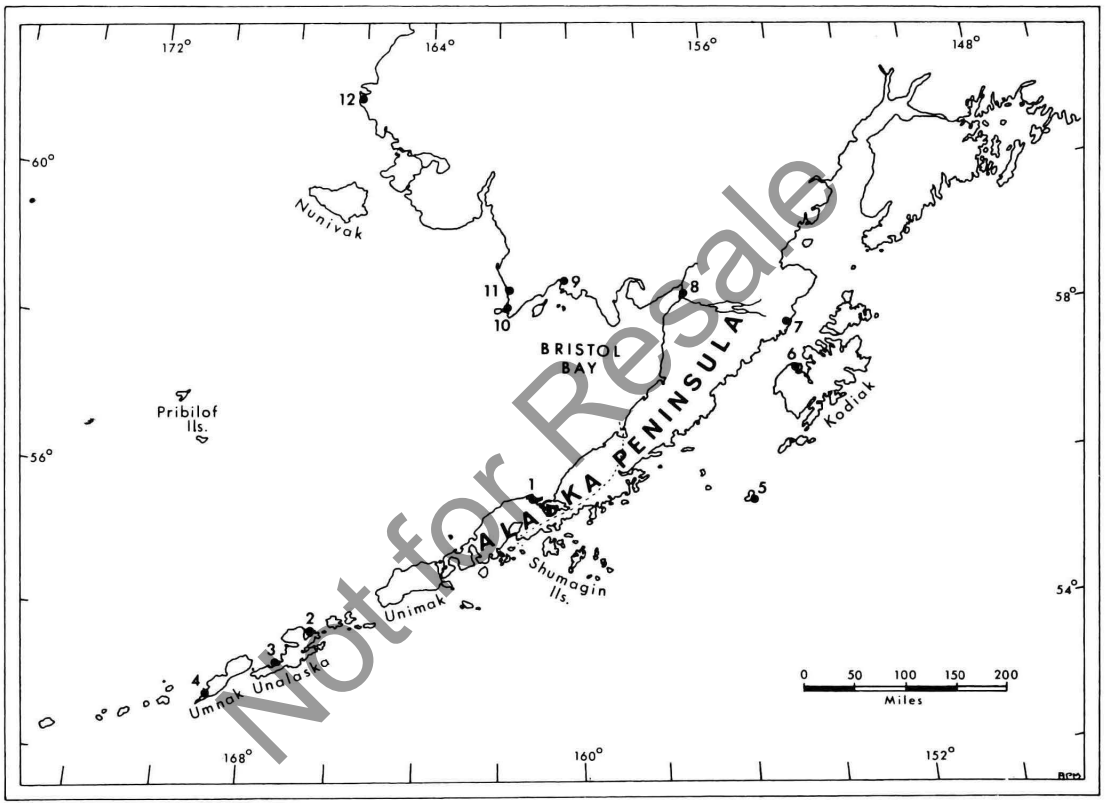

Fig. 1. Map of the Alaska Peninsula and Adjacent Areas. The dotted line across the Peninsula represents the Aleut boundary as determined by Petroff. Some of the important archaeological sites are marked as follows: 1) Port Moller, 2) Amaknak Island-Unalaska Bay, 3) Fortress or Split Rock, 4) Chaluka, 5) Chirikof Island, 6) Uyak, 7) Kaflia, 8) Pavik-Naknek Drainage, 9) Togiak, 10) Chagvan Bay, 11) Platinum, 12) Hooper Bay.

PREHISTORIC ALEUT INFLUENCES AT PORT MOLLER, ALASKA[1]

by

Allen P. McCartney
Univ. of Wisconsin

Introduction

Recent mention has been made of the Aleut influences at the large prehistoric site at Port Moller, the only locality known archaeologically on the southwestern half of the Alaska Peninsula. Workman (1966a: 145) offers the following summary of the Port Moller cultural affinities:

> Although available published material from the Aleutians is scarce and the easternmost Aleutians in particular have been sadly neglected, it is my opinion that the strongest affinities of the Port Moller material lie in this direction. The prevalence of extended burial and burial association with ocher at Port Moller corresponds most closely with the burial practices at the Chaluka site on Umnak Island. Several of the more diagnostic projectile points have Aleutian affinities as do the tanged knives and, possibly, the side-notched projectile point. Strong points of correspondence, particularly in the burial practices and the stone technology, lead me to believe that a definite Aleut component is represented at the site. Data currently available will not allow any definitive statement as to whether or not there are other components represented at the site as well. Complete analysis of existing collections and possibly more field work will be necessary to resolve this important question.

Also, Laughlin (1966b: 154, 1967: 443) concludes that two crania from 5 or 6 feet below the surface in part of the Port Moller middens were those of Paleo-Aleuts, suggesting that

[1] I wish to thank W. B. Workman for reading and commenting on this paper; Profs. C. S. Chard and J. W. VanStone also offered valuable points for consideration for which I am appreciative. I wish to acknowledge the Field Museum of Natural History and the American Museum of Natural History for their cooperation in permitting me to study their Aleutian and related collections, and the Wenner-Gren Foundation for Anthropological Research for partially assisting me in the same.

either all the area west of Port Moller was ancient Aleut territory or at least that the Port Moller region was an Aleut enclave with some time depth.

Indeed, the notion that portions of the Peninsula were occupied by Aleut populations is not a new one. Late 19th century writers on the Aleutians indicated the eastern limits of the aboriginal Aleuts at roughly 160° W. longitude, just east of Port Moller (Dall 1870: 374), or from Cape Strogonof (Port Heiden) on the Bering Sea coast to Pavlov Bay on the Pacific coast (Petroff 1884: 146) (Fig. 1).

Jochelson (1925: ethnographic map) and Hrdlička (1945: 22) follow the Alaska Peninsula distribution of the Aleut, extending the possible eastward spread at least to Ugashik Bay or further east on the northern coast.

Though the Shumagins were inhabited by Aleuts during Veniaminof's day (1840: 202-3) and have been included in the Aleutian area by later writers, we have practically no information about the prehistory of this island group south of the Peninsula and just what cultural affinities the prehistoric inhabitants had at different time periods to either the archipelago or the mainland will have to await further investigations of those islands.

The early geographic estimates of eastern Aleut territory have been accepted by current writers who use one or more of these Alaska Peninsula lines as the general aboriginal boundary (e.g. Cressman and Dumond 1962: 42, Map 2; Laughlin 1952: 67, 69, Fig. 1, 1962:121; Oswalt 1967: Map 2). Though this boundary reflects *sensu stricto* the known Aleut extension at roughly the latter half of the 19th century, one might logically assume a certain amount of time depth for Aleut occupation on the western end of the Peninsula including Port Moller.

As I have recently analyzed the large A. R. Cahn collection in the Field Museum of Natural History and the American Museum of Natural History from sites bordering on Unalaska Bay, one of the "existing collections" referred to by Workman

[2] Petroff's "ethnological map" included in his Tenth Census report shows the eastern Aleut territory extending to the Ugashik River on the Bering Sea coast and to Cape Ivanof on the southern coast. This Ugashik River division is not consistent with his limits as described in the text above. However, Petroff does state, in discussing the Aglegmiut territorial limits, that the latter group extended "down to the Ugashik River where the Aleutian settlements begin" (Gsovski 1950: 60).

above, I prefer to suggest a revision to the above view, namely that the cultural similarities between the eastern Aleutians and Port Moller were perhaps greater on the earliest time horizon but that prehistoric Aleut influences as far east as Port Moller were minimal during the Christian era. Because the Cahn collection [3] is the largest easternmost assemblage studied in the archipelago proper and lies closest to Port Moller (approximately 260 miles), it ought to serve currently as the best cultural datum from which to measure the similarity or dissimilarity of assemblages to the east during the past two millennia.

Before detailing the reasons for seeing no great Aleut time depth or significant cultural influence at Port Moller, it should be emphasized that I do not question the basis for the common ethnic map boundary which survives to the present. On the contrary, the ethnographic/linguistic observations by Dall, Petroff, and other early Russian and American investigators in southwestern Alaska definitely suggest an Aleut expansion along the northern shore of the Peninsula. I would suggest, however, that until archaeological evidence to the contrary is forthcoming, we view this expansion as a recent phenomenon, perhaps occuring within the Russian period, or post-1741. Oswalt (1967: 241) has recently expressed this same view. Intentional scattering of Aleut sea mammal hunters outside the archipelago proper was carried out by the Russians for expansion of the early colonial economic sphere; Aleuts were introduced into such areas as the Commander Islands, the Pribilof Islands, Sitka, and along the California coast during the first half of the 19th century (Dall 1877a: 22; Heizer 1943: 120; Hrdlička 1945: 22-3). With such large-scale population movements dictated primarily by economic expediency, it is doubtful that the pre-contact Aleut boundary can be more than approximated.

A further complication in deriving specific geographic limits of Aleut occupation was the apparent indiscriminate use

[3] In addition to the Cahn collection, the Field Museum also has the much smaller VanBarriger collection from one of Cahn's Amaknak Island sites, Site B. Part of the Cahn collection is in the American Museum as is the Larsen collection from another one of Cahn's sites, Site D. All these materials have been inspected (McCartney 1967), along with part of Weyer's original collection in the American Museum. Workman has also made drawings of several dozen Port Moller specimens from the Univ. of Alaska Museum and has made these available for my use.

of the term "Aleut" for many native groups of southwestern Alaska; according to Dall (1870: 530, 1877a: 22), for instance, early traders also called the Koniag (Kodiak) natives "Aleuts." Such generic usage would certainly not lend itself to reconstructing actual past ethnic boundaries.

Before leaving the matter of culture area limits, we have no evidence that whatever discontinuity existed between the Aleut and mainland Eskimo was ever stable or nonshifting over time or formed a relatively sharp boundary. It is possible that the southwestern end of the Peninsula constituted a cultural continuum rather than a sharp Aleut/non-Aleut line of demarcation, the westernmost area receiving more influence from the archipelago proper and the eastern area being influenced more by Bristol Bay and southern Alaskan peoples.

The most recent and authoritative aboriginal distribution map by Oswalt (1967: 4-5, 8, Map 2) differs from former maps in not dividing the Alaska Peninsula between the Aglegmiut, the Koniag and the Aleut; rather the Aglegmiut are restricted to the territory along the northern part of Bristol Bay. Peninsular Eskimo is a new division recognized for most of the Peninsula between the Aleuts in the west and the Aglegmiut and Koniag in the east. With the sketchy ethnographic data known for the Peninsular Eskimo as well as the lack of prehistoric archaeological data for the Peninsula, no "direct historical approach" is currently open to us in aligning archaeological assemblages with historic groups.

The importance of Port Moller is obvious: it is the only excavated site locality towards the western end of the Peninsula, an area almost totally unprobed by archaeologists but where one might expect three broad cultural spheres of influence to be felt - - from the southern Alaskan coast - Kodiak area to the northeast, from the Aleutians to the southwest, and from the Bristol Bay - western Alaskan coast to the north. Cultural similarity between Chirikof (Workman 1966b) and Port Moller or the eastern Aleutians has not yet been specified.

Only four dozen archaeological specimens from Weyer's pioneering excavations at the site were ever published (1930), and the more recent investigations of the joint Univ. of Wisconsin - Meiji Univ. expedition have only been reported in summary fashion by Oka *et al* (1961) but in greater detail by Workman (1966a).

The only other archaeological investigations on the Peninsula have been those of Davis (1954) and Oswalt (1955) at the Katmai National Monument, of Dumond (1963; Cressman and Dumond 1962) and Larsen (1950) along the Naknek River drainage at the eastern end of the Peninsula, and of Townsend and Townsend (1961) at Iliamna Lake at the base of the Peninsula. Hrdlička (1930, 1943) located and haphazardly tested several sites on both the northern and southern coast.

Time Periods

Workman (1966a: 145) reports two radiocarbon dates for the lower strata of the Port Moller middens - - 2680 ± 250 and 2960 ± 320 B.P. Thus, the Port Moller occupation dates to at least a millennium B.C. and Workman (146) suggests that the occupation lasted at least until the beginning of the Christian era if not longer.

On the basis of several specific artifactual similarities between Port Moller and Amaknak - Unalaska Bay, I would suggest that portions of the Port Moller locality were occupied through at least the first millennium A.D. and perhaps until the late prehistoric period. We know that the Unalaska Bay site occupations persisted roughly from as early as 200 B.C. to c. 1500 A.D. and at least one site was occupied at historic contact in the mid - 18th century (McCartney 1967: Table 1). Further, Workman (personal communication, 1967) now considers the Port Moller assemblage to be a conglomerate of artifacts representing more than one time period; the very large (250 x 220 meters) and deep (3.5 meters) nature of the middens would suggest that a long occupation span occurred at the site.

Because of the few specific Aleut cross ties and those ties with other relatively late prehistoric mainland - Kodiak assemblages, we cannot discount the preponderant dissimilarity between these two locality assemblages wholly on the basis of dissimilar time periods; rather there appears to be overlapping temporal occupation for at least the middle and upper parts of the Port Moller sequence.

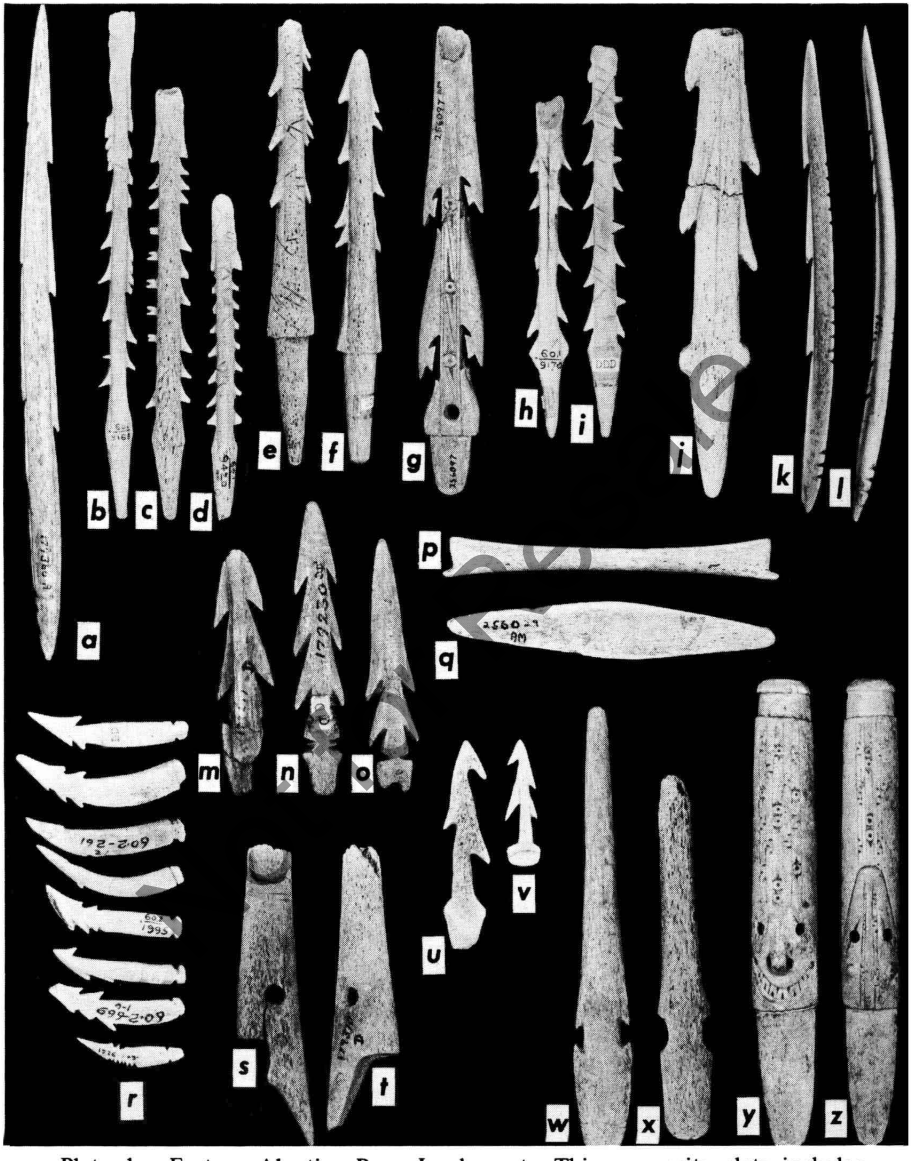

Plate 1. Eastern Aleutian Bone Implements. This composite plate includes several important bone tool types from Amaknak and Unalaska Islands. These specimens are illustrated at different scales and the maximum length measurements are indicated in the following listing; lengths of broken specimens are given in parentheses. a) leister spear center point or side prong - 23.1 cm;

Archaeological Data

The following tabulations and the plate are intended to summarize primarily the degree of similarity and dissimilarity of artifacts found at Unalaska Bay and Port Moller, and secondarily the similarity between these two localities and others in the eastern Aleutians, Kodiak, and southern, western and northern Alaska.

There are obvious pitfalls in such a summary as not all the traits below are comparable nor are they quantified. Some items are artifact types and some are specific attributes; they do not carry equal weight as diagnostic traits distinguishing one locality from another. As neither full type descriptions nor detailed plates are included here, each specific differentiating artifact type cannot be listed separately and briefly and still give the reader an accurate idea about its morphology. Therefore, only a few of the more important types or groups of types are listed and are illustrated in Plate 1. These listings, then, are not all-inclusive but are rather suggestive of kinds of differences between the localities. The presence or absence of comparable artifacts from mainland sites is indicated only on the basis of a brief review of the literature of the area and should not be taken as complete.

The comparative treatment below is based largely on artifacts of bone, ivory or tooth because these materials indicate greater fabricating precision than do chipped stone artifacts and are thus considered more diagnostic. As Workman based his point of Aleut-Port Moller similarity on some stone varieties,

b-f) large, raggedly-barbed projectile points with conical and subconical tangs and incised decoration-25.0, 21.3, 16.3, (17.0), (15.7 cm); g) plug-tanged projectile point with incised decoration-21.6 cm; h-i) small, raggedly-barbed projectile points with contracting wedge-shaped tangs and incised decoration-12.0 & 13.7 cm; j) basal section of large projectile point with conical tang-(13.1 cm); k-l) leister spear side prongs-22.2 & 23.2 cm; m-o) small dart points with bilaterally notched tang sections-7.0, 8.4, 7.3 cm; p) bone gauge, lateral view-15.7 cm; q) bone gauge, plan view-15.4 cm; r) barbed points of composite fishhooks-second from top 6.1 cm; s) toggle harpoon head with open blade basin and closed socket-12.0 cm; t) toggle harpoon head with blade slot and closed socket-11.2 cm; u-v) small dart points with wedge-shaped tangs-7.7 & 4.6 cm; w-x) toggle harpoon loose shafts-12.6 & 10.2 cm; y-z) cylindrical, two-piece foreshaft sections with bifurcated tangs and carved heads and incised decoration-21.4 & 21.0 cm.

this discussion presents another cultural aspect but one which I consider to be of greater comparative value.

Eastern Aleutian Artifacts

Our knowledge of prehistoric assemblages in the Fox Islands is almost as incomplete as that for the Alaska Peninsula. Only two large excavated collections have been studied in the eastern islands, those from Chaluka (Umnak) and from Unalaska Bay. Hrdlička's extensive collections from the eastern area remain unstudied to date. However, the Chaluka and Unalaska Bay collections supplement each other to form a rather long sequence, the former representing largely a period of the first millennium and a half B.C. and the latter representing a period of more than a millennium almost wholly within the Christian era. On the basis of both these assemblages, we may compare artifacts from almost 3,500 years with the early and more recent Port Moller specimens.

We still have yet to work out the intersite correspondences in the Aleutians; we have no other large eastern island assemblage of a corresponding period as the lower portion of Chaluka that might point out the degree of regional distinctiveness which developed at this early Aleut horizon. On a more recent time horizon we are in a better position to postulate stylistic patterns more or less common to all of the eastern Aleutians. Such items as singly or doubly barbed projectile points with wedge-shaped tangs, toggle heads, raggedly-barbed projectile points, plug-tanged projectile points, single-piece foreshafts with carved faces, bone gauges, decorated bone spools, and other more ubiquitous artifact types are found on Umnak and Unalaska and enable us to compare the eastern Aleutian area as a whole to the mainland. As more information is forthcoming, we hopefully will be able to detail what types and styles are common to the entire area and what is specific to regional sub-divisions.

No attempt is made here to compare differences between the western, central and eastern parts of the chain.

Discussion

Table 1 indicates that there are several artifact types and

characteristics found at Port Moller which do not occur in the Fox Islands but which do occur either commonly or infrequently in other parts of Alaska: e.g. toggle heads with V spur (1), toggle heads with parallel blade slit and line hole (2), lobe-tanged projectile points (5), long-shafted projectile points or leister prongs (7), leister side prongs with lashing facets and lips (10), slit salmon spear barbs (11), star-shaped blunts (12), and a general lack of surficial incising and carving (9).

On the other hand, there are several eastern Aleutian types which are not yet known at Port Moller and which, in my estimation, must be present to constitute evidence for significant genetic interaction. These include, for example, raggedly-barbed projectile points (22), plug-tanged projectile points (23), "castellated"or bi-surfaced inner barb margins (27), foreshafts with carved faces (33), non-slit salmon spear barbs (34), curved fishhook barbs (35), large bone gauges (36), bilaterally notched loose shafts (37), cylindrical, decorated bone spools (38), "bear" figurines (39), and elaborate and stylized barbing and incised decoration (31).

Further, it will be noticed that practically all of the types shared by Port Moller and Unalaska Bay are also shared with other Kodiak and mainland sites. Many of these are characteristic of Alaskan Eskimo assemblages as a whole (e.g. bone or wooden spoons, wedges, mattocks, bird and mammal bone awls, etc.) whereas others typify southwestern Alaska as a regional development (e.g. unilaterally-barbed, wedge-tanged projectile points, long rod-like barbed projectile points, long rod-like socketed foreshafts).

In regard to stone artifact types (not included in Table 1), Port Moller is similar to the early Aleut period in the eastern chain in the emphasis on chipped over ground stone; practically no ground slate is found at Chaluka. A great deal of slate is known from the later Unalaska Bay sites. The presence of several ground slate pieces at Port Moller appears to be out of character with the poorly to well-made chipped pieces and can best be interpreted as relatively recent intrusions following the earlier chipped stone.

Similar stone types at Port Moller and the Fox Islands include grooved stone weights, partially ground adze blades, asymmetrical tanged knives, large ovoid blades, and a general

class of lanceolate-shaped projectile points with slightly contracting stems. Port Moller artifacts differ in the presence of perforated stone weights, wide diamond-shaped points with sharply contracting stems, "spade" - shaped points, long finely chipped points with slightly contracting stems or slightly shouldered with squared stems, and long, concave-based points. Besides the presence of ulu blades and other ground slate types at first millennium A.D. sites in the eastern Aleutians, asymmetrically serrated points or knives are also distinctive to the islands and are not known at Port Moller.

The shared absence of ground slate and the simplicity of bone artifact styles which characterize Port Moller and early Chaluka assemblages suggest that perhaps the greatest genetic contact between the Peninsula and the eastern Aleutians was on an early time horizon. However, the more recent addition of a highly stylized bone industry and increased importance of ground slate in the Fox Islands and the recent Port Moller acquisitions as star-shaped blunts, slit salmon spear barbs, and toggle heads with V spurs suggest that regional divergence took place during the Christian era, making the two assemblages even less similar. The Aleutian development was an indigenous one whereas Port Moller reflects the influences of wide-spread mainland Eskimo styles indicating greater contact with contiguous peoples than was geographically possible in the islands.

Late prehistoric Aleut contacts with Peninsula, Bristol Bay, and Kodiak groups, though sporadic, are known (Veniaminof 1840: 184-5) and such intermittent contacts probably had a long history. However, this interaction appears to have been mainly of a belligerent nature and we would not expect cultural exchange to be significant. One lobed-tang projectile point, for instance, found at Unalaska Bay is obviously an intrusive element from the Peninsula because there is no tradition of this distinctive style on Unalaska or at other known localities in the eastern chain whereas this style is very popular on the mainland.

Burial Patterns and Skeletal Remains

Besides similarity in artifact assemblage, Workman has suggested that extended burials and the use of ocher in inhumation perhaps tie Port Moller to the eastern Aleutians. Ocher

in burials may have been most popular in the Aleutians and have influenced the adjacent Peninsula culture, but very little is known about southern Bering Sea burial practices in general and it may be too soon to draw this conclusion. For instance, ocher in burials is reported from at least Pt. Barrow (Ford 1959: 30), Prince William Sound (de Laguna 1956: 83, 252), and two sites at Kachemak Bay (de Laguna 1934: 47, 164). At least one other Prince William Sound burial contained individual lumps of ocher (1956: 70, 72). The use of ocher other than in burials is rather commonplace in coastal Alaska (e.g. de Laguna 1960: 104-105; de Laguna *et al* 1964: 116-117; Heizer 1956: 53; Ackerman 1964: 11, Giddings 1964: 150, 156, 189, 239; Collins 1937: 163, 174, 237, 240, 287; Geist and Rainey 1936: 127, 161; Larsen and Rainey 1948: 72, 86-87) and future investigation may reveal a greater use of red paint or hematite in burial associations on the mainland.

The distribution of extended burials is also little understood, existing in part at Port Moller and almost exclusively at Ipiutak (Larsen and Rainey 1948: 58, 62-3) and at the Uelen cemetery (Levin 1964: 306). Though varying degrees of flexed burials are the norm throughout the Alaskan Eskimo area, isolated extended burials have been found in the Shumagin Islands (Weyer 1929: 237), on Kodiak (Heizer 1956: 12, 120), and on St. Lawrence (Geist and Rainey 1936: 78).

A few extended burials are known from the Aleutians (see Workman 1966a: 136), but by far the most popular practice throughout the chain was inhumation in a flexed position (Jochelson 1925: 43-44, Plates 10-14; Hrdlička 1945; Spaulding 1962: 14-16). Thus, I question the use of extended burials as a trait of similarity with the Aleutians and suggest that when we have more information about the Bristol Bay area, we might find that the Port Moller instances are more attributable to that sphere of influence than to the eastern Aleutians or are unique in southwestern Alaska in emphasizing this burial practice. It might also be shown in the future that different burial positions are associated with different time horizons, but we do not have enough controlled evidence to postulate such associations at present.

Dumond (1964: 39-40) summarizes our current knowledge of human skeletal information for the southwestern

Alaskan area, pointing out that no series of physical remains exists from the coastal Bristol Bay-northeastern Peninsula region. For this reason, it would appear that until comparative series are excavated at Port Moller, Bristol Bay, and other areas contiguous with the archipelago proper, we must bracket our estimates of biologic distance and affinity between the known Aleuts and these neighboring populations realizing that when the raw data become available our present picture of morphological specifics may be altered accordingly.

Summary

Two of the longest and best understood local archaeological sequences have been studied at Chaluka midden and along the Naknek drainage at the northeastern end of the Alaska Peninsula. However, Dumond (1964: 36) points out the lack of specific correspondences in these artifact sequences. On the basis of recent excavations at Port Moller and recent study of existing collections from Unalaska Bay, we are in position to narrow our Aleut-mainland cultural comparisons from a linear distance of roughly 650 miles to 260 miles along the Bering Sea coast.

On the basis of the existing evidence, I suggest that these two latter localities share several specific artifact styles but that the differences are more profound than the similarities, and that the similarities are largely not confined to these two localities but also apply in many instances to the Koniag, Pacific, and Western Alaskan Eskimo areas. This conclusion suggests that the prehistoric Aleut boundary, however irregular or wide, was further west of Port Moller rather than to the east of that bay. Until archaeological reconnaissance is carried out on the southwestern half of the Peninsula, we will not have the data to firm up this amorphous boundary nor will we be in position to specify the nature of the transition between the prehistoric Aleut culture area and that of the Peninsula. And, until much more information is forthcoming on the Bristol Bay area, it will remain impossible to measure the degree of similarity of Port Moller to the Aleut area to the northeast.

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TABLE 1

Distribution of Selected Southwestern Alaskan Traits

	Description	Port Moller	Unalaska	Umnak*	Kodiak	Cook Inlet-South Alaska	Northeastern Alaska Pen. to Norton Sound	St. Law. Island	North Alaska
1)	Toggle harpoon heads with V-shaped spur notch, rectangular slot socket, blade slot perpendicular to line hole, spur perpendicular to line hole	X-3, 33, 36	---	---	Rel-6	---	Rel-21	---	---
2)	Toggle harpoon heads with closed socket, blade slot parallel to line hole, spur parallel to line hole	X-28, 33, 36, ?-37	---	---	X-17	---	X-1, 16	X-7, 14 Rel-32	X-13, 15, 34
3)	Simple, unilaterally two-barbed projectile points with unilat. basal lip	X-33	---	X-2, 24 Rel-19 up, low	---	---	---	---	---
4)	Emphasis on centrally drilled tangs of simple unilaterally and bilaterally barbed projectile points (excluding item 44 below)	X-3, 28, 33 36	---	X-2, 24 25,up low	---	---	X-16,20, 29	X-14, 32	X-15
5)	Emphasis on unilaterally barbed simple bone points with drilled slight to strong unilateral tang lobes above wedge-shaped bases	X-3, 9, 28, 33, 36, 37	Rr-27 **	Rel-2 low	X-17	X-10, 11	X-30, ?-8	---	---
6)	Non-toggle harpoon points with blade slot parallel to line hole or perpendicular to wedge-shaped tang	Rr-33	---	---	Rr-5	---	---	X-32	---
7)	Simple projectile points/leister prongs with relatively small bilateral barbs near tips with long unbarbed shaft-tang sections	X-3	---	---	---	---	X-8, 16, 20	X-32	X-13, 22
8)	Indented, C-shaped tang side notches on barbed harpoon points	X-33	---	---	---	Rr-10	X-16, 20	---	---
9)	General emphasis on non-elaborate, simply carved projectile points with minimum of incised lines or other surficial decoration on point faces	X-3, 33, 37	---	X-2 low	X-6, 17	X-10, 11	X-20, 29	---	X-34 ?-13
10)	Unilaterally barbed leister side prongs with flattened tangs and lashing lips; sometimes with lashing depression in outer edge above tang portion	X-3, 36, 37	-- ***	---	X-17	---	---	Rel-14, 31, 32	---
11)	Slit salmon spear barbs or "catches"	X-33, 36	---	---	---	---	---	X-31,32	X-13, 15, 22
12)	Star-shaped blunts or bird points	X-33	---	---	---	---	X-16, 21	X-32	X-13, 15, 22, 34
13)	Simple loose shafts with unilaterally or bilaterally flared, wedge-shaped tangs	X-33, 37	?-27	---	X-17	---	X-20	---	---
14)	Straight to slightly curved compound fishhook points	X-3, 37	---	---	X-5, 6, 17	X-10, 11	---	---	X-15, 34
15)	L-shaped compound fishhook shanks with raised exterior ridges or bumps on lower corner and lower arm	X-33	---	Rel-2 mid	---	---	---	---	---
16)	Unilaterally side notched or full grooved adze heads with closed blade sockets or sleeves	X-33	---	---	X-17	X-10	X-16	X-7, 14, 32	X-13, 15, 22, 34
17)	Unnotched adze heads with open blade basins	X-3	---	X-2 low	X-17	---	---	---	---
18)	Perforated ivory weights	X-33	---	---	---	---	---	---	---
19)	Elongated-ovoid labrets with center protrusion or pip	X-9, 36	---	---	Rel-17	---	---	---	---
20)	Drilled bone "button" or "buckle," square or rectangular	X-33	---	---	X-5	---	---	---	---
21)	Toggle harpoon heads with open blade basins or slots perpendicular to line hole, spur parallel to line hole, closed socket (Pl. 1-s,t)	---	X-27	X-19	X-17	---	X-20	X-7, 14, 32	X-13, 15, 22, 34
22)	Emphasis on long and short, raggedly-barbed projectile points with open blade basins and surficial decorative incising, cylindrical tangs (Pl. 1-b, c, d, e, f, h, i)	---	X-4, 27	X-2, 18 , 19, 24, 25 up	---	---	---	---	---
23)	Emphasis on large multiple barbed points with plug-tanged bases, drilled center shafts, surficial decorative incisions or raised ridges, open blade basins, some "castellated" barbing (Pl. 1-g)	---	X-4, 27	X-2, 18, 19, 23, 24 up	---	---	---	---	---
24)	Thin bilaterally barbed points with fine, tooth-like ridged barbing	---	X-27	---	---	---	---	---	---
25)	Long, flattened (leister ?) points with ridged barbing and notched tang sections (Pl. 1-a)	---	X-27	X-18	---	---	---	---	---
26)	Emphasis on "step" scarfing tangs on points or shafts	---	X-27	---	Rel-17	---	X-20 Rel-16	Rel-31	---
27)	Emphasis on "castellated" or bi-surfaced inner barb margins (Pl. 1-g).	---	X-27	X-2 ?-19 up	---	Rr- 11, 12	---	---	---

28)	Emphasis on subconcal or tapering cylingdrical tangs (P1. 1-b, c, d, e, f, h, i, j)	Rr-3	X-4, 27	X-2, 19, 23 up, low	X-17	X-10	X-20	X-32	X-34
29)	Small three and four barbed, bilaterally asymmetrical dart points with wedge-shaped tangs (Pl. 1-u, v)	---	X-27	X-19 Rel-25, 23	Rel-17	---	---	---	---
30)	Emphasis on bilaterally side notched tang sections (Pl. 1-m,n,o)	---	X-4, 27	X-19	X-17	---	---	---	---
31)	Emphasis on elaborate barbing and surficial incising of point faces (Pl. 1-b-j)	---	X-27	X-2, 19 up	X-17	---	---	X-7, 14	---
32)	Curved leister side prongs with unilateral barbing and tang notching; without flattened tangs and lashing lips (Pl. 1-k, l)	---	X-27	X-19	Rel-17	---	Rel-20	Rel-31	---
33)	Cylindrical one or two piece foreshafts with recessed bifurcated tang sections and carved faces and incised designs (or plain) (Pl. 1-y, z)	---	X-27	X-18	---	---	---	---	---
34)	Non-slit salmon spear barbs or "catches"	---	X-27	X-2, 18, 19 up	?	?	Rel-20	---	---
35)	Slightly to strongly curved compound fishhook points; some elaborate multiple barbing (Pl. 1-r)	---	X-27	X-2, 19	---	---	---	---	---
36)	Large bone gauges (Pl. 1-p, q)	---	X-27	X-2, 18, 19 low	---	---	---	---	---
37)	Bilaterally notched loose shafts (Pl. 1-w, x)	---	X-27	?	X-6, 17	---	---	---	---
38)	Cylindrical bone spools/ornaments with varying sized circle and dot designs on end surfaces	---	X-27	X-18	---	---	---	---	---
39)	"Bear" figurines with squared posterior, heads or headless	---	X-27	X-****	X-17	---	---	---	---
40)	Small, knob-tanged needles	---	X-27	?	X-17	---	---	---	---
41)	Unilaterally notched adze heads with open blade basins	---	X-27	---	X-17	X-10	---	---	---
42)	Long, rod-like unilaterally barbed projectile points with blade slots or open basins; some with ridged barbs; cylindrical tangs	X-3, 33, 36 37	X-27, 35	---	X-17	Rel-10, 12	---	---	---
43)	Thin, unilaterally and bilaterally barbed arrow points with conical tangs	X-3, 33, 36	X-27	X-2, 25 24 up	X-17 Rel-6	---	X-20	X-7, 32	X-22
44)	Unilaterally barbed projectile points with drilled wedge-shaped tangs	X-3	Rr-27	---	X-6, 17	X-10, 11, 12	X-8, 16, 20, 30	---	X-15
45)	Open, recessed blade basins at tips of projectile points	X-33, 36	X-27	X-2, 18 19 up	Rel-17	Rel-10	---	---	---
46)	Emphasis on simple unilaterally and bilaterally flared, wedge-shaped tangs on projecting points	X-3, 33	X-4, 27	X-2, 19, 24, 25 low	X-5, 6	X-10	---	---	---
47)	Short, heavy, two piece foreshafts with double sockets	X-33	X-27	X-18	---	---	---	---	---
48)	Long, rod-like one piece foreshafts with closed point sockets and bifurcated tangs	X-3, 36	X-27, 35	X-19, Rel-25	X-17	X-10	---	---	---
49)	Emphasis on non-toggling harpoon heads	X-3,33, 36, 37	X-27	X-2, 19	X-5, 6, 17	X-10, 11	X-20	---	---
50)	"Step" beveled drill shafts (?)	Rr-3	X-27	X-*****	---	Rel-12	---	---	---
51)	Drilled or slit plain loose shafts	?	X-27	---	X-6, 17	X-10	X-16, 20	X-7, 14, 31, 32	X-13, 15, 22
52)	Bilaterally notched or full grooved adze heads with open blade basins	X-33	X-27	---	X-17	X-10	---	X-7, 14	---
53)	Multiple-sectioned chain/swivel ornaments carved from one bone piece	X-33	X-27	---	Rel-17	---	---	X-31	---
54)	Ovoid and/or simple plug labrets	X-9, 33, 36	X-27	X-2, 19 up	X-5, 6, 17	X-10, 11	X-8, 16, 20, 29	---	X-13, 15, 22, 34
55)	Flattened bone wedges; some with drill bearing wear	X-3, 28, 37	X-4, 27	X-2, 19	X-6, 17	X-10, 11	X-16, 20	X-7, 14, 31, 32	X-13, 15, 22, 34
56)	Blunt rib "flakers" and/or pointed rib tools	X-3, 37	X-27	X-2, 26	X-17	X-10, 11	X-20	X-7, 14, 32	X-34
57)	Split and whole bird and mammal bone awls	X-3, 28, 36, 37	X-27	X-2, 19	X-6, 17	X-10, 11, 12	X-16, 20	X-7, 32	X-13, 22, 34
58)	Small eyed needles	?	X-27	X-2	X-17	X-10, 11	---	---	X-22
59)	Irregular whalebone upper drill bearings or holders	X-37	X-27	?	?	?	?	X-32	---
60)	Curved compound fishhook shanks	X-3, 28, 37	X-27	X-2, 19 up	X-5, 6, 17	X-11	---	---	---

61)	Bone/wood scoops and spoons	X-37	X-27, 35	X-19	X-6, 17	X-10, 11	X-8, 16, 20, 29	X-7, 14, 32	X-13, 22, 34
62)	Wedge-like whalebone mattock heads with indented margins for hafting	X-33	X-27	Rel-2	X-12	?	?	Rel-32	Rel-22, 34

SYMBOLS

X	Artifacts known, popularity unknown
Rr	Rare, known to occur in low frequency
Rel	Related in form but not identical in all respects
?	Questionable
---	Absent as far as currently known

NOTES

*	Up, mid or low refers to upper, middle or lower parts of Chaluka levels
**	One specimen present; believed to be intrusive elements from mainland
***	Related form included in Amer. Museum Facchin collection, supposedly from Shemya (?)
****	From Ashishik Pt., Umnak (G. Denniston personal com. 1967)
*****	From Univ. of Michigan Bank collection

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