

THE EARLIEST ALEUTS¹

by

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The Aleutian Islands are unique in being the home of two species of tool-using mammals, sea otters and humans. Though both of them ate enormous quantities of sea urchins, the Aleuts cramped the symmetry of this nutritional triangle by eating the tool-using sea otters as well as the sea urchins. In fact, the Aleuts added insult to injury by using the bones of this small tool-using mammal for making tools, thus insuring their position at the apex of this triangle. The nutritional scheme involving these three forms reflects the richness of the intertidal zone in the Aleutians. The abundance and accessibility of foods in this zone reflects in turn the general absence of winter sea ice. The absence of winter sea ice in turn permitted the elaboration of kayaks and year round pelagic hunting. Both the intertidal zone and the pelagic zone were accessible to the earliest Aleuts who entered the chain by boat, necessarily, and have continued to shape and reflect the physical and cultural evolution of the Aleutian Islanders for some four thousand years. The ecological base explains in large part the long, continuous and rich development of this old division of Eskimo-Aleut stock.

An inventory and objective description of the earliest skeletons, associated artifacts and faunal remains is considerably enhanced by an interpretation utilizing contemporary data. Such contemporary data can be reliably used where there is demonstrable evidence of: a) continuity in the presence and habits of the sea mammals, birds, fish, and of the foods secured in the intertidal zone; b) maintenance of generally similar physiographic conditions; c) continuity in the physical characteristics of the human population; d) continuous occupation as witnessed in the successive strata within archaeological sites and between contiguous sites on the same bay; e) continuity in the artifactual record with only minor alterations, involving no significant additions or deletions indicating a significant change in the way of life or exploitation of any ecological niche; and f) simplicity or rigorously limited alternatives for origins, direction of migration and, correlatively, absence of contaminating influences from unknown quarters. It has been possible, under these con-

¹ This paper has been read by Christy G. Turner, II, project supervisor of the 1962 excavations in Chaluka. Though these materials have not yet been analyzed there will likely be no major revisions though there will be some interesting additions. Dr. R. F. Black, Department of Geology, University of Wisconsin, notes that the site rests upon an ashfall on the 2-3 meter terrace of the post-glacial thermal maximum. The Anangula lamellar flake industry lies under four ashfalls of which the youngest is the Chaluka ash. Its antiquity may therefore be extended considerably whereas the oldest occupation of Chaluka cannot exceed some 5,000 years ago.

ditions, to excavate the earliest skeletons without exhuming notions concerning inland origins of Arctic Mongoloids and their marine culture. From the linguistic data it has been possible to infer time depth (some 4600 years to the separation of Aleut and Eskimo from a proto-Eskimo-Aleut base) and to see the westward direction of migration in the movement of the central and eastern dialects. Two radiocarbon dates from 60 cm and 85 cm above the native sterile floor of Chaluka yield confirming dates of 3750 ± 180 and 3600 ± 180 respectively. Close genetic affinities with Eskimos and other Mongoloids, rather than with American Indians, are attested in the serological data as well as in the dental and other morphological facts. Methods of hunting and the kinds of gear used, derived from ethnological studies has been combined with zoological studies of the behavior of sea mammals to interpret the remains of such mammals in the middens, i.e., the fact that sea lions haul up in rookeries and were hunted in different ways, with larger harpoon heads than sea otters, or the fact that whales were wounded with small harpoons, or spears. The uses of many excavated artifacts such as wedges for splitting driftwood, or the image of the diety, *kaadargaadar*, is reliably inferred from the surviving uses of such artifacts. Contemporary studies therefore have borne much relevance to forming an integrated interpretation of the first inhabitants, their way of life and their affinities. The employment of contemporary data (1741 to 1961) has likely been more meaningful and realistic in the Aleutians than in continental or less circumscribed areas owing to the various continuities, the restricted entryway for genetic and cultural traits, and the linear distribution of some one hundred occupied islands and the Alaska Peninsula.

DELIMITATION AND CHARACTERIZATION OF THE ALEUTIAN AREA

In summarizing our knowledge of early events in the Aleutians and of their relationship to other areas inhabited by genetically related people, the physiographic and ecological aspects are of primary importance. The natural environment provided the anvil on which each group of immigrants had to hammer out its mode of adaptation. The Aleutians are correctly seen in three aspects: 1—as an appendical area for the movements from the Alaska Peninsula, 2—as a filter for sea mammals, birds and fish moving between the Pacific Ocean and the Bering Sea, and 3—as a zoological garden of considerable variety and relatively long term stability. Using this evidence, with the genetic and linguistic, we have confirmed the Alaskan origin of the Aleuts and ruled out any direct Asiatic contact, excepting of course the convenient “vanishing boatmen” who are periodically conjured from some Asian shore bearing some particular trait, i.e., pots, red hair or an ornamental design, which they dutifully tended a conveniently receptive group and then obligingly vanished, whether in an orgy of hybridization, mass murder or homesickness re-

mains equally intangible. In fact the authors of Aleutian culture are tangible and well represented in skeletal remains.

The Aleuts were sealed into their 1250 mile appendix by the Konyag Eskimos of the Alaska Peninsula and Kodiak Island. They adjoined each other on a line running across the Peninsula from Port Moller on the north to Kupreanoff Point on the south. Where the line of separation lay in earlier times is not now known though the presence of winter sea ice and shallow depths in the Bering Sea which occur near here may have contributed to the differentiation of Eskimo and Aleut. The absence of whales in the shallow eastern Bering Sea, the presence of greater numbers of walrus on the ice, and the necessary adaptations for winter ice hunting are among the obvious differences. The Aleuts, in contrast, occupied an area of deeper waters with little or no winter sea ice, an abundance of resident sea otters, sea lions, many whales and a richer more accessible intertidal zone. The Konyag Eskimos, though morphologically and serologically very similar, present many cultural differences such as the manufacture of pottery and kneeling in their kayaks. Archaeological evidence indicates the earliest Konyags did not have pottery, but their peculiar method of kneeling in the kayak cannot be excavated nor inferred from contemporary evidence.

At their western extremity the Aleutians are separated from the Commander Islanders by 180 miles of deep water. These islands, Bering and Medni, in turn are separated from the Kamchatka Peninsula by 90 miles with no intervening reef systems. No pre-Russian occupation of the Commander Islands has been discovered in spite of a fair degree of examination by Steller and other members of the *St. Peter* stranded there in 1741, by L. Stejneger in 1882-83 and in 1895, by N. Grebnitski, a governor of the islands, by A. Hrdlička in 1938, nor by the Aleuts resident there since 1826. Instead, Bering Island was lavishly endowed with a remarkably diverse fauna including large flocks of eiders (*Anas stelleri*), ptarmigan (*Lagopus lagopus*) and the flightless, spectacled cormorant (*Phalacrocorax perspicillatus*) which provided food in generous quantities; sea otters (*Enhydra lutris*) quite unafraid of the arrivals; fur seals (*Callorhinus ursinus*) arriving at their rookeries the following spring; sea lions (*Eumetopias jubata*); blue fox (*Alopex lagopus*) whose burrows they enlarged for house pits; harbor or hair seals (*Phoca vitulina*) and the unusual sea cow (*Hydrodamalis gigas*, Zimmerman) which provided the best meat supply for them and for many succeeding Aleutian expeditions. Annual runs of salmon and a rich supply of other fish also reflected the ecological wealth of Bering Island.

Steller was convinced by the fearlessness of the sea otters, who had approached his boat, and of the blue foxes who sniffed and snapped at the newcomers, that he had come to a land where the animals had not

yet made the acquaintance of man (Stejneger, 1936: 317). The existence of two unique species, the herbivorous, lethargic sea cow and the flightless spectacled cormorant, large enough, "so that one single bird was sufficient for three starving men," (Stejneger, 1936: 351), is equally telling. The sea cow was exterminated in only 27 years, and the cormorant about the year 1850. It seems likely that if any of the people who have inhabited the coasts of the Bering Sea had found these two islands they would have exterminated the sea cow with equal promptness, or have established a balance so that both would have survived. The nature of the Commander Island fauna is formidable evidence against occupation by humans, either from Kamchatka, the Kuriles or the Aleutians prior to their discovery in 1741. Attu Island was the blind end of the Aleutian appendix.

As a filter the Aleutians channeled the movements of two major sources of food, fur seals and whales. Each spring some 1,200,000 fur seals swam through the Aleutian passes and again in the fall, with an additional 600,000 born on the Pribilof Islands. There is tentative evidence that some fur seals were resident in the Aleutians as well as passing migrants (Murie, 1959: 307). Use of this convenient food supply is well attested in the middens from the lowest levels. The islands were also ideal shooting stations for whales. Our knowledge of whales was considerably enhanced by the excellent study of Chamisso (1824) who spent several months on Unalaska in 1817 and procured wooden carvings of the whales hunted by the Aleuts and information concerning their food and fabrication uses. They were familiar with the Pacific Right whale (*Eubalaena sieboldii*), the Bowhead (*Balaena mysticetus*), the Gray whale (*Eschrichtius glaucus*), the Finback (*Balaenoptera physalus*) the Sei whale (*Balaenoptera borealis*), the Blue whale (*Sibbaldus musculus*) the Humpback (*Megaptera novaeangliae*), the Sperm whale (*Physeter catodon*), the Pacific killer whale (*Grampus rectipinna*) and other *Delphinidae* and *Ziphiidae*. It seems clear that the Aleut hunters preferred small whales to large ones, and young rather than old. The Humpback whale was extensively hunted, especially the calves. However, the Aleuts enjoyed the dividends of a large and complex coastline and secured many stranded whales. Whales were utilized extensively from the earliest times forward, but there is no certain way of distinguishing those who died of natural causes from those that had been wounded or killed outright by the Aleuts. Many of these whales, possibly most, were stranded after wounding. Often a wounded whale drifted up in the exploitative area of another village than the one from which the hunters had come. This retrieval by other villages was a very important source of 'unearned increment' and distinguishes the Aleutians from most other Eskimo areas with more sparse population and greater space between villages.

Viewed as a zoological garden the Aleutians were lavishly endowed with large numbers of many species and equally important, with a year-

round distribution that insured against starvation. Beginning with the reef system, characteristic of all major villages, there were, and are, sea urchins, limpets, whelks, mussels, chitons, fish, octopus and algae easily accessible to women and children as well as the aged of both sexes. Driftwood and clams, the latter found on sandy beaches, may also be enumerated among the products of the intertidal zone. Salmon, of four species, filled the fresh water streams each summer. Cod fish and halibut were usually caught with compound fishhook. Owing to the use of boats halibut and other deep water fish could be taken at all times of year.

Among the sea mammals the sea otter demands special attention owing to its habits and therefore availability to the earliest inhabitants. It can breed the year round, it usually inhabits the kelp beds close to shore and climbs up on land during storms. As a consequence it could be clubbed on land as well as harpooned at sea and caught in nets. Sea otter bones comprise some twenty per cent of all mammal bones in the lower levels. They were a very important source of food, clothing and material for bone tools. Harbor seals were always important and are well represented in the archaeological remains. Perhaps more important, considering their greater size, was Steller's sea lion. The larger harpoon heads with stone end blade were used on these and in fact, one specimen, the left humerus of a large male, has been found with the broken obsidian point embedded in the internal tuberosity. Fur seals were killed in quite large numbers. Skull fragments, especially temporal bones, of the seals are common and suggest no serious observance of the practice of throwing the heads back into the sea. The fact that many animals were immature and the skull consequently became disarticulated, and that the brains were frequently removed, has likely suggested a deficient number of skulls. The sea lions hauled up in rookeries where they could be clubbed as well as harpooned. They appear always to have been a mainstay of Aleutian life.

Some twenty species of birds have been identified from the Chaluka midden. One man living in the modern village of Nikolski provided the names and identification of 104 species of birds. The earliest Aleuts clearly utilized large numbers of cliff nesting Murres and Puffins. These, with the Shearwater, the Glaucous-winged Gull and the Yellow-billed Albatross comprise a majority of the species identified. Use of eggs may be reliably inferred. These were taken in large numbers until recently. For this reason small offshore islands constitute an important part of the local habitat.

Artifacts and Technology of the Earliest Aleuts

Drawing primarily but not exclusively on the contents of the lower two-fifths of the old village midden of Chaluka, Umnak Island, the basic

artifact inventory can be described. Differences between large and permanent winter village sites with many burials as opposed to summer fishing sites generally show a smaller inventory in the more limited summer sites, though they were often used to some extent for winter habitation by a few people. Style variations are characteristic of different regions within the Aleutians as well as different time periods. The ivory carving of the western and central Aleutians, for example little figures or animals, is distinctive, as are the long serrated thrusting points of Kiska.² A greater proportion of toggle head harpoons may have been employed in the Near Islands but this comparison can not now be made on a quantified basis and a generalization for all the islands would be premature. What does stand out is that all the ecological niches were exploited from the earliest times to the present. There is no variation in the artifact record which would permit the inference that the way of life had changed. There are many style changes within the same site and between sites. Aside from the obvious relationship to the principal products of the area, more fish and fewer birds or mammals at certain sites, there has been no major deletion or addition in the instrumentation for exploiting the rich ecological base. The variety of niches required a variety of weapons and most of these were partially or wholly made of bone. Most of this bone is whale bone and attests in itself the extensive utilization of whales by the first occupants. The use of whale bone in burials, sometimes simply a skull placed between two whale ribs, indicates a high regard for whales. It is not possible to identify whale bone from a harpooned whale as opposed to one that died of natural causes and subsequently stranded. The amount of whale bone, the varied uses of whale bone including its use in burials, and the well known whaling of the later Aleuts provides strong grounds for inferring the practice of whaling. Many of the harpoon heads, and of the projectile points, are eminently suitable for whaling though no single class can be definitely identified with whaling. In the case of sea lion there is, in addition to extensive skeletal remains, one left humerus with an obsidian point embedded in it. This kind of point was inserted in the harpoon heads with end slot and provides excellent proof of actual harpooning.

Listed by major classes the artifacts are:

Stone

bolas
net sinkers
projectile points
thrusting points
ulus, chipped stone

Bone and Ivory

Compound fish-hooks
spearheads (including three
pronged bird spear)
harpoon heads (including toggle-
heads)

² Mr. Alan G. May has accumulated excellent records, with drawings and photographs of regional variation in the Aleutians, based on three seasons with the Smithsonian field parties and one with the Peabody Museum, Harvard, Aleutian Expedition.

tanged knives	foreshafts
choppers	two-piece sockets
non-lamellar scrapers and graters	wedges
lamellar scrapers and graters	awls, pins, etc.
drills	sea otter bone tools
adze-blades	flakers
pounding, grinding and polishing stones	labrets
paint metates, rubbing stones and red ochre	image of the deity
lamps	adze-heads
pots (stone dishes or bowls)	bone dishes
house wall stones	root diggers
lamps	needles (including eyed)

From this general inventory we can synthesize several characteristics of the manufacture of the artifacts and of the technological system. The latter becomes meaningful when the faunal remains are correlated.

1—Techniques of stone working:

Though some polishing may be seen on adze-bits, the result of use primarily, the practice of shaping cutting edges by grinding does not appear until the arrival of the Neo-Aleuts and then is associated most clearly with ground slate blades. Chipping was the predominant manufacturing technique. Scrapers and graters made on prismatic flakes struck from polyhedral cores are an important characteristic of the earliest occupation. Of 69 lamellar graters and scrapers 77% were found in the lowest two-fifths of the excavation at Chaluka. In proportion to other stone tools, projectile points, knife blades and adze blades, they constitute 31 per cent of the total in the lowest one-fifth and 23 per cent of the total in the next fifth of the deposits (Laughlin and Marsh, 1956). Polyhedral cores have been found, along with lamellar flakes ranging in size from micro- through meso- and macroblades, at a manufacturing site on nearby Anangula Island (Laughlin and Marsh, 1954). Throughout the Aleutians a relationship between size and form of stone artifact and the nature of the stone used can be seen. Some artifacts, such as the green stone points and scrapers, appear to be limited by the small size of the original pebbles and cobbles from which they are derived. Thinner and smaller lamellar flakes are made of harder materials (chert-cherty shale, basalt and basalt andesite, and obsidian) whereas thicker and longer flakes are more often made from softer materials (limy chert and cherty shale). An interesting association between tool type and material observed at Chaluka was the increase in chipped knife blades from bottom to top, most of these being made of basalt. Obsidian appears to

have been more commonly used in the earlier periods. To date it appears that all the obsidian in the Aleutians comes from a site inland from Cape Chagak (named after the Aleut word for obsidian) on the northwest end of Umnak Island.

2—Heavy wood-working industry:

The first people to enter the chain had a well developed heavy wood working industry. The adze blades, whalebone heads and the pounding stone or mauls, together with the abundance of whalebone wedges, indicate extensive use of driftwood. This agrees with the fact that seasoned, straight-grained wood was needed for boats, (presumably both kayak and umiak). The insular habitat happily permits reliable inference of boats. Sixty seven per cent of 45 adze blades were found in the lowest two-fifths of Chaluka. Other uses of wood, as shafts for the spear heads and harpoon heads, are satisfactorily indicated but no osseous or lithic remains permit the same strong inference of wooden dishes and planks which were common and important at the time the Aleuts were discovered. Wooden hats of two types and also the large masks might be inferred from contemporary distribution but the archaeological evidence is clearly lacking. The first migrants undoubtedly found a large supply of accumulated driftwood. Ethnological sources suggest that in some areas, related to coastline and number of villages, there was a dearth of driftwood. Population size was obviously important here as elsewhere to the collection and utilization of natural resources.

3—Trends in harpoon and spear heads:

The earliest occupants showed a clear preference for harpoon heads with end slots for straight based points. In this case there is good correspondence between the chipped points, the harpoon heads, and the sea lion bones. Tanged projectile points with square butt in the middle two-fifths of Chaluka comprise 62 per cent of the points of this style. Corresponding to this 77 per cent of the harpoon heads of style H-3, detachable, fluted, with end slot, are found in the same levels. The manufacture and decoration of harpoon heads is characterized by precision and careful finishing. A circle and dot design appears before the level marked by the 3,018 yr. carbon-14 date, approximately one meter above the floor of the site, in the lowest fifth of the Chaluka site. Surface design more often consists of a few parallel incised lines. Interestingly no socket pieces large enough to accommodate the slotted harpoon heads of styles H-3 or H-4 have been found in the lower levels. The possibility that they were inserted directly into a reinforced wooden shaft must be considered. The earliest style of three pronged bird spear carried especially long side prongs, often made of ivory.

The early Aleuts arrived with a wide variety of weapons suitable for birds, fish, pinipeds, sea otter and whales. Their success in hunting these is well indicated in the abundant faunal remains. Styles changed but the basic categories apparently did not.

4—Houses:

Excavations in a number of sites, though limited in scope, do not provide the well marked stratigraphic dislocations associated with the excavated, semi-subterranean houses known to be in use at the time of Russian conquest in 1741. Oval rings of large flat stones, standing on end, suggest a radically different kind of house, possibly a tent. Complete excavation of such oval rings and the area about them must be completed before their identification is satisfactory. At this time it is also possible that such features represent the inner border of sleeping platforms.

5—General characterization of the early technology:

The critical elements identifying the earliest assemblages as those of a generally Eskimo material culture are: 1—harpoons, (toggling and simple detachable), 2—fish spears, 3—pronged bird spears, 4—chipped stone ulus, tanged knives, 5—lamps, 6—labrets (medium to large medial labrets), 7—fishhooks and, 8—bolas. Skin boats and throwing boards may be inferred. Many other items, such as the use of red paint, bone clubs, lamellar flaking, and the wood working industry are also characteristic but not diagnostic of an Eskimo material culture.

Absences:

Pottery, sleds, burins, bladder nozzles, and equipment associated with ice hunting (ice picks, etc.) are missing. It is possible that pottery was traded to a major village center such as Unalaska, but there is no evidence that pottery was ever manufactured in the Aleutian Islands. The ice hunting equipment and sleds were of no utility in the islands though the sled may have been used on the Alaska Peninsula within the Aleut area. The dog, however, was introduced by the Russians. Inflation nozzles for skin floats appear only in the later deposits along with the ground slate blades, late style shallow stone lamps, the long single-piece sockets, the small sea-otter points and the throwing board with ivory engaging pin. Ear plates of the wooden hats, have not yet been found archaeologically.

Correspondences in Faunal Remains:

Two noteworthy characteristics of the Aleutian occupational sites are the abundance of faunal remains, actually composing a major portion of the old village sites, and a correspondence between the excesses or de-

ficiencies of particular bones of certain animals and their fabrication into tools. For inventory purposes all the ecological niches are represented. The ecosystem was not only rich and complex, but exploited with thoroughness of which the large series of mammal, bird, fish and mollusc remains are the tangible evidence. Whalebone is common from the earliest time, but species identification, except in the case of sperm whale teeth, has not been possible on the basis of the utilized or fragmentary remains. Dr. W. G. Reeder has identified, in addition to the expected hair seal, sea lion, fur seal, sea otter and porpoise, a large series of birds. Among these the albatross, especially the short-tailed albatross, is of particular interest owing to its southern distribution. Dr. Karl Kenyon, of the U. S. Fish and Wildlife Service, has also reported an unusually large number and proportion of albatross bones from sites on Amchitka Island. Shearwater, puffins, cormorants (including the Asiatic cormorant), ducks, gulls and eagles were the principal birds hunted. Sea urchins, limpets, whelks, mussels and clams are generally abundant in approximately this order. Chitons probably belong near the end of this list.

Likely examples of correspondences which may prove to be very useful when confirmed and extended by further analysis have been found in the deficiency of sea otter fibulae and in the excess of hyoid bones of the hair seal and the sea lion. Of 287 sea otter bones excavated in 1961 at Chaluka, there were 33 femora, 39 tibiae, and 2 fibulae. Other portions of the skeleton were well represented with the exception of the foot. Owing to the fact that the foot was not utilized, unlike that of the sea lion, it was likely discarded where the sea otter was butchered. The difference in numbers between the femora and the tibiae does not seem significant, but the paucity of fibulae does. Recognizing the fact that the fibula is a relatively slender bone, that it might more often be broken and the fragments not recovered, the number still seems much too low. There is no known butchering technique that separates the tibia from the fibula, the limbs most often being disarticulated at their joints. A possible explanation lies in the known use of the sea otter fibula as an awl, of which some identifiable specimens have been recovered, with the inferior or distal articular surfaces remaining.

Similarly a possible explanation for the excess of hair seal and sea lion hyoids lies in the extensive use of the oesophagus of these particular animals for rain proof parkas (*kamleika*) and pants. An alternative explanation is the dietary use of the tongue with a butchering technique that removed the hyoid with the tongue.

There is slight, tenuous indication that larger sea otters were killed in later periods. If this difference becomes statistically significant when larger numbers have been measured (the femora are currently being used) the intriguing question of an evolutionary change in the size of the sea otter or a cultural preference for larger or more mature sea otter will

remain. The possibility that a system of conservation was practiced constitutes an intriguing question.

Preliminary investigations of the faunal associations indicate that the earliest Aleuts secured everything that was edible, from whales to whelks, and that their basic dietary interests and the technological system they employed to satisfy them, has not changed appreciably in four thousand years. Variation in numbers between sites and fluctuations over time are certainly present but these reflect the immediate habitat and not the ecosystem as a whole. Of the four easily secured foods: eggs of a wide variety of birds, algae, molluscs and stranded whales, only the mollusc shells and whale bones are registered in the archaeological remains. Bird eggs were very important in the diet and had the further advantage over some other food sources in that eggs collected from laying birds, cormorants and sea gulls for example, were replaced by the bird so that the population of birds did not suffer in consequence but produced a greater number of eggs. Additionally, eggs were stored for long periods and thus could be used when wanted and at especially judicious times. The 18th, 19th century and continuing use of bird eggs can be inferred into the past, as can the use of algae. The bird bones found in the sites and the inferred use of eggs can be usefully related to another archaeological fact, the absence of foxes. Thus, one important predator of eggs and young birds was not competing with the earliest Aleuts for this choice food supply.

SKELTAL CHARACTERISTICS

The earliest skeletons (Paleo-Aleuts or pre-Aleuts of Hrdlička) are easily recognizable as Mongoloid, differing much from the various central and eastern Eskimo types, but with some marked similarities to the Ipiutak people and to the Paleo-Konyags. Similarities to Alaskan Indians can not yet be elucidated owing to the paucity of early Tlingit or Athabaskan skeletons. The possibility that the earliest Aleuts and Konyags, as well as other early southern and western Eskimos show more similarities with early American Indians than do the later populations in the same areas could, if true, reflect incipient or partial differentiation between the Mongoloid Eskimo-Aleut stock and the American Indians. That differentiation has increased with time is likely but such an observation must await further evidence. There is no area within the distribution of this Mongoloid stock which has remained constant for as much as one thousand years.

Those traits which identify the Paleo-Aleuts as Mongoloid include the large cranial capacity, high frequencies of the mandibular torus, palatine torus, dehiscences of the tympanic plate, tendency toward round and tubular auditory meatus with absence of exostoses, shovel shaped incisors, Y-5 pattern on the first lower molars, broad medial and lateral incisors, large face, simple sutural patterns, high orbits, separate neural arches and

short tibia. The Paleo-Aleut cranium is characterized by dolichocrania or low mesocrania. The range of cranial index for sixteen crania from the older eastern portion of Chaluka, males and females, is 64.95 to 76.44. Recovery of the male Paleo-Aleut shown in Figs. 1, 1a, 1b, with a cranial index of 71.14 places the mean for eight male crania close to 73. Easily seen is the marked occipital protrusion with an especially marked crista

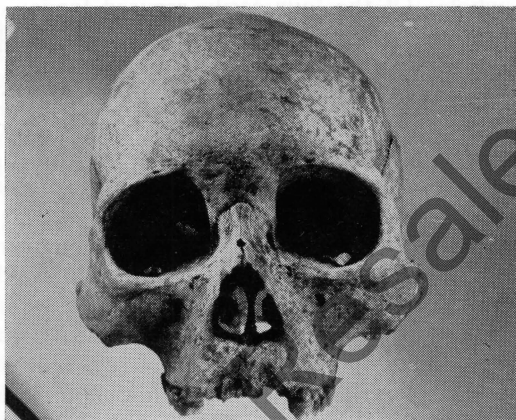


Fig. 1. Paleo-Aleut male from upper levels of eastern end of Chaluka. Burial included red ochre on skull, harpoon heads and two-piece sockets. Cranial length 194 mm., breadth 138 mm., cranial index 71.14.

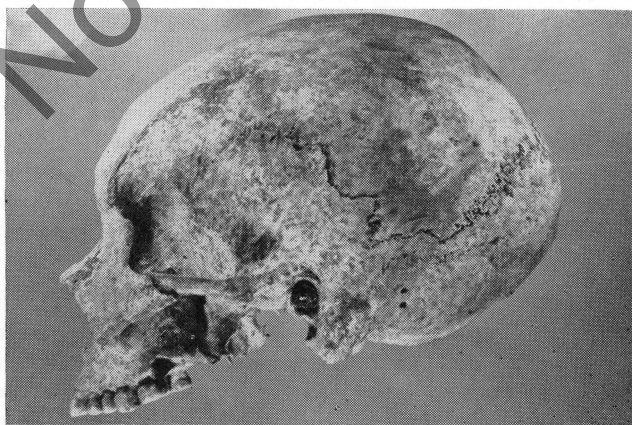


Fig. 1a.



Fig. 1b.

occipitalis externa dividing the nuchal plane into distinct halves. This trait appears poorly developed in the later Neo-Aleuts as is the occipital protrusion.

The cranial index offers a quick summary of stability and change in the Aleutians:

Sequence of Cranial and Cephalic Index

	n	Male		n	Female	
		range	mean		range	mean
Eastern Aleuts (cephalic index of living)	17	81.0 - 89.0	84.62	17	78.0 - 91.0	84.32
Kagamil mummies	11	75.8 - 85.2	81.41	9	79.4 - 86.9	83.41
Chaluka: west end	6	74.4 - 85.1	78.8	4	75.1 - 87.1	80.9
Chaluka: east end (earliest)	7	69.8 - 76.4	73.8	8	64.9 - 74.2	71.3

Two interesting points stand out in this sequence table. First, there is a substantial difference between the earliest inhabitants of Chaluka, beginning below the 3,000 yr. carbon 14 level, and the present inhabitants.

Second, the time span represented in the eastern end of Chaluka, most likely some three thousand years or more, indicates the persistence of the Paleo-Aleut physical type through a number of changes in artifact types culminating near the surface with a male burial containing two-piece sockets and harpoon heads of type H-8. The west end contains both Paleo- and Neo-Aleuts that could likely be sorted out morphologically with accuracy, but may represent a mixing of populations that took place in the later occupation of this site. Burials with diagnostic artifacts would constitute the most useful evidence bearing on the question of evolutionary change within the Aleutian Island population continuum as opposed to the arrival of migrant Neo-Aleuts who had evolved into their *pronouncedly brachycephalic and low-valuted form farther to the east*. The evidence from one site, moreover, is insufficient to deal with such a question for a conservative village group might well be deviant from neighboring groups. The skeletal material from Krugloi Point, excavated by Dr. A. C. Spaulding, indicates presence of a predominantly Paleo-Aleut group. The lower levels of this site were dated at 2,630 B.P. (Spaulding, personal communication).

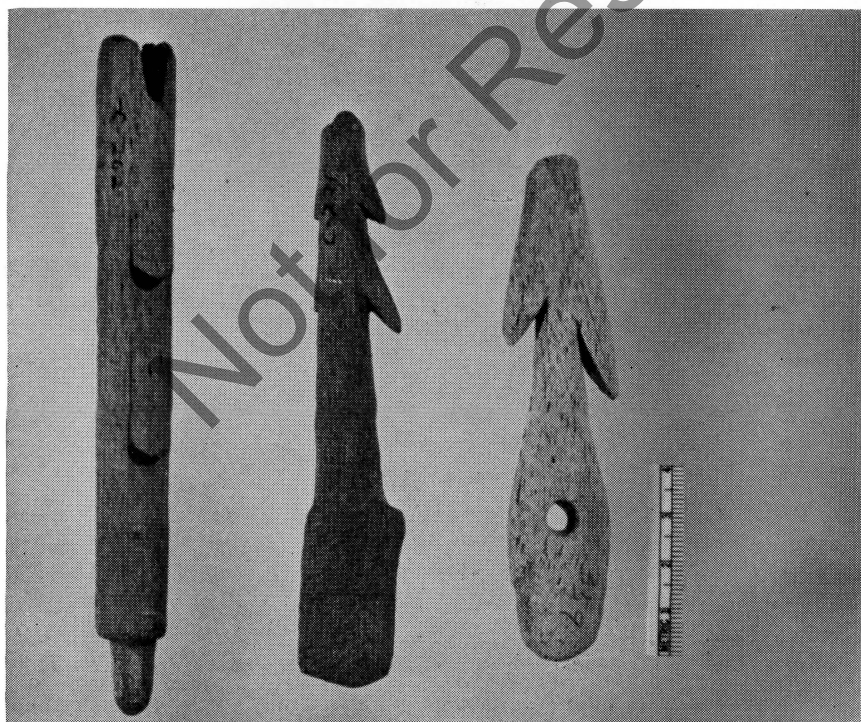


Fig. 2. Harpoon heads: (left to right) H-3, H-2, H-4. From lower levels of Chaluka, eastern end.

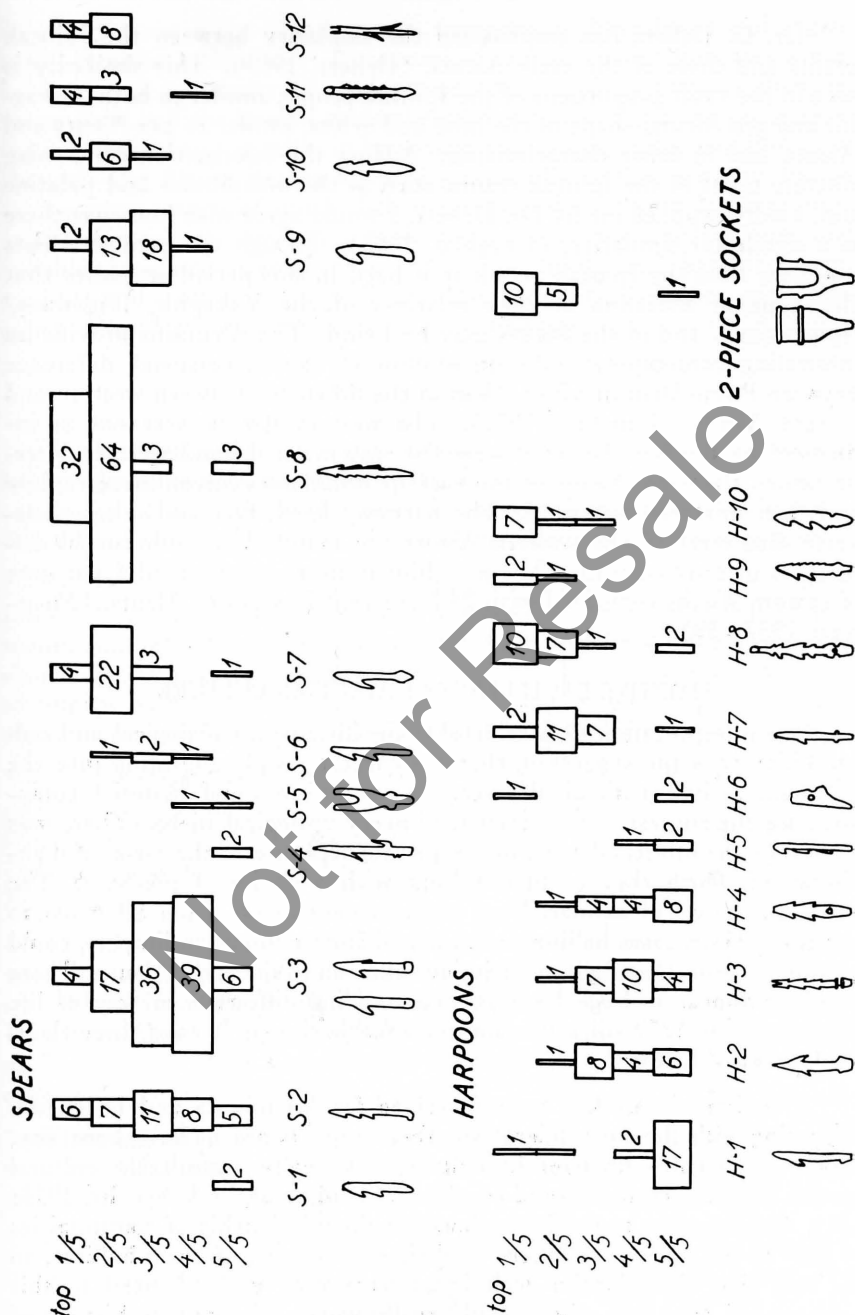


Fig. 3. Depth distribution chart of the classes of spearheads and harpoon heads from Chaluka, Umnak.

Dr. G. Debetz has emphasized the similarity between the Ipiutak crania and those of the early Aleuts, (Debetz, 1959). This similarity is seen in the vault proportions of the Ipiutak people, similar to both Yukaghir and pre-Aleuts; shape of the nose and orbits, similar to pre-Aleuts and Aleuts, and in other characteristics. Adding the information concerning discrete traits of the Ipiutak crania, such as the mandibular and palatine tori, kindly supplied me by Dr. Debetz, I would agree with him that there is a significant similarity, (Laughlin, 1962). Though the earliest Aleuts are older than the Ipiutak people it is back in this period or earlier that the common ancestors or close relatives of the Yukaghir, 'Tigarians,' 'Ipiutakians,' and of the Aleuts may be found. The Aleutians provide an interesting contemporary documentation of the successional difference between Paleo-Aleut and Neo-Aleut in the difference between western and eastern Aleuts, (Laughlin, 1951). The western Aleuts were not as influenced by the Neo-Aleuts as were the eastern, or depending upon interpretation, the early Aleuts in the eastern Aleutians evolved more rapidly and then migrated westward. The narrower head, face and other transverse diameters of the western Aleuts are matched by substantial differences in discrete traits. The mandibular torus occurs in 61.4 per cent of eastern Aleuts compared with 25.7 per cent in western Aleuts, (Moorrees, 1957: 59).

ADAPTIVE EXCELLENCE OF ALEUTIAN CULTURE

One interpretation of considerable significance for biological and cultural history is the suggestion that the earliest people migrating into the Aleutians arrived with all the necessary techniques and material equipment for the successful exploitation of every ecological niche. There was no part of the intertidal zone, of the pelagic area, nor of the terrestrial environment which they could not hunt with a choice of methods. The entire size range of animals from whales to sea otters, from albatross to humming birds, from halibut to trout and from octopus to limpets, could be handled with the adaptive techniques known to the early Aleuts. There does not appear to have been any outstanding difference in way of life over the entire 1250 miles, nor any remarkable change in over three thousand years of history.

A similar picture has been described for Micronesia and Polynesia. Beginning with the early migrations there appears not to have been any, really "remarkable changes in culture, any really remarkable cultural growth comparable to those of continental land areas," (A. Spoehr, 1953: 143). Spoehr offers as partial explanation the relationship of communities of men to the limited resources of their endowment, of their habitat, to the fact that the adaptive techniques were very well adjusted to this habitat, and that few others would really work. The culture history of the Aleutian Islands appears to have followed a somewhat similar course.

In order to enter the islands it was necessary to have boats and a generally complex technology. The record of faunal remains indicates a persistence and continuity of exploitation. The cultural remains show no major shift and the human skeletal record indicates a population increasing in numbers and possibly in longevity, with a discernible morphological change. The Aleuts, having adapted successfully to this rich and diverse environment, expended much of their energy and interest in oral literature, aesthetic interests (especially well displayed in their polychrome and lavishly decorated wooden hats and visors; masks and basketry; ceremonials and games), in a well articulated empirical science with considerable sophistication in anatomy and medicine.

SUMMARY

1—The recognition, but not classification, of two successive populations in the Aleutians was accomplished by Dr. Aleš Hrdlička (1945). At the conclusion of his 1938 field season he expressed the view that the evidence for distinction between pre-Aleut and Aleut was unimpeachable.

2—It is likely that the population succession, a general event for all of southern Alaska for which data is available, is the result of evolution within southern Alaska, with local migrations and local refugia imposing sharp contrasts at various sites, as at Chaluka. Larger samples, especially of burials with diagnostic artifacts for dating, might reveal a gradual change from the earlier Paleo-Aleut into the Neo-Aleut.

3—Formal classification of the earliest Aleuts can not be definitive until more contiguous groups have been sampled. They are Mongoloid, they share a number of features with the Ipiutak people described by G. Debetz, and may be considered another variant within the polymorphic Eskimo-Aleut stock.

4—The excavations by a number of workers within the last twenty-five years has added to the picture of local variety within a systemic uniformity. These include the excavations of Helge Larsen at Dutch Harbor, Unalaska; Albert C. Spaulding at Krugloi Point, Agattu; Philip Spaulding at Tigalda; and W. S. Laughlin and colleagues at Chaluka, Anangula and other sites on or near Umnak.

5—The possibility of still older occupations than those now known, perhaps in zones comparable to the Kodiak Island refugium, can not be dismissed.

6—Constant exploitation of the environment is reflected in the faunal remains and in the artifacts. There do not yet appear to have been any remarkable changes in the way of life though there are many style changes. The abandonment of manufacture of the lamellar blades and

polyhedral cores has as yet no demonstrable consequences in ecological adaptation.

7—Regional variation within the 1250 mile range of the Aleuts is as yet poorly quantified. The distribution of a number of the basic harpoon and lamp styles characteristic of the earliest Aleut occupation on southern Umnak is not known. The authors of this local cultural expression, the Paleo-Aleuts (pre-Aleut of Hrdlička) are known to have occupied the entire area. Comparison of samples from a 1250 mile range with those from single sites or more localized cultures presents some theoretical problems not yet dealt with and relevant for both biological and cultural evidence.

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ADDENDUM: EXCAVATIONS AT
ANANGULA ISLAND, 1962

(The information below, suggested for inclusion by Dr. Laughlin, was abstracted from a letter dated April 2, 1963 from Laughlin to the editor.)

Surface collections from Anangula (off Umnak Island) were reported in 1954. The material consisted most largely of polyhedral cores and the lamellar flakes or blades derived from them. Excavations undertaken in 1962 succeeded in locating an occupation horizon with these materials in place. Two radiocarbon dates have been obtained for this stratum: $7,660 \pm 300$ and $8,425 \pm 175$ years ago. At that time Anangula was joined to Umnak Island. Until at least 11,000 years ago Umnak was the end of the Alaska Peninsula. The pass between Umnak and the westward Islands of Four Mountains has always been open. At that time the Bering Sea Platform was far out in the Bering Sea. Nunivak, the Pribilofs, and St. Lawrence islands were inland hills. Because of the availability of marine resources it is likely the earliest and major migrations followed the edge of the platform.

Dr. M. Yoshizaki has examined the material and offers these observations: (1) Three burin spalls recovered from the Anangula site differs from burin by-products of the Arctic Small Tool Tradition, both in form and technique. (2) This kind of burin spall and burin are predominant in later stages of the preceramic cultures of Japan and northeast Asia (e.g., the Sakkotsu Micro-Brade Industry of Hokkaido and Budun site of Siberia of ca. 13,000 to 9,000 B.P.). (3) Radiocarbon dates indicate the Anangula stone industry is older than the Arctic Small Tool Tradition. The date and the burins suggest the possibility that the Anangula industry

was under heavy influence from the aforementioned preceramic Asian stone industries.

Although there is a time gap between Anangula and the lowermost levels of Chaluka there is a strong suggestion of some cultural continuity between the two.

The Paleo-Aleuts were probably the first people who moved down along the Bering Sea Platform arriving at its corner (Umnak) where they remained and prospered owing to the unusual wealth of faunal resources. Deglaciation proceeded from west to east; thus, some of the migrations and the gene flow was from Umnak eastward.

The general similarities between the Paleo-Aleuts and the Old Bering Sea and Ipiutak people are commensurate with the geographical separation and the greater antiquity of Umnak. The existence of substantial differences between Paleo-Aleuts and Paleo-Konyags suggest that more than one variant of Mongoloids came across on the Platform. A recent examination of five skulls from the Okhotsk culture reveals a number of similarities to Aleuts and western Eskimos. These similarities with those of Anangula to the preceramic industries of Japan do tend to enhance the likelihood of migrations from the Japanese area around the Bering Sea and out to Anangula Island. The proto Eskimo-Aleuts probably migrated in this manner. The bulk of the Indians had probably come over earlier following different routes, thus insuring the geographic separation necessary for differentiation of Eskimos and Indians.

Dr. R. F. Black who has conducted geological studies at the Anangula site thinks that the radiocarbon dates may be too young. Soil profiles and several overlying ash layers suggests greater antiquity.