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OBSERVATIONS ON THE "ESKIMO TYPE" OF KINSHIP AND SOCIAL STRUCTURE

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The Unalik and Malemiut dialects of Eskimo language are spoken within the limited range of Norton Bay villages of the northern Bering Sea region. The author has noted, in building an ethnographic background for his archaeological work, that discrepancies occur between the two closely neighboring groups in their kinship terminologies and in their social practices, and that these singularities are not easily classified into an over-all, inclusive "Eskimo" pattern.

The Malemiut of Koyuk, for example, include all first cousins in the same relationship term except the children of the father's sister, while the Unalit of Elim call all first cousins "Elowak" and joke with them, excepting the children of the mother's brother. These cousins include preferred marriage partners and are treated with formality. The same Malemiut have different terms for the grandparents on the mother's and the father's side, while the Unalit set apart only the mother's mother's brother. Emphases such as these on one or another side of the descent show up frequently in other parts of western Alaska.

The term "Eskimo" has long been used as though it were descriptive of a single cultural group in both the historical and ethnological sense. A rapid excursion through the literature will show, however, that those ethnic groups speaking an Eskimoan dialect and scattered across more than two thousand miles of the Arctic and sub-Arctic region, are by no means identical in physical type and in culture; remarkable changes have also taken place periodically in the materials which we recover from frozen and buried occupation sites in various parts of the area concerned. Greenlanders who have never seen a tree can hardly be equated with certain West Alaskans who do not leave their forests of spruce and birch; nor can people who live on the ice-free coasts of the North Pacific be equated with those of Point Barrow, where open water is a short-lived phenomenon of the summer months. A customary division of Eskimos into eastern and western groups is hardly more satisfactory, although students who speak in terms of such a dichotomy are acknowledging more than they themselves sometimes practice in their analyses of the Arctic American field. If, as we suspect, "Eskimo" is primarily the name of a linguistic group, it should be employed as critically as are such terms as Yuman and Algonkian.

The term "Eskimo" has long been associated with a system of kinship reckoning, and it now designates a form of social structure. Even though this usage is not meant by its proponents to identify a specific whole culture and area, one is encouraged by the label to assume that all of those people who are known by no other broad

grouping than Eskimo will exemplify the social structure that bears their name. In view of the limited source material on northern North America at the time when Morgan (1871, pp. 267-277) first set up criteria on Eskimo kinship, we can understand his assumption of a high degree of cultural uniformity not only between Greenland and the coasts of Arctic Canada but across the whole of the American Arctic. A half-century later, however, when Spier (1925) surveyed the kinship systems of the whole continent and divided them into eight basic systems, it had become clear that some disharmony existed even in kinship terminology between the east and the west of the Arctic slope. Spier noted that "the Alaskan Eskimo resemble the Chukchi and Koryak in their tripartite division, older, younger, and youngest brother and sister," but at the same time his eighth category is inclusively the "Eskimo type," distinguished mainly by the calling of cross cousins and parallel cousins by the same terms (Spier, 1925, p. 79). More recently, as we shall see, it has become extremely doubtful that the relatively dense population of the Bering Sea coast of Alaska is to be included in the type that bears its linguistic label.

Both Spier and Lowie (1916) seem to have based their Alaskan information on limited notes from E. W. Hawkes and others, as no thorough study of kinship in the area was published before 1946. Lowie perhaps saw historical significance in the similarity between the above-mentioned aspect of West Alaska kinship and that of the Chukchee, pointing out that "while the differentiation of elder and younger brothers and sisters is of very common occurrence, a tripartite classification of *Geschwister* is not found in (North America), so far as I know, except among the Eskimos" (Lowie, 1916, p. 234).

By the time of the appearance of Murdock's *Social Structure*, in 1949, the "Eskimo type" had become attached to a particular form of social organization and had transcended those groups of people considered by Morgan to such an extent that only two Eskimo-speaking local groups were included among the eighteen world groups compared under this heading (Murdock, 1949, p. 228). It is surely no fault of the Cross-Cultural Survey that more Arctic American groups could not be included in this basic report, nor does this circumstance interfere with the primary aims of the study. Murdock states that he has "occasionally chosen a society because a good source was readily accessible rather than because a sample was demanded." He has, however, "sought consciously to avoid any appreciable over-representation of particular culture areas" (Murdock, 1949, pp. vii-ix). Nevertheless, students of Eskimo ethnology and archaeology would be interested in knowing whether or not all speakers of Eskimoan dialects practice Eskimo social organization.

The two groups chosen by Murdock from the Eskimo linguistic area are prejudicial to a regional study. Both are from the east, where archaeology shows us that a single, rather rapid spread of the Thule Culture (Mathiassen, 1927, pt. 2) probably laid a relatively recent foundation for the present-day cultural similarity between Greenland and North Canada. These are the Copper Eskimos (Jenness, 1922), who live north and a little west of Hudson's Bay on the shores of the

Arctic Sea, and the Angmagsalik (Holm, 1914) of East Greenland. This choice of groups reflects the ethnographic thoroughness of the several Danish investigators who have for many years taken the American Arctic as their special field of research, and of the Canadian, Jenness. The peoples in question, despite their geographical separation, are culturally very close. One group confirms the other in many respects.

The absence of an Alaskan Eskimo-speaking group in Murdock's survey undoubtedly relates to availability of adequate reports. Although *Social Structure* was published in 1949, its substance was largely complete before the issuance, in 1946, of Lantis' *The Social Culture of the Nunivak Eskimo*. The latter volume is eminently suited to the purposes of the Cross-Cultural Survey and contains a body of information from a central point in the densely populated Bering Sea area. The Nunivagamiut live under climatic conditions greatly different from those of the Copper Eskimos or the Angmagsalik, and their material culture, physical appearance and social practice differ in marked respects from those of the eastern groups to which their language is basically related. Although we cannot yet say how generally the Nunivagamiut represent their neighbors along the coasts of Alaska, it is clear that they form no group entirely apart.

Nunivagamiut social structure differs in some major respects, by the standards set forth in Murdock's book, from that of the Angmagsalik or of the Copper Eskimos. We shall examine this structure briefly in light of the two groups mentioned in order to determine whether it belongs within Murdock's "Eskimo type" or in some other.

We are puzzled by a statement regarding Nunivak kinship. Dr. Lantis says, ". . . there is nothing unusual about this kinship terminology;" but she goes on to say, "It has the basic pattern of the Iroquois and Western Eskimo systems, according to Spier's classification . . ." (Lantis, 1946, p. 236). While it is true that Spier differentiates his Eskimo type from his Iroquois type mainly because cross cousins and parallel cousins in the former are called by the same cousin terms, it is clear that he felt this a sufficiently important reason for setting up a separate type in full equality with the other seven (Spier, 1925, p. 79). It appears that there is something unusual in the Nunivak terminology. Parallel cousins are siblings, while cross cousins are cousins. This is true of the Iroquois type (Spier, 1925, p. 77), but not of the eastern Arctic groups. Again, to quote from Lantis, ". . . older siblings (are) distinguished from younger siblings (the Nunivak terminology differs here in classing younger brothers and younger sisters together; at the same time it shows traces of the Eskimo system of using six sibling terms, distinguishing middle from older brothers and sisters) . . ." (Lantis, 1946, p. 236). Here again is the tripartite division that has crept into both Lowie's and Spier's summations with the implication that because it is found among Eskimo-speaking groups it must belong within the "Eskimo type." No evidence appears that this practice has ever been current among the peoples of Greenland and North Canada, however. At this point we may return to the revised system proposed by Murdock.

"... the Eskimo type," says Murdock, "included all societies with Eskimo cousin terminology and no exogamous unilinear kin groups" (Murdock, 1949, p. 227). Since "Eskimo cousin terminology" is pre-defined as the calling of female cross cousins and parallel cousins by the same name while differentiating them from sisters (Ib'd., p. 223), the Nunivagamiut fail to qualify in "Eskimo type." Their cousin terminology is of "Iroquois type."

Do the Nunivagamiut have "exogamous unilinear kin groups"? Lantis reports that "surrounding the individual, surrounding the biological family, there was the lineage, a social as well as biological continuum from generation to generation" (Lantis, 1946, p. 239). However, "lineage" seems to mean descent of property rather than of kinship. The heritage centered about a concept meaning "specific power, amulet, charm, magic helper", which could be worn if contained in material form, or memorized or absorbed if not. Some of these "inogos" could be obtained from a shaman for pay, but "most of his inogos were inherited; not necessarily the actual bit of ivory carving or the sperm-whale tooth, but the right to use a whale's tooth or a carving of a flounder. . . . A man communicated to his children (both sons and daughters) an astonishing quantity of secret knowledge, all of which contained power, and he handed on to his sons a few actual things pertaining to the inogo animals. The child got no such amuletic material from his mother. . . . One man volunteered the information that not only the members of a man's immediate family but all his distant cousins related to him through his father sang the same hunting songs" (Lantis, 1946, p. 239). Exogamy is clearly indicated in the following: "Regarding marriage of two people having the same inogo animals, the old folks were rather puzzled. All concurred that there was no rule against such a marriage, like rules forbidding marriage between brother and sister or between aunt and nephew. But all felt that it probably would not happen. It was not likely to occur, that was all" (Ibid).

This curiously suggestive combination of patrilineal inheritance with similarly oriented marriage rules does not seem to extend to the kinship terminology. Murdock (1949, p. 59) insists upon a distinction between transmission of property rights and principles of descent; hence, we may not exclude the Nunivagamiut from other bilateral Eskimo groups.

If the Nunivagamiut follow an Iroquoian cousin terminology but are bilateral, what of residence, the third determinant in Murdock's classificatory list (Murdock, 1949, pp. 225-226)? Lantis describes this as temporarily matrilocal. "Since the women were required to be together in small close units more than was required of the men, it was a good thing that matrilocal residence was the rule, at least temporary matrilocal residence" (Lantis, 1946, p. 161). The degree to which this practice was carried out is also indicated. "Following the marriage, the young man just stayed on in the girl's village if he was from another settlement, as was true frequently. If his family lived in the same village, he brought his own dishes and clothing to the home of his bride's parents but probably would leave his hunting gear in his

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father's storehouse. The rule of matrilocality was adjusted to fit circumstances as agreeably as possible. If a family had four sons and one young daughter, one of the sons would bring his wife home instead of going to her village. If the bridegroom did the customary thing and moved to the other village, he probably would use the kazigi to which his wife's father and brothers belonged, but he might use another kazigi because it was less crowded or nearer his wife's house or because some of his own kin stayed in it" (Lantis, 1946, p. 234).

In contrast to the Nunivak situation, matrilocality is reported for neither of the eastern Arctic groups. The Angmagsalik tend to be patrilocal, but like the Copper Eskimos they are also neolocal. Both groups reckon descent bilaterally, with no such stoppage of inherited lore on the mother's side as that reported for the Nunivagamiut. The eastern groups thus bear out Murdock's statement that bilateral kin groups "appear especially common with bilocal residence, though they also occur frequently with neolocal residence" (Murdock, 1949, p. 57). Cousin terminology of course is of "Eskimo type" among both the Angmagsalik and Copper groups. Thus, in two of the critical points discussed so far, there is disagreement between Nunivak and the eastern groups.

Nunivak structure differs in another important respect from that of the eastern groups. In the former, the evidence for a customary avoidance of marriage within the lines of "inogo" transmission indicates some patrilineal extension of incest taboos.

In other respects, still following Murdock's major points, there is agreement between Nunivak and the eastern groups. Aunt and niece terms conform to the same bifurcate collateral pattern in both areas, and clans and demes are absent or unreported. Marriage in both areas is predominantly monogamic, but with polygyny permitted. Perhaps we should mention, however, the vestiges of sororate and levirate among the Nunivagamiut. Lantis reports that "the genealogies do show that in polygyny and polyandry there was a tendency to marry two sisters or two brothers. There have not been enough cases of polygamy within recent generations to warrant any more explicit statement than that" (Lantis, 1946, p. 234).

If our assumptions are thus far correct, we see no reason for inclusion of the Nunivagamiut within either Spier's or Murdock's "Eskimo types" of kinship or social organization except that they do not seem to fall within any other. Since insufficient information is available for a close comparison with other western Eskimo-speaking groups, we shall not attempt to make much of Nunivak Island distinctiveness.

In conclusion, it is intended to point out that we may not blandly assume cultural unity between Eskimo-speaking groups. This is becoming evident not only in studies of material culture and archaeology, as the author has pointed out elsewhere, but also is discernible in social studies. Little progress can be made along social lines, however, until more projects such as that of Lantis are carried

out among the many dialect groups to be found on the coasts of Alaska between Point Barrow and the Aleutian Chain. When more local studies are available for groups neighboring the Nunivagamiut, for the Unalik and Malemiut villages and others, it seems highly probable that a study of kinship systems in the far north may be used as a valuable aid in distinguishing linguistic from cultural boundaries.

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NOTES ON KONIAG MATERIAL CULTURE

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In the University of California Museum of Anthropology at Berkeley is a large collection of Eskimo material culture which was amassed as incidental to the activities of the Alaska Commercial Company some 60 to 70 years ago (Johnston, 1940). Included in this larger collection, and described here, is a small lot of artifacts from Kodiak Island, and the presumption is that these specimens are to be attributed to the indigenous Koniag or Pacific Eskimo of the locale. Most of the articles are likely to have been secured from resident natives, the majority of whom were Koniag of the island, but the minority doubtless included some Aleuts from the islands to westward, and Athabascans from the Cook Inlet region. A few items in the collection are obviously of Athabascan Indian type and may be presumed to have been imported from the mainland to the east.

The only first-rate study of Koniag material culture is by Kaj Birket-Smith (1941), who has published a careful description of the materials collected by H. J. Holmberg in 1851. There exists no single printed source which contains an adequate summary of the culture of the Eskimo people of Kodiak. Among the more important single works are those of Birket-Smith (1942), Holmberg (1856), Hrdlicka (1944), Lantis (1938), Merck (1937), and Petroff (1884).

The Koniag belong to the Eskimoan stock, and are closely affiliated both culturally and linguistically to the Chugach of Prince William Sound (Birket-Smith, 1941, p. 124). No doubt through this mainland connection some of the obvious Northwest Coast traits present on Kodiak (e.g., the decorations on the basketry hats shown by Birket-Smith, 1941, Fig. 7 and Sauer, 1892, Pl. 17) were transmitted from groups such as the northern Tlingit.

The Koniag economy was based upon salmon and sea-mammals which they took with a variety of hooks and harpoons. Whales were hunted by means of slate-tipped lances poisoned with an extract of aconite plants (Heizer, 1943). Such familiar Eskimo items as the large, open women's boat or umiak, the kayak and bidarks, spearthrower, fur and gutskin clothing, oil lamp, semilunar slate knife or ulu, and pottery (Heizer, 1949) were known to the Koniag. The dog sled was not used, though dogs were present. The Koniag culture was, to use Kroeber's words, "heavily charged with elements usually regarded as Northwest Coast or Asiatic and lacking much of the inventory of 'typical' Eskimo life" (Kroeber, 1939, p. 157).

¹I am indebted to Professor E. W. Gifford, Director of the Museum of Anthropology for making the Eskimo collections available for study, and to Dr. C. Meighan for the photographs of the Kodiak material.

²Petroff records 1943 Koniag in the 1880 census. Holmberg in 1851, believed their number to be about 1,500.

OBJECTS OF DRESS AND ADORNMENT

Boots (Pl. 1a)

A pair of boots of soft tanned leather (Museum No. 2-6557) is decorated with red flannel and fur strips, red paint and small glass beads. The sole is a single, rather stiff piece of tanned, dehaired leather to which is affixed, with fine two-ply, left-twist sinew thread, the upper. The sole seam is flat and there's no welt or puckering. The upper consists of a small triangular section to form the toe curve and the top has a vertical seam up the back. The decoration comprises a vertical strip of alternating blue, white, yellow and red seed-beads, 15 beads wide, running vertically down the front of the top which splits to cover the seams of the upper. Around the bottom run alternating strips of red and white beads. The beaded strips are outlined in faint red pigment, and on each side of the top are crosses marked in red. The opening has soft gray fur edging sewed to a red flannel strip, and there are four double tassels of fur and flannel.

These boots are decorated in precisely the same fashion as those shown by Osgood (1937, Pls. 4, 5) from the Tanaina of the Cook Inlet region.

HUNTING IMPLEMENTS

Spearthrower (Pl. 1b)

A spearthrower (2-4337) 60 cm. long of the same general shape as those shown by Birket-Smith (1941, Fig. 17) is in the Kodiak collection. This form is unlike that attributed by Mason (1885, Pl. 17) to Kodiak Island, and is similar to one shown by Mason (op. cit., Pl. 6) of doubtful provenience, and to that depicted by Lisiansky (1814, Pl. III) from Kodiak. Mason's Kodiak spearthrower is probably nothing more than an imported Aleutian (Unalaskan?) specimen.

Bows (Pl. 1g, h)

Two wooden bows are quite similar to each other. Birket-Smith's (1941, p. 140)³ statement that "in contradistinction to other Eskimo bows, sinew backing does not seem to have been employed," does not hold, for both of these Kodiak bows have a sinew cable backing of the general type which Murdock (1890, pp. 308-310, Pl. 12) has called "Southern."

No. 2-6358 is 134.5 cm. long. The grip is nearly cylindrical and the front is flat (max. width 5 cm.) and the back rounded. The sinew cord consists of 12 small two-ply right-twist sinew cords laid together and bound with a spiral wrap of a single two-ply sinew cord. On either side of the grip are three sinew cord wrappings which fasten the cable to the wood. Between the grip and the nock are two other sets of double two-ply sinew cord attachments, the first set having three double cords, the second set having four double cords. The cable or composite backing-cord is not anchored at the nock, but as each set of attachment cords is taken off the cable is diminished by a certain number of elements so that the last wrap uses the last remaining sinew strand of the cable.

³Holmberg (1856, p. 106) also denies sinew-backing on bows.

One end of the bow string has a looped end formed by splicing; the other end is free and was probably knotted into a loop when the bow was strung. The bowstring consists of three right-twist sinew strands.

The second bow (No. 2-6363) is 131 cm. long and is of similar construction. The slightly rounded back is 4.0 cm. at the widest point. The multiple cord cable consists of 10 fine braided sinew strings into which are inserted numerous short red cotton threads and tufts of blue thread for decoration.

Darts and Harpoon Arrows (Pl. 1c-d, Pl. 2d-g)

A sea-otter dart (2-3043) practically identical to those shown by Birket-Smith (1941, Fig. 15g-h) is 126 cm. long, including the bone socket piece which is 20 cm. in length (Pl. 1c). The bone head (Fig. 1, No. 2) is barbed, has a line guard to which the braided sinew line is looped, and has a straight tang. The wooden shaft is painted red. The braided line at the distance of 74 cm. from the barbed head divides, and each leg of the Y is tied to the dart shaft 24 cm. apart. The feathering is radial and is attached to the shaft in the manner described by Birket-Smith (1941, p. 138).

Four harpoon arrows (2-6359, 2-6360, 2-6364, 2-6365) have nocks for engaging a bowstring (Pl. 2g). Each is about 78 cm. long including the bone socketpieces (Pl. 2d-f) which range from 22 to 26 cm. in length and are 1 cm. in diameter. The small heads (Pl. 2d-f) are unilaterally barbed and have line holes to which the braided retrieving line is attached. In each instance the line divides with the ends tied to the shaft. The shafts are painted red, and under the fine sinew wrap which attaches the socketpiece to the shaft, is a piece of thin birchbark. Filed notches and incised lines on the heads (Fig. 1, Nos. 1, 3) probably represent property marks.

A dart shaft 106 cm. long which is now equipped only with feathers (2-3042) has a tanged socketpiece made in the fashion shown in Fig. 1, No. 6. The longer and thinner socketpieces of the sea-otter darts and harpoon arrows described above are similarly constructed. In all of the socketpieces the cavity for receiving the butt of the point is too large and has been partly filled with a wooden bushing.

Seal Harpoon (Pl. 1f)

A complete seal harpoon with float attached to the shaft (2-6350) is like one shown by Lisiansky (1814, Pl. III) and Birket-Smith (1941, Fig. 13). A similar Cook Inlet Tanaina specimen is illustrated by Osgood (1937, Fig. 16).

The harpoon shaft is cylindrical and from a maximum diameter of 3 cm. at the proximal end, it tapers regularly to 1.2 cm. diameter at the butt end. The unilaterally barbed head is 17.6 cm. long, and rests in a simple socket in the end of the wooden shaft. There is no separate socketpiece or foreshaft, the end of the shaft being simply bound with a twisted sinew cord. The harpoon line consists of a heavy, flat braid of sinew 105 cm. long into which have been inserted long hairs. The heavy line has attached at one end a sinew cord loop to which is attached the "leader" for the barbed head, and at the other end divides into a Y or martingale, the ends of which are attached to the shaft 77 cm.

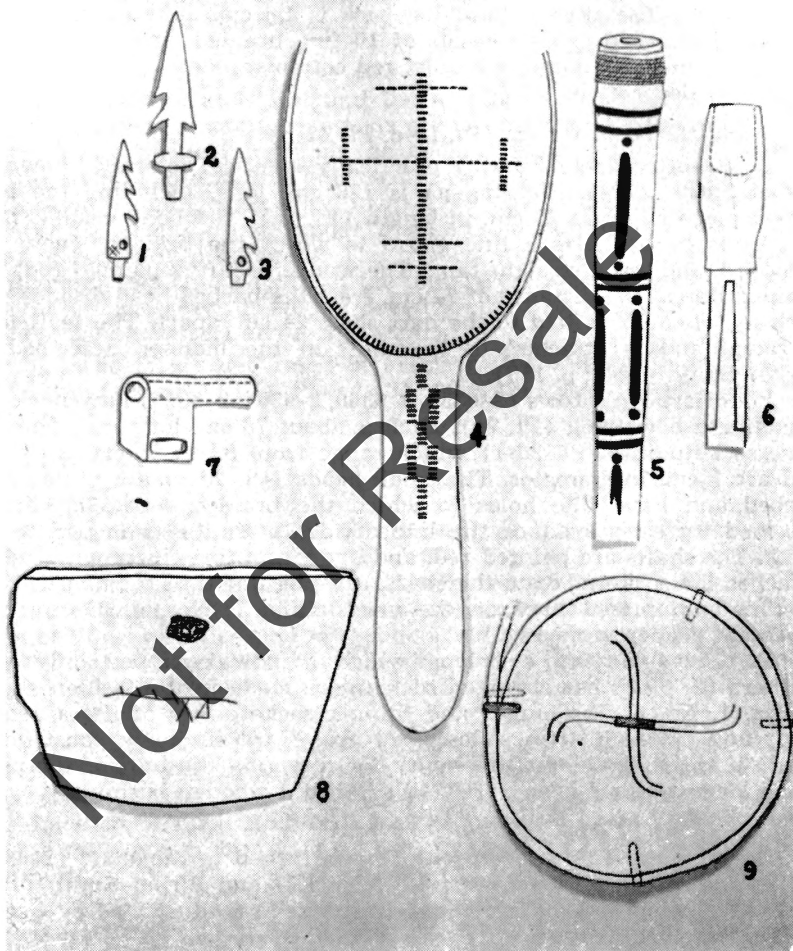


Figure I

apart at the points where the black-painted central section of the shaft meet the red-painted fore and aft sections. The fore-branch of the Y is 85 cm. long, the aft-branch is 92 cm.

The skin float is attached to the shaft by sinew cord bindings, and there is a bone mouthpiece (Fig. 1, No. 7) with the (wooden ?) plug missing.

The shaft is painted red with designs in black for the upper 81 cm.

of its length (Fig. 1, No. 5). The central portion of the shaft is painted black, and the lower 105 cm. repeats the black-on-red decoration of the top third. All sinew bindings affixed to the shaft are underlaid by neatly trimmed wraps of b'rchbark. In all respects our specimen is a duplicate of that shown and described by Birket-Smith (1941, p. 135, Fig. 13).

Lance (Pl. 1e)

A heavy casting lance with a wood shaft and bone head with a copper tip (2-6288) was probably used for whale hunting. The heavy barbed bone head is 29 cm. long, fits directly into a socket hole excavated in the wood and has neither line hole nor line guard for attachment of a retrieving line. The Kodiak method of whale hunting by throwing non-retrievable spears whose loosely socketed tips were poisoned with an extract of aconite is well known (Heizer 1943), and this implement would serve such a purpose. The wooden shaft is 105.5 cm. long. The smaller end is flat and could have been fitted to a spearthrower, though the spear could have just as well been cast by hand in the manner shown by de Mofras (1844 Vol. 2, frontispiece). Just below the copper tip in the thin edge of the bone head are three small notches which may be property marks which served to identify the hunter's weapon.

Wooden Quiver (Pl. 2b)

The beautifully made and decorated wooden quiver (2-6570) is 94 cm. long. The top, which is fitted with a flat mortised round lid, is 10 cm. in diameter and the bottom is 7 cm. in diameter. The thickness of the walls is .7 cm. The quiver is in two pieces and was apparently made by splitting the cylindrical solid wood vertically and then hollowing out each half. The seam is offset slightly in several places to prevent vertical slipping of the joint. The halves are tightly joined by sinew braid strings at the bottom and center which lie in grooves. At the top the joint is held tight by crack-sewing a braided sinew cord through two holes.

The exterior design (Pl. 4) is a combination of incising and painting, using black and red pigment. Taken all together, this is as neat a piece of aboriginal woodwork as one would want. The indications are clear that a metal knife was used to carve the wood. Such quivers were used in bidarka hunting.

Whaling Lance Heads of Slate (Pl. 2j-1)

What are almost certainly 3 tips for poisoned whale spears (2-3021, 2-4010, 2-4009) are shown in Pl. 2j-1. One has a short wooden handle attached by a thin spiral wrap of baleen; the other two are unhafted. What are probably property marks for identifying the hunter's weapon are a series of short incised lines along one edge of one specimen. The hafted blade is 33.5 cm. overall length; the other two measure 19.5 and 25.5 cm. long. These specimens are rather similar to ones collected by Holmberg and described by Birket-Smith (1941, Fig. 16).

Skin Boat Models (Pl. 2a, c)

A model (2-6340) of a three-hatch skin boat (bidarka) is 70 cm. long, 9.0 cm. wide, and 6.0 cm. high (Pl. 2a). From the bow, the center

of the hatches are at 20.3, 30.8 and 50.5 cm.; their diameters are, respectively, 4.0, 4.5 and 4.0 cm. The deck is decorated with single strand strings of alternating red and blue glass seed beads.

In the features of the vertical stern, bifurcated bow curving upward, and frame construction, our specimen is like that described by Birket-Smith (1941, p. 147).

The second model (2-5817) is 50 cm. long, 6.0 cm. high and 9.0 wide. The hatch is 7.5 cm. in diameter. In construction it differs from the other model described above in the mode of support of the hatch coaming. A flat, circular piece with two tenons fitting into the heavy gunwale at the bottom and the coaming at the top help to support the man-hole frame which is additionally supported by fore and aft curved deck beams arched between the gunwales. The shape of the bow bifurcation and the notch in the vertical stern are additional points of difference.

Fishing Equipment (Pl. 2i)

The contrivance shown in Pl. 2i (Museum No. 2-7530) was apparently for catching codfish. Holmberg (1856, p. 385) describes a similar rig where the hook was the composite angled bone type characteristic of Kodiak and the Aleutians (cf. Birket-Smith, 1941, Fig. 23) in the following words: "The (hook) was connected, by the means of a cord about a foot long with the end of a stick, to the other extremity of which was tied a cord twice as long with a sinker (usually a round stone), to the middle of the stick was tied the fishline, and the whole apparatus was allowed to sink to 50 or 60 fathoms, or until the sinker touched the bottom." The long fishing lines were made of kelp (cf. Hrdlicka, 1944, p. 59).

The piece shown here consists of a round, red-painted wooden stick 53 cm. long and 1.0 cm. in diameter. The end of the braided sinew line is wrapped around a knot of dried kelp (the remnant of the original fishing line) and is doubled as far as a knot where it separates in a Y to attach, at points 16 cm. apart, to the wooden bar and is then carried out to the ends of the bar, being tied along it at three points with a fine two-ply right-twist sinew cord in much the same manner that the heavy sinew cable is attached to the back of the bows described above. The braided cords seat in notches in the ends of the stick and extend 39 cm. to where they attach to heavy, handmade copper hooks. Fine, doubled sinew cords are attached to the wrappings of each hook, but what their purpose was is uncertain.

The round stone sinker (9 cm. in diameter) has an equatorial groove and is attached to a braided sinew cord about half again as long as the hook leaders. Toward the parallel bar this braid bifurcates and has two tied loops at the termini which slip around the bar and are held in position with a fine sinew cord tie.

Small Nooses (Pl. 2h)

A dozen identical nooses (2-4430) may have served for catching fish or small mammals (cf. Nelson, 1899, Pl. L1). Osgood (1937, p. 79) mentions that the Iliamna Indians make ground squirrel snares from the stem or shaft of feathers. Our snares may have served such a

Notes on Kodiak Material Culture

purpose. A fine two-ply right-twist sinew cord, 49 cm. long, is tied to a small round shaft of wood. Under this cord is run one end of a split feather or quill 2 mm. wide which has a simple overhand knot tied in it to prevent its being drawn back under the cord. The noose is then formed by tying the other end of the quill in an open slip-knot around the quill shaft.

HOUSEHOLD IMPLEMENTS AND TOOLS

Wooden Ladle (Pl. 3e)

A handled ladle (2-6273), made by steam-bending a piece of soft wood in a circle and attaching a separate bottom, is 10 cm. in diameter, 22.5 cm. high and has walls of 0.6 cm. thick. The joint is made by 6 coarse vertical stitches of split root. One stitch catches the bottom which is also attached by 4 round wooden pegs. The inner lip is bevelled, and there are 2 raised interior prominences or lugs 2 cm. below the lip and opposite each other—their purpose is unknown. The bottom is decorated, as shown in Fig. 1, No. 9, with the lightly engraved design of a swastika. The entire exterior surface has been painted red, but the color is now somewhat worn.

Wooden Spoon (Pl. 3a)

A large red-painted wooden spoon (2-3024) is 32 cm. long. The handle, 3.0 cm. wide and 14.0 cm. long, is decorated on its upper surface, and the bowl, 9.5 cm. wide and 3.0 cm. deep, is incised both inside and on the bottom (Fig. 1, No. 4).

Slate Ulo

A polished slate ulo (2-3905) with a pecked (not drilled) hole in the middle near the back is typical of Kodiak ulos (cf. Hrdlicka, 1944). It is labelled in pencil "Kartuk" (a village on the north shore of the island) and may be either a recent or ancient archaeological piece—I incline, on the basis of its appearance, to the latter probability. Its only notable aspect is a simple incised design (Fig. 1, No. 8) on one surface, an interesting feature in view of the distinctive Kodiak trait of incising small flat slate pebbles (cf. Heizer, 1947, Fig. 6; Heizer, 1952).

Skin Bag (Pl. 3d)

A rectangular skin bag (2-4527) in the collection is basically similar to one of somewhat uncertain provenience, but attributed to Kodiak Island, by Birket-Smith (1941, p. 150, Fig. 28). The same style of decoration occurs on a head-dress from Kodiak pictured and described by Birket-Smith (1941, p. 129).

The bag is 41 cm. long and 23 cm. wide. The pouch is 27 cm. long, the balance being the decorated top. The curved upper portion has a black background (from graphite rubbed on the surface). A red-colored leather border is edged with colored sinew braid and the edge has a hair fringe. Two designs, apparently representing plants (note "leaves" or "flowers") and a "cross" are applied on the black background in stained red leather bordered with sinew embroidery. Below this is a horizontal band of black with red-flannel ends and a red leather edging with hair and sinew braid loop fringing. On the lower body is a similar

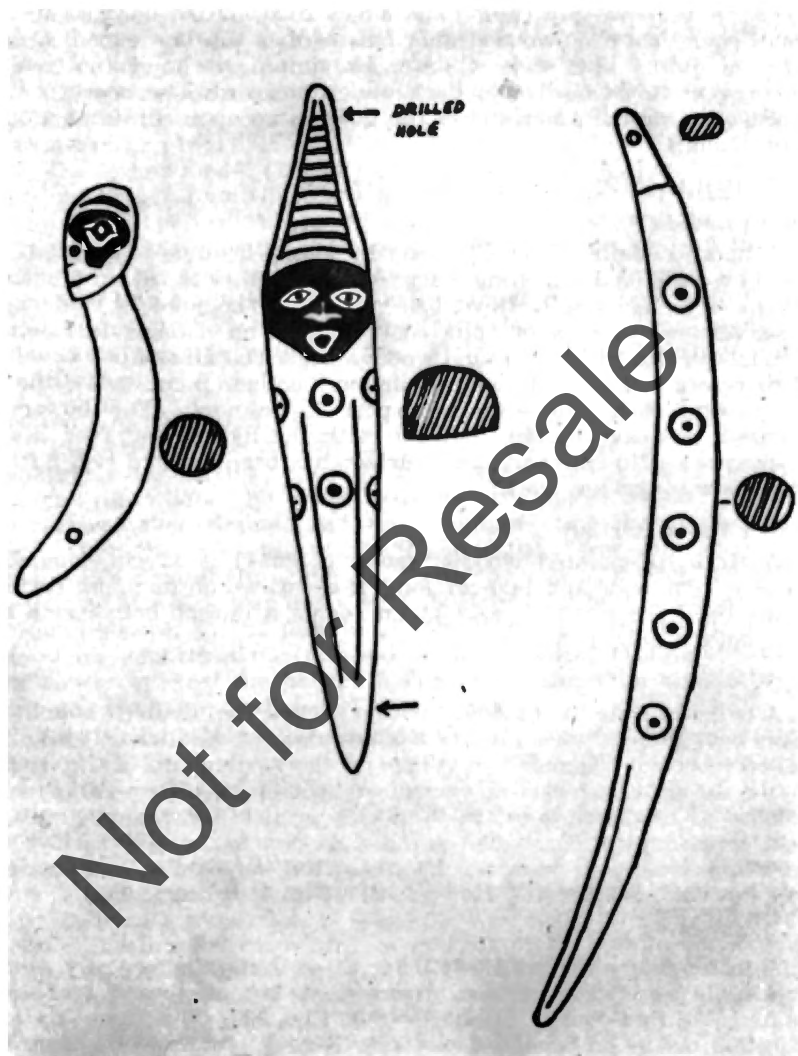


Figure 2

horizontal panel so placed that when the bag is folded the two bands lie opposite each other. The back is of plain yellowish thin tanned skin and consists of a number of separate pieces sewed together with the seams inside.

Fur Cap (Pl. 3c)

A soft fur-covered cap (2-6564) has a flat cotton cloth top. The fur sides are 8 cm. high and the round cloth top is 14 cm. in diameter. Four carved ivory ornaments (Fig. 2) are attached to the sides.

Skin Pouch (Pl. 3b)

A pouch with two pockets (2-3022) has a leather backing, red-stained skin edging and cotton cloth lining. It measures 28 cm. long and 12 cm. wide. At the top is attached a coarse sinew braid. The upper pocket is 10 cm. deep; the lower pocket is 11 cm. deep.

OBJECTS FOR CEREMONIAL USE

Puffin-Beak Rattles

Two rattles (2-6409, 2-6480) consisting of two concentric round wooden rings (scarfed at the ends) joined by a flat crossbar handle and with beaks of sea-parrot or puffin (*Lunda cirrhata*) tied on either in pairs or singly, are not figured here. The diameters of the two rings of each rattle are 14.0, 17.5 and 14.0, 16.5 cm.

These rattles were used for dances (Birket-Smith, 1941, fn. 92) and similar ones are shown by Birket-Smith (1941, Figs. 35, 36) and Langsdorff (1813). A wooden rattle from Prince of Wales Island with attached puffin beaks is shown by Niblack (1890, Pl. LIV), and Osgood (1937, Pl. 6, F) illustrates straight dance rattles with clusters of puffin beaks from the Tanaina of the Cook Inlet area.

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PLATE 1



PLATE 2



PLATE 3

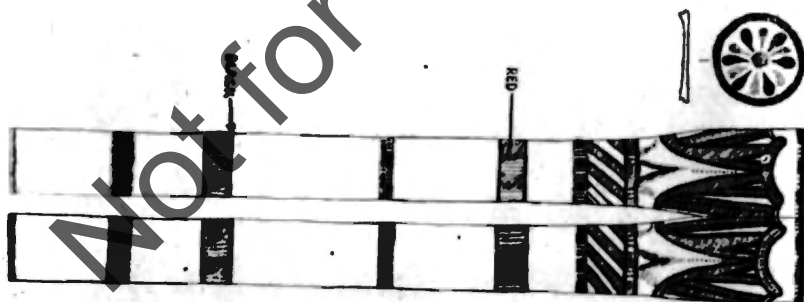


PLATE 4

THE ALEUT-ESKIMO COMMUNITY

W. S. Laughlin

Along the coast of northern North America, Greenland and a small area in Siberia, there exists a genetically, linguistically and culturally related population which provides one of the most outstanding examples in human history of the linear distribution of a population. By virtue of its unusual contiguous linear extension this stock offers a number of basic problems concerning the process of racial, linguistic and cultural change. It is first necessary to appreciate the ways in which these peoples are related, to assess their ecological relationships and their relative time depth, before the processes by which they have become differentiated into geographical variants can be profitably studied. It is now apparent that there is sufficient evidence for considering these peoples as one unified stock, physically, linguistically and culturally. Researches of the last five years which have included dialectical studies, dental and morphological researches, blood typing, ethnological and archaeological studies, have brought to light much information which demonstrates the nature of the relationships of the contemporary people and, especially with the finding of core and blade industries, the relatively great time depth of the proto-Aleut-Eskimos. At the same time these researches have indicated the great fertility, the creativity and innovative genius of these pragmatically oriented people.

To the extent that both the variability and the structure of Aleut-Eskimo culture have been ignored, the racial polymorphy unappreciated, the ecological framework disregarded and the time depth minimized, there has been an accompanying lack of attention to process. As a consequence, there has been a frequent resort to migration of unrelated peoples from the most improbable places to explain various traits which were felt to be aberrant.

In the study of Eskimo culture as well as in the racial background the underlying assumption that change or evolution took place "somewhere else" is frequently manifested. Thus, an amazing medley of peoples ranging from the Ainu, Tungus and Kamchadals on the one hand to various American Indians such as Athabascans on the other hand have been cited as the authors or bearers of Aleut-Eskimo traits. Consideration of genetic processes in race, language and culture, plus the fact that there has been ample time for substantial changes to have taken place, when added to the known examples of change and development *in situ*, obviate the excessive dependency upon external sources to explain the elaboration of culture or race among these highly adaptable people. It is the intent of this paper to examine certain aspects in the nature of the Aleut-Eskimo relationship, to call attention to the variability, to cite various examples of internal change and to point out the need for the study of the actual processes of change.

Is There an Aleut-Eskimo Racial Unity?

Much of the answer to this question concerning the unity of the Aleut-Eskimo stock hinges purely upon which of two major approaches to the recognition of a race is used: the typological approach or the population approach. The deficiencies of the older typological approach have been exposed sufficiently elsewhere to exclude that method from serious consideration (Laughlin, 1950, 1951). When we turn to the question of whether or not these people constitute one over-all breeding population we are in a position to deal with the problem scientifically. Present evidence indicates that Eskimos have habitually interbred with Eskimos, Aleuts with Aleuts, within their several breeding isolates, and that Aleuts mated with Eskimos. The frequencies of intermarriage between the different dialectical and language groups have surely varied considerably. In the case of the greatest linguistic barrier, that between Aleuts and Eskimos, there are ample references in the traditional accounts of the people to demonstrate beyond any question that the Aleuts frequently raided the Koniags for wives and slaves and that the Koniags did likewise. The Koniag Eskimos are the only people with whom the Aleuts have been in immediate contact. Keeping in mind that it is the breeding population which is the race, and not a type abstracted from the population, it is immediately apparent that the Aleut-Eskimo peoples constitute one breeding population and therefore constitute a sub-race or race depending on the taxonomic value to be assigned their degree of distinctiveness from other breeding populations.

Once it is recognized that these people do intermarry, at different rates between the many breeding isolates, and that there is gene flow throughout their geographical range, we are in a position to assess the differences between the breeding isolates within this population. This view simply recognizes the polymorphy of these people and the large number of geographical variants in contrast to the inaccurate typological system of assuming a type and considering all differing isolates to be deviations from that type.

The question of Indian intermixture has been dealt with previously. The essential points are: 1) little or no mixture with Indians has taken place, and 2) there are not enough Indians in the contiguous areas to notably affect the larger populations of Eskimos or Aleuts. The possible exception of certain peripheral groups of Eskimos such as those about Hudson Bay can be admitted but, since they constitute a numerically insignificant part of the Eskimo population, random mixing between Indians and them, if demonstrated, would make little difference in the over-all genetic constitution of the Aleut-Eskimo population. (Collins, 1951, pp. 445-454.)

The physical characteristics shared by most isolates of the Aleut-Eskimo sub-race are varying amounts of blood type B, with more A and O, a generally Mongoloid physiognomy, small hands and feet, large relative sitting height, small nose, mandibular torus, shovel shaped incisors, and a number of other dental characters. In some of these characters, such as blood type B, the adjacent Indians appear to be

totally lacking in the necessary gene; in the other characters the frequencies of the traits distinguish the Aleut-Eskimo peoples from the Indians. It is interesting to note that selected similarities between Eskimos and Indians in Canada have been used as evidence of inland origin for the Eskimos whereas selected similarities between Indians and Eskimos in southwestern Alaska have been used as evidence of admixture. That the Indians should be considered contemporary representatives of ancestors in one case and adulterating agents in the other case is an unscientific coercion of the data in an attempt to justify a particular theory of the origin of the Eskimos. The Aleut-Eskimo population is also characterized by variability in head form. However, the majority of Eskimos and Aleuts are brachycephalic or high in mesocephaly. Brachycephaly reaches a climax among the later representatives of the populations in the area of the eastern Aleutians and Kodiak Island, and declines again in the western Aleutians.

The four factors responsible for changes in a population are selection, mutation, genetic drift, and migration or mixture. Past theorists have placed primary reliance upon mixture to explain the variants in the population. This has been accompanied by the attempt to analyze race on the basis of a single skull (Birket-Smith, 1952, p. 14). It can only be reiterated that a race is a population and that one individual is an inadequate sample of any contemporary population. Owing to the variability in all Mongoloid populations, as in other populations, there is much overlap in most of the northern peoples, Neo-Asiatics and Paleo-Asiatics, including the Aleut Eskimos. On the basis of morphological classification it is often possible to place a particular individual in any one of several populations.

An example of internal change appears to exist in southwestern Alaska where an earlier population, designated in the Aleutians as Paleo-Aleut, has been largely superseded by a later population, Neo-Aleut (Pl. 1, a-d). This same succession is known to have occurred in the prehistory of the Kuskokwim Eskimos and the Koniag Eskimos. The fact that the Neo-Aleuts have their heaviest concentration in the eastern Aleutians, and that this population succession took place in adjacent areas to the east, is sufficient in itself to exclude the importation of "Tungids," from Asia. On the basis of their higher blood type N frequency alone, the "Tungids," the Ainu, and other Asiatics may be exempted from a rather ambitious voyage from Asia to southwestern Alaska. Additionally, the relative population size must always be kept in mind when mixture is suggested for the origin of a particular trait or type. Hybridization of the population of southwestern Alaska would have been no mean task for a considerable number of extremely fertile "Tungids." One has only to note the minor genetic effect of the Russian occupation on the Aleuts to roughly estimate the required numbers (Boyd, 1950, pp. 418-419).

Only patient examination of large numbers of stratigraphically derived skeletal collections will provide the details of the origin of the many geographical variants among the Aleut-Eskimo stock. Undoubtedly different processes have been more important at one time than another.

Additional increments of Mongoloid populations may have come across Bering Strait from time to time. The distribution of the people into small breeding isolates and these into small village communities provides an ideal situation for the process of genetic drift (Laughlin, 1950).

Linguistic Unity of the Aleut-Eskimo Stock

Perhaps the most adequately documented example of the common background of the Aleut-Eskimo stock lies in language. As a result of the studies of both European and New World scholars there is at least a little information on most of the divisions and in many cases much information. Though Rasmus Rask had recorded a list of words spoken by two Aleut brothers in St. Petersburg in 1819 and correctly linked Aleut with Eskimo, neither he nor later researchers had sufficient first-hand material nor had fundamental structural comparisons been made until the recent studies of G. H. Marsh and Knut Bergsland which have been conducted in a number of Aleut villages and in all the dialects. The theoretical importance of the Aleut linguistic studies to the problem of the relationship and origins of the Aleut-Eskimo peoples may be indicated by an earlier quotation from Sapir:

Had the historical significance of linguistic differentiation been more generally appreciated, I doubt if the theory, for example, of the distribution of Eskimo tribes from the west coast of Hudson Bay as a centre would have received quite such ready acceptance. I do not wish expressly to oppose this theory, but merely to point out that it does not well agree with the linguistic evidence. The Eskimo linguistic stock is sharply divided into two dialectic groups, Eskimo proper and Aleut. Inasmuch as Aleut is confined to Alaska and as a considerable number of distinct Eskimo dialects are spoken in Alaska besides, it seems very probable to me that the earliest at present ascertainable centre of dispersion of the tribes of Eskimo stock lies in Alaska (Sapir, 1916, p. 82).

Those divisions to which Sapir referred as dialectic groups are now recognized as languages. Thus, in referring to the degree of difference between Yupik and Inupik Swadesh states, "It has long been customary to speak of the Eskimo dialects. We now see that it is correct to recognize two separate languages with dialectical variations" (Swadesh, 1951, p. 70). The third language, and much more divergent, is Aleut, which has three dialects. The nature of the linguistic relationship has been examined by Bergsland (1951), Marsh and Swadesh (1951).

Recognizing the fact that the fundamental structure and some of the basic vocabulary correspond in the two languages, it is possible to estimate the time of divergence from a common proto-Aleut-Eskimo language by a method based on the percentage of basic vocabulary correspondence. Such an estimate suggests a period of 4,000 years of separate development. This is, happily, compatible with the archaeological record of a relatively great time depth in southwestern Alaska, a record based on carbon-14 dating. A shorter period of time, some 1,500 years, is estimated for the time of separation between Yupik and Inupik.

Past attempts to find similarities indicative of relationship with other peoples, such as the Ainu or the Kamchadals, has been

unsuccessful. This is quite understandable when the probability of Alaska as the homeland of the proto-Aleut-Eskimo of some five thousand or more years is recognized. No non-Aleut words have been found in the Aleut dialects, excepting, of course, the recent accretions of Russian and English. There can be extremely little basis for an assertion of any basic similarity or immediate interrelation between Aleut on the one hand and the Chukchi-Koryak-Kamchadal family of languages on the other. The phonologic system in the two groups of languages is more or less dissimilar. The morphologic pattern is likewise rather remote, and the lexicon shows tenuous connections if any at all. Furthermore, as a side point, if one is going to compare the Chukchi-Koryak-Kamchadal (or Lucravedlan) family with Aleut, Kamchadal is the least probable member of that family from which to demonstrate. Of the three, Kamchadal shows the most aberrant form and is also the most clearly permeated with the rather striking Uralic or Altaic (most likely Altaic in the case of Kamchadal) phonologic features which all three of these languages manifest. There is the vague possibility of some remote comparisons between Chukchi-Koryak-Kamchadal and the Aleut-Eskimo stock in general, but the comparisons that might be made will have to be on the proto level, with the assumption that an ancient substratum of proto-Aleut-Eskimo overlain by a dominant Uralic speaking element might have produced languages such as we see in the East Siberian group. In view of the fact that the Aleuts have been separated from contact with Indians by the intervening populations of Eskimos, and from Asia by a minimum distance of 180 miles to the uninhabited Kommandorski Islands, non-Aleut words would have to be accepted before their movement out onto the chain. This would mean a time span of at least 4,000 years and it is unlikely that they would be identifiable at this date.

In addition to providing the analysis of putative Asiatic similarities G. H. Marsh has provided the summary quoted here:

On the linguistic connections of Aleut and Eskimo the identity of phonologic system stands out. Both groups have the same five ranges of consonant phonemes: bilabial, dental, alveolar (also called prepalatal), velar (or postpalatal), and uvular, plus a defective lateral series. Furthermore all the Aleut and Eskimo languages show the greatest instability in the phonematic system in the alveolar series, so that the interrelations between c x/z y are variable and often the series is defective in some respect. There is also no nasal to go with this series (it would have to be ny) which in the Eskimo dialects where it does exist (around Point Barrow) is said to be no more than a phonetic variant of n due to the palatalizing influence of a preceding i. All of these languages have an identical vowel structure with three vowels, i, a, u, which can be doubled or lengthened. These languages all agree in admitting only a limited number of consonants at the end of a word, and it is in every case the same consonants: the nasals, the velar and uvular fricatives or the velar and uvular stops. The morphologic system of all these languages also concords in its essential features: 1) all derivation is by suffixes only (a feature in which this linguistic stock may be unique in the whole world). 2) the basis of the categories of number, person, and "case" is the same. 3) the differential treatment of consonant and vowel stems both in the nouns and verbs is found throughout. 4) the fundamental morphemes designating number, person,

and case are uniformly comparable, 5) the verb structure is everywhere similar: a) in paradigms made up of both verbal and nominal forms, b) in the use of invariable forms which are lacking in any suffixes for either person or number, c) in the types of model distinctions which are contained in the verbal complex, 6) the "adjective" is a noun (not a verb as in many Indian languages), 7) the variety of augmentative and diminutive and other derivational suffixes on nouns are the same and many of these can also be repeated in the verb complex, 8) the pronouns and demonstratives have different paradigms from the nouns, and the special suffixes are identical, 9) there is a lexical correspondence of at least thirty percent (personal communication).

The over-all importance of the linguistic unity of the Aleut-Eskimo people is manifested in at least three ways. First, the linguistic community serves as an isolating mechanism to define the breeding population. Second, the fact that there is an underlying unity means that the differences are due to divergence which demonstrates the nature of change which has taken place and removes the process of borrowing from any important place in understanding the differentiation. Third, the linguistic relationships indicate the major divisions with sharp lines of demarcation having been created within the community. In the absence of contact this can only indicate that there have been periods of separation of various divisions and that there has been considerable time for the operations of linguistic differentiation.

The sharp breaks in language, at Norton Sound between the two Eskimo languages, and on the Alaska Peninsula between Aleut and Eskimo, provide a powerful demonstration of the extent to which change has taken place without the intervention of alien cultures. The existence of intrusive peoples at either of these places, past or present, would alter considerably the picture of cultural elaboration over a linear distribution of contiguous peoples.

The theoretical model provided by the differentiation within the stock is valuable for both the racial and cultural analogies. Since all contemporary forms go back to a proto-Aleut-Eskimo, no one is more Eskimo than another anymore than dissimilar siblings of the same parents where some of the children bear more physical resemblance to the phenotype of the parents are any more or less valid children. It is not possible to have a contemporary ancestor; though it is possible that some of the divisions have changed less than other divisions, it is evident that all have changed to some extent from the original form or forms.

This linguistic model also demonstrates the necessity for distinguishing between origins of the Aleut-Eskimo stock and the areas of characterization. It appears to be a patent certainty that the ultimate source of the Aleut-Eskimo stock is Asiatic and that its progenitors entered the New World across the Bering Strait. However, it appears that the languages, as well as other portions of the culture, assumed their definitive aspects in southwestern Alaska.

Time Depth and Variability in Material Culture

Without considerable time depth it would not be possible to understand the linguistic differentiation and physical differentiation which has taken place inside the Aleut-Eskimo stock. Archaeological studies reveal a time depth well in excess of 3,000 years and a correspondingly great variability in the material culture. It is this degree of variability which has, in fact, made difficult the recognition of "Eskimo" traits in the absence of skeletal remains. In some cases archaeological assemblages have been accepted as Eskimo even though skeletons were not present and there was no indication of the language spoken. This is possible in many cases though there are certainly many subliminal claimants to the designation of Eskimo on the North Pacific Coast and in southern Canada and northeastern United States. When one considers the trait differences in excess of certain basic traits in Dorset, Thule, Koniag, Aleut, Ipiutak and St. Lawrence Island it is necessary to admit a high degree of local variation. Considered solely in time depth the problem of the point at which Eskimo begins and its predecessors end is equally a problem which will require the presence of skeletons or, at least, of traits which are well associated with skeletons at some other point in time linked by an unbroken sequence. Such a problem is raised by the important discoveries of the Denbigh Flint Complex and associated industries using lamelles to a great extent (Giddings, 1952). Asiatic connections are as clearly evidenced in this industry as they are in the Ipiutak culture some 5,000 years later (Larsen, 1951). It is significant that a core and blade industry is found in the Aleutian Islands and that tools made from these blades are found in the lower levels of the oldest known site on Umnak Island. (Laughlin, Marsh and Leach, 1952). The skeletal materials from this portion of the site are those of the Paleo-Aleuts, who are morphologically similar to many other western Alaskan Eskimos. On the basis of visual inspection they appear similar to the Ipiutak population, especially in the presence of the occipital "bun." (Pl. 1, B)

The nature of the archaeological sequence in the Aleutians was obscured by the chance selection of sites dug by W. Jochelson. He excavated sites which belonged wholly or predominantly to the later portions of the known sequence. This has been demonstrated by our excavations in which we went to some of the same sites he used and compared the artifacts with those of the long Chaluka sequence at Nikolski, Umnak Island. Since no great time sequence was suspected the minor amount of change he demonstrated was accepted with little question. The excavations of A. Hrdlicka did not add a great deal to the picture in terms of change, for he kept little or nothing in the way of archaeological records and mixed the artifacts by collecting them in boxes which were convenient but not chronological.

From the floor of the Chaluka site, below the 3,000 year radio-carbon date, to the surface, which is contemporary, there are some very interesting changes. These changes are all the more interesting when it is realized that the economic base remained substantially the same. Both stylistic and more basic changes took place

without apparent environmental provocation. Plate 2 shows some of the changes in harpoon styles and method of assembly. Fluted heads with stone insets were relatively more numerous in the lower strata. (Pl. 2, D) Later a basin is used, the end slot continuing, for the positioning of the chipped stone point. The two piece socket which precedes the single piece socket for harpoon heads bears an interesting relation to the length of the head. When the socket piece is increased in length, as in the late strata and in use to the turn of the century, the length of the harpoon head is decreased (Pl. 2, A, B, C).

The single piece socket still bears a name with a dual ending, indicative of its predecessor. The same sequence of socket-pieces is reported for Cook Inlet (De Laguna, 1934, p. 87).

Plate 2, E through I, shows harpoon heads of various kinds from successive strata. The quadrilateral line hole found in the lower strata, with round line holes, does not appear in the upper strata. Plate 2, I shows a late style which has some resemblances to Ipiutak arrowheads.

The chipped semi-lunar knife covers most of the span at Chaluka, and only in the most recent strata has the ground slate blade been found (Pl. 3, C, D). Similarly, the shallow, polished lamp is found only in the latest strata (Pl. 3, A, B). The continuity and overlap between the different kinds of artifacts and their various styles does not permit the delimitation "periods" in the sequence. There is, however, no necessary relation between the existence of separate periods and the total amount of variability. Aside from environmental limitations the degree of variability is determined by cultural patterns. It is possible that the Aleut sequence reflects less change than some other Eskimo sequences, St. Lawrence Island for example, but this is not a simple matter to qualify for objective comparison. Certainly, considerably more change is evident than was recognized originally by Jochelson. When the abandonment of the Aleutian core and blade industry is reckoned, another major change for this area must be recorded. Publication of the Chaluka archaeology will illustrate the great number of styles contemporaneous with each other. Ethnological studies reveal a pattern of individualism in the manufacture of weapons and other tools which placed a premium on making things "a little different." When to this individualism is added the village and island variations in tool manufacture it becomes obvious that the identification of extraneous traits is extremely difficult, at least in the absence of a thorough knowledge of the range of variation. There are, for example, two specimens of a slotted socket similar to ones found by Jochelson on Kamchatka. Where previously an interpretation of direct Asiatic influence might have been seized upon, it is a simple matter to demonstrate the "goodness of fit" of these specimens in the total inventory of which they are a part.

A study of Aleut archaeology reveals no traits which do not have a good basis in the elaboration of the original artifact inventory carried into the Aleutians from the Alaska mainland or which have subsequently been introduced from the east. The sequence does reveal considerable innovation of styles and is in harmony with a minimum date of entry of some 4,000 years ago.

Uniformity, Variability and Structure in the Aleut-Eskimo Culture

An ecological preface is necessary to an over-all view of the cultural uniformities of these peoples. The important aspect of their distribution is not that it is Arctic, a common misapprehension, but first, that it is primarily littoral and second, that it is a linear distribution of contiguous groups (usually remaining in contact with each other to the relative exclusion of Indians) running from the sub-Arctic into the Arctic. In accordance with their littoral distribution their main subsistence is derived from the hunting of sea mammals and fish, and the major portion of their culture is dedicated to this end. Other subsistence factors associated with the sea are the presence of driftwood and the presence of ice. Access to land animals is another major factor and especially one which has permitted deviation due to local opportunity. Deviation is here used to mean less frequency and not to imply less validity. Access to land animals must also be considered with reference to the extent to which these could be pursued inland. Thus, on the Alaska Peninsula and the southern coasts land animals were added to a rich inventory of sea mammals: caribou, bear, mountain goats, mountain sheep, weasel, marten, fox, ground squirrels, beaver and wolves. However, the presence of mountains close to the sea, such as the interior mountains of Kodiak Island, or the mountains of the Alaska Range, the Aleutian Range, etc., did not permit these people to go inland and still maintain their familiarity with sea hunting techniques. One conclusion which may be drawn from this is that the early southwestern Alaskan populations had familiarity with the hunting of land animals, in addition to their intimate knowledge of sea hunting, and migrating groups were able to draw upon this cultural background for more specialization where the local area presented the opportunity. Where land hunting is practiced the bow and arrow becomes of greater importance. Thus, those Aleuts living on Unimak Island and the Peninsula, where caribou were present, used the bow far more than the Aleuts to the west of Unimak Island. The Aleuts west of Unimak used the throwing board and retrieving harpoon almost exclusively, since they were much more adaptable to use from skin boats, and reserved the bow for warfare, a form of land animal hunting. Similarly, ice hunting techniques are used where ice is present, and if people must spend long periods of time on the ice the snowhouse is used also. The sled has not been used at either end of the Aleut-Eskimo range, southern Alaska or southern Greenland. At the same places ice hunting cannot be practiced. There has been a consequent elaboration of kayak hunting, at least in southern Greenland; it was probably antecedent in southern Alaska.

Kroeber (1939, pp. 23-4) has listed twenty-five regional variants of Eskimo economic culture and the list could well be extended. In spite of the adaptation to each local region a number of traits are rather uniformly present:

- 1—A great group of similar utensils, tools, and weapons: the ulu, whittling knives, men's meat-cutting knives, side-bladed knives, toggle and other harpoons, comparable spear types, leisters, pronged

- bird spears, flat throwing boards, semilunar pots, sewing implements, fishhooks, grappling hooks, nets, weirs, similar bows and the same type of arrow-head mounting, bolas, bag-nets, lamps, drums, etc. For ornamentation the dot-and-circle, animal figures and human heads all used on tools.
- 2—Two types of boats: the community boat, the bydar, and the individual boat, the bydarky.
 - 3—Communal houses (houses for one family alone seem to be found only in North Greenland and in the present-day Aleut after long contact with whites).
 - 4—A distinction between summer and winter houses, the winter (in a few places the summer) house being a communal dwelling and relatively permanent either in structure or location, the summer being temporary and for only one family per shelter on the whole—the main distinction, again, being between communal and individual, as with boats.
 - 5—The use of stone and whale-bones in house construction even where wood is available (our few oldest Aleut house remains show the stone element, and whalebone is obvious everywhere).
 - 6—The dichotomy between land and sea mammals not only in methods of hunting but also in methods of eating.
 - 7—A similar type of social organization with emphasis on maintaining a co-operating group in spite of personal frictions and antagonisms. The keeping of personal antagonisms in restraint unless continued and cumulative irritation aggravated the relation to the point of explosion leading to murder and consequent blood-feuds. Specific mechanisms for maintaining group cohesiveness, of which the most widespread is the arbitrary name-sake relation (*anaaqisax*), whereby people who acquire the same name in some arbitrary fashion must form a mutual-relationship pair (in some Eskimo areas this consists in intentionally naming a child after an older person; among the Aleut besides intentional naming accidental naming also occurs).
 - 8—Proper age for starting the instruction of children is 10-12. Before that they learn by watching, imitating, playing, and so forth, but after that the older people definitely undertake to teach the skills and behavior belonging to adult life. Among other things the instruction of children includes training in survival techniques (even in the Aleutians, which are outside the Arctic proper and have a relatively mild climate): inurement to cold, training in observation, bodily health and strength, survival foods.
 - 9—Control on the population through indirect socially sanctioned restraints on promiscuity. Though the general exercise of sexual promiscuity or restraint is an individual matter, there are various organized tabus and injunctions on both men and women: e.g. boys can't walk out at night, and can't attend dances before 20; hunters refrain from intercourse with their wives before hunt and with other women during hunting period; girls are confined at menarche and tabued regularly during menstruation; women mustn't be

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unfaithful to husbands who are out hunting; there are boogy-men to keep the women in at night; widows and widowers are confined after death of the spouse and a "mourning period" before they remarry is recommended, and such like. On the other hand there seems to be population control in the other direction through socially sanctioned promiscuity especially to encourage breeding with outsiders and strangers (there are some hints of this among the Aleuts).

- 10—The use of labrets and tattooing. Tattooing is mainly for women, where in the Aleut and Kanyag area women and transvestites could be distinguished at times only by their tattooing and ear ornaments.
- 11—Tailored garments, involving the elaborate piecing together of materials both for structure and for ornament. This feature sets the whole Aleut-Eskimo stock off from any of their Indian neighbors.
- 12—Tending of the lamp, working with grass and the gathering and handling of vegetable products, are specifically women's jobs.
- 13—No secret societies. (This is not certain for the Aleuts simply through lack of information on the subject, but if they had existed they probably would have been important enough to have made their way into the literature).
- 14—Flexed burial. Not only flexed burial but the attempt to cover up the corpse seems to be a general Aleut-Eskimo custom (exposure is found in only a restricted area). Grave goods are also sufficiently prevalent to be common to the stock.
- 15—Differential burial for important and unimportant people with the attempt to preserve the bodies of the important people to retain their spirits. (There may not be sufficiently large distribution of this trait among the various Eskimos to maintain it as a trait characteristic of the stock as such).
- 16—Mourning customs involving dietary tabus.
- 17—A number of beliefs about the supernatural seem to belong to the whole stock:
 - a) the spirits of the dead participate in the affairs of the living (hence Aleut mummies).
 - b) a method exists for destroying the power of the soul of an annihilated person (the method is not everywhere the same, but the existence of a method is widespread—Aleut, disjoints; Bering Strait, cutting off fingers and toes; farther east, eating part of the heart of the killed person).
 - c) spirits, notably ones that whistle, inhabit places, especially bodies of water.
 - d) the moon is an important being, is everywhere a man, and is probably throughout the stock connected with the fertility of women.
- 18—A Headman who functions as coordinator of activities simply providing ideas and suggestions and then organizing a group to carry them out.

- 19—The cooperative gathering and communal sharing of food with fixed formulas for the division of the highly prized animals, (whether whales, bearded seals, sea otter, or other, depending on the area).

Unfortunately the time, depth of all these traits cannot be uniformly documented. A list of traits common to most Aleut-Eskimos of 2,000 years ago might differ somewhat. Such a trait as the labret, which appears before the 3,000 year level at Chaluka, Umnak Island, must have been shared by the proto-Aleut-Eskimo and has probably been discarded by the Eskimos who went into the Arctic.

Another cause of variation which operates in addition to local ecological adaptation is that of style preference. Where the choice is presented in the method of removing salmon from a trap, as in the Aleutians, the people may prefer to use a gaff hook instead of a net simply because it is "more fun." More important, whales can be successfully hunted using essentially the same equipment as that for seals or for humans and without the addition of heavier tackle. Thus, some eastern Aleuts used a light spear with a stone point set in a whalebone socket and after spearing the whale waited for him to die, at which time they secured a line in his lower lip and towed him to shore. Other techniques were available, one being an invention (Heizer, 1943). The Aleuts possessed togglehead harpoons and could have used techniques similar to those further north. It is of interest to note that as part of their complex whaling techniques the Aleuts used "poison," composed of such things as a kind of isopod and bumble bee legs, which was placed in the slot beneath the stone point.

Consideration of the variability in single material traits alone forces one to place more emphasis on the processes of innovation. The ground slate semi-lunar knife, common among the recent Aleuts and Eskimos, is confined to the later strata in the Aleutians. It was, however, preceded by a chipped semi-lunar knife which was, in turn, only one of several kinds of knives. If the single category of knives were considered for all past and present Aleut-Eskimo cultures, it would be apparent immediately that there has been considerable innovation. The number of such traits is so far in excess of the number uniformly found among all the peoples that neither diffusion from neighboring peoples nor migration of more distant peoples can be very useful in explaining their presence. One is perforce led to consider the processes of innovation. In view of the fact that innovation is known to have been specifically encouraged, this area of the culture must receive more thorough consideration before the "sources" of Aleut-Eskimo culture can be exposed.

Variability not due solely to ecological adaptation has provided the basis for dividing Eskimo groups into the heterogeneous and the homogeneous, or the pure and the impure. Thus, Kroeber has used the term "purer" to apply to the eastern Eskimo as contrasted with the western Eskimo (Kroeber, 1939, p. 25). By this is meant those things in the race, language and culture which are "more characteristically or undilutedly" Eskimo. However, this greater variability of the western

Eskimos and Aleuts should not be taken to mean that they are any less "Eskimo." In this case greater variability is a characterizing trait in itself, just as great variability is a characteristic of the gibbons and does not suggest that they are any less valid anthropoid apes for this characteristic. A fuller quotation from Kroeber (1939, p. 25) may show more clearly the implications of this variability:

On this view, the shores of the vicinity of Alaska would have been both an ancient and a modern meeting ground of various cultural influences, pre-Eskimo, non-Eskimo, and Eskimo; and from the stock of sea-adapted culture there accumulated, the shore peoples eastward selected, not only once but more likely several times or continuously, such elements as they could use, besides of course, modifying them. Alaska then would be the point of origin in the sense of crystallization of Eskimo as contrasted with non-Eskimo culture as a whole, and at the same time the area where this culture remained most "mixed," at least set apart by rigorous restriction to its own specializations.

Obviously, western Alaska has been exposed to influences coming from Asia across Bering Strait. The larger populations of western Alaska with greater food supplies and opportunity for incorporation of new traits, in the absence of the restricting limitations of near survival subsistence of the Arctic, have been able to maintain a greater inventory of traits. Moreover, they have at the same time been able to innovate more traits and to elaborate them into multitudinous variants. Whereas, various eastern Eskimos have one kind of kayak, the Aleuts have three, depending on the number of hatches. The three-hatch skin boat may be excepted in view of the fact that it was an innovation apparently stimulated by the Russians. In hunting techniques the degree of elaboration is comparatively great. In hunting the seal several methods were used, a decoy behind which the hunter lay, nets, clubs, and a variety of retrieving harpoons with or without attached bladder. In disposal of the dead another variety of methods is seen, which depended on the fact that there was not a fear of the dead in the same way characteristic of the Arctic or eastern Eskimos; bodies were kept about the house for varying periods of time, mummified and placed in caves or in special log tombs, buried in the habitation area, buried in special little homes, or, in the case of slain enemies, dissected for study purposes or dismembered and thrown in the ocean.

Almost any trait that is found among the eastern Eskimos and western Eskimos will have many more variant forms or embellishments in the west, within a comparable dialectic group. When the total variants of the different groups are placed together the variability of west as opposed to east is shown in equally clear relief. The situation is then quite comparable to that of the linguistic differentiation or the physical differentiation. At the same time it is more difficult to abstract particular traits and assign their origin to non-Aleut-Eskimo peoples.

The variability of western Eskimo culture, both material and non-material culture, is closely related to the population size. The size of the population in turn is related to ecological background. In the Aleutians and in southern Alaska south of the Kuskokwim River the size and number of archaeological sites substantiate the population estimates which indicate that one third of the Eskimo speakers

(including Aleut) lived on the Pacific Ocean frontage and that roughly three-fifths of all Eskimo, indicated also by sites to the north of the Kuskokwim, lived south of Bering Strait. Relative to the Indians and eastern Eskimos comparatively large populations were made possible in the southwestern area by the presence of annual salmon runs and many kinds of marine fish, in addition to a large inventory of sea mammals, including walrus, whale, sea lion, seal and sea otter. The fur seal were especially important and were conveniently available owing to the necessity of passing through the Aleutian Islands on their annual trip to the Pribilof breeding grounds. Large numbers of octopus, shell fish and edible sea weeds, as well as land plants, enabled many communities to survive the lean spring period when storms prevented hunting at sea and the winter stores had been depleted. The presence of land animals comparatively close to the shore line villages provided an additional source of food for the peoples of the mainland and adjacent Unimak and Kodiak Islands.

The population size contributed to the elaboration of the culture in at least two major ways; first, there were simply more people available for the production of new traits and these people were provided with a wealth of plastic materials, ivory, wood, stone and bone. Second, more indirectly but none the-less influential, the comparative ecological wealth of southwestern Alaska explains in part the early occupation of this area insofar as the proto-Aleut-Eskimo peoples are concerned, thereby providing more time, clearly in excess of 4,000 years, for the characterization and elaboration of the Aleut-Eskimo culture to take place.

In summary, two points may be emphasized. First, "marginal cultures" in general are characterized by heterogeneity resulting from local invention. This point has been made by Lowie who, in an article which includes a reference to the invention of the vaulted snowhouse by the Eskimo, concludes, "The ecological adaptations of marginal peoples reveal an astonishing inventiveness. The religious, magical and social aspects of their cultures exhibit imagination and logical power. *A fortiori*, the occurrence of items belonging to these categories need not arouse our amazement" . . . (Lowie, 1952, p. 7). Second, the Aleut-Eskimo culture in particular is characterized by an especially high degree of heterogeneity within a common structured framework. This variability is the result not only of local adaptation but of an explicit pattern for innovation. Finally, this culturally sanctioned emphasis on innovation in both the individual and the village community has been one of the major factors enabling the Aleut-Eskimo stock to enter into inhospitable areas with success and still retain its over-all unity.

Structural Regularities

The simple tabulation of trait inventories of the Aleuts and Eskimos has some limitations in analyzing variants within the over-all culture and in contrasting it with that of the Indians. Cultural traits cannot be easily coerced into comparative tables for such reasons as: 1) some traits have changed greatly and recently while others have changed

little, slowly, or long ago; 2) environmental limitations preclude certain traits; 3) cultural interests select or delete others, deletions due to style preferences not always being distinguishable from deletions due to environmental selections; 4) the same traits may be differently patterned in different areas. Aside from the brute similarities of external form which can be easily appreciated in material traits and their uses, it is necessary to know the meaning and the function of the traits to be compared. Thus, on the level of material ethnography, the Aleuts, like all members of the Aleut-Eskimo stock, possess the throwing board. However, the form not only has certain regular distinguishing features such as the uniform breadth of the handle and blade, but the ivory pin is conceived to be a ziphisternum and is thus named; the upper end is conceived as a forehead and bears the name for forehead, the back is painted black and represents fur, while the belly is painted red and represents blood. While the primary function of the throwing board remains everywhere the same, the meanings connected with it probably do not.

The use of anatomical names for the various parts of the throwing board and for other material traits of the Aleuts assumes more significance when it is realized that anatomical concepts and interests form a major orientation in several aspects of Aleut culture. This anatomical orientation, plus other orientations, is as distinctive of Aleuts as is their language. Neither intelligible comparisons nor studies of the process of change can be managed until the form, the meaning and the functions of the traits are known. And, until these are studied, the structural regularities, the themes and patterns of the culture must be neglected or inaccurately conceived.

It is precisely in the field of these major orientations that some of the most significant uniformities of the Aleut-Eskimo culture are to be found. These major orientations, like the linguistic and genetic similarities, testify to the historical unity of this stock and easily distinguish them from the Indians.

The briefest characterization of the Aleut-Eskimo culture is given by Kroeber where he states, "The Eskimo, again, are very sensory, immediate, concrete and discrete in their ethos." (Kroeber, 1948, p. 606). In contrasting Eskimos with Indians he states, ". . . but their primary and dominant orientation is realistic," and "The cause for this orientation can perhaps be sought in the extraordinary trying circumstances of survival in the Arctic. The Eskimo must be mechanically-minded, able-bodied, manually skillful, and practical" (ibid, p. 603). In contrasting the use of magic between Eskimos and Melanesians he says of the Eskimo, "They are far more practical, competent with tools, and self reliant" (ibid, p. 308). The point here is that these same characterizations apply equally well to all the Aleuts, as evidenced in the following quotation, "In common with other members of the Eskimo stock mechanical innovations have played a major part in the remarkably successful adaptation of the Aleuts to their environment. In their case this has often been the result of deliberate comparative experiments. Their culture is directed toward

the development of self-sufficient individuals within the framework of a highly cooperative group" (Laughlin and Marsh, 1951, p. 84). It is possible to recognize a considerable body of evidence from many different workers which illustrates this uniformity of a pragmatic orientation to the environment, a concentration on technical details of practical importance, and the development of self-sufficiency or self-reliance. Upon these common structural regularities the Aleut division appears to have advanced with reference to the use of deliberate comparative experiments. An appeal is frequently made to superior functional performance as the explanation for a particular practice by the Aleuts. In their traditions they describe such things as a boat race between two villages west of Umnak which was held to decide which method of preparing food, steaming or boiling, was preferable for the development of great wind and endurance. Again, two children were raised in two different fashions to determine what method of child raising would give most satisfactory results. In the development of their extensive anatomical knowledge the resort to empirical investigation is seen in many ways. Persons who died were dissected in an effort to determine the cause of death. Sea otter were dissected as late as 1910-13 for the purposes of true comparative anatomy. The Aleut explanation for the use of the sea otter is that it is most similar to humans and, in fact, it does possess the most morphological similarities of any available sea mammal, as evidenced in the humerus, femur and flat grinding molars. The use of the dead for dissection and the use of their supernatural powers provided by mummification may not be as distinctive as they first appear when more is known about the Eskimos to the east. The Koniags are known to have made use of mummies and may also have built up a body of anatomical knowledge.

Another example of the necessity of knowing the meaning of a trait, and thus being enabled to understand its place in a pattern and of the place of the resulting patterns in a theme or major orientation, is shown in the belief in a supernatural power which resides in the body (Laughlin and Marsh, 1951). In brief, the separate elements may be found among other Eskimo groups, but in the eastern Aleutians they have a particular relationship which may not be duplicated elsewhere. Thus, the discrete practices of joint binding of pubescent girls, the dismemberment of slain enemies, mummification of the honored, joint binding of the widow and the dismemberment of the hawk and owl are all brought together by the belief that the power in the body can be regulated or removed completely. These various practices were employed to either protect the living individuals or enable them to use the power of a person who had suffered corporeal death or for both purposes. It is apparent that the eastern Aleuts do not believe that a person who had power gave it up simply by the act of dying.

In summary there are sufficient uniformities in both the material and the non-material culture to demonstrate the historical unity of Aleut-Eskimo culture. Variations are seen not only in the mechanical innovations but in the structure of the culture as well. The patterning in the culture, the relations of the traits to each other, can not be

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known without a thorough knowledge of the form, meaning, function and use of each trait. Aleut-Eskimo culture has placed a premium upon innovation and this in itself constitutes a major characteristic of the culture as well as a major source of Aleut-Eskimo traits.

Summary

The primary purpose of this paper has not been merely to consider new data concerning the problem of Aleut-Eskimo relationships but to consider this problem by means of a more comprehensive method of evaluation. Specifically, this involves a study of those elements which set these people apart as a distinct population, a study of those elements common to all the divisions of the people and, following this, a consideration of the factors of internal change which are primarily responsible for the variations within the stock. Viewed in time depth these changes are manifested racially in the development of a brachycephalic population from an originally mesocephalic population, linguistically by the differentiation into languages and dialects, and in the material culture by the abandonment of the core and blade industry and the innovation of many mechanical adaptations. At the same time it is necessary to appreciate the geographical variants represented by dialect groups, breeding isolates with distinctive morphology and local variants in the over-all culture. To those documented examples of change must be added those in the structure of the culture. A catalog of traits, no matter how large and complete, does not take into account the patterning of the traits. Just as the terms Aleut and Eskimo are useful abstractions imposed upon the people and their culture, so it is useful to compare the abstractions of pattern and ethos, as given, for example, by Kroeber. To the extent that these are empirically derived they can be valid and useful. Without the inclusion of these patterns the genius of Aleut-Eskimo culture must receive inadequate attention.

The practical effect of this point of view, the recognition of variability and change within a common framework, is to focus more attention on the processes of change within the people of the Aleut-Eskimo stock and, therefore, to place less reliance upon speculative and unproven suppositions of extraneous migrations from distant peoples or upon premature and factually exiguous suggestions of culture contacts with Asiatic peoples across the Pacific Ocean rather than across Bering Strait. The speculative migrations presuppose the existence of traits, physical and cultural, which have not developed within the culture nor been accepted from their immediate neighbors. Historical evidence indicates that traits have been declared atypical or alien when only a portion of the stock has been selected as a type model, or when only a portion of a complex was known, and that this arbitrary selection has given a false appearance of homogeneity. Traits have been wrenched from their context in part because the context has been so poorly known. Only after the time depth has been more thoroughly explored and the limits of variability of the over-all culture better known can there be profitable comparisons with alien cultures on a sound basis.

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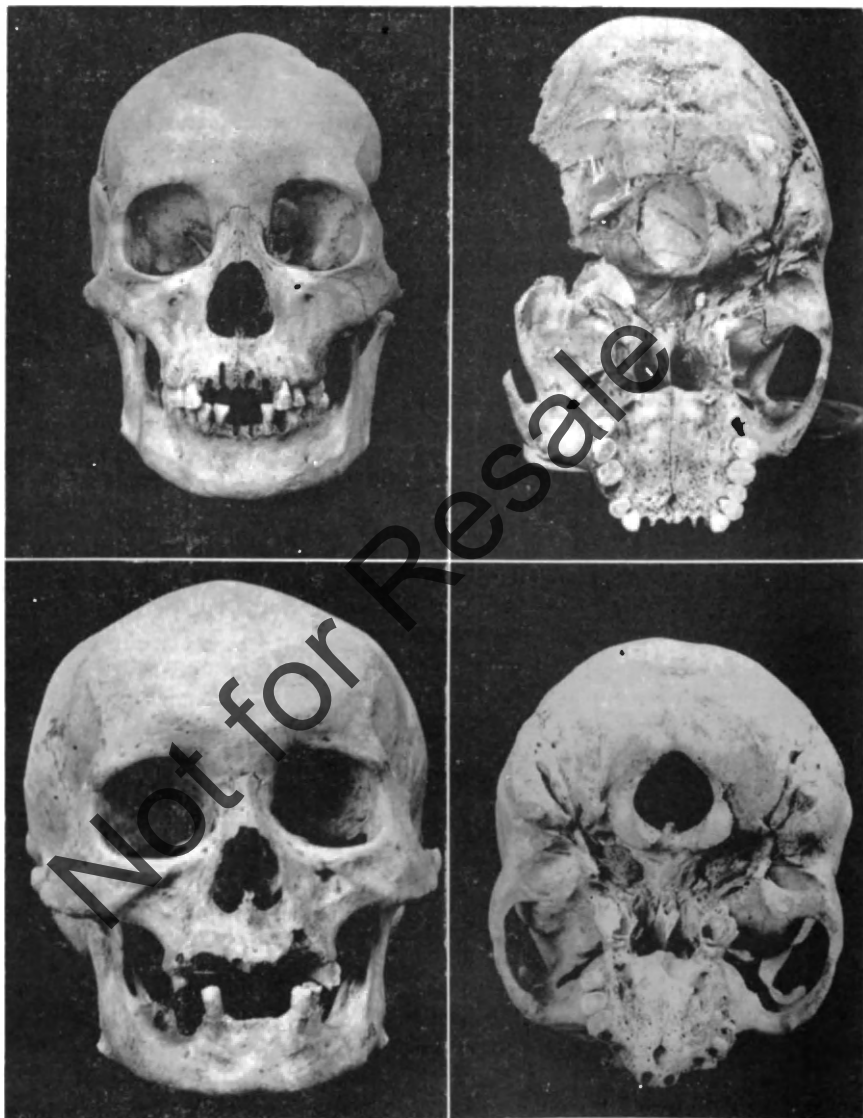


PLATE 1

Top, left—Paleo-Aleut male. Norma frontalis.

Top, right—Paleo-Aleut male. Norma basalis.

Bottom, left—Neo-Aleut male. Norma frontalis

Bottom, right—Neo-Aleut male. Norma basalis.

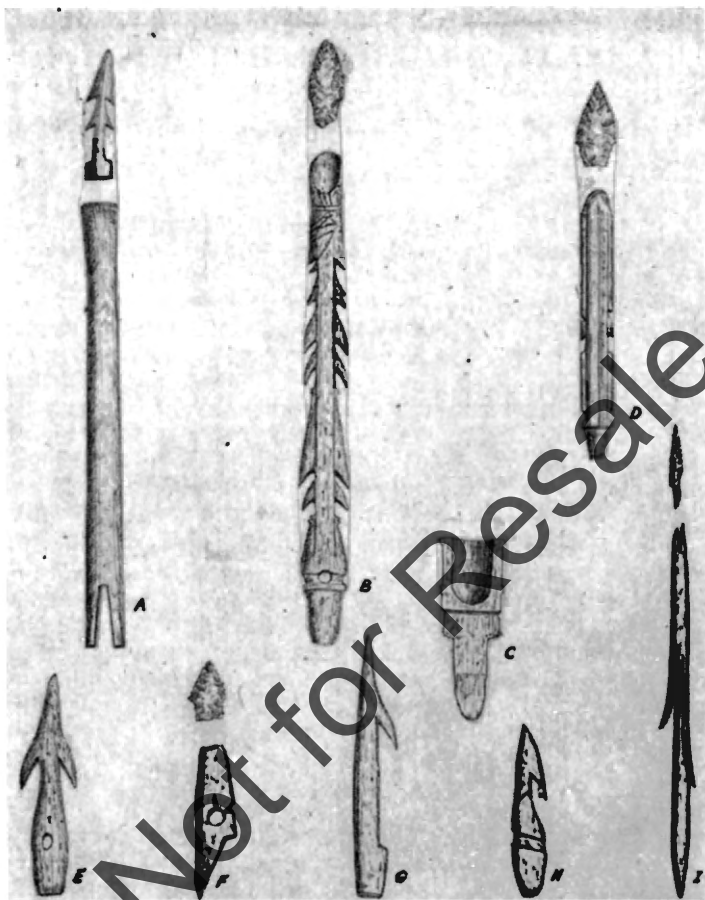


PLATE 2

- A. Socket piece with bifurcated tang.
- B. Symmetrically barbed harpoon head.
- C. Composite socket piece.
- D. Fluted harpoon head with stone inset.
- E. Early class harpoon head with quadrilateral line hole.
- F. Toggle harpoon head.
- G. Early class harpoon head.
- H. Late class harpoon head with castellated barb.
- I. Late class harpoon head with inserted stone point.

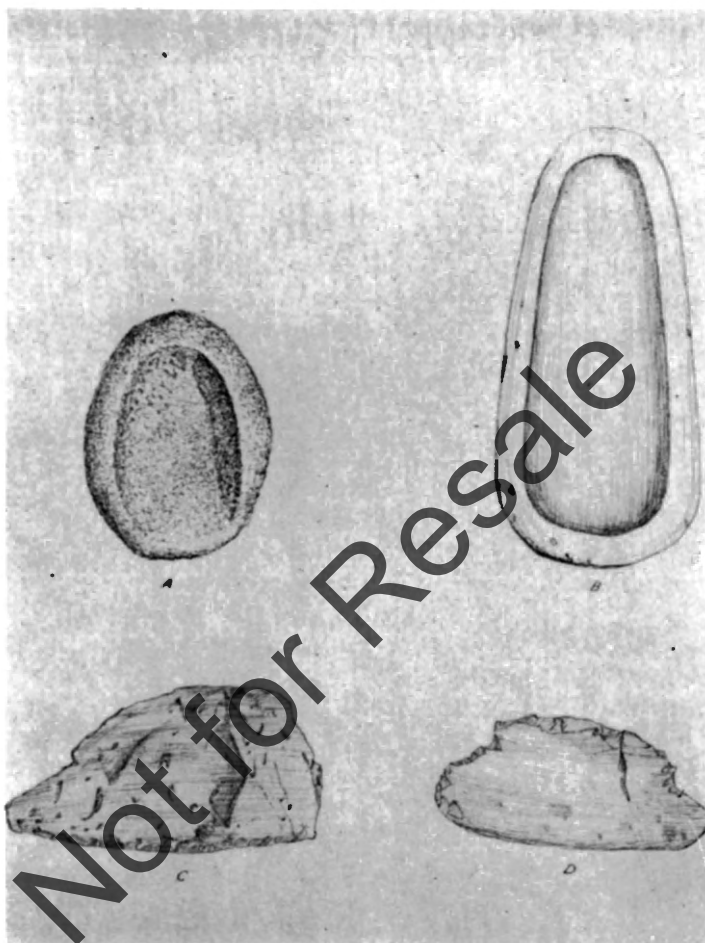


PLATE 3

- A. Basic style stone lamp.
- B. Stone lamp of latest style.
- C. Chipped stone ulu.
- D. Ground slate ulu.

THE ARCHAEOLOGY OF HOOPER BAY VILLAGE, ALASKA

WENDELL OSWALT

Archaeological investigations at Hooper Bay Village, on Alaska's Bering Sea coast, were initiated in 1951 in order to determine prehistoric cultural affinities between this locality and other regions of Alaska.¹ The Hooper Bay region was chosen since it is unknown archaeologically and since it is situated near the southern limit of winter sea ice, which is one of the important demarcation lines between different forms of Eskimo culture. Upon historic contact the Eskimos in the Hooper Bay region were known to have been influenced by more southern groups of Eskimos and Northwest Coast Indians, as well as by northern Eskimos and interior Alaskan Indians. Investigations in this locality thus offered an opportunity to determine the prehistoric extent and relative effects of these influences.

The Hooper Bay region is situated between the mouths of the Yukon and Kuskokwim rivers and extends farther west into the Bering Sea than any other section of the Alaska mainland from Bristol Bay to Norton Sound. With the exception of the 2300 foot Askinuk Mountains to the north, the terrain forms a low alluvial tundra plain well beyond the maximum range of timber. The sea coast is for the most part low, and the daily tides (seven to nine feet) are great enough to partially drain large sections of the coast, adjacent rivers and bays. The entire region south of and inland from Hooper Bay is commonly known as the Big Lake district; this name well may be applied to the entire area, for it is honeycombed with both large and small lakes and ponds. Such country offers few suitable localities for habitations; therefore, when a good village site had once been found, it was likely to be occupied for many years. This was the case at Hooper Bay Village, where there is ready access to the sea either by an overland approach of a few miles or by one of two short water routes. The village, although on high enough ground to escape damage by even severe floods, fronts a slough where boats can be hauled up readily.

¹The archaeological excavations at Hooper Bay Village, Alaska, were sponsored by the Arctic Institute of North America with funds from the United States Government, and supported also by the Bering Strait Expedition with funds from the University of Alaska, the Danish National Museum, the University of Pennsylvania, and the Wenner-Gren Foundation. The writer wishes to express his sincere thanks to Mr. and Mrs. Walter Arron for their field assistance and to Mr. and Mrs. Olin Pruitt, Alaska Native Service teachers at Hooper Bay Village, for their cooperation during the field season. The writer also wishes to express his gratitude to Dr. Ivar Skarland of the University of Alaska for making available the time for this study while the writer was on the staff of the University Museum. The photographs in this paper were taken through the courtesy of Mr. Richard Smith.

Other factors accounting for its permanent inhabitation are that there is a sufficient summer water supply and that the region affords good year-round hunting and fishing.

Today the most important sea mammals in this region are the common seal, bearded seal, and white whale. Walrus and larger whales rarely frequent this shallow coast. The fish most utilized are the salmon, herring, tom cod, needle fish and blackfish. Other edible products of the sea are clams and cockles. Today there are no large land mammals in the locality, but the older people remember having seen caribou roam close to Hooper Bay. The only land mammal of importance at present is the muskrat, which is hunted for its skin. The shores of Hooper Bay and adjacent Igiak Bay compose the largest concentrated breeding ground in Alaska for ducks and geese; as a result the people can depend upon birds or eggs as food from early spring to late fall. The low tundra country around Hooper Bay offers so little in the way of plant food that the salmonberry, comparatively scarce at the Village itself but abundant at the east end of the bay, is the only flora economically useful to a very great extent.

Since the Hooper Bay region is not a rich source of furs, contact with Russian trappers and traders must have occurred not earlier than 1835 when St. Michael (located approximately 200 miles north of Hooper Bay) was established (Petroff, 1900, p. 195). Prior to this time the Russian Orthodox Church sent a missionary from Unalaska in the Aleutian Islands north beyond the Kuskokwim River delta (Petroff, 1900, p. 194), but that this party penetrated as far north as Hooper Bay is doubtful. It was not until December 14, 1878, that the first known European visitor reached Askinuk (Baker, 1906, p. 106), or Hooper Bay Village as it is known now. The village was visited by E. W. Nelson when he made a sled trip to collect ethnographic material during the winter of 1878-79. At that time he traveled from St. Michael south to Hooper Bay and to Cape Vancouver, returning by an inland route across the Yukon-Kuskokwim delta to the Yukon River.

When Nelson (1899, p. 249) visited Hooper Bay Village, the people living there told him that their village was higher than the surrounding country (15 feet higher according to Nelson) because of the accumulation of debris during a long period of occupancy. Nelson stated that, ". . . its present appearance would seem to justify this assertion", an assertion partially confirmed by excavations in 1950.

Hooper Bay Village is located at the northern end of the bay on a small slough that flows through Hooper Bay and into the Bering Sea. The village is built on three knolls, one behind the other, with only the first fronting the slough. Upon historic contact, dwellings were on the first knoll only; the remaining two knolls were covered with burials. Today, however, there are dwellings on all three knolls, with a Catholic Mission and a Native Store occupying most of the second, and the Alaska Native Service school, the third. The knoll fronting the slough measures approximately 380 by 150 by 50 feet; this is the only section of the village where evidence of prehistoric houses and midden was found. Midden debris is present all along this natural mound and appears to be more than fifteen feet deep in thicker sections. Still

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accumulating, the deposit has already become one of the larger middens in western Alaska. Since most of the midden is covered with present day houses, the space in which to dig is limited; however, two test cuts were marked off, a 36 by 36 foot one on the east end of the midden, and a smaller one, 6 by 18 feet, at the west end. The excavations were divided into six foot squares and depths were recorded by six-inch intervals. July 7, at the time when excavations were begun, the ground had thawed to a depth of slightly more than two feet; after this layer had been removed, the thawing progressed less than two inches per day. On August 28, which was the end of the field season, depths of five and eight feet had been reached in the larger and smaller cuts respectively. Since the relatively slow rate of thaw made it impossible to reach the bottom of the midden in one season, only the upper layers of the deposit could be sampled.

Analysis of the Hooper Bay Village collection established the fact that artifacts from the test cuts were from a single synchronous time period and thus could be combined into a single unit.

The artifact descriptions that follow are under eleven headings: sea hunting, land hunting, fishing, tools, household, transportation, personal adornment, tobacco complex, toys, ceremonial objects, and miscellaneous. In each group, description of the artifacts precedes comparison of the group with similar finds. Since all major and minor artifact finds are illustrated the descriptions are usually brief. Supplementing the descriptions and illustrations is an extensive trait list of all identifiable objects and the levels from which they were recovered. In the trait list will be found a figure and specimen number for each illustrated artifact.

SEA HUNTING

The eleven detachable harpoon dart heads are of two different forms. The first, represented by one specimen, has a single barb, an off-set line hole, and is heavy and rectanguloid in cross section; the tang is missing (Pl. 1, 1). All other dart heads, including fragments, are lighter than the previous type, uniformly small, ovate in cross section, and multibarbed. Four of the seven bilaterally barbed dart heads have more barbs on one side than the other (Pl. 1, 2-3); two have pairs of opposite barbs (Pl. 1, 4); and one has a single staggered barb on each side (Pl. 1, 5). Of the eight complete line holes five are gouged and three drilled; one of the three examples with a drilled line hole has spurs cut longitudinally on either side of the hole, giving the appearance of gouging. (Pl. 1, 3). All line holes except one in a purchased specimen are in the center. Seven dart heads, including fragments, are made from antler, two from ivory, and two from bone.

The one antler harpoon foreshaft is 10 cm. long and ovate in cross section. This specimen has its greatest diameter at the line hole, which is a third of the distance from the base.

Three of the four socketpieces have bifurcated tangs; the one without a bifurcated tang has a hole at the end into which the shaft is fitted (Pl. 1, 7). The respective lengths of these socketpieces are 18.5 cm., 9 cm., and 5 cm.; the fourth is too incomplete to determine its original length. Two are made from antler, and two from bone; all are oval or circular in cross section (Pl. 1, 6).

The two bladder mouthpieces are different in form. The first, made from tooth, (Pl. 1, 8) is ovate in cross section and slightly constricted in the middle to receive the lashings. The second mouthpiece, made from antler, is round in cross section and has a lip at the top (Pl. 1, 9). There are four small holes drilled at different heights around the body of this specimen.

The four wood and two bark float plugs are ovate in outline and average 1 cm. in thickness; each has a deep groove encircling it (Pl. 1, 10).

The two ground slate harpoon blades are flat and trianguloid, resembling similar pieces from other western Eskimo collections.

Fine preservation at the Hooper Bay site made it possible to recover artifacts of perishable materials that normally would have decayed; these include a number of **dart shaft fragments**. The six dart shaft proximal ends are round in cross section and uniformly light (Pl. 1, 11). All have flat bases, and two have a small recess at the end to receive a throwing board peg. Each shaft has at the proximal end a gradual swelling toward the base which is intended to fit into the deepened groove on the throwing board near the peg (see description of throwing boards). Distal ends of the dart shafts are of three types, based on the style of socketpiece hafting. The prevailing type is flattened on two sides to fit a socketpiece with a bifurcated tang (Pl. 1, 12). The second type has a roughly cone-shaped pit at the end. One side of the cone is open to permit shaping; opposite it is a small gouged hole near the base of the opening (Pl. 1, 13). This type of shaft is made to receive an oval, tapering tang with a hook at the end, the hook fitting into the small hole. The third type is similar to the preceding except that the hook hole is absent.

One large slate lance or knife blade with finely ground surfaces was recovered; approximately half way down each side is a well-defined shoulder which marks the beginning of a wide, tapering tang (Pl. 1, 14). The one other large lance blade recovered is a wide, flat flint blade. With the greatest width near the center, it tapers to a somewhat blunted point at one end and to a long, slightly shouldered tang at the opposite end (Pl. 1, 15). Two other lance blades were found, both short and of the same general lines as the large slate blade mentioned above; one differs from the rest, however, because of its scored tang and decorations on both sides of the blade. The trianguloid section delineated near the center of the specimen in Pl. 1, 16, is a fracture mark in the slate rather than part of the design elements. The motifs are straight and curved lines (See Fig. 1, D, E). The circle or semi-circle with radiating lines occurs in three places; there are four sets of short converging lines and one set of three parallel lines.



Figure 1

There are two **throwing board fragments** in the collection. One consists of the central grooved section in which the dart shaft was placed. The groove is 2 mm. deep at the end where the hand hold once was; it tapers to a depth of 6 mm. (over a distance of 20 cm.) at the point where the peg had been inserted

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(Pl. 1, 18), causing a marked downward slope to the end nearest the peg. That a similar pitch is evident on the proximal end of the dart shafts has been mentioned. The second throwing board fragment, part of a hand grip, has one antler grip peg in place; 3.8 cm. forward is a hole for a similar peg (Pl. 1, 17).

Comparisons

From archaeological excavations and ethnographic observations it appears that the Alaskan center for the harpoon dart head is among the Pacific Eskimo, Aleut, and southern Bering Sea Eskimo. The oldest known harpoon dart heads from this general region date approximately 1000 B. C. and are from the Paleo-Aleut levels on Umnak Island in the Aleutians (Laughlin and Marsh, 1951, pp. 80-84). More recent, but still of considerable antiquity, are those from the Pacific Eskimo sites at Kachemak Bay (de Laguna, 1934, pp. 82-84, Pl. 39, 40) and the southern Bering Sea Eskimo site at Port Moller (Weyer, 1930, pp. 265 - 266, Fig. 17). In all three areas toggle harpoon heads have been recovered but they are greatly outnumbered by harpoon dart heads. During late periods at Kachemak Bay the dart heads still dominate (de Laguna, 1934, pp. 82-85); they also occur more frequently than toggle harpoon heads at the recent Bristol Bay site of Platinum South Spit (Larsen, 1950, p. 180). Eleven harpoon dart heads were recovered at the Hooper Bay Village site; no toggle harpoon heads were found, although presence of the latter is indicated by a harpoon foreshaft, harpoon blades, and a wooden toy toggle harpoon head. In northern Alaska the toggle harpoon head dominates in all periods, although dart heads also occur. The latter are found in collections of Okvik (Rainey, 1941, Fig. 13, 5), Old Bering Sea (Geist and Rainey, 1936, Pl. 77, 2), Birnirk (Univ. of Penn. Collections), Ipiutak (Larsen and Rainey, 1948, Pl. 42, 10), Western Thule (Larsen and Rainey, 1948, Pl. 95, 4), and Giddings' inland Eskimo stages on the Kobuk River (Giddings, MS). Ethnographically they are found among the Bering Sea Eskimo, Aleut, Pacific Eskimo and adjacent Indian groups (See Birket-Smith, 1929, II, tables A.30, B.22; Birket-Smith and de Laguna, 1934, p. 434). The one large rectanguloid dart head from Hooper Bay Village site with a single barb and an offset line hole is similar to one purchased by Nelson (1899, Pl. LVII, b, 33, p. 148) at a village just north of Kuskokwim Bay. It resembles also the one excavated by Larsen (1950, Fig. 55, A, 3) at the recent site of Pavik, Bristol Bay, and those illustrated by Giddings (MS) from the Kobuk River region. Bilaterally barbed dart heads with more barbs on one side than the other and with a central line hole are reported from several sites other than Hooper Bay Village. Among these are Fox Creek on the lower Yukon River (de Laguna, 1947, Pl. XXVI, 6), the Kobuk River sites (Giddings, MS), and Nelson's ethnographic collections from the Bering Sea region (1899, Pl. LVII, 16, 19, 20). Dart heads with similar pairs of opposite barbs and a central line hole are reported from Umnak Island in Paleo-Aleut levels (Laughlin and Marsh, 1951, pp. 80 - 84); Pavik, which is recent-prehistoric (Larsen, 1950, Fig. 55, A, 2); Kukulik on St. Lawrence Island in Old Bering Sea and Recent-Prehistoric levels (Geist and Rainey, 1936, Pl. 77, 2, Pl. 42, 5, Pl. 54, 3); the Kobuk River sites

(Giddings, MS), and Nelson's Bering Sea collections (1899, Pl. LVII, b, 18). The last class of dart heads, those with staggered opposite barbs and a central line hole, is reported from Port Moller (Weyer, 1930, Fig. 17, f) and Norton Sound (Nelson, 1899, Pl. LXVIII, 8).

Three of the socketpieces have in common one traceable feature, the bifurcated tang. Similar socketpiece tangs are found from Yukon Island III, Kachemak Bay (de Laguna, 1934, p. 195); modern Kodiak (de Laguna, 1934, p. 195); Neo-Aleut levels on Umnak Island (Laughlin and Marsh, 1951, pp. 80-84); Jochelson's Aleutian Island material (Jochelson, 1925, Pl. 22, 1-3, Pl. 23, 19-24, Pl. 26, 16, 34); in the Big Lake district between the Yukon and Kuskokwim river mouths (Nelson, 1899, Pl. LVII, 34, p. 147); and in the Kobuk region (Giddings, MS). This tang type is characteristic of late socketpieces but may be reasonably old in Neo-Aleut finds. Socketpieces with a hole at the proximal end to fit the dart shaft have been found from the Kobuk River area (Giddings, MS) and Hooper Bay Village. From numerous distal ends of dart shafts it is possible to determine still more concerning the socketpiece tangs. The most prevalent type of dart shaft socket is made to receive a socketpiece having a bifurcated tang; however, not represented in the collection is a socketpiece with a conical tang and an end hook such as would fit into the second type of dart shaft socket. Socketpieces with a conical butt and an end hook have been found, to the writer's knowledge, only at the Nukleet site on Cape Denbigh (Univ. of Alaska collections), although their presence may be inferred at Hooper Bay Village.

The float plug is found in most coastal Eskimo sites from the Okvik stage (Rainey, 1941, Fig. 12, 4-9) through the period of historic contact. The notable exception is the Ipiutak site at Point Hope where the trait apparently did not exist (Larsen and Rainey, 1948, p. 147). The bladder dart mouthpiece, a relatively recent innovation, was introduced at St. Lawrence Island during Punuk times (Collins, 1937, p. 220-221). The Hooper Bay Village examples do not have the distinctive "cannon shape" of some Punuk and more recent types (Collins, 1937, Pl. 73, 11-12; Geist and Rainey, Pl. 54, 26) but rather are similar to the cylindrical form also from Punuk to historic contact (Collins, 1937, p. 220; Nelson, 1899, Pl. LVI, a, 18-19). The cylindrical bladder mouthpiece for water containers used in the Aleutians (Jochelson, 1925, Fig. 65) is similar to some of the cylindrical bladder dart mouthpieces.

Slate or flint lance blades are very old in Eskimo culture, extending back to Okvik (Rainey, 1941, Fig. 31, 5-7), Old Bering Sea (Collins, 1937, Pl. 39, 13), Birnirk (Univ. of Penn.), and Ipiutak stages (Larsen and Rainey, 1948, Pl. 14, 13-18). The slate lance blades in the collection lack the barbs characteristic of many Kachemak Bay (de Laguna, 1934, Pl. 31) and some recent Bering Sea lance blades (Larsen, 1950, Fig. 55, b, 10; Nelson, 1899, Pl. LVII, a, 10, 24).

Incised designs on slate, such as the one found on a slate end blade, are rare from the Eskimo area. The most striking comparison is with the slate figurines reported by Heizer (1952, p. 266) from Kodiak Island. These figurines illustrate the head in a very schematic form;

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this seems to be the case also with the design on one surface of the Hooper Bay Village end blade (Fig. 1, E). On the opposite surface of the Hooper Bay Village specimen is a large pair of eyes, as well as a relatively small pair of arms and legs (Fig. 1, D). If the interpretation of a body on the Hooper Bay Village figurine is correct, the body element is a point of differentiation between the Hooper Bay Village and Kodiak Island figurines.

The throwing board is found extensively in the Eskimo area, and the Hooper Bay Village examples are similar to most of those illustrated by Nelson (1899, Fig. 43) from the Nunivak-Norton Sound region. Throwing boards from the Hooper Bay vicinity in the University of Alaska ethnographic collections have the groove deepened near the peg, a characteristic found also in the archaeological specimen; this feature is compatible with the slight swelling at the proximal ends of the dart shafts.

LAND HUNTING

The nine complete or nearly complete **arrowheads** are ovate in cross section and range in over-all length from 5 to 16 cm.; each is made from antler, as is also the case with the arrowhead fragments. The barbless examples with end blades were considered by Hooper Bay Village informants to be war arrowheads (Pl. 2, 1); those with barbs and with or without an end blade were described as being used on land mammals (Pl. 2, 2-3). One point of uniformity in all the arrowheads is the tang type. All nine complete or nearly complete specimens, as well as five fragments with tangs, have a sharp shoulder and plain conical tang.

Blunt arrowheads are of five different types. The most common is made from wood (5) or antler (1) and is roughly the shape of an elongated diamond; from a sharp tip it swells to a point approximately one-third of the distance from the end of the tang, and from this spot it tapers gently to the wedge-shaped tang (Pl. 2, 4). The second blunt arrowhead, made from wood, is cylindrical with a sharpened tip; it has a socketed base. Another type, represented by one antler specimen, is rectangular in cross section and has a wedge shaped tang that slopes gently from the body of the arrowhead. The tang has two distinctive side notches, and the tip has a serrated edge (Pl. 2, 5). The fourth type of blunt arrowhead is simply a splinter of bone 1.1 cm. long inserted into the end of an arrow shaft. The last type is an empty rifle cartridge fitted onto the end of an arrow shaft.

Bow fragments in the collection are relatively scarce. Each is made from spruce and has a nock similar to the illustrated example (Pl. 2, 7). One of the three has a distinctive groove down each side, probably made to contain a sinew for strengthening. A wooden **sinew twister** was purchased from the boy who recovered it from the midden. It is similar in form to those usually found in the western Eskimo area.

Nock ends of arrows occur quite frequently in the midden. Two still retain bits of the lashing used to prevent the nock from splitting and to hold the feathering; one arrow has lashing 12 cm. from the end, and another has three split black features 12 cm. long, with the proximal binding of willow inner bark (?) still remaining intact (Pl. 2, 6).

The illustrated **bird spear center prong**, made from antler, has a wedge-shaped tang without a well-defined shoulder. Bilaterally barbed, the point has two barbs on one side and one on the opposite side (Pl. 2, 8). The distal end of another weapon point is made from ivory; it appears to be too heavy for an arrowhead but is of the same general shape as the bird spear center prong illustrated by Nelson (1899, Pl. LIX, 10) from the Bering Sea region.

Comparisons

Land hunting equipment at the site is relatively scarce, and of the forms present most are either so widespread in distribution or so nondescript that comparison has little value. For this reason, the bow fragments, blunt arrows, and the one complete bird spear center prong will not be considered here. The sinew twister and the sinew-backed bow merit consideration since they, as well as wrist guards and armor plate, were introduced to St. Lawrence Island during Punuk times (Collins, 1937, pp. 223-225).

The uniformity in arrowhead tangs is noteworthy; all have square shoulders and plain conical tangs. The recent arrowheads from northern Alaska usually have sharp or sloping shoulders, two to four knobs, and/or a raised ring or bulge around the conical tang; some have the Hooper Bay Village type tang. The three arrowheads recovered by de Laguna (1947, Pl. XXVI, 1, 4, 9) from two different sites on the lower Yukon River have tangs like those from the site under consideration. The Hooper Bay Village type arrowhead tang is more similar to the pre-contact arrow tangs at St. Michael than to the knobbed tangs common from late northern Alaskan sites.²

FISHING

The eight barbless complete fish spear center prongs for the **three pronged fish spear** are round in cross section and are usually long and thin. They have either a wedge shaped tang without a definite shoulder or a plain conical tang with a well defined shoulder (Pl. 2, 9, 10). Seven are made of antler and one of bone.

The group of **leister prongs** may possibly be bird spear side prongs and vice versa (see Nelson, 1899 Figs. 42, 44, and Pl. LIX). The side prongs usually have about six small barbs, but there are two examples without barbs and one with twenty-seven barbs (Pl. 2, 11-13). The twenty complete side prongs and seven fragments are of antler. The smaller side prongs may have been used for fish arrows.

The four **ice scoop rim** sections are thin rectangular strips of antler which curve slightly and have evenly spaced holes near one edge. On the convex surface is a shallow groove running from hole to hole (Pl. 2, 14).

Two thin **spruce root** strips wrapped with willow root and retaining at right angles other small spruce strips appear to be from **conical fish traps**. The fragments are quite light and are possibly from a small trap such as might be used for blackfish (Pl. 2, 15).

The two wooden **fish killing clubs** are 48.5 and 40 cm. long respectively. The former is round, 3.5 cm. in diameter, with the end shaped in from all sides to form a sharp tip. This club has a handle 14.2 cm. from the butt end. The second is ovate in cross section, 3.5 cm. wide at its greatest diameter, and has a curved up knife-like point. The proximal end tapers slightly and has a groove, probably to support a suspension thong, on one side.

²A group of eighteen arrowheads in the University of Alaska collections from St. Michael (Acc. 300 and Acc. 505) deserve mention since they are from the region being discussed. In this group twelve have sharp shouldered plain conical tangs; one has a sharp shouldered conical tang with scoring on the tang; two have wedge-shaped tangs, one of which is scored and the second, lacking scoring, has side hooks similar to Pl. 2, 5. One arrowhead has a socketed butt into which the arrow shaft is fitted; another is sharp shouldered and has a raised bulge around the tang half-way from the tip; the last type, also represented by a single specimen, has a sloping shoulder terminating in a plain conical tang.

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Net floats are of two varieties. The first includes three bark and seven wood floats that are roughly rectangular in outline; in cross section they are up to 3 cm. thick in the center, tapering to either end where there are vertical holes for attachment to the net. Most of the above are somewhat carelessly made. The second type float is usually light, well made, and has an upward curve at each end (Pl. 2, 16). Three of the twelve are of bark, and the remainder are wooden.

Ten net sinkers are heavy, irregular in shape, and usually poorly made; sixteen others are small, light, and well made (Pl. 2, 17). Twenty sinkers are made from rib; five are made of antler, and one is of mammoth ivory.

All three wooden **mesh gauges** recovered are complete; two are for small nets since the gauging distance on each is approximately 6 cm., while the third has a gauging distance of 13.5 cm. It is likely that the former were used for blackfish or herring nets and the latter for seal or perhaps white whale nets.

The one probable **netting needle** (Pl. 2, 19) is antler and similar to those described by Nelson (1899, Pl. LXXIII, 1-7, p. 192). This same type implement has also been described as a snowshoe needle, and it appears impossible to differentiate between the two. This specimen has been considered to be a net mending needle on the premise that the snowshoes used at the site were of the type found along much of coastal Alaska today, a type that is short and has relatively few webbing thongs, making a snowshoe needle unnecessary; on the other hand, there is evidence of netting in all levels, suggesting that a net mending needle could have been used.

Comparisons

Fishing appears to have been quite as important to the Hooper Bay Village Eskimos as it was to most coastal groups, particularly those living south of Bering Straits where there are great salmon runs. There is evidence at the Hooper Bay Village site to indicate the use of the three-pronged fish spear, leister-pronged spear, probable use of fish arrows, fish traps, nets, as well as indirect evidence of the hook and line.

The eight barbless and bladeless points were probably used as center prongs for the three-pronged fish spear. Although none of the side prongs were recovered, this type implement was used in the region during the period of historic contact. Farther north the spear is found from the Okvik stage (Rainey, 1941, Fig. 15, 1-4) chronologically forward, including Point Hope Ipiutak (Larsen and Rainey, 1948, p. 78). At the latter site the three-pronged fish spear was the most important fishing device. In southern Alaska these spears are found at Port Moller (Weyer, 1930, Fig. 25), where they are described as toggles, at Kachemak Bay, (de Laguna, 1934, p. 92-93) and in the Aleutians (Hrdlicka, 1945, Fig. 209), where they are described as "catches."

It is possible that the leister prongs might have been used with a fish spear or as fish arrows; it is also possible that some were employed as bird spear side prongs. In any event these weapon points are similar to the same type side prongs from recent Bering Sea collections (Nelson, 1899, Pls. LIX, 1, LXVII, 2, LXVIII, 1, Fig. 44), and there is a similarity with an illustrated Old Bering Sea side prong (Collins, 1937, Pl. 33, 18) from St. Lawrence Island. The same general type, but with a lashing hole near the base, is found at the Punuk Island Okvik site (Rainey, 1941, Fig. 13, 12-13); in Recent Prehistoric (Geist and Rainey, 1936, Pl. 42, 3-4) on St. Lawrence Island; and in modern Bering Sea collections.

Although no identifiable fish hooks were recovered, their presence may be inferred from the number of ice scoop rims which were found, since ice scoops are used to remove freshly forming ice from a fishing

hole after the hole has been chipped open with an ice pick. Baleen ice scoop rims have been found in Old Bering Sea and Punuk sites (Collins, 1937, p. 171, p. 240); the rims appear in the Kotzebue region at approximately 1550 A.D. (Giddings, MS). Examples from the latter region as well as those from Hooper Bay Village are made of antler. The ice scoop rim of bone is considered by Birket-Smith (1929, II, p. 113) to be of comparatively recent introduction from Siberia. The ice pick used for fishing is not distinguishable from most harpoon ice picks which are used widely in the Eskimo area.

The two fragments of conical fish traps from the site can be compared only with those described in ethnographic collections, since archaeological evidence from other sites is absent. This type of fish trap is used along the lower Yukon River and adjacent sea coast by the Eskimos (Nelson, 1899, p. 184). Among the Athabaskan Indian groups in Alaska, of which the lower Yukon Ingalik is one, the conical fish trap is used widely, and it is also reported from the Aleutians (Birket-Smith and de Laguna, 1938, p. 438).

Fish-killing clubs from the lower Yukon River and Sledge Island are described by Nelson (1899, Pl. LXX, 1-2). They are also specifically mentioned in the Eyak Indian literature (Birket-Smith and de Laguna, 1938, p. 435). Birket-Smith and de Laguna (1938, p. 435) determined that clubs for killing game of one sort or another have a wide distribution among the Northwest Coast Indians, and it is possible that although a fish-killing club was used in some areas, it could not be identified specifically as such.

Evidence of the importance of netting is indicated by the number of net floats and sinkers. Since only sinkers are preserved in most sites, the floats will not be cross compared. The most complete netting sequence is from the Kobuk River region (Giddings, MS). Here there are a few stone sinkers at the earliest site, Ahteut, dating approximately 1250 A.D.; at Ekseavik, dating a hundred and fifty years later, there are also relatively few sinkers, as is also the case at Old Kotzebue. Not until Intermediate Kotzebue, which dates approximately 1550 A.D., are many net sinkers found, and it is quite possible that the increase is related to the larger collection of Intermediate Kotzebue artifacts. On the other hand, indications are that the mesh gauge and net shuttle were not introduced into the area until the Intermediate Kotzebue period (Giddings, MS); these introductions might have stimulated netting and resulted in the abundance of net sinkers. Net sinkers first appear on St. Lawrence Island during the Punuk period (Collins, 1940, p. 554), and it is probable that the mesh gauge and shuttle arrived at a somewhat later date from Siberia.

Net mending needles such as the ones described by Nelson (1899, p. 192) from the Bering Sea region are found at Hooper Bay Village and in the Tigara midden at Point Hope (Larsen and Rainey, 1948, Table 3). The same type implement from the Ambler Island and Ekseavik sites on the Kobuk River has been described as a snowshoe needle (Giddings, MS). It is possible that such a use existed in the latter region where there was contact with Indians who used needles for mending snowshoes rather than mending nets.

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TOOLS

The **crooked knife handles** (Pl. 3, 1) are made from slightly curved pieces of antler (5) or bone (1). Four of the six handles have long curved blade slits indicating the use of metal blades; the two other handles have small (1 cm. long and .2 cm. wide; and 1.1 cm. long and .1 cm. wide), straight blade slits, but it is probable that they, too, contained metal blades. Three of the handles have drill bearing holes near the center and on one side. One also has a suspension hole at the proximal end and an engraved line with spurs extending the length of the specimen; half way down the side of this handle are two drilled holes which are quite close together.

One of the two complete **composite knife handles** is of wood; the second is of antler. The former consists of two roughly rectangular pieces of wood flat on the inner side and rounded on the outside. There is an outside groove near each end around which spruce root (?) lashing still remains intact. The end blade slot is rather wide; into it a tanged slate blade was probably fitted (Pl. 3, 2). The antler composite knife handle is ovate in cross section and slightly curving. It has a wooden peg still intact at the proximal end. The blade slot of this knife is so badly disintegrated that it is not possible to determine the type blade used (Pl. 3, 3). A purchased "composite" knife handle of antler is similar to the foregoing except that the halves are not completely separated at the base (Pl. 3, 4). One half of a composite knife handle, recovered in the third layer from the top, still retains a metal end blade. The handle of this knife is made from an imported hard wood, probably oak. A pocket knife with the blade intact was also recovered from the third layer.

A rectangular **beaver tooth draw-knife handle** made from antler has a hole drilled diagonally through two surfaces near the distal end; into this hole is fitted a small piece of wood (Pl. 3, 5). This same type handle, complete with beaver tooth and wooden wedge to hold the tooth in place, has been found at the Nukleet site on Cape Denbigh (Univ. of Alaska collections). The Hooper Bay Village specimen has a suspension hole at the proximal end and a drill bearing socket half way down one side of the handle. Two other beaver tooth knife handles are end hafted; both are of wood and similar to each other but different from the above. They have a curved oblong hand grip and, at the tip, a groove into which the tooth was fitted (Pl. 3, 6).

Five **ulu handles** were recovered from quite near the top of the deposit. Two handles, one wooden and the other antler, still retain fragments of metal blades; another wooden handle holds a complete metal blade. The fourth is slightly curved and has a slot near each end for metal arms which were riveted perpendicularly to a metal blade. The fifth handle, similar to the first three, is made of wood but lacks any trace of the blade.

The ground **slate ulu blades** fall into two types. The first, represented by four examples, has a curved cutting edge which joins the straight top used for hafting (Pl. 3, 7). The second type has a straight cutting edge and sides at right angles to the blade or sloping inward slightly toward it; the top of this form is also straight (Pl. 3, 8). The illustrated example of the second type is the only one with a notch at the side of the blade.

The one wooden **engraving tool handle** has a split base and small lashing groove (Pl. 3, 9). The bit of this tool was probably either a small animal tooth or an iron blade.

Two of the **adze handles**, one of antler and one wooden, have a single large hole near the blade end through which lashing was passed to the adze head or blade. The antler handle has a suspension hole at the end opposite the blade and a drill bearing hole half way up one side. A third handle is of antler and appears to be beach worn. It has a single hole near the top and also a heel at the back, both of which were to be used to lash the head or blade into position.

The **adze blades** are either small, flat, and intended to fit into an adze head (no adze heads were recovered) or large, heavy, and made to be lashed directly upon the adze handle. The former type blade (Pl. 3, 10) is almost indistinguishable from a type of hafted skin scraper (Pl. 4, 1) which has the same shape and is

often made from the same type of material. The thin slate blades (averaging 4.4 by 3.8 by .7 cm.) have been classed as adze blades, whereas the same shaped blades made from softer materials are considered as skin scrapers. Although some of the adze blades may be skin scrapers, it is unlikely that any of the blades made from softer materials are anything other than scraper blades. One of the two pieces of jade recovered is made into an adze blade (Pl. 3, 11). The one heavy slate adze blade that was lashed directly upon the adze handle is 7 by 5.5 by 2.5 cm. and has a beveled cutting surface slanting back .7 cm. on one side but relatively square on the other side (Pl. 3, 12).

Three different types of stone skin scrapers were recovered. The first type, an **end hafted stone scraper**, is represented by four blades and one specimen complete with handle (Pl. 4, 1). This type has a small blade similar to the small adze blades. Had one blade not been lashed to a short straight handle, all would have been classified as socketed adze blades. The only certain distinction between the small adze blades and scraper blades is that the former would not be made of soft material; the latter, however, might be made of either hard or soft stone. The second type scraper blade is flat, rectangular, relatively thin (Pl. 4, 2), and longer and narrower than ulu blades. This type blade was probably used in a **stone bladed two handed scraper** with a long, straight or slightly curved handle; the blade would be set longitudinally in the middle of the handle. The third type of scraper is made from a flat, usually ovate, thin section of stone which had been struck from the side of a large boulder (Pl. 4, 3). This type of tool has been described by de Laguna (1934, pp. 60-1 as a **boulder chip** and by Rainey (1939, p. 360) as a "tci-tho".

Ten of the twelve **bone scrapers** are made from a caribou scapula; each has a longitudinal blade. Although most scrapers of this type are fragmentary, one complete specimen was purchased from the boy who found it in the midden (Pl. 4, 4). Another bone scraper is made from a caribou leg bone and has a longitudinal cutting edge (Pl. 4, 5); this specimen is small but distinctive in shape. The other scraper is a small sharp-edged piece of whale jawbone (?), too incomplete to indicate the original shape (Pl. 4, 6).

Both **antler bark peeling tools** are incomplete. Each is tapered to a flat point at the end but broken off a short distance above the tip (Pl. 4, 7).

Awls made from bird humeri were described by Hooper Bay Village informants as being used to split grass for baskets or mats. The three bone and one antler awls are heavy in cross section and may be considered as marlin spikes. One antler handled awl from the upper foot of the midden still retains a long nail-like iron point. The wooden handled awl has a small seal tooth bit (Pl. 4, 9). When this artifact was found the sharp edge of the tooth was turned into the handle, apparently to prevent its being dulled when not in use.

The **four fire drill shafts** are each round in cross section and vary in length from 16 to 26 cm. Each is blunted at the end which came in contact with the drill board and is rounded at the opposite end which fits into the drill bearing. The two **fire drill boards** are incomplete but appear to have been made from irregularly shaped pieces of spruce. Both had also been used as cutting boards. The **limestone drill bearing inset** is ovate in cross section, has a deep well-worn hole in one surface, and a flattened opposite surface.

The complete illustrated **shovel blade** (Fig. 2) is the only one of its type which has been reported. The other wooden shovel fragment is a small section of the blade tip. The antler blade and its short handle are made from the flat tine over the caribou's forehead.

The bone, antler, and wooden **wedges** are numerous from nearly all levels of the site. They vary in length from 9 to 26 cm. and average approximately 12 cm. The wedges are not distinctive but constitute an important wood working implement.

The scarcity of **worked slate** at Hooper Bay Village would seem to be explained by the fact that the slate deposits are located inland where tools were roughly manufactured and then transported to the Village. The few fragments that were recovered show signs of flaking as well as sawing. The one jade fragment had also been sawed. One **stone saw** fragment, made from sandstone, was recovered (Pl. 4, 13).

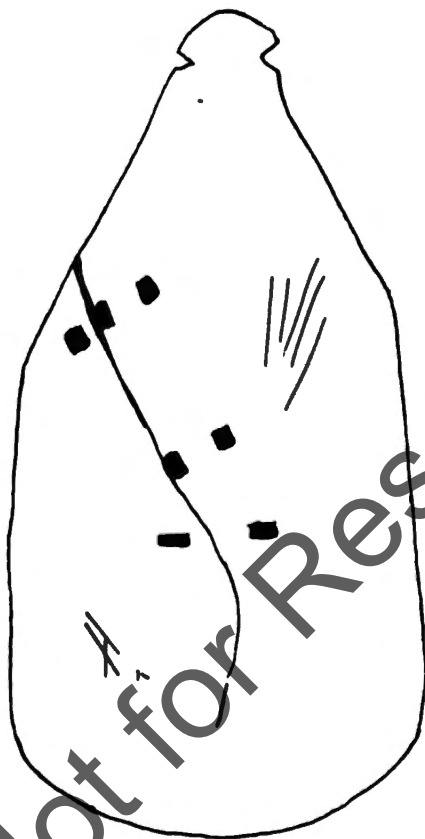


Figure 2

The rectangular whetstones vary in length from 3 to 9.2 cm. and in thickness from .9 to 2.3 cm. Sixteen of these whetstones were used on all four surfaces, and three were used on three surfaces (Pl. 4, 10-11).

All of the hammerstones are irregularly shaped except one which has been hafted. The latter is a roughly triangular shaped stone that has been pecked on all four corners about a third of the distance from the butt end. It has been lashed to a handle on the one flat surface, and the working ends show considerable wear (Pl. 4, 12).

Comparisons

Most prominent among the tools at Hooper Bay Village are the different forms of men's knife handles. The type occurring most frequently is the crooked knife handle. This is recognized by Collins (1937, p. 333) as a further development of the side bladed Old Bering Sea knife. The latter has a stone blade at one side near the tip of a wooden handle. The typical crooked knife does not appear on St. Lawrence Island until the Punuk period (Collins, 1937, Pl. 78, 1-3);

from this time forward it is found in northern and western Alaska from Barter Island to the Bristol Bay region (Mathiassen, 1930, Pl. 5, 10; Murdoch, 1892, Fig. 118; Nelson, 1899, Pl. XXXVIII; Larsen, 1950, Fig. 55, 5); at Hooper Bay Village it is still frequently used today.

The complete flat wooden composite knife handle probably held a double edged slate blade similar to the one illustrated by Murdoch (1892, Fig. 99, b) for the same type of handle. The more typical form of composite knife handle is made of antler or ivory and is slotted at the end to hold a relatively small end blade. The majority of the Punuk Island Okvik knife handles are of this form (Rainey, 1941, Fig. 18, 1-4), which continues to be important in the Old Bering Sea and more recent stages on St. Lawrence Island (Collins, 1937, p. 231; Geist and Rainey, 1936, Pl. 23, 6) as well as on the Alaska mainland down to historic times (Nelson, 1899, Pl. XXXVI, 8). The variation of this type in which the base is not completely split to form two halves, is much less common than the preceding style (Rainey, 1941, Fig. 18, 5-7).

The beaver tooth knife appears to have been distributed widely among Athabaskan tribes (Birket-Smith and de Laguna, 1938, pp. 408-409) and has been found among some Alaskan Eskimos. The end-hafted beaver tooth knife handle is described and illustrated by Osgood (1940, p. 85) from the Ingalik Indians and by Nelson (1899, Pl. XXXVIII, 21, 23) from the Eskimos in the Kuskokwim-Yukon delta country. Nelson (1899, Fig. 25, 3, p. 89) also illustrates from Port Clarence a hafted beaver tooth which is described as a sharpener for iron and steel knives; however, the specimen gives the appearance of being an ordinary end-hafted beaver tooth knife. Archaeological examples of this same type tool are from the Kobuk River Eskimo sites, the Kotzebue site (Giddings, MS), and Nukleet on Cape Denbigh (Univ. of Alaska collections), as well as Hooper Bay Village. The beaver tooth draw-knife handle is described and illustrated by Osgood (1940, p. 87-88); it is also found at the Nukleet site on Cape Denbigh (Univ. of Alaska collections) and at Hooper Bay Village but is absent in the recent Bering Sea collections and from the Kobuk River sites.

The ulu handles are not distinguishable from those in most Eskimo collections, but the ulu blades are noteworthy. The typical ulu blade has a distinctly curved cutting edge. This type is found widely in Eskimo sites from Kachemak Bay to Point Barrow and east into Canada. Ulu blades with a straight cutting edge are found over most of the Eskimo area but occur more frequently in the southern Alaskan Eskimo region. They appear most often at Kachemak Bay among the Pacific Eskimo (de Laguna, 1934, Pl. 33, 10-11), in some Aleut sites (Jochelson, 1927, Pl. 16) and at Hooper Bay Village.

Engraving tool handles are found in all known cultural stages on St. Lawrence Island (Rainey, 1941, Fig. 35, 10; Collins, 1937, p. 173, p. 180, p. 237), at Point Hope Ipiutak (Larsen and Rainey, 1948, pp. 82-83), and at Ekseavik on the Kobuk River (Giddings, MS), but they are not listed by Nelson (1899).

Distribution of the heavy adze blade lashed directly upon the adze handle is almost universal among the Eskimos. For a discussion of adze blades see de Laguna (1947, pp. 154-162).

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The end-hafted skin scraper with a small ground slate blade is recorded among the Bering Sea Eskimo (Nelson, 1899, Pl. XLIX) and Ingalik Indians (Osgood, 1940, pp. 79-81; de Laguna, 1947, Pl. XIV, 48, pp. 186-187). These, however, all have crooked handles; the Hooper Bay Village specimen has a short straight handle. It is often difficult to determine whether a small blade such as would fit into a socketed adze head was actually used as an adze blade or as a skin scraper. This problem is also recognized by de Laguna (1947, p. 186), who mentions that some of the blades she considered as parts of planing adzes might have been for scrapers. It is equally possible that the adze-like scrapers from Old Bering Sea (Collins, 1937, p. 232, Pl. 42, 12-14) and Punuk Island Okvik (Rainey, 1941, Fig. 33, 3) are the same type skin working tool as the Hooper Bay Village specimens. This type scraper appears to have been absent on the Kobuk River where the discoidal shaped scraper apparently was used in its place (Giddings, MS).

It is likely that the larger flat rectanguloid stone blades (Pl. 4, 2) were hafted in the center of a two handed scraping tool. Such tools, with either a stone or iron blade, have been described from the Chukchee (Bogoras, 1904-9, Figs. 144-146). It is also possible that this is the same type blade found on the Kobuk River and described as a stone "axe" (Giddings, MS). It is significant that Type 1 of the Ipiutak discoidals made from flint (Larsen and Rainey, 1948, Pl. 15, 1-8) is similar in shape to the rectanguloid slate scraper blades from Hooper Bay Village. Hafted scrapers which possibly could be of the two handed scraper type also appear in Kachemak Bay III (de Laguna, 1934, pp. 76-77, Pl. 34, 9).

Boulder chip scrapers such as were found at Hooper Bay Village are usually ovate in outline, but they may assume the irregular shape of the stone from which they are struck. This type implement is characteristic of Kachemak Bay sites during all periods (de Laguna, 1934, pp. 60-61), is a typical tool type from some interior Alaskan sites (Rainey, 1939, pp. 358-405), and has been used by historic Indians (Rainey, 1939, p. 360; Osgood, 1936, p. 67) in the interior. Eskimos living inland on the Kobuk River apparently did not use the boulder chips extensively; rather, they replaced them with discoidal shaped scrapers which are "finished by grinding or by flaking on both sides" (Giddings, MS) and are very similar in shape to the Type 4 discoidal from the Point Hope Ipiutak site (Larsen and Rainey, 1948, Fig. 23, d).

Caribou scapula scrapers with a longitudinal blade are characteristic of Kachemak Bay III (de Laguna, 1934, p. 98); they are also present in the Yukon Indian sites (de Laguna, 1947, Pl. XV, 24-26) and are in all periods (1250 A.D.+) on the Kobuk River. This type scraper is considered by Giddings (MS) to be a fish scaler. Leg bone scrapers with a longitudinal edge are found in the Birnirk site at Point Barrow (Mason, 1930, P. III, 6) and in all periods on the Kobuk River (Giddings, MS). They are also found along the Yukon River during both prehistoric and historic periods (de Laguna, 1947, Pl. XV, 27). Bone scrapers made from dog leg bones were found by Collins (1937, Pl. 30, 12-14) in the Old Bering Sea culture.

Scrapers with a transverse working edge, a type described as a bark

peeling tool, are found archaeologically on the Kobuk River (Giddings, MS) and on the Yukon River (de Laguna, 1947, p. 169); bark peelers in general have a wide distribution (de Laguna, 1947, p. 169).

Bone awls are found almost everywhere in one form or another; therefore, comparisons are not very useful. At Hooper Bay Village there is a dominance of birdbone awls, but there are also a few of caribou bone or antler plus a hafted seal tooth that must have been used as an awl or reaming tool.

All the drill shafts in the collection are for a fire drill, although there are many artifacts with uniformly drilled holes indicating the use of a stone-tipped drill shaft. There are no bow drill handles that can be identified positively as such, but some of the handles or toy bow fragments may actually be for bow drills. The one drill shaft bearing recovered is made to be set into a drill mouthpiece. The center of distribution for this type, according to de Laguna (1947, p. 171), is in the Norton Sound region. One probable reason no more drill bearings were recovered is that knife handles often acted as drill bearings, and in one case the same is true of an adze handle.

Wood, bone, or antler wedges are common at the site as they are throughout most of western North America (Birket-Smith, 1929, II, Tables A, 90, B, 59).

One of the two pieces of jade in the collection is an adze blade. Although Hooper Bay is approximately four hundred and fifty miles from the only known Alaskan source of jade, on the Kobuk River, it is not surprising to find the stone used so far from its source. Jade, because of its suitability for cutting blades, was traded over wide areas in prehistoric times. Thus we find it as far east as the Mackenzie region (Mathiassen, 1930, p. 13) and south to the southern Bering Sea region.

The stone saw appears to have been a relatively recent innovation in the Kobuk River sites since it did not appear until about 1500 A.D. (Giddings, MS); at Kachemak Bay it arrived during the IIIrd period. Stone saws were apparently used in the Aleutian Islands, among the Pacific Eskimo and further south in Salish sites (de Laguna, 1947, p. 167).

Whetstones are another universal tool; the only interesting feature of the Hooper Bay Village examples is that many are small, rectangular in shape, and used on four surfaces. The only distinctive hammerstone is the trianguloid specimen pecked for hafting.

HOUSEHOLD

Six **birdbone tubes** were recovered, but of these only one may be assumed to be a needlecase. This particular tube is fitted at one end with a wooden plug representing an animal head (Pl. 5, 1) and is almost identical with the birdbone needlecases illustrated by Nelson (1899, Pl. XLIV, 33-36). One other birdbone tube is decorated and considerably longer than most of the known needlecases. This has been described, with reservations, under the heading of snuff tube, as illustrated by Nelson (1899, Pl. XC). The three other complete birdbone tubes and one fragment are plain and could have been used as drinking tubes, needlecases, or snuff tubes.

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The **antler cord shuttle** closely resembles the average net shuttle although it is smaller and narrower than most. This example is complete except for a broken prong at one end (Pl. 5, 2).

Four of the miscellaneous **handles** are wooden, two are bone, and one is antler. Each is rounded to ovate in cross section, and six of the seven have lashing grooves around each end (Pl. 5, 3). The seventh handle has end notches for hafting. Such handles were probably used on buckets.

There are six **spoons**, five wooden and one antler, that have bowls which tend to be round and deep (Pl. 5, 4); the handle may be either straight or curving. Another type of spoon, of which there are six antler and two wooden examples, has a shallow, oblong bowl and relatively straight handle (Pl. 5, 5). The last type is represented by two antler examples that have rectangular bowls and off-set handles at one corner (Pl. 5, 6).

The small **fish-shaped box** (Pl. 5, 7) is a good example of the woodworking abilities of the Hooper Bay Village Eskimo. The box is partially hollowed out in the center to act as a container; the lid fits snugly into the top of the opening. Along the sides are small cross lines to represent scales of a fish and the gills are represented by a heavy curving line on the head.

The **cutting boards** are either well-made rectangular sections of spruce or irregularly shaped pieces that have served temporarily as cutting boards. One large, much-used cutting board which differs from the above is rectangularoid and has a suspension hole at one end, with a crow's foot design radiating from the opening. Around the edge on both surfaces of this board is a line; in addition there is a groove on the edge surrounding the body of the board. This specimen has traces of red paint on the sides.

The twenty complete or nearly complete wooden **vessel bottoms** are all ovate in outline and range in their greatest diameter from 10 to 55 cm. with the average being approximately 20 cm. Although few of the vessel bottoms are completely flat, the majority have a flat section near the center of the bottom and flare upward slightly a few centimeters from the sides. Some of these vessel bottoms may have been shallow bowls, but judging from the sharp edges on many of the vessel sides it is more likely that they had high wooden sides with a groove to receive the sharp edges of the bottom. A few bottoms have flat sides and still retain pegs, indicating a method other than grooving by which sides were attached. The one clear-cut example of a **bowl** is oval, approximately 31 cm. long, and has an incised line around the edge of the lip. At one end there is a small rectangular projection which is for decoration only.

There are eighteen **decorated vessel bottoms**, from nearly all levels, that have designs on the under surface. Eight are too incomplete to determine their original design elements; the remaining ten vessel bottoms have one of four motifs. The most common design, at the center of the bottom of four specimens, is an X with or without a small rectangular or oval depression where the two lines cross. There are three bottoms with the crow's foot motif (Fig. 1, A); three others have two pair of curved parallel lines with short lines running from the concave side (Fig. 1, B). One half of a vessel bottom has two sweeping curved lines, with a single spur from each (Fig. 1, C). In this group also should be mentioned one bottom that has the X design on the inside and center of the bottom.

The wooden **vessel sides** vary in height from 1.4 cm., which is hardly more than a rim, to approximately 16.3 cm. The majority of the side pieces are fragmentary, but the average height for the sides is approximately 6 cm. These vessel sides were made from a single large flat piece of wood which was bent to fit the bottom and then fastened with either pegs or root lashings.

One small **cup** is complete with handle, bottom, and lashing. The handle and sides are made from one piece of wood, and at the end of the handle is the carving of a caribou (?) head. Two other fragments were found that are handles for cup-shaped containers; these examples are slightly larger than the preceding.

The one **birch bark basket** fragment is a section of the container edge. Around the edge is a band of willow stitching which fastens to the basket a decorative strip of bark (Pl. 5, 8).

Comparisons

As previously mentioned, of the six possible needlecases only one is positively identifiable as such; the other birdbone tubes may have been used as snuff or drinking tubes. The one distinctive needlecase is like those described and illustrated by Nelson from the Kuskokwim-Yukon delta region (1899, p. 103, Pl. XLIV, 33-36). Birdbone needlecases are also specifically recorded from the Aleutians (Dall, 1877, II, p. 82). Needlecases on St. Lawrence Island go back to Okvik (Rainey, 1941, Fig. 23, 1) and Old Bering Sea times (Collins, 1937, Pl. 17, 4-9), but the birdbone needlecase was introduced during the Punuk period (Collins, 1937, p. 194). De Laguna cites examples of birdbone tubes from Kachemak Bay III which may have been used as needlecases, and she refers to similar tubes from Port Moller which also may have been needlecases (de Laguna, 1934, p. 198). Birdbone tubes have also been reported from Point Hope Ipiutak (Larsen and Rainey, 1948, pp. 90-91), Ambler Island on the Kobuk River (Giddings, MS), and from the Yukon River sites (de Laguna, 1947, pp. 220-221).

The cord shuttle is probably a late modification of the net shuttle which has been considered under fishing. The former appears to be a localized trait restricted to the Hooper Bay region.

Spoons with rounded bowls like those from Hooper Bay Village are reported ethnographically from Point Hope (Nelson, 1899, Pl. XXX, 7) and archaeologically from Punuk levels on St. Lawrence Island (Collins, 1937, Pl. 78, 16). Spoons with oblong bowls, either squared or rounded at the end, are more common and are the only type reported from the Kobuk River sites (Giddings, MS); these are also illustrated by Jochelson (1925, Pl. 26, 19) from the Aleutian Islands. Similar spoons are present in the Bering Sea ethnographic collections (Nelson, 1899, Pl. XXX, 3) and in finds from Kachemak Bay and Port Moller (de Laguna, 1934, p. 201). Spoons with a rectangular bowl and an offset handle appear to be restricted to the Hooper Bay collection (Nelson, 1899, Pl. XXX, 8) and the late Aleutian finds (Jochelson, 1925, Pl. 26, 18).

The small fish-shaped box is similar to those illustrated by Nelson (1899) on Plate LXII. These boxes are described by him as being used to hold arrowpoints. This type container, usually made into the shape of some mammal or fish, seems to be limited to the Bering Sea locality during the period just prior to historic contact.

One goose leg bone, much too long for a needlecase or snuff tube, was probably used as a drinking tube. Birdbone tubes have been discussed previously.

Tent pegs are all of the type used on canvas wall tents and represent an introduction during recent times. The one tent peg found in the sixth level (30 inches) was probably intrusive into this depth.

The wooden vessels are of two types. The first is a shallow, low-sided oval bowl made from a single piece of wood. The second type container is composite, with the bottom usually made from one piece of wood and the sides from another. The former type is found in the Bering Sea region (Nelson, 1899, Pl. XXXI, 5) and among the adjacent

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Indian groups (Osgood, 1940, pp. 119-120; de Laguna, 1947, Pl. XXII, 7). Containers having flat or nearly flat bottoms with sides fitted snugly against them are found in most periods of western Eskimo development (Rainey, 1941, Fig. 34, 1-2; Collins, 1937, p. 350; Giddings, MS; Larsen and Rainey, 1948, p. 111; Nelson, 1899, Pl. XXXI, 6, Pl. XXXII, all except number 7).

Decorated vessel bottoms are both plentiful and unique; although Nelson did not describe any of the containers in his collection as having decorated bottoms, he made a reference to the fact that lower Yukon Indians mark containers. Nelson (1899, p. 70) stated that "They fashion from spruce large numbers of wooden dishes, buckets, trays, and ladles, which they ornament with red and black paint, and the maker usually places his totem mark on each utensil. They make trips down the river for the purpose of selling their products to the Eskimo . . ."

Drinking cups from Hooper Bay Village are similar to those described by Osgood (1940, p. 128) for the Ingalik. Nelson (1899, Pl. XXIX, 7-8) illustrates dippers made in the same manner, but none seem as small as the Hooper Bay Village and Ingalik specimens.

The grass matting (Pl. 8, B) from Hooper Bay Village appears similar to that found by de Laguna (1947, Pl. XIX) in the lower Yukon sites and in the Prince William Sound region (de Laguna, 1947, p. 217). Nelson (1899, Pl. LXXIV, 15) also illustrates grass matting similar to the examples under consideration. Today at Hooper Bay Village mats are used primarily for kayak seats.

TRANSPORTATION

Artifacts functionally related to travel are plentiful. Those associated with the kayak or kayak sled constitute the largest assemblage in this group. Most types of **kayak** parts are represented, each type being similar to that used today at Hooper Bay Village. The parts not found were sections of the ring around the man hole and stringers from along the bottom of the vessel. The side supports for the man hole ring are of two varieties. The first, represented by two specimens, averages 4.5 cm. wide, 1.5 cm. thick, and 14 cm. long with offset bottoms to permit mortising into the main side stringers. The tops of the pieces have an L-shaped angle cut so that they fit snugly against the man hole ring; there is also a square hole near the top and center of each piece to permit lashing to the ring. The second variety of support, also represented by two pieces, averages 12.5 cm. wide, 1 cm. thick, and 17 cm. long. The bottom of one of these side supports is missing, but the other is shaped like a broad wedge in order to fit into the stringer. Whereas the former type has an L-shaped cut along the top for lashing, the latter has only a flat surface. The second type has two lashing holes near each side at the top for attachment to the ring and a narrow semilunar groove cut on the inner surface approximately a fourth of the way from the top. One piece of the second variety has a 1.5 cm. square hole in the middle of the semilunar groove.

The **bow and stern shoes** are used at each end of the boat so that the cover will not be worn through when the kayak is drawn up on the beach. These keel shoes average 1.6 cm. wide and have holes at irregular intervals for insertion of the pegs which attach the shoes to the kayak (Pl. 5, 9). Five of the keel shoes are bone and three are antler. This same type of shoe is used on kayaks at Hooper Bay Village today.

All of the **kayak seat boards** in the archaeological collection are fragmentary, but they appear to be the same as the modern Hooper Bay Village type. These boards are approximately 80 cm. long, 5.5 cm. wide, and .8 cm. thick. About six

of these boards are placed side by side; each is stitched to the adjoining piece at the side and near the end. The completed group of kayak seat boards is placed lengthwise in the bottom of the kayak so that it forms a cradle-like seat fitting the rounded contour of the inside of the kayak. A grass mat similar to the fragment illustrated in Pl. 8, B is usually placed over the boards.

All **kayak sled uprights** are similar in size and shape to the illustrated example (Pl. 5, 10). These uprights extend from the runner to the cross pieces which hold the two runners together. On either side of the sled and above the cross pieces is a longitudinal wooden strip extending from the front to the back of the sled. Each cross piece is lashed to the longitudinal strip by a thong that passes through the hole in the sled upright and over the strip. The uprights are wedged into the runners and are spaced at approximately two foot intervals. The **kayak sled cross pieces** have an average width of 4 cm. and a thickness of 1.4 cm. Each cross piece has a pair of notches on either side near the end; these are used to bed the lashing throngs. Three of the four cross pieces have a gouged line down one side for decoration.

Umiak sled uprights are the same shape as those described for the kayak sled except that they are considerably larger. The average length of the kayak sled uprights is 8.1 cm., whereas the length of the one complete umiak sled upright is 13.5 cm.

Sections of two types of paddle blades were recovered, those from a **single bladed paddle** and one from a **double bladed paddle**. Of the former there are seven crutch handle pieces and two blade sections. Both blade sections have pointed tips and a central rib which shows on both sides. The double bladed paddle section has a heavy central rib down one side; the opposite surface is slightly concave and does not have a rib.

The four antler kayak **meat hooks** are similar in shape to the illustrated example (Pl. 5, 11). These hooks, according to an informant at Mountain Village, are used in the kayak for pushing meat to the front or back of the vessel when loading and for hooking onto the meat and drawing it out when unloading. The Eskimo word for the implement in this region means to push or pull.

The three wooden and three antler **kayak harpoon rests** are all similar to the illustrated example (Pl. 5, 12).

The sixteen antler and thirty-six whalebone **sled shoes** range in width from 1.5 cm. to 3 cm. and are as much as .7 cm. thick. There are irregularly spaced staggered holes in the shoes through which they were pegged to the sled runner (Pl. 5, 13).

The incomplete **breast yoke** is a curved strip of wood which is made to fit across the chest and aid in packing heavy loads. The one complete side has an end notch for lashing the supporting lines, but there is no way of telling whether the opposite side had a hole such as is present in the breast yoke illustrated by Nelson (1899, Pl. LXXVI, 14). The complete half of the breast yoke from Hooper Bay Village is 26 cm. long, 1.2 cm. thick, and up to 4.8 cm. wide. The under side is flat but the top curves slightly.

Comparisons

The kayak parts recovered from the Hooper Bay Village midden were identified by people living there as being from the same type of kayak as that used at the Village today. This type of kayak, with an inverted V-shaped deck and a large mooring hole at the bow, is illustrated from Nunivak Island by Nelson (1899, Pl. LXXIX, 1-2). Nelson (1899, p. 220) states that "At Kashunuk, Askinuk (Hooper Bay Village), as well as along the southern border of the Yukon mouth, the Nunivak Island style of kaiak is in use. . . ." The kayak seat boards used beneath the kayak mat were not mentioned by Nelson.

A kayak sled from St. Michael (Nelson, 1899, Fig. 61) differs

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slightly from the Hooper Bay Village examples. The primary difference is that the Hooper Bay kayak sleds, since they are lower, do not have small rectangular upright wood stanchions; instead, they have short stanchions with wedge shaped bottoms and round tops with a hole through one diameter. This form of sled, both the Hooper Bay Village and St. Michael models, differs from many of the simple sleds used in western Alaska for hauling boats and heavy loads. The St. Lawrence Island type has short cross pieces lashed at right angles to a pair of walrus tusks (Nelson, 1899, Pl. LXXVI, 1). A similar type of sled is found at Point Hope (Univ. of Alaska collections) and at Point Barrow (Murdoch, 1892, p. 355).

The umiak sleds in use today at Hooper Bay Village are similar to those used for kayaks except that they are much longer and somewhat wider. One such sled is approximately twelve feet long. It will be recalled that large uprights were found at the site and that these were similar to the kayak sled uprights except in size. It is noteworthy that the sled from Nunivak Island illustrated by Curtis (1927, vol. 20, p. 58) has the same kayak or umiak sled uprights as those at Hooper Bay Village even though the sled has been modified to resemble the modern built-up sled.

The double bladed paddle is used by nearly all Eskimo groups, but the single bladed paddle exists only among the western Eskimo and adjacent Indians (Birket-Smith, 1929, II, Table A, 51).

The meat hook has been included under transportation since at Hooper Bay Village it is used in the kayak to push game in front of or behind the man hole and then to retrieve it again. Meat hooks are present in all the stages of culture in the northern Bering Sea region (Rainey, 1941, Fig. 17, 1-8; Nelson, 1899, Pl. LXXX, 4-5).

The wooden breast yoke from Hooper Bay Village is narrower than the one illustrated by Nelson (1899, Pl. LXXVI, 14) from Nunivak Island but is similar to a breast yoke in the University of Alaska collections from the Ingalik Indians living today at Lake Minchumina. Osgood (1940, p. 343) mentions a rawhide breast strap for heavy packing, but wooden breast yokes are not mentioned.

The two snowshoe cross pieces (Pl. 5, 14) do not tell anything about the shape of the Hooper Bay Village snowshoes since the same type of cross piece is used for both the highly specialized Athabaskan snowshoe and the simple Eskimo examples. Today the people at Hooper Bay Village use the short shoe, a type similar to that illustrated by Nelson (1899, Fig. 64) from Cape Darby, for packed snow.

PERSONAL ADORNMENT

Each labret is illustrated since no two are identical in form. The antler example (Pl. 6, 1) is ovate in cross section and 2 cm. wide at its greatest distance across. One ivory labret (Pl. 6, 2) is also oblong but has a uniform width of 1.1 cm. The limestone specimen is ovate and has a hole in the center, probably for the suspension of beads (Pl. 6, 3); badly weathered, this piece has a thickness of only 6 mm. The small, flat aragonite labret is 4 mm. thick (Pl. 6, 4) and was described by informants as being the type used for a small boy who was just beginning to wear labrets. The second ivory labret is sickle-shaped with two small bead suspension holes drilled on the side (Pl. 6, 5).

The three earrings are all made from ivory but each takes a different form. The elaborate earring with compass-drawn circles (Pl. 6, 6) still retains a small inset, also of ivory, at the bottom and in one corner. The ring was probably attached to the ear with a hook at the back and top; part of this hook still remains. The earring with a human face on the front (Pl. 6, 7) has a complete suspension hook at the bottom of the back. It appears as though the head was to be upside down when the earring was worn. There is a small hole at the back for the suspension of beads. The plain lined earring has, at the back, a small suspension hole at the narrower end but the hook at the opposite end is missing (Pl. 6, 8).

Only four beads were recovered; three of these are small blue-glass trade beads (Pl. 6, 9) and the fourth is a cylindrical limestone bead (Pl. 6, 10).

The iron bracelet found in the upper foot of the deposit is a narrow circular band that overlaps at each end.

The one hunting visor is made from spruce root and is semi-lunar in shape; at each end is a lashing hole, and on the top and in the center is a small hole probably intended for some decorative inset.

That the spruce root hat was used is indicated by the finding of flat, oblong pieces of antler with regularly spaced drilled holes. These were identified by Hooper Village informants as having been used to bind together the back of a spruce root hat.

Comparisons

The oldest labrets thus far recovered in Alaska are from the Aleutians (Laughlin and Marsh, 1951, p. 82), Kachemak Bay (de Laguna, 1934, pp. 109-112), and probably Port Moller (Weyer, 1930, p. 265). In northern Alaska labrets are absent during the entire cultural sequence on St. Lawrence Island and are relatively rare at Ipiutak, but Larsen and Rainey (1948, p. 114) suspect that they were used more frequently than the number of finds would suggest. On the Kobuk River labrets are absent at the Ahteut site; there is one "novice's labret" from Ekseavik plus another lateral labret that is suspected of being intrusive (Giddings, MS). At Kotzebue there is adequate evidence of labrets in houses dating slightly later than Ekseavik (verbal communication with J. Van Stone), and in more recent collections from coastal Alaska labrets are quite common. De Laguna (1934, pp. 204-206), in her detailed analysis of labrets, points out that the medial form was used at Kachemak Bay, in the Aleutians, and north and east as far as Barter Island and Point Atkinson. It is possible that two of the Hooper Bay Village labrets are of this type (Pl. 6, 1-2), although they are not so large and distinctive as many medial labrets. Lateral labrets are present at Kachemak Bay, the Aleutians, and along the western and northern coasts of Alaska. At Hooper Bay Village there is one of this type with a hole through the center, probably for the insertion of a set or beads. The small medial labret is probably a novice's labret (Pl. 6, 4). This flat specimen is almost identical with one illustrated by de Laguna from Kachemak Bay (1934, Pl. 51, 23). The sickle-shaped labret, worn by women (Nelson, 1899, p. 45), is apparently a late local development in the Hooper Bay Village region.

Earrings such as were found at Hooper Bay Village are described by Nelson (1899, p. 52), and seemingly this region was the center for such styles. It is significant that the relatively plain earring from

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Hooper Bay Village (Pl. 6, 8) was recovered from the tenth level (60 inches), and the more elaborate form (Pl. 6, 6) was from nearer the top of the deposit.

All of the glass beads recovered, one found alone in the midden and two set into the deck of a toy boat, are pale blue and from the upper foot of the deposit (Pl. 6, 9). There is a small suspension hole at the bottom of the earring found in the tenth level (60 inches); although it is likely that the hole was for the suspension of a bead such as was found on a similar late earring from the locality, there is no way of determining the type of bead which may have been used.

Binding pieces for spruce root hats are described for the Bering Sea region (Nelson, 1899, Pl. LXIV, 20-22, Fig. 45, p. 167) but appear to be somewhat longer than the examples recovered at Hooper Bay Village.

Tobacco Complex Compared

All Hooper Bay Village equipment connected with the tobacco complex was recorded earlier by Nelson (1899, pp. 271-285) for the Bering Sea region; therefore, no description of the individual pieces is given here. In the Hooper Bay midden there is evidence of smoking in the seventh level, forty-two inches deep, where a wooden pipe stem was found; this is the earliest tobacco complex evidence that was discovered. In the sixth level, thirty-six inches deep, was a piece of spruce driftwood whose outermost ring dates 1836, indicating that subsequent layers were deposited after this date. Thus it seems reasonable to assume that the seventh level would date around 1800 A. D. Captain Cook (Anderson and Eells, 1935, p. 63), when he visited Norton Sound in 1778, found that the Eskimos there were familiar with tobacco although the ones in the Bristol Bay region did not use it at the time. It would appear that tobacco was introduced into the Hooper Bay region from the north about 25 years after it had been observed in Norton Sound. Rainey (1947, p. 267) is of the opinion that there was a trade in tobacco, iron, etc. across Bering Straits shortly after Russian cossacks established the Anadrsk trading post in northern Siberia in 1649. If such trading existed, the Hooper Bay region must not have felt its effects (at least with respect to tobacco) until a hundred and fifty years later.

TOYS

Toys are well represented in the total number of artifacts recovered. **Story knives** alone include thirty-five identifiable pieces. The story knives all take the form of the illustrated example (Pl. 6, 14); thirty-two are made of wood and three are antler. Two of the wooden knives and one of antler have suspension holes at the end. The small antler tip with a design along one edge (Pl. 6, 15) is probably part of a story knife, but this identification is not certain. The majority of the **toy bow** fragments include only a small section below the nock; all are much the same as the few sections of large bows. The **toy toggle harpoon head** with its bifurcated spur has the rude outline of the late type harpoon heads from this area. The model also includes a foreshaft carved from the same piece of wood. The **toy fish spear side prong** is like an ordinary side prong except that it is made from wood. Although the **toy**

throwing board is unusually small, it conforms with the full sized examples from the area except that it lacks the finger pegs. All of the **tops** are slightly ovate in outline and have a dome-shaped upper surface, which in two cases flattens toward the center. One composite top was found, half of which was in one section of test cut A and half in an adjoining section at the same level. This top had been pegged together and had a small groove near the edge in which there are still traces of red paint (Pl. 6, 16). The **toy kayak** and two **toy umiaks** look like the full-sized ones at Hooper Bay Village today. One toy boat, from the upper twelve inches of the deposit and obviously copied after a modern boat, has two small pale blue beads set into the deck. The two **pop gun** plungers (Pl. 6, 17) were described by various individuals at Hooper Bay Village as being used with a cylindrically hollowed out piece of wood or straight birdbone. The end of the cylinder was stuck into the mud a short distance, rotated, and pulled out again so that it retained a mud plug at the end; the plunger then was forced quickly into the cylinder, thus propelling the mud.

Nineteen **carvings of human faces** have the head, neck and shoulders indicated; three others have only the head represented. Six of the carvings have lines to depict the facial features, while all others have at least some contours to the face. The present inhabitants of Hooper Bay Village, both men and women, stated that the carvings of men always have the corners of their mouths turned up while those of women always have the corners of their mouths turned down. It was found that seven of the faces do not have the mouth represented, three have straight lined mouths, five have the corners of the mouth turned up (one of these has a labret at each corner), and seven have the corners of the mouth turned down. One of the latter group is covered completely with red paint and also has the breasts represented (Pl. 7, 3). One of the illustrated carvings of a man has a shallow groove all around the face (Pl. 7, 2). Twenty of the human representations are wooden, one is antler and one, ivory.

Comparisons

The story knives described from Hooper Bay Village are the same as the "snow knives" illustrated by Nelson (1899, Pl. XCIV), but the writer has preferred to use the former term since snow knife has come to denote a different tool. The story knives are used by women to draw pictures in the sand or snow to illustrate a story, and too they are used by children to draw pictures for amusement. The practice of using story knives still continues at Hooper Bay Village, but the metal table knife has for the most part replaced the wooden or antler story knife. Nelson (1899, p. 345) observed that children of both sexes used the story knife, but the writer has seen only young girls use them today. Archaeological evidence of these knives is thus far limited to Hooper Bay Village, but Nelson (1899, p. 346) mentions that they occur from the southern limit of the Eskimo area north nearly to Point Barrow. An antler skin dressing tool from Norton Sound (Nelson, 1899, Pl. L, 15) looks very much like a story knife, and it is possible that the two may be confused.

Toy hunting equipment from Hooper Bay Village is not distinctive; similar toys are found in most western Eskimo archaeological collections. The top has a very wide distribution in both archaeological and ethnographic collections (de Laguna, 1947, pp. 221-222.).

It is possible that the grass ring (Pl. 8, C) recovered is for the ring tossing game described by Nelson (1899, p. 333), who mentions

that "a small ring of twisted grass about six inches in diameter" was used. The grass ring found at Hooper Bay Village is about this size but is made more elaborately.

The form of pop gun recorded from Hooper Bay Village is mentioned by Birket-Smith (1929, II, p. 121, p. 205) as being used by the West Greenland and Caribou Eskimos. It is also present among the Eyak Indians (Birket-Smith and de Laguna, 1934, p. 238) and has a scattered distribution in North America and Siberia.

The carvings of human faces, often extended to include shoulders, are probably dolls, which are common playthings among most Eskimo children (Birket-Smith, 1929, II, Table A, 107). Another indication that this particular type of carving represents a doll is that a child's grave excavated by the author's party near the Yukon mouth contained thirteen such figures. Archaeologically, dolls are found in most Alaskan sites but are notably absent from the Kobuk River sites (Giddings, MS). In the Hooper Bay group the one ivory doll with a long narrow nose and narrow head (Pl. 7, 1) appears to be in the Okvik doll tradition (Rainey, 1941, Fig. 30).

CEREMONIAL OBJECTS

The group of masks and maskettes collected by Nelson in the Hooper Bay region makes it possible to identify many similar objects recovered from the midden. The one large section of a mask in the collection was purchased from a boy who said he found it near the test cuts. On one side is a hole for a lashing thong, but unfortunately the face is too incomplete to show definite features. It appears likely that one side of the mouth turned up and the outer corner of one eye turned down in a curved line that intersects a round raised nose. The second mask is only 10.3 cm. across and appears to be too small for wearing. This mask does not have holes on the sides for a suspension cord. In the upturned mouth there are still traces of a little red paint and below each corner of the mouth as well as above each eye there are small holes which were probably for the insertion of feathers or other appendages (Pl. 6, 18).

Each of the three finger masks has on one side a face with an upturned mouth and on the opposite side a face with a turned-down mouth (Pl. 7, 5). Each finger mask also has a groove around the face for the attachment of a ruff. One finger mask was held by a handle through which the index finger was slipped; another has a short handle, and the third, from the third or fourth level, was probably held by an iron ring, part of which is broken off in the wood. Two maskettes still retain traces of red paint.

The mask appendages are nearly all similar to those illustrated by Nelson. These include small faces, a wand, hands, caribou, seal, and a bird head model (Pl. 7, 6-10). Those found but not illustrated by Nelson are small fish, mink, bird (?), bird beak (?), and a white whale. Three other animal representations were found but cannot be identified.

Comparisons

In the western Eskimo region the elaborate mask carvings, finger masks and mask adornments have a relatively limited distribution, being confined primarily to the Yukon-Kuskokwim delta country. Masks, etc., similar to the archaeological material are illustrated by Nelson (1899, Pls. XCV-CV) from this region, and the Ingalik Indian mask forms from the adjacent interior Alaskan region are much the same (de Laguna, 1936, pp. 569-585).

MISCELLANEOUS

The spoon-shaped object is decorated on both sides with similar patterns of compass-made circles (Pl. 7, 11). The small straight lines running from one circle to the next are found only on the front. This specimen is quite thin and made from antler.

The small ivory carving of a white whale is complete except for the tail (Pl. 7, 12). On the flat underside two holes have been drilled near the head. These holes converge at the bottom, leaving a small ivory bridge which has been broken out. This carving was probably attached to a hunting helmet (Nelson, 1899, Fig. 45).

The flat antler strip (Pl. 7, 13) of unknown use is decorated with a series of straight and slightly curved lines within a line nearly outlining the piece.

The small carnivore tooth stuck on top of a stick (Pl. 7, 14) is of unknown use.

The cylindrical piece of antler with a slot cut through the side was probably used as a small toggle (Pl. 7, 15). It is decorated with short lines at the sides of the slot.

One birdbone inserted into another is a common find at the Hooper Bay Village midden. The birdbones appear to be from either ducks or geese. Each bone, without exception, has both condyles missing. There are 18 examples of one bone inserted into another (Pl. 7, 16) and eight bones with a smaller bone at one end and a piece of wood at the opposite end (Pl. 7, 17). There are also two examples in which a birdbone has only a piece of wood stuck through it. One more unusual piece has a sharp antler awl in one end, with the birdbone appearing to act as a handle (Pl. 7, 18); another has a fish spear side prong sticking through a birdbone.

The one **drum handle** (Pl. 7, 19) is made from wood and is ovate in cross section except where it narrows to a point inside the drum. The **drum rim** fragment is a thin strip of wood approximately 1.5 cm. wide with a groove cut into the side of the convex surface. The groove is for securing the leather binding which holds the drum head in position.

Comparisons

One birdbone inserted into another (Pl. 7, 16-18), a common find at Hooper Bay Village, is a Punuk characteristic (Collins, 1937, p. 240), and, like those from Punuk sites, these bones always have both condyles missing. Similar birdbones, one inserted into another, are found in eastern Thule sites. A boy at Hooper Bay Village suggested that the smaller bone was pushed through the larger one to dislodge the marrow so that it could be eaten; this seems reasonable but does not explain why some large birdbones have a bone stuck in one end and a piece of wood in the opposite end.

Although the tambourine type drum is a widespread feature of North American material culture, the type with a handle is recorded primarily from the Eskimo (Birket-Smith, 1929, p. 201).

It should be mentioned that the cooking pots from Hooper Bay Village have been considered separately (Oswalt, 1952) and an analysis of the clay lamps will be published soon.

Yearly Cycle

According to the residents of Hooper Bay Village their yearly cycle was formerly much the same as it is today. As soon as the ice went out in the spring, king salmon were caught in gill nets and dip nets. The latter were used in the slough, while the former were set

out in the bay and constantly attended from a kayak. The king salmon and those that run next, the dog salmon, were dried for fall and winter consumption. Ducks and geese were speared in the spring when they arrived at the breeding grounds; later in the season bird eggs were consumed, and in the fall molting birds were taken in drives.

During the summer and fall when young bearded seal and white whale frequented the bay, sporadic hunts were organized to take these animals. The young bearded seal were hunted from kayaks; usually a number of hunters went together, taking the animals by means of a detachable dart thrown with a throwing board. White whale hunting was conducted from umiaks; a number of boats usually tried to drive a school of the easily frightened whales into shallow water, where they were killed with "big spears." Formerly caribou were hunted in the fall on the flats behind the Village and toward the modern village of Bethel. During the winter seal were hunted in the open water on the adjacent Bering Sea coast.

Age of Hooper Bay Village Site

Using the Douglass system of tree-ring dating as it has been applied to the Alaskan Arctic by Giddings (1941) the writer has been able to date a limited number of spruce driftwood samples recovered from various levels in the midden. The oldest dated sample is from the twelfth level (72 inches deep). The date is 1690 A. D. near bark, indicating that this layer was deposited after the foregoing date. A date from the sixth level is 1836 n. b., and one from the fifth level is 1874 n. b. From these three dates it would appear that the bottom of the excavation, fifteenth level, would date shortly after 1600 A. D. This date is not for the bottom of the deposit but rather for the lowest level reached in one field season.

Comparison Summary

From the text comparisons it is apparent that archaeological material from the Hooper Bay Village site is much the same as the material in Nelson's ethnographic collections from the same general area. However, as thorough and systematic as Nelson was in collecting items of Eskimo material culture, he apparently did not record the following types found in the Hooper Bay Village midden and undoubtedly in use upon historic contact.

- engraving tool
- boulder chip scraper
- rectangular scraper
- leg bone scraper with longitudinal edge
- straight handled skin scraper
- stone saw
- one birdbone inserted into another
- "composite" knife, spring type
- beaver tooth draw knife
- small drinking cup
- kayak sled stanchion of the Hooper Bay Village type
- kayak seat board

The similarity between the material culture of the coastal and inland Eskimos inhabiting the Yukon-Kuskokwim river deltas and that of adjacent Ingalik Indians has long been recognized. A comparison between archaeological types at Hooper Bay Village and at Ingalik sites along the Yukon River (the latter supplemented by Ingalik ethnology) gives the following list of comparable features:

From archaeological excavations in lower Yukon River Indian sites as far down stream as Holy Cross (de Laguna, 1947)

adze head for small adze blade
hafted hammerstone
rectangular whetstone
stone saw
scapula scraper with longitudinal edge
leg bone scraper with longitudinal edge
leg bone scraper with transverse edge
crooked knife
stone inset for drill mouthpiece
barbless and bladeless arrowhead
arrowhead, sharp shouldered with a plain conical tang

From the *Ingalik Material Culture* (Osgood, 1940)

hafted skin scraper
end hafted beaver tooth tool
beaver tooth draw knife
ulu
flat wooden composite knife handle with end blade
adze, large blade hafted directly to handle
antler wedge
wooden wedge
wooden club
irregular whetstone
braided grass line
ovate dish made from one piece of wood
wooden bowl with high sides, sides separate from bottom
wooden bowl with low sides, sides separate from bottom
wooden drinking cup
wooden dipper
birch bark basket
grass mat
situla shaped clay vessel
shallow bowl-shaped clay lamp
fire drill shaft and board
cutting board
hammerstone
toggle harpoon head
detachable dart head
throwing board
bow
three split arrow vanes
blunt arrow with basal notches for hafting
net shuttle
mesh gauge
gill net
fishing ice pick
fish rake (?)
small conical fish trap
labret
sled shoe

crutch handle paddle
kayak
umiak
red paint
top
tambourine drum
ceremonial (?) doll
face mask, plain
finger mask

From a group of Ingalik Indian masks (de Laguna, 1936, pp. 569-585)

mask wand
mask hand
bird beak on mask
fish model as mask adornment

From University of Alaska collections, Lake Minchumina Ingalik Indians

wooden breast yoke

From Nelson's remarks (1899, p. 70) about lower Yukon Ingalik Indians

totem marks on vessels

The above comparison makes it evident that exclusive of widespread general forms there are important specific artifact types common to the Hooper Bay Eskimos and Ingalik Indians. One of these types is the end-hafted beaver tooth knife which is found widely among the Athabaskan Indians. It is essentially a tool of forest-dwelling peoples but has spread to the Bering Sea coast Eskimos and inland Eskimos living on the Kobuk River. The distribution would seem to reflect a local Eskimo borrowing of a widespread Athabaskan implement. References to the beaver tooth drawknife, however, are limited to the Ingalik Indians upon historic contact and the Bering Sea Eskimo archaeological sites of Nukleet on Cape Denbigh and Hooper Bay Village; even though this type is restricted in distribution it would also appear to be a case of Eskimo borrowing.

Another connection between the Ingalik and coastal Eskimos appears to have been a trading from Indian to Eskimo of wooden vessels. Nelson (1899, p. 70) refers to such a trade and states that the maker puts his totem mark on each vessel. To judge from the number of marked vessel bottoms recovered, this trade must have been extensive and a significant link between the two groups.

The situla-shaped clay pot found among the Ingalik and the Bering Sea Eskimos from Bristol Bay to Norton Sound has been shown to have a restricted distribution in Alaska (de Laguna, 1947; Oswalt, 1952). It has been demonstrated that the type is relatively late in both groups and is an eastern Asian cultural element which spread to the Bristol Bay-Norton Sound region of Alaska; from here it spread inland and was adopted by the Ingalik.

The double bladed paddle is found throughout the Eskimo area, but it is only in Alaska when there has been contact with interior

Indians that the single bladed type has been adopted. This again would be a trait borrowed by the Hooper Bay Village Eskimos from the Athabaskans.

The similarity between Yukon-Kuskokwim delta Eskimo and Ingalik Indian ceremonial paraphernalia of face masks, finger masks and mask appendages is one of the most striking parallels between the two groups. It has been proposed by Birket-Smith (1936, pp. 179-180) that much of the richness of southern Bering Sea Eskimo culture is due to influence received from the Northwest Coast Indians. Lack of a Northwest coast prehistoric cultural sequence suggesting local development of the elaborate features of Northwest Coast Indian material culture makes it tempting to search elsewhere for some of its origins. If we look to the Bering Sea region for the mask complex there is the 1000 year old Ipiutak culture to draw upon. It had a highly developed ceremonial life and was at the same time widespread. At Hooper Bay Village we know that the specialized mask forms are at least 300 years old and that upon historic contact it was in this region that Eskimo mask ceremonialism had reached its peak. It would not be surprising, therefore, to find this roughly the center of origin for both the Northwest Coast and Ingalik Indian masks.

Types of relatively unknown archaeological age that appear at Hooper Bay Village are:

- story knife
- grass mats
- mask adornment
- conical fish trap
- beaver tooth draw knife
- end socketed beaver tooth knife
- breast yoke
- kayak or umiak sled with distinctive uprights (Pl. 5, 10)

Types that appear to be of very recent development at the site are:

- earrings like Fig 6, 6-7
- the tobacco complex
- blue glass bead (?)
- inlay on dishes.

It should be noted that both the Hooper Bay Village informants and the excavations indicated that bolas were not used in this region. Another seemingly significant absence is the single bladed slate knife blade, which quite possibly had been replaced by the metal bladed crooked knife which was found in nearly all levels of the excavated deposit.

In conclusion it may be said that the excavated part of the Hooper Bay Village site dates from approximately 1600 A. D. to the present and the artifact types are, with some important additions, the same as those described by Nelson when he visited the region in 1878. The artifact assemblage from Hooper Bay Village shows many connections with late developments in northern Alaska as well as a strong likeness to adjacent Ingalik Indian material culture; however, since at present the latter lacks prehistoric depth, separation of Hooper Bay Village diagnostic traits into those borrowed from the Ingalik and those of local development may be hypothesized but cannot be proved.

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TRAIT LIST I

Six-Inch Levels

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	ND	Pur.
SEA HUNTING																	
harpoon dart head, single barb (Pl. 1, 1).....	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
harpoon dart head, small light, multibarbed (Pl. 1, 2-5)....	—	2	—	—	—	—	—	—	1	—	—	2	—	—	—	—	2
harpoon dart head frags.....	—	—	—	—	—	—	—	2	1	—	—	—	—	—	—	—	—
harpoon foreshaft	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—
harpoon socketpiece with bifurcated tang (Pl. 1, 6) ..	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
harpoon socketpiece with sockets at both ends (Pl. 1, 7).....	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
bladder dart mouthpiece (Pl. 1, 8-9).....	1	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—
float plug (Pl. 1, 10).....	—	—	2	1	2	—	—	—	1	—	—	—	—	—	—	—	—
harpoon blade, slate.....	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
dart shaft, proximal end (Pl. 1, 11).....	—	1	—	—	—	—	—	2	1	—	—	3	—	—	—	—	—
dart shaft, distal end flattened on two sides (Pl. 1, 12)....	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
dart shaft, distal end cone shaped with notch (Pl. 1, 13).....	—	—	—	—	—	—	—	—	1	—	—	—	1	—	—	—	—
dart shaft, distal end cone shaped	—	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—
harpoon shaft, distal end cone shaped with notch....	—	—	—	1	—	—	—	—	—	—	—	1	—	—	—	—	—
lance shaft, distal end slotted lance blade, slate	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
(Pl. 1, 14 and 16).....	—	2	—	—	—	—	—	—	1	—	—	—	—	—	1	—	—
lance blade, flint (Pl. 1, 15)...	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—
throwing board (Pl. 1, 17-18)	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—

Six-Inch Levels

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	ND	Pur.
LAND HUNTING																	
arrowhead, barblless with end blade slot (Pl. 2, 1).....	—	—	—	—	—	—	—	1	—	2	—	—	—	1	—	—	—
arrowhead, barbs and end blade (Pl. 2, 2).....	—	—	—	—	—	—	—	1	1	—	—	1	—	—	1	—	—
arrowhead, single barb (Pl. 2, 3).....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—
arrowhead fragments	—	—	1	2	—	—	—	3	—	—	—	—	1	—	—	—	—
blunt arrowhead, elongated diamond (Pl. 2, 4).....	3	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
blunt arrowhead, cylindrical ..	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
blunt arrowhead, rectangular, serrated tip (Pl. 2, 5).....	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
blunt arrowhead with split bone tip	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—
blunt arrowhead, rifle cartridge	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
bow fragments (Pl. 2, 7).....	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
sinew twister	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
arrow shaft, nock end (Pl. 2, 6)	4	4	5	—	1	2	5	4	—	4	—	4	—	1	1	—	—
bird spear center prong (Pl. 2, 8).....	—	—	1	—	—	—	—	—	—	—	—	—	1	—	—	—	—

Anthropological Papers of the University of Alaska

	1-2	3-4	5	6	7	8	9	10	11	12	13	14	15	ND	Pur.
FISHING															
fish spear center prong, wedge tang (Pl. 2, 9).....	—	—	1	—	—	—	—	—	—	1	—	—	—	—	1
fish spear center prong, conical tang (Pl. 2, 10).....	—	1	—	—	—	—	—	—	—	—	3	—	1	—	—
leister side prong (Pl. 2, 11-13).....	—	—	2	1	2	5	2	2	—	4	1	1	—	—	1
leister side prong fragments.....	—	—	—	—	2	—	1	2	—	1	—	—	—	—	1
fishing ice pick (?).....	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—
ice scoop rim (Pl. 2, 14).....	—	—	—	1	—	—	—	1	—	1	1	—	—	—	—
conical fish trap frag. (Pl. 2, 15).....	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—
fish killing club.....	—	1	—	—	—	—	1	—	—	—	—	—	—	—	—
net float, rectangular.....	—	—	—	1	—	2	1	3	—	2	1	—	—	—	—
net float, thin and curved (Pl. 2, 16).....	3	4	1	—	—	—	—	3	—	—	1	—	—	—	—
fish net sinker (Pl. 2, 17).....	3	12	2	—	2	—	3	2	—	—	—	—	—	—	2
mesh gauge.....	1	2	—	—	—	—	—	—	—	—	—	—	—	—	—
net shuttle (Pl. 2, 18).....	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—
netting needle (Pl. 2, 19).....	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—
TOOLS															
crooked knife handle (Pl. 3, 1).....	—	—	1	—	—	1	2	—	—	—	1	1	—	—	—
composite knife handle (Pl. 3, 2-3).....	2	1	—	—	—	—	—	—	—	—	—	—	—	—	1
composite knife handle spring type (Pl. 3, 4).....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
beaver tooth drawknife (Pl. 3, 5).....	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—
beaver tooth tool handle end socketed (Pl. 3, 6).....	—	—	—	—	—	—	1	—	—	—	1	—	—	—	—
ulu handle.....	2	1	2	—	—	—	—	—	—	—	—	—	—	—	—
ulu blade, curved (Pl. 3, 7).....	—	—	1	1	—	—	—	—	—	2	—	—	—	—	—
ulu blade, straight (Pl. 3, 8).....	—	—	—	—	—	—	2	2	—	—	—	—	—	—	—
engraving tool handle (Pl. 3, 9).....	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—
adze handle.....	—	—	1	1	—	—	1	—	—	—	—	—	—	—	—
adze blade, small, thin (Pl. 3, 10-11).....	—	2	—	—	—	—	1	—	—	—	—	—	—	—	—
adze blade, large, heavy (Pl. 3, 12).....	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—
skin scraper handle with blade (Pl. 4, 1).....	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—
skin scraper, blade only.....	—	2	—	—	1	1	—	—	—	—	—	—	—	—	—
skin scraper blade rectanguloid (Pl. 4, 2).....	1	2	—	—	—	—	—	—	—	—	—	—	—	—	—
boulder chip (Pl. 4, 3).....	—	1	—	—	2	—	—	—	—	—	—	—	—	—	—
scapula scraper (Pl. 4, 4).....	—	—	—	—	1	1	1	1	—	3	2	—	—	—	1
leg-bone scraper (Pl. 4, 5).....	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—
jaw-bone (?) scraper (Pl. 4, 6).....	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—
bark peeling tool (Pl. 4, 7).....	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—
awl, birdbone (Pl. 4, 8).....	2	1	1	—	—	—	—	—	—	2	—	—	—	—	—
awl, seal tooth with handle (Pl. 4, 9).....	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
awl, bone or antler.....	1	1	1	—	—	—	1	—	—	—	—	—	—	—	—
awl, antler handle and metal bit.....	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
fire drill shaft.....	—	—	1	—	—	1	—	—	—	1	1	—	—	—	—
fire drill board.....	—	—	1	—	—	—	1	—	—	—	—	—	—	—	—
drill bearing.....	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—
shovel blade (Fig. 2).....	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
wedge, antler or bone.....	4	9	3	2	8	5	8	18	—	10	3	3	—	—	5

The Archaeology of Hooper Bay Village, Alaska

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	ND	Pur.
wedge, wood	4	7	—	2	3	3	—	1	—	—	—	—	—	—	—	—	—
slate blade frags.....	1	3	1	3	2	—	—	1	1	—	1	—	—	—	—	—	—
jade, worked	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—
slate, worked	—	—	1	—	1	—	—	1	—	—	—	—	—	—	—	—	—
stone saw (Pl. 4, 13).....	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
whetstone, rectangular, used on three or four sides (Pl. 4, 10-11).....	6	5	1	1	—	—	2	1	—	1	2	—	—	—	—	—	—
whetstone, hexangular	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
whetstone, irregular	4	7	6	1	1	3	3	6	—	1	2	—	—	—	—	—	—
hammerstone, irregular	3	6	1	2	1	1	1	1	—	—	—	—	—	—	—	—	—
hammerstone, hafted (Pl. 4, 12)	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

HOUSEHOLD

needle case (Pl. 5, 1).....	2	1	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—
cord shuttle (Pl. 5, 2).....	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
handle (Pl. 5, 3).....	—	1	3	—	1	—	—	1	—	—	1	—	—	—	—	—	—
spoon with round bowl (Pl. 5, 4).....	2	2	—	1	—	—	—	1	—	—	—	—	—	—	—	—	—
spoon with shallow oblong bowl (Pl. 5, 5).....	1	1	1	—	—	2	—	1	—	1	—	1	—	1	—	—	—
spoon with rectangular bowl and offset handle (Pl. 5, 6).....	—	—	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—
spoon fragments	2	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
dipper or large spoon.....	—	3	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—
fish shaped box (Pl. 5, 7).....	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—
cutting board	1	4	—	—	—	—	2	1	1	—	1	—	—	—	—	—	—
drinking tube, birdbone.....	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
vessel bottom, wood	2	4	1	3	3	1	2	3	—	1	1	1	—	—	—	—	—
side of wooden vessel.....	1	5	1	1	1	2	6	6	—	4	2	2	1	1	—	—	—
cup, wood	—	—	—	—	—	—	—	—	—	—	2	—	—	—	—	—	—
grass matting (Pl. 8, A).....	1	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
grass kayak mat (Pl. 8, B).....	—	1	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—
grass braid	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—
container, birch bark (Pl. 5, 8).....	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—

TRANSPORTATION

kayak stern piece.....	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
kayak bow piece.....	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
kayak ring support, wide.....	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—
kayak ring support, narrow.....	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
rib fragments	3	3	2	1	—	2	1	4	—	1	3	5	—	—	—	—	—
kayak bow or stern keel pieces (Pl. 5, 9).....	—	4	—	—	—	1	2	3	—	—	—	—	—	—	—	—	—
kayak seat board	—	—	—	—	—	—	2	—	—	—	—	—	—	—	—	—	—
kayak sled upright (Pl. 5, 10)	3	2	—	2	—	1	1	1	—	1	1	—	—	—	—	—	—
kayak or umiak sled cross piece	1	2	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—
umiak sled upright.....	—	—	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—
crutch paddle handle.....	1	2	—	2	1	—	1	—	—	—	—	—	—	—	—	—	—
single bladed paddle.....	—	—	—	—	—	—	—	1	—	—	—	1	—	—	—	—	—
double bladed paddle.....	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—
kayak meat hook (Pl. 5, 11).....	—	—	1	2	—	1	—	—	—	—	—	—	—	—	—	—	—
kayak harpoon rest (Pl. 5, 12)	—	3	1	1	—	—	—	—	—	—	1	—	—	—	—	—	—
sled shoe (Pl. 5, 13).....	9	10	6	3	2	3	2	4	—	7	2	1	—	—	—	—	2
breast yoke	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
snowshoe cross piece (Pl. 5, 14)	1	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	ND	Pur.
PERSONAL ADORNMENT																	
labret (Pl. 6, 1-5).....	—	—	—	—	1	1	1	—	1	1	—	—	—	—	—	—	—
earring (Pl. 6, 6-8).....	—	—	—	—	1	—	—	—	—	1	—	—	—	—	—	1	—
glass bead (Pl. 6, 9).....	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
limestone bead (Pl. 6, 10).....	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—
iron bracelet	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
visor	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—
binding piece for spruce root hat	—	—	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—
TOBACCO COMPLEX																	
pipe stem; split, wooden (Pl. 6, 11).....	—	—	—	—	2	2	—	—	—	—	—	—	—	—	—	—	—
pipe bowl (Pl. 6, 12).....	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—
snuff tube (Pl. 6, 13).....	—	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
quid box	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—
tobacco grinding mortar.....	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
pipe bowl, modern.....	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
TOYS																	
story knife (Pl. 6, 14-15).....	14	12	2	4	—	—	1	—	—	—	—	1	—	—	—	—	1
harpoon head with bifur- cated spur	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
bow fragments	3	2	1	—	—	—	1	2	1	—	—	2	1	—	—	—	1
fish spear side prong.....	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—
throwing board	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—
blunt arrow, complete.....	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
blunt arrow head.....	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—
top (Pl. 6, 16).....	2	1	2	—	—	—	1	2	—	—	—	—	—	—	—	—	—
kayak	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
umiak	—	—	—	—	—	—	1	1	1	—	—	—	—	—	—	—	—
modern boat	1	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
grass ring (Pl. 8, C).....	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
pop gun (Pl. 6, 17).....	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
ice skate; wood, modern.....	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
carved human faces (Pl. 7, 1-4).....	4	6	—	1	1	—	—	—	2	—	4	1	—	—	—	—	3
CEREMONIAL OBJECTS																	
mask (Pl. 6, 18).....	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
finger mask (Pl. 7, 5).....	—	3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
mask wand	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
mask hand (Pl. 7, 6).....	—	1	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—
carving of human head for mask (Pl. 7, 7)	1	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
carving of mink for mask	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—
carving of caribou for mask	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
carving of bird (?) for mask (Pl. 7, 8).....	4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
carving of white whale for mask (Pl. 7, 9).....	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—
carving of seal for mask (Pl. 7, 10).....	—	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—
carving of a raven head for mask	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—
carving of fish for mask	1	2	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
carving of bird beak (?) for mask	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—

The Archaeology of Hooper Bay Village, Alaska

	1-2	3-4	5	6	7	8	9	10	11	12	13	14	15	ND	Pur.
MISCELLANEOUS															
spoon shaped object															
(Pl. 7, 11)	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—
white whale carving															
(Pl. 7, 12)	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
decorated antler strip															
(Pl. 7, 13)	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—
tooth on end of stick															
(Pl. 7, 14)	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—
toggle (Pl. 7, 15)	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
trade goods: iron, dish															
fragments	2	4	—	—	—	—	—	—	—	—	—	—	—	—	—
mending and re-inforcing															
strips	2	4	2	—	1	—	1	—	—	—	—	—	—	—	—
small birdbone inserted into															
large birdbone (Pl. 7, 16)	1	—	—	—	1	1	4	7	—	2	1	1	—	—	—
large birdbone with small															
birdbone at one end and															
piece of wood at opposite															
end (Pl. 7, 17)	—	1	—	2	—	1	—	1	2	—	1	—	—	—	—
birdbone with piece of wood															
inserted into it	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
birdbone with sharp piece															
of antler inside (Pl. 7, 18)	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
birdbone awl with fish spear															
side prong inside	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—
handle with forked end										1	—	—	—	—	—
drum handle (Pl. 7, 19)	2	—	—	—	—	—	—	—	—	—	—	—	—	—	—
drum rim	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—

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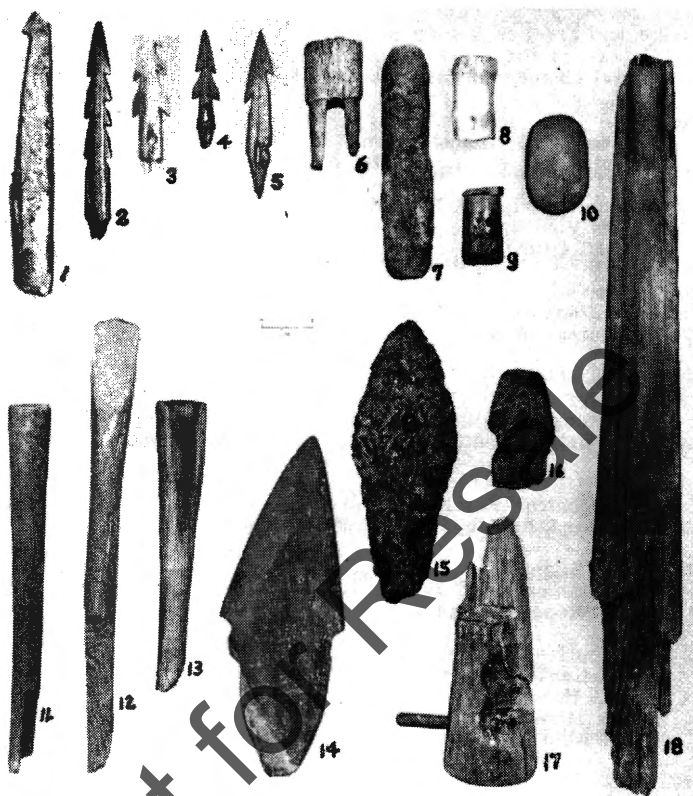


PLATE 1

1. Harpoon dart head
2. " " "
3. " " "
4. " " "
5. " " "
6. Harpoon socketpiece
7. " "
8. Bladder dart mouthpiece
9. " " "
10. Float plug
11. Dart shaft, proximal end
12. Dart shaft, distal end
13. " " " "
14. Lance blade
15. " "
16. " "
17. Throwing board
18. " "

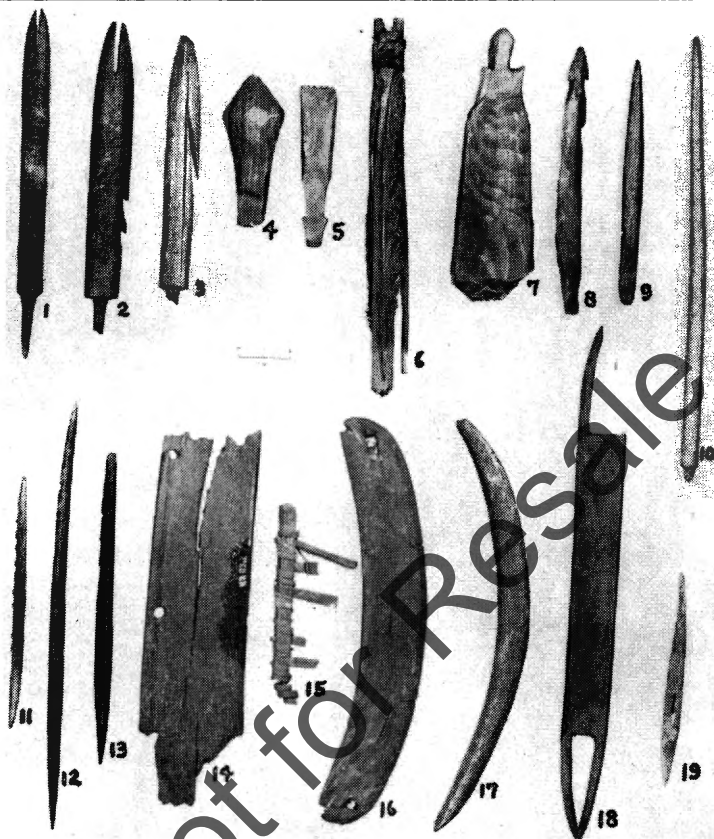


PLATE 2

1. Arrowhead
2. " "
3. " "
4. Blunt arrowhead
5. " "
6. Arrow shaft, nock end
7. Bow fragment
8. Bird spear center prong
9. Fish spear center prong
10. " " " "
11. Leister side prong
12. " " " "
13. " " "
14. Ice scoop rim
15. Conical fish trap fragment
16. Net float
17. Net sinker
18. Net shuttle
19. Netting needle

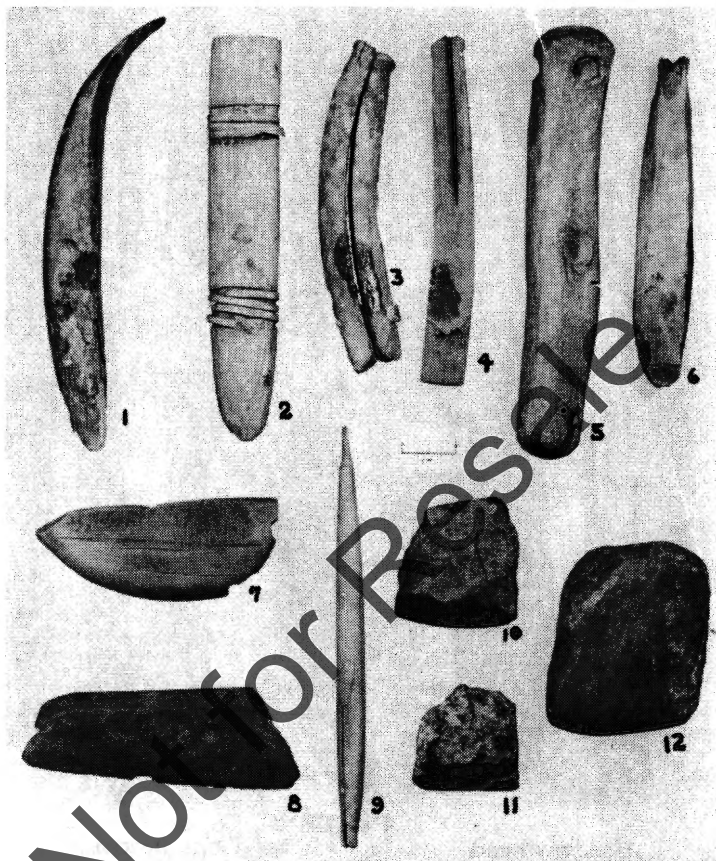


PLATE 3

1. Crooked knife handle
2. Composite knife handle
3. " " "
4. Composite knife handle, spring type
5. Beaver tooth drawknife
6. Beaver tooth tool with end socket
7. Ulu blade, curved edge
8. Ulu blade, straight edge
9. Engraving tool
10. Adze blade, slate
11. Adze blade, jade
12. Adze blade, heavy slate blade

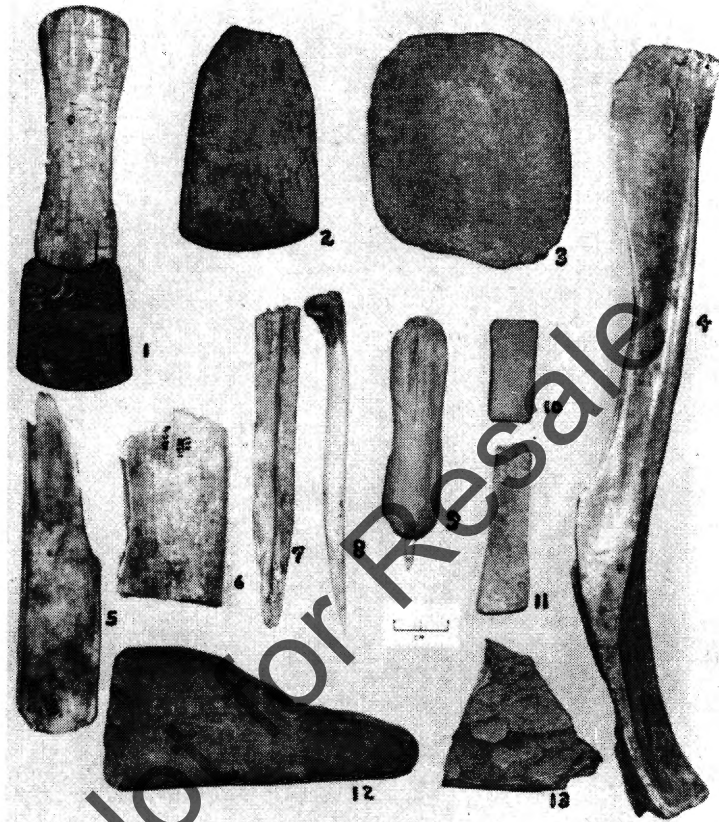


PLATE 4

1. Skin scraper handle and blade
2. Skin scraper blade
3. Boulder chip
4. Scapula scraper
5. Leg-bone scraper
6. Jaw-bone scraper
7. Bark peeling tool
8. Awl, birdbone
9. Awl, with seal tooth tip
10. Whetstone
11. "
12. Hafted hammerstone
13. Stone saw

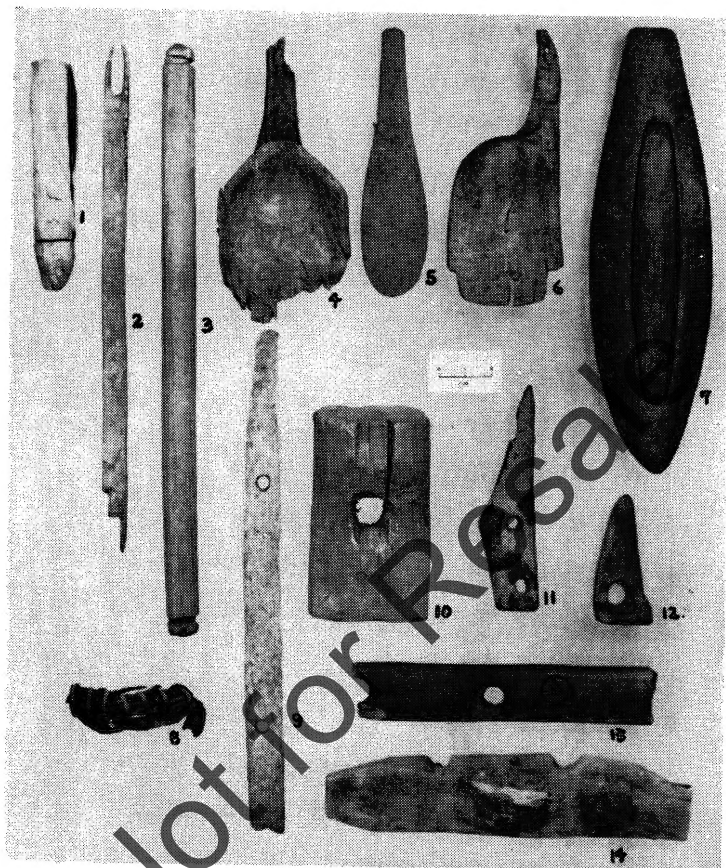


PLATE 5

1. Needle case
2. Cord shuttle
3. Handle
4. Spoon
5. "
6. "
7. Fish-shaped box
8. Birch bark container
9. Kayak keel plate
10. Kayak sled upright
11. Kayak meat hook
12. Kayak harpoon rest
13. Sled shoe
14. Snowshoe cross piece

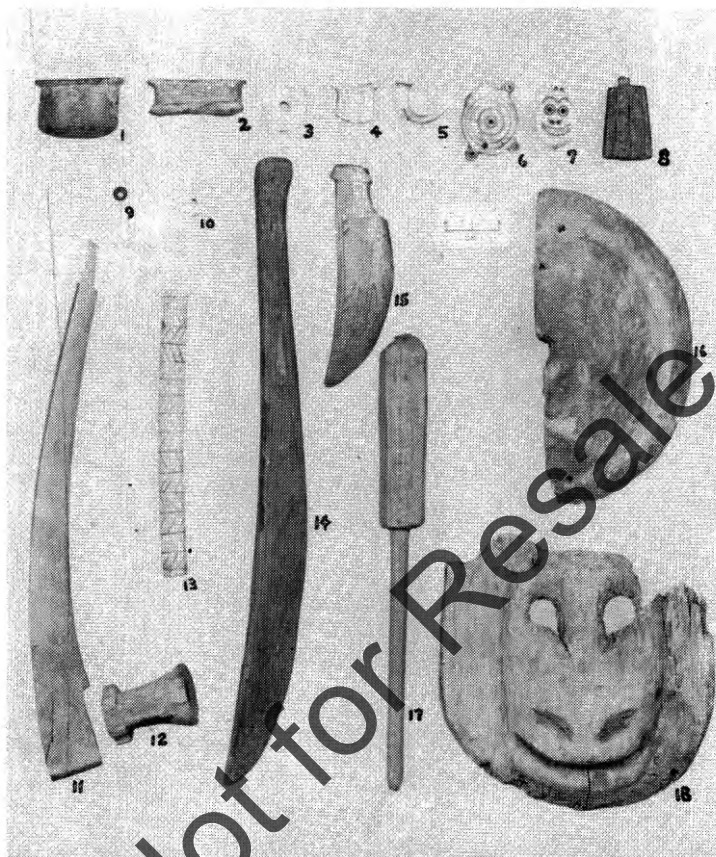


PLATE 6

1. Labret
2. "
3. "
4. "
5. "
6. Earring
7. "
8. "
9. Glass bead
10. Limestone bead
11. Pipe stem
12. Pipe bowl
13. Snuff tube
14. Story knife
15. " "
16. Top
17. Pop gun plunger
18. Mask

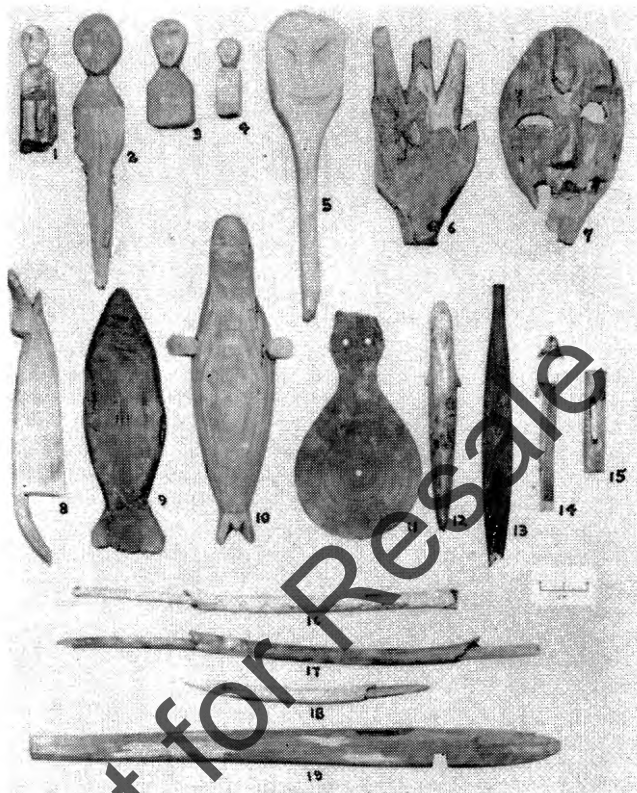


PLATE 7

1. Human face carving
2. " " "
3. " " "
4. " " "
5. " " "
6. Mask hand
7. Mask adornment
8. Bird (?) carving for mask
9. White whale carving for mask
10. Seal carving for mask
11. Spoon shaped object
12. White whale carving
13. Decorated antler strip
14. Tooth on the end of a stick
15. Toggle
16. Small birdbone inserted into large birdbone
17. Large birdbone with small birdbone at one end
and a piece of wood at the opposite end
18. Birdbone with sharp piece of antler inside
19. Drum handle

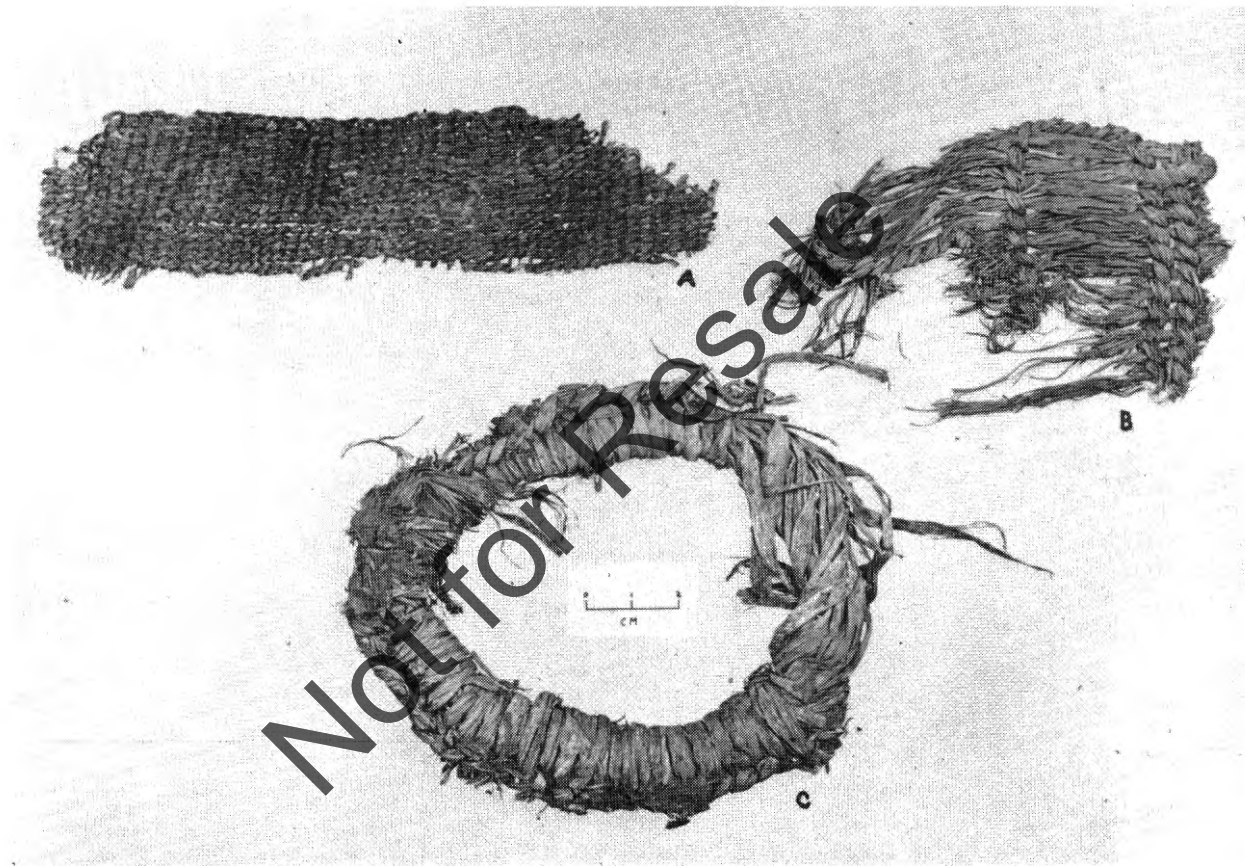


PLATE 8

A. Grass mat fragment, B. Kayak mat fragment, C. Grass ring.

Not for Resale



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