with Chulka are interpreted by Turner to be the three main village localities of the late prehistoric period. The Saa site is par-



Smithsonian, NAA: 32680-V.

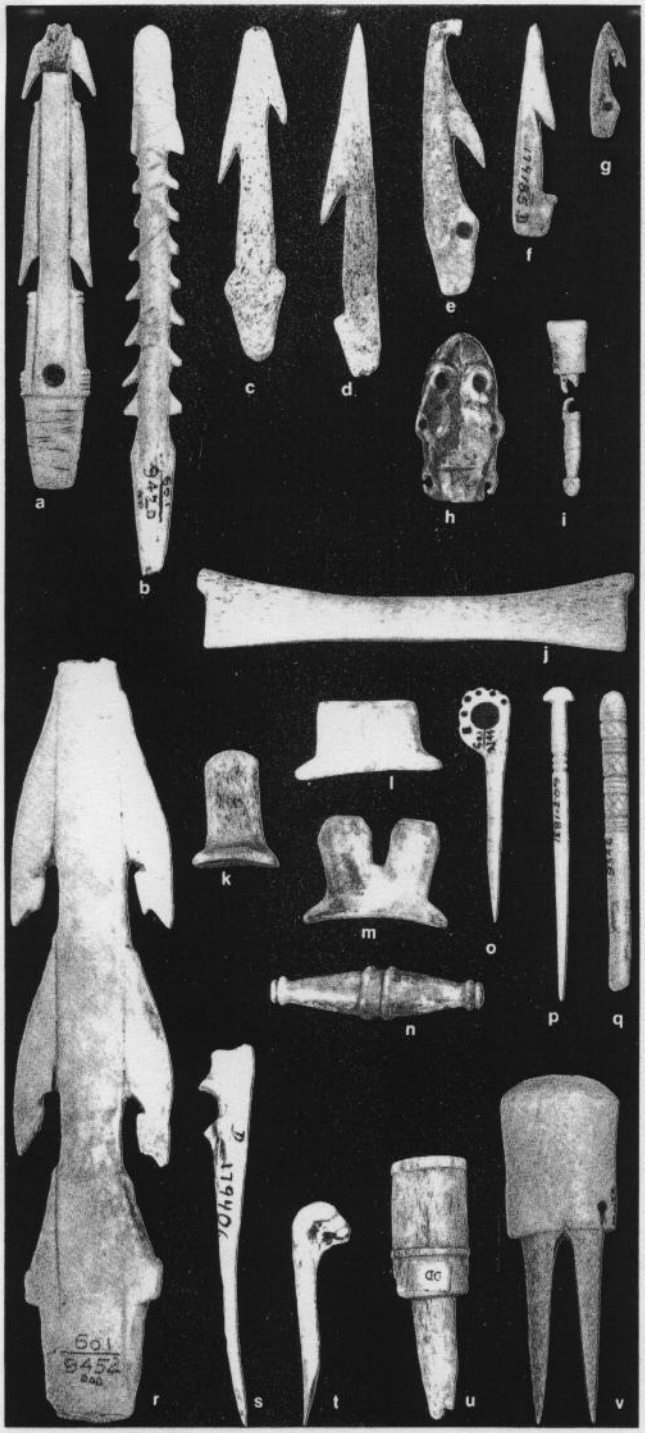
Fig. 8. Prehistoric twined basketry on display in former Smithsonian exhibit. (For modern examples see "Aleut," fig. 4, this vol.). All collected by Aleš Hrdlička from Kagamil caves, Islands of the Four Mountains, Alaska, 1937.

ticularly noteworthy because it contains water-saturated strata in which very well-preserved wooden artifacts are found. It is Turner's belief that the degree of artifactual variation displayed among different Akun sites is greater than that usually attributed to the entire archipelago. But few other islands have been sufficiently tested to make possible comparisons of intra-island variation.

• UNALASKA Unalaska, especially the Unalaska Bay region, is an area where archeological research was first undertaken. Further, the extensive site surveying and collecting by Lt. Comdr. Alvin Cahn during World War II makes this region one of the best studied in the chain. Historically, Dutch Harbor and Iliuliuk (Unalaska village) formed the most important Russian period community in the archipelago. Nineteen sites were located around Unalaska Bay and on Amaknak Island during the 1940s. Artifacts salvaged from military constructions came mainly from five sites. These collections are housed at the Field Museum of Natural History, Chicago, and the American Museum of Natural History, New York (Quimby 1946, 1948; McCartney 1967). They compose the largest collections for all the islands east of Umnak and date from A.D. 1–1500. Although most of the pieces lack provenience details within sites, the wide range of artifact styles represented is valuable for typological and distributional studies.

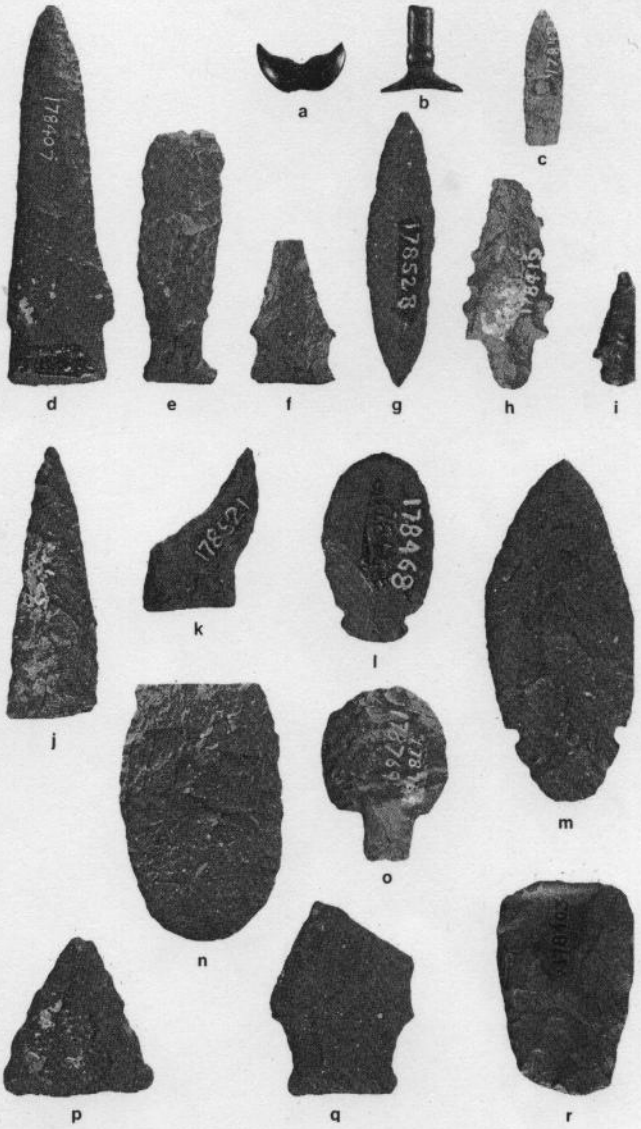
Bone implements and decorative pieces fashioned from a wide spectrum of animals such as whales, sea lions, foxes, and birds were collected during 1941–1945 (fig. 9). Flaked stone projectile points, knives, and scrapers were commonly made of basalt (fig. 10). Labrets or lip plugs were made of jet, bone, and ivory. An analysis of the Amaknak bone industry revealed no marked discontinuities in Site D, one of the largest and deepest on that small island (McCartney 1967). In addition, some Amaknak bone artifacts were shown to be rather similar to those of Kodiak Island (Three Saints and Koniag phases; Clark 1966). Comparison to western island assemblages demonstrated that bone implement styles were not uniform throughout the eastern, central, and western island groups.

Bank (1953a) suggested, in contrast to Hrdlička's two-migration theory, that different human populations and cultural periods may be explained by isolation along the



Amer. Mus. of Nat. Hist., New York: a, 60.2–470; b, 60.1–9420; h, 60.2–4867; i, 60.2–442/1513; k, 60.1–9144; n, 60.2–942; o, 60.1–9144; p, 60.2–1831; q, 60.1–9346; r, 60.1–9452; v, 60.2–2198; Field Mus., Chicago: c, 179,363; d, 179,252; e, 179,624; f, 179,185; g, 179,181; j, 178,941; l, 256,035; m, 179,406; s, 179,406; t, 256,035; u, 179,276.

Fig. 9. Bone artifacts, Amaknak (Fox Is.), about A.D. 1–1500: a–c, bilaterally barbed harpoon points; d–g, unilaterally barbed harpoon points; h, carved ivory face, use uncertain; i, broken 2-piece pendant; j, "gauge" with end pips, use uncertain; k–m, bone and ivory labrets; n, decorated cylinder of uncertain use; o–q, decorated ivory bodkins(?) or awls, q missing the pointed end; r, bilaterally barbed harpoon head blank, partially finished; s, fox ulna awl; t, puffin humerus awl; u, half of a 2-piece harpoon socket piece; v, harpoon socket piece. Length of a, 13.8 cm; rest same scale.



Field Mus., Chicago: a, 179,680; b, 178,934; c, 178,421; d, 256,008; e, 178,481; f, 178,618; g, 178,528; h, 178,419; i, 256,008; j, 178,425; k, 178,521; l, 178,468; m, 178,534; n, 178,531; o, 178,769; p, 178,481; q, 178,751–1; r, 178,403.

Fig. 10. Stone artifacts, Amaknak (Fox Is.) about A.D. 1–1500. a, jet (coal) nose(?) ornament; b, jet labret; c, flaked projectile point; d–f, flaked knife blades with tangs, f missing the tip; g, flaked bipointed projectile point or knife blade; h, flaked projectile point with erratically serrated edges; i, small flaked asymmetrical knife blade; j, tip section of a flaked knife blade; k, flaked side scraper with tang; l–m, flaked knife blades with side-notched tangs; n, basal section of an ovoid flaked knife blade; o, flaked knife or scraper blade with tang; p, flaked triangular knife blade; q, basal section of a flaked asymmetrical knife blade with tang; r, partially ground adz blade. Length of d 12.9 cm; rest same scale.

linear archipelago, which would allow development of regional variations. Such variations from one post-Anangula stock could thus form a kind of racial, linguistic, and technologic gradation from east to west.

The excavation of an Aleutian mummy site on a small islet at Sedanka Point is especially important in revealing late prehistoric artifacts (fig. 11) (Weyer 1931;

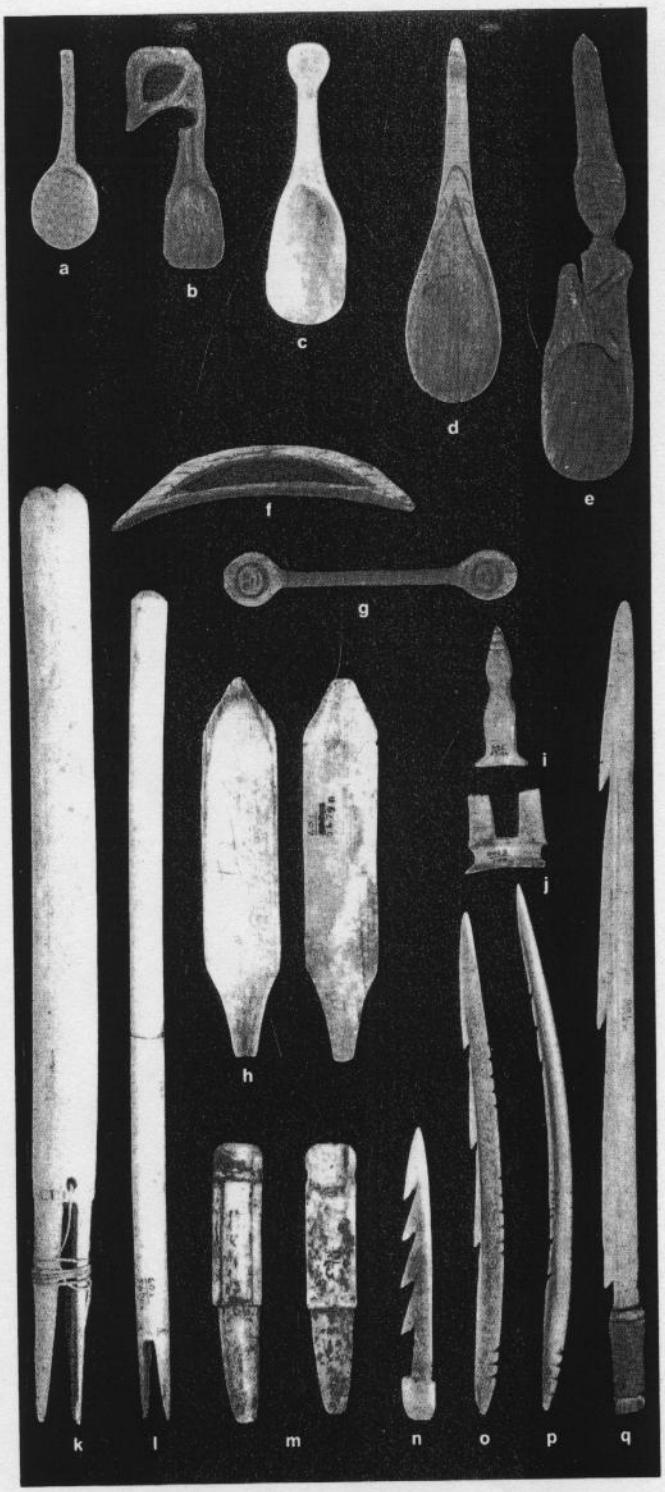
McCracken 1930). The wooden mummy sarcophagus and associated wood, bone, and stone artifacts probably date to A.D. 1550–1700 (fig. 12). Mummies are typically tightly flexed bodies with mat wrappings (Hrdlička 1945). Wooden sarcophagi or shelters are referred to in ethnohistoric literature, and burials with wooden covers have been excavated on Umnak (Jochelson 1925) and Amchitka (Desautels et al. 1970) as well. Late prehistoric or early Russian-period mummies placed in rock crevasses were also found at Sedanka Point. Similar burials in crevasses, rockshelters, and caves are common to the Unalaska area.

• UMNAK The modern village of Nikolski has been the focal point for prehistoric research at the southwestern end of Umnak Island. Part of this village rests on the prehistoric site called Chaluka, a midden site measuring approximately 100 by 240 meters by 10 meters deep that has been extensively excavated since 1909 (Jochelson 1925; Hrdlička 1945; Laughlin and Marsh 1951). Other Nikolski area sites such as Sheep Creek, Sandy Beach, Oglodax, and a midden site on Anangula Island nearby have also been studied.

Chaluka midden has been the source of the greatest number of artifacts, burials, faunal refuse, and dated radiocarbon samples of any site in the Aleutians. The site has been more or less continually occupied, with few significant breaks, from about 2000 B.C. until the present (Denniston 1966; Turner, Aigner, and Richards 1974). The midden rests on a small isthmus separating Nikolski Bay from a freshwater lake. A volcanic ash layer referred to as Ash IV is intermixed with the lower midden strata (R.F. Black 1976). This thick and often unweathered ash layer was the uppermost of four primary ash strata found in the Anangula core and blade site stratigraphy. The core and blade artifacts are sealed beneath Ash III (McCartney and Turner 1966a). The time interval represented between Ash III and Ash IV is approximately 3,500–4,000 years.

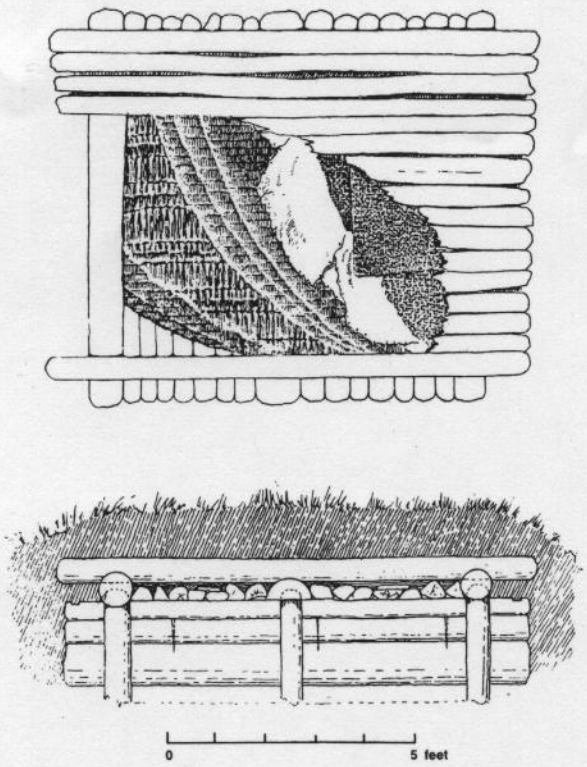
At the base of Chaluka midden are found coursed stone walls of houses that probably had whalebone roof supports. Stone-lined storage holes are associated with these lower houses (Turner, Aigner, and Richards 1974; Aigner 1978). Chaluka artifact and faunal descriptions are supplied by Aigner (1966), Denniston (1966), and Lippold (1966).

An even older site on southwestern Umnak is one at Sandy Beach (Aigner et al. 1976). Excavation there uncovered eight house floors. Five radiocarbon dates indicate that the site may have been occupied 500 years earlier than Chaluka, or by 2500 B.C. The site's cultural horizon falls just beneath Ash IV of the Anangula-Chaluka ash sequence (R.F. Black 1976). The stone industry of this old site conforms to those of other Aleutian tradition sites in having lamps, bowls, adz blades, basalt knife blades, scrapers, bifacially flaked knives, and ocher grinders. The excavators conclude that this



Amer. Mus. of Nat. Hist., New York: a, 60.1–5690; b, 60.1–5753; c, 60.1–5755; d, 60.1–5754; e, 60.1–5752; f, 60.1–5719–1; j, 60.1–5700; k, 60.1–5673; l, 60.1–5676–a; m, 60.1–5681; n–p, 60.1–5719; q, 60.1–5674.

Fig. 11. Artifacts from Sedanka Point (Fox Is.), Alaska, about A.D. 1500–1740: a–c, wooden spoons; f, wooden handle of uncertain use; g, wooden "barbell" piece with opposing faces, uncertain use; h, 2-piece wooden case of uncertain use, obverse and reverse shown; i–j, fine-grained limestone labrets; k–l, harpoon socket pieces; m, 2-piece ivory harpoon socket, obverse and reverse shown; n, unilaterally barbed harpoon point; o–p, fish or bird spear prongs; q, unilaterally barbed lance point set into a wooden shaft fragment. Length of a 9.0 cm; rest same scale.



Weyer 1931:fig. 2 b–c.

Fig. 12. Driftwood sarcophagus. top, Top view showing layer of matting between the 2 wooden lids; bottom, side view in situ, Unalaska I., Alaska.

early Sandy Beach site is technologically more similar to Chaluka midden than it is to the much older Anangula core and blade site.

A second site on Sandy Beach has a cultural horizon just above Ash IV, dating to about 1000 B.C. Still another site, located at Idaliuk west of Sandy Beach, has a date of about 2200 B.C. (R.F. Black 1976).

Chaluka midden has provided one of the largest human skeletal series of any site in the chain (Jochelson 1925; Hrdlička 1945; Laughlin 1951). Burials dug into the midden strata are known only by skeletal remains, usually in flexed position, and surrounding ocher powder and durable artifacts. No wooden covers, mat wrappings, or skin clothing are preserved, as is typical of mummies from rockshelters and caves. A second type of subsurface burial has been discovered in pits dug between inverted V-shaped drainage trenches. The points of these trenches are directed uphill on slopes in order to divert ground water. These features are known from Umnak and other central islands in the chain including Kagamil and Atka (Aigner and Veltre 1976; Veltre 1979). These V-shaped features are likely the remnants of cache pits that were secondarily used as burial pits. Whalebone fragments have been found associated with these burials as well as mummy cave burials, suggesting some symbolic connection between whales and those interred (see Aigner and Veltre 1976; May 1951; Hrdlička 1945).

The only site excavated at the northeastern end of Umnak is that at Ashishik Point. It dates from as early as A.D. 200 and continues until the late prehistoric period with some occupational gaps. Although the artifact collection is small in comparison with other Umnak and Unalaska collections, Denniston's (1972, 1974) analysis of Aleut economic patterns is a pioneering demonstration for this area. She analyzed the faunal debris as a means of understanding food resources, subsistence seasonality, and nutritional adequacy of the diet. Major food classes are quantified as to edible weight, and the results form an estimate for relative food importance. The ratio determined was 1.0 part marine invertebrates, 1.8 parts birds, 35.9 parts fish, and 51.7 parts sea mammals. Marine and terrestrial vegetation, although not identified in the midden debris, provided only an insignificant quantity of food in the Aleut diet. Yesner (1981) estimates prehistoric Aleutian biomass and harvesting strategies based on archeological site fauna.

Islands of the Four Mountains

No midden sites have been excavated by archeologists in the Islands of the Four Mountains, a seven-island group, although they occur there as on surrounding islands. These islands are best known for the Aleutian mummies that come from one of them, Kagamil (Dall 1875, 1880; Hrdlička 1945:237–246, 417–420). Similar burial caves were investigated at Shiprock (between Unalaska and Umnak), Chernofski (Unalaska), and Ilak (Delarof group; Hrdlička 1945:312–337, 412–417). The Kagamil mummy series (63+ skeletons, 30 separate skulls, and other loose bones) is the largest for one island. Both sexes of all ages were carefully placed in such caves and crevasses with weapons, clothing, and other equipment. Besides the biologic data and evidence of mummification techniques gained from the Kagamil burials, the best Aleutian collection of organic materials was found with them. Artifacts of wood include dishes, combs, shields, slat armor, and kayak frames. Clothing and containers of gut, feathers, and skin were found. All manner of vegetable fiber mats, nets, baskets, and cordage are included in the burial inventory. Other materials include seaweed, sinew, and baleen (Dall 1880; Hrdlička 1945:238–242, 478–479, 589–610).

The excellent artifact preservation and folklore accounts of burials on Kagamil attributed to historic-period Aleuts suggest that these mummies, as others in the chain, date to the late prehistoric period.

Andreanof Islands

Knowledge of Aleut prehistory is more limited for the Andreanof Islands than for any other major island group. Excavations during the past century on Amlia, Atka,

Adak, Kanaga, and Tanaga have been poorly published, and the resulting museum collections have not yet been thoroughly studied (Dall 1877; Jochelson 1925; Hrdlička 1945; Bank 1952, 1952a). Contents of a minor burial cave are reported from Kanaga (Nelson and Barnett 1955).

Extensive excavations during the 1970s on Atka reveal a long sequence of prehistoric and historic age on northeastern Atka (Veltre 1979). This is the site known from the Russian period as Korovinski, a major Russian-American Company post in the Andreanof group. A prehistoric midden dating between A.D. 1 and 1400 underlies the early nineteenth-century historic occupation by Aleuts and Russians. the Korovinski excavation provides a rare glimpse of Russian trade items such as beads, window glass, iron nails, and bricks. Turner's (1973) Akun excavation and the excavation on Tigalda referred to above are the only other sites to reveal historic trade goods in quantity. The prehistoric artifacts from Korovinski and other sites in the Andreanof group appear, on the whole, similar in style and material to those from the eastern Aleutians. Such similar types include basalt knives, scrapers, and projectile points; stone lamps, abraders, whetstones, and weights; bone harpoon heads, socket pieces, fishhooks, awls, and wedges.

Rat Islands

Amchitka is the only island of the group that has been studied in any archeological detail, although sites were tested during the nineteenth century on Kiska and Little Kiska as well (Dall 1877; Hrdlička 1945). This long, flat island is relatively accessible and received special attention as an atomic testing ground during the late 1960s and early 1970s (Merritt and Fuller 1977). Working from a World War II period map of 40 sites (Guggenheim 1945), the Atomic Energy Commission sponsored archeological surveys that increased the known site total to 73 (Turner 1970; McCartney 1977). Testing and excavations at about 20 midden sites provide almost 11,000 artifacts and several radiocarbon dates that confirm a prehistoric occupation as early as 600 B.C. (Desautels et al. 1970). While some artifact styles appear to be unique to this island group and to the Near Islands to the west, others show cultural connection with the central and eastern islands. Of particular interest are a dozen iron knife (?) fragments found in the upper strata of five sites (Desautels et al. 1970:243ff.; Cook, Dixon, and Holmes 1972). Some of these are likely of early historic age but some may date to the late prehistoric period. Whatever their age, these iron pieces came from an exchange network based in Asia, as no native iron occurs in the chain or southwestern Alaska.

A permanent house with wooden superstructure, also found on Amchitka, is the only fully excavated prehistoric house west of the Fox Islands that includes architectural details (Cook, Dixon, and Holmes 1972:91–101). Dating to about A.D. 1500, this house measures six by seven and one-half meters. Apparently very little whalebone was used in building it, making it quite different from the whalebone house at Izembek Lagoon. However, the Amchitka and Izembek Lagoon houses are similar in size, and they stand in contrast to the much larger communal houses known from the early Russian period in the eastern Aleutians.

Near Islands

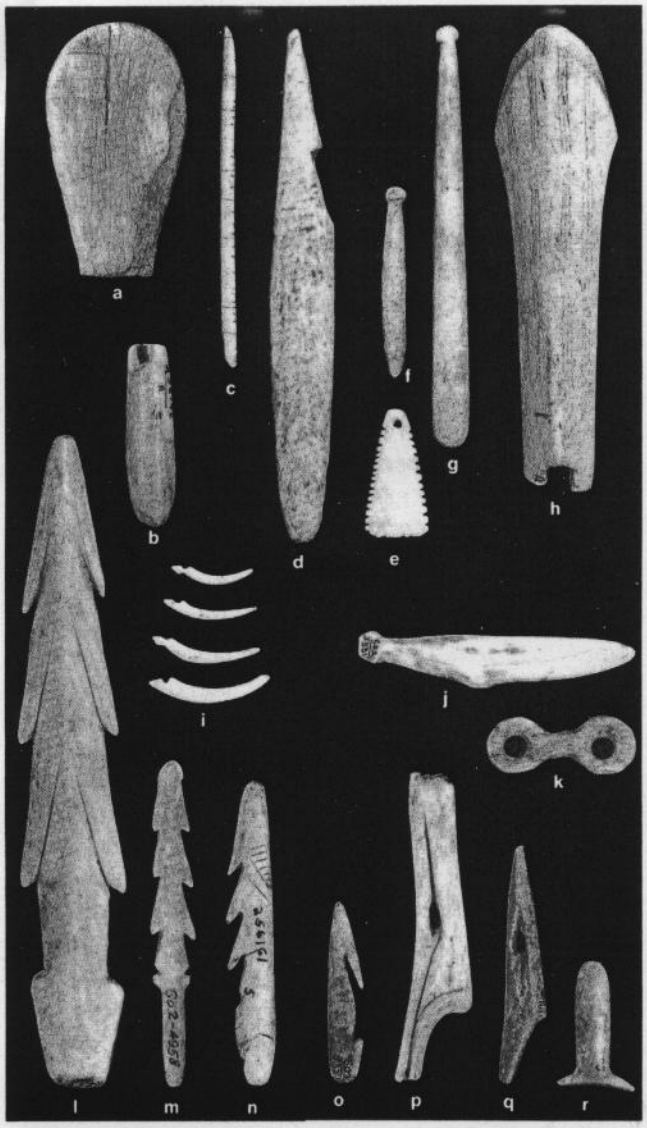
The westernmost island group, that designated "nearest" the Asiatic mainland by early Russian seamen, is the smallest group of the five. L.M. Turner (1886) tested Attu sites in 1880–1881 but his collections, now in the Smithsonian Institution, were never published. Dall (1877), Jochelson (1925), and Hrdlička (1945) all excavated on Attu or Agattu and published some illustrations of artifacts from these major islands. Many small artifact collections were made by servicemen during World War II. However, only a few of these have been deposited in museums or published (Hurt 1950; McCartney 1971).

Following the war, a small crew dug at Krugloi Point on Agattu at a site dating to the middle of the first millennium B.C. (A.C. Spaulding 1962). Spaulding concluded, on the basis of a poor bone artifact sample, that isolation caused the archaic and simple inventory found. However, it has been demonstrated, on the basis of other collections from nearby Shemya and Attu, that cultural impoverishment does not characterize the Near Islands (McCartney 1971). The same classes of artifacts found farther to the east in the chain occur in this island group as well (figs. 13–14). It is true that this island cluster is the most isolated in all the chain because of its placement at the end and because it is separated from the neighboring Rat Islands by the widest interisland pass. This isolation is seen technologically in several styles of stone and bone artifacts that are found only in this group or are shared with the Rat Islands just to the east.

Aleut Cultural Patterns

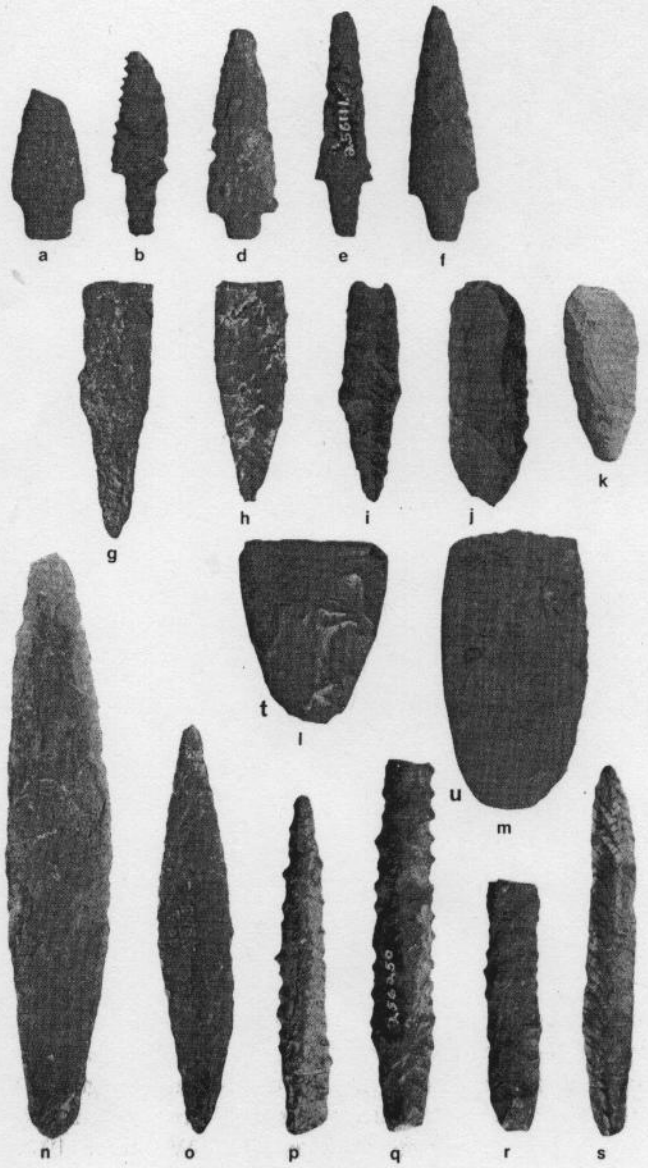
Marine Adaptations

Aleut interaction with the sea was almost exclusive and unquestionably rewarding. The mixing Pacific and Bering Sea currents are highly productive and the resulting food web was sampled at several levels, from kelp to puffins and seals. The convoluted shores around the islands and embayments increase the exploitable area over a straighter coast. Skin boats permitted hunting in



Field Mus., Chicago: a, 256,197; b, 256,196; f, 256,277; g, 256,195; h, 256,194; l, 256,130; n, 256,161; Amer. Mus. of Nat. Hist., New York: d, 60.2–5056; e, 60.2–5017; j, 60.2–5331; k, 60.2–5327; m, 60.2–4958; o, 60.2–5322; p, 60.2–5042; q, 60.2–5319; r, 60.2–5015.

Fig. 13. Bone artifacts, Shemya and Attu Is., Alaska, late first millennium B.C.–A.D. 1500: a, trimming tablet showing multiple cutting scars; b, ivory ferrule or blunt projectile point with broken socket at the upper end; c, incised bird bone awl section; d, step-scarfed object of uncertain use; e, pierced pendant with notched edges; f–g, pendants with carved knobs; h, harpoon socket piece with broken basal tang; i, composite fishhook points or barbs (secured to shanks when used); j, lure or decorative fish figurine; k, drilled bone piece of uncertain use; l–m, bilaterally barbed harpoon points; n–o, unilaterally barbed harpoon points; p, toggle harpoon head; q, toggle harpoon head; r, carved labret. Length of a 7.5 cm; rest same scale.



U. of Wis., Madison: Lichter Coll. a, g, h, k, p, r; Field Mus., Chicago: b, 256,118; c, 256,117; d, 259,119; e, 256,111; f, 256,259; i, 256,263; j, 256,107; l, 256,101; m, 256,225; q, 256,250; s, 256,248; Amer. Mus. of Nat. Hist., New York: n, 60.2–4952; o, 60.2–495.

Fig. 14. Stone artifacts, Shemya and Attu Is., Alaska, late first millennium B.C.–A.D. 1500: a–f, flaked projectile points; g–i, pointed basal sections of flaked projectile points; j–k, unifacially flaked side scrapers; l–m, partially ground adz blades; n–o, narrow flaked knife blades; p–r, narrow flaked projectile point; s, narrow flaked scraper with ground ventral surface (dorsal side shown). Length of a 4.5 cm; rest same scale.

open water beyond the shore. Another geographic advantage of the chain and peninsula was ready access to migrating sea mammals and birds passing through this archipelago filter, augmenting the resident marine life and avifauna.

The following shore habitats were those principally exploited by prehistoric Aleuts: beaches as hauling spots for pinnepeds and sites for washed-up whales, intertidal reefs or flats where crustaceans, mollusks, echinoderms, and various seaweeds occur, stream mouths where salmon run annually, and precipitous cliffs where birds and their eggs are found. The Aleuts favored three water habitats: onshore shallow areas for netting fish or fishing with lines from shore, deeper offshore areas

for line fishing from boats and sea mammal hunting, and marine or lake waters for hunting waterfowl (see McCartney 1975, 1977 for a discussion of Aleut procurement patterns).

Faunal analyses of midden samples throughout the chain show general consistency from site to site of those animals serving as primary sources of food, skins, bones for artifacts, and other products (Jochelson 1925; Eyerdam 1936; Hrdlička 1945; Lippold 1966; Denniston 1972; Desautels et al. 1970; Turner and Turner 1974). Minor intersite variation in animal species and proportions occurs, but there are too few careful faunal studies to reveal frequency patterns of prehistoric animal use. The principal, but by no means the only, animals utilized include: sea otters, harbor seals, northern fur seals, northern sea lions, large and small whales, porpoises, foxes, cormorants, ducks, gulls, cod, halibut, rock greenling, Irish lord, salmon, sea urchins, limpets, mussels, clams, periwinkles, chitons, and scallops. Whereas the Aleuts west of Unimak depended almost totally on these sea animals for food, inhabitants of Unimak and the end of the Alaska Peninsula added walruses and a terrestrial mammalian fauna (Kotani 1980). But with the exception of caribou, the added land animals contributed little as dietary staples.

Distribution of animal species along the chain is dictated by geographic factors such as shore shape, availability of strand flats, and shallow waters around islands. Each island differs in kinds and extent of coastal habitats, and therefore islands differ as to species abundance (see Sekora 1973). Volcanic eruptions from some of the 45 known Aleutian volcanoes, with their related earthquakes, tsunamis, lava flows, or ash falls, are common throughout the chain (Coats 1950). These cataclysmic events caused one or more islands' vegetation and littoral sea life to be adversely affected, sometimes for months at a time (Wilcox 1959; Workman 1979; Black 1979). Dependence on marine resources was, thus, periodically interrupted on or near active volcanic islands. Volcanic eruptions probably caused Aleuts to shift their residence temporarily to unaffected areas on nearby islands.

Settlement Patterns

Little is known about varieties of prehistoric communities and their seasonal occupation, although general habitation patterns appear to be shared throughout the chain. No complete site survey has been conducted for all the Aleutian Islands, but village or camp sites are found on essentially all islands with circumferences greater than two or three miles. Large, deep midden sites of accumulated shell and bone debris and soil horizons mark the most permanent settlements, probably occupied for most of the year (Bank 1953b). These coastal sites are commonly found on embayments and sometimes on headlands. They are almost always found on low coasts with easy access to the sea (see McCartney 1974b, 1977 for locational factors). Coastal spits usually have prehistoric sites on them. It has been estimated that only 5 to 10 percent of the total Aleutian coastline is low enough for sites (McCartney 1974b). The majority of coast consists of high or steep cliffs and shores undergoing mass wasting.

Sites tend to be reused for periods of up to thousands of years. The supporting food base permitted demographic stability and the conservative continuity of these communities makes for few cultural hiatuses over time. No inland sites of lasting duration are known; all sites are situated on island shores or the shores of the Alaska Peninsula. Few activities other than bird, plant, stone, and mineral collecting took Aleuts away from the coastal zone. Camps of more temporary occupation were probably established during the summer near salmon streams and possibly bird rookeries. These sites have much less midden accumulation and often show surface depressions from temporary shelter foundations.

Permanent houses are little understood. At Russian contact, large semisubterranean barabaras or pit houses of up to 50 meters long and housing many families were used. But houses as early as 2000 B.C. were small, probably single-family dwellings made of boulders and whale bones or driftwood. The Izembek and Amchitka houses described above are more similar to the early style, although they were built after A.D. 1000. Just when the transition occurred from small to large houses is unknown, but it probably dates to the past 500 years.

Technology

Nineteenth-century ethnographic collections exhibit limited varieties of stone and bone tools and implements, while archeological research reveals a much fuller picture of these native technologies. Conversely, organic materials such as wooden implements, matting, basketry and cordage fragments, and skin clothing are rare in collections older than the late prehistoric period (see Hrdlička 1945:589–610). The great majority of harpoon shafts, boat fragments, bowls, and woven pieces are from the historic period. Wooden objects were abundantly fashioned from drift logs, but these are not well preserved in most middens. Trees are not native to the Aleutian archipelago.

Hunting implements include harpoons, lances, darts and throwing-boards, bows and arrows, and clubs. Harpoons and dart heads are both of the toggling and nontoggling types, but nontoggling heads are more frequent. Lines with hooks (simple or compound) and weights, and nets with floats and weights are some of the fishing implements used. Bone picks, mattocks, and shovels were used as collecting and digging tools. Wood- and boneworking tools include wedges, adzes, drills,

knives with flaked stone blades, scrapers, and scoria and pumice abraders or smoothers. Skin preparation was done with ulu knives with ground slate blades, various knives and scrapers, bone awls and punches, needles, and trimming tablets. Also found are miscellaneous household items such as whale vertebra bowls, bone and wooden spoons and scoops, hammerstones, stone lamps, grinding slabs and rubbing stones for preparing ocher powder and other materials, and tabular stone griddles. Decorative items include bone, ivory, and jet labrets, spools, pins and pendants, carved bone chains, animal effigies, and other finely made decorative pieces of uncertain function.

The Aleutian artifact collections form a continuum from east to west. By inspecting major collections from one island group to the next, one gets a distinct impression that each group has artifact styles not found elsewhere but also styles shared with adjacent groups. Although stylistic variation occurs between island groups, artifacts such as those listed above occur throughout the chain. The common equipment is directly related to common marine adaptations in similar coastal habitats. Unfortunately, such a horizontal cultural continuum has never been studied in detail or quantified.

Raw materials for tools, clothing, boats, and other objects made by Aleuts were spread, albeit unevenly, throughout the archipelago. Bones, skins, driftwood, and basalt are available on most larger islands, requiring no long-distance trade for these basic materials. For example, it has been shown that all the rocks used for lithic implements on Umnak (such as silicified argillite, basalt, andesite, obsidian, scoria/pumice, and welded tuff) are found on that island (see R.F. Black 1976). Obsidian is an example of a relatively rare rock used for projectile points and scrapers that was traded from eastern Aleutian sources (McCartney 1977:108–109). It is only infrequently found in Rat and Near Island collections, suggesting that implement materials were, in most cases, of local origin.

Old World Contacts

Attu is the western terminus of the Aleutian culture area. Two hundred and twenty-five miles to the west lie the Commander Islands, made up of Bering and Copper Islands and small islets. There is no good evidence to date that these islands were occupied by Aleuts or other natives prior to Vitus Bering's discovery of the Aleutians in 1741 (Hrdlička 1945). Bering expedition survivors who camped on the islands on their return from the New World did not relate sightings of human occupants or their settlements. Despite the intermediate position of the Commander Islands between Kamchatka Peninsula and the Aleutians, there is no archeological basis for believing that native populations ever entered the Aleutians by this water route. Sailing vessels of Asian origin may have occasionally wrecked on Aleutian shores prior to 1741, but there is no incontrovertible evidence that intentional trade contacts existed between Asia and the Aleutian chain before the Russian period.

However, convergent cultural development based on maritime-dependent adaptations is seen between Aleutian and marine hunting and gathering cultures of the Old World Pacific rim such as the Okhotsk and prehistoric Kurile cultures (e.g., Befu and Chard 1964; Vasil´evskii 1969–1970; Ohyi 1975; McCartney 1974). Such convergence stems largely from different peoples occupying similar cold ocean islands or coasts and subsisting on the same or similar sea mammals, birds, fish, and invertebrate species. Cold ocean convergence can also be demonstrated between the Aleut and Fuegian areas at opposite ends of the New World (for example, Dall 1877:53–54; McCartney 1975).