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# **Archaeological investigations of inland and coastal sites of the Katmai National Monument Alaska. No. 4 1960**

Davis, Wilbur A.; Leach, James A.

[Madison, Wisconsin]: Society for American Archaeology and the University of Wisconsin Press, 1960

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ARCHAEOLOGICAL INVESTIGATIONS OF INLAND  
AND COASTAL SITES OF THE KATMAI NATIONAL MONUMENT  
ALASKA

by

Wilbur A. Davis

with the assistance of

James W. Leach

Foreword by

Dr. W. S. Laughlin

1954

Revised 1960

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## EDITORIAL NOTE

The existence of this report was called to the attention of the editors of Archives of Archaeology by Professor William S. Laughlin. It clearly contained much material of immediate value to the archaeological profession and since six years had elapsed since the manuscript was prepared, Archives of Archaeology appeared to be an appropriate medium to make it more generally available. Thus, with the permission of Mr. Wilbur A. Davis, an effort was made to secure the manuscript for the series. We are indebted to the National Park Service and particularly to Dr. John M. Corbett, Chief Archaeologist, for providing us with the original ribbon copy of the manuscript and the original plates from which this version was photographed.

In the original format of the manuscript, planned for a contemplated publication of the National Park Service, figures and plates were grouped at the end of the text. Particularly in a microcard publication, it seemed much more convenient to insert these in the text at the point where they were first cited. This does some violence to the original numbering of the figures which remain unchanged, but it is hoped that the added convenience will serve as compensation. We have added a Table of Illustrations to serve as a guide to their location. In a few instances two versions of an illustration have been inserted, the second being a plate printed by offset, since we were uncertain which might provide a better quality of illustration.

David A. Baerreis  
April 20, 1960

Eugene, Oregon  
March 4, 1954

Director, Region Four  
National Park Service  
180 New Montgomery Street  
San Francisco, California

Dear Sir:

In fulfillment of my professional services agreement with the National Park Service, I am sending you under separate cover the report of the division of archaeology and history of the Katmai Project entitled "Archaeological investigations of inland and coastal sites of the Katmai National Monument, Alaska." . . . .

I hope the report meets with your approval.

Sincerely yours,

/s/ Wilbur A. Davis

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE, REGION FOUR  
180 New Montgomery Street  
San Francisco, California

April 8, 1954

Mr. Wilbur A. Davis  
1691 Mill Street  
Eugene, Oregon

Dear Mr. Davis:

It gives us great pleasure to acknowledge receipt of, and acceptance of, your report entitled "Archaeological Investigations of Inland and Coastal Sites of the Katmai National Monument, Alaska," which was submitted in fulfillment of the Professional Services Agreement between this Service and yourself.

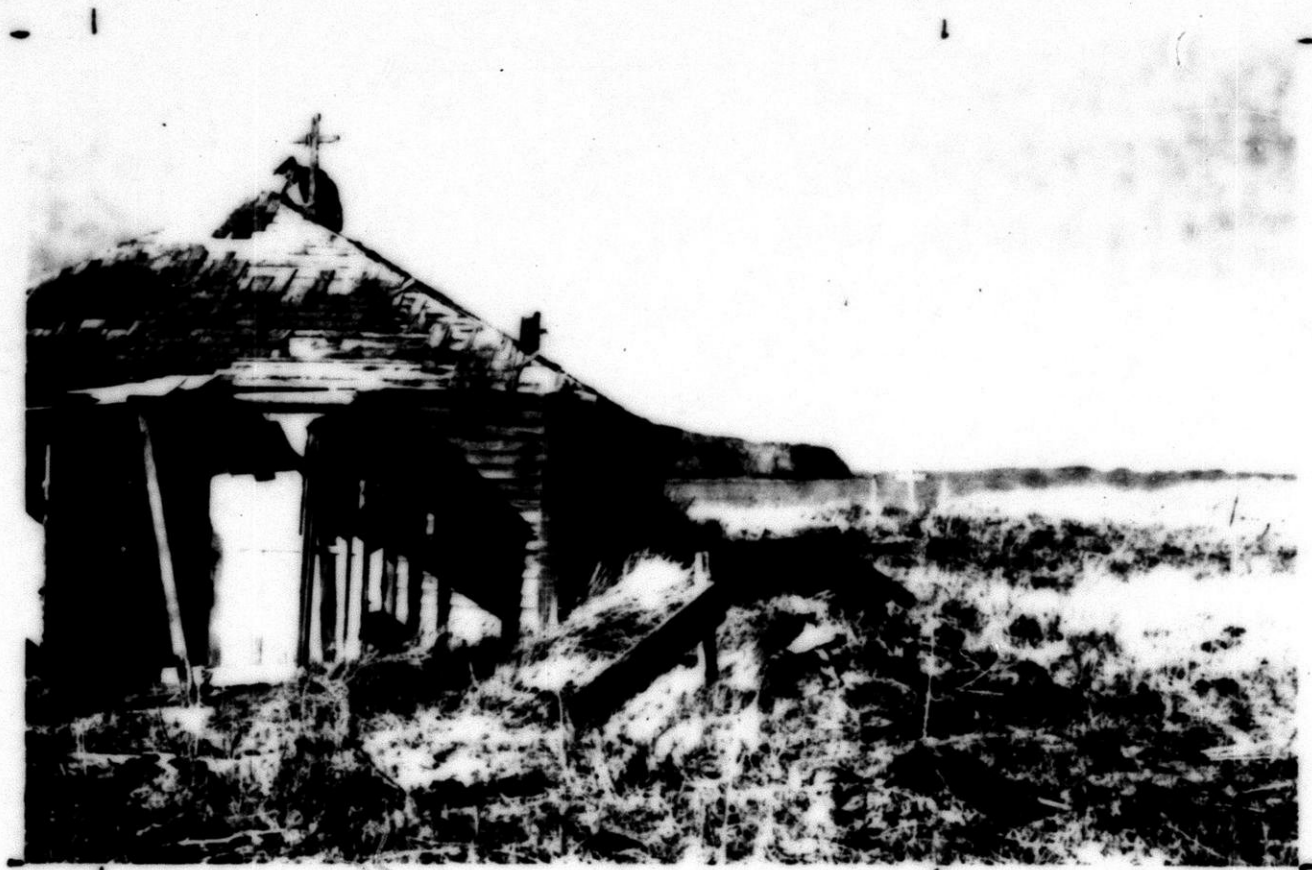
This excellent report is, in our opinion, a distinct contribution to knowledge, presenting the results of the first systematic archeological and ethnological investigation of the area at the base of the Alaska Peninsula within the boundaries of Katmai National Monument. In addition to its general scientific value, this report will be of importance to this Service in planning the development and interpretation programs at the national monument so that the area may be preserved for the inspiration and enjoyment of future generations.

We wish to express our appreciation to your collaborators in this project: to Mr. James W. Leach, who participated in the field work and in the preparation of the report; and to Dr. W. S. Laughlin, who was in general charge of the Archaeology Division of the Katmai Project and who wrote the foreword to the report. We also appreciate the assistance of Dr. Luther S. Cressman, Head, Department of Anthropology, University of Oregon, who, in addition to general advice and counsel, supplied the photographs for the artifact plates. The University of Oregon supplied the space and facilities for the analysis and storage of the artifacts.

Sincerely yours,

/s/ Lawrence C. Merriam

Lawrence C. Merriam  
Regional Director



Frontispiece. Russian Orthodox Church and Cemetery,  
Kaguyak, June 1952.

## FOREWORD

Owing to historical accident a surprisingly small amount of information concerning the Eskimo occupation of the Alaska Peninsula has been recorded. Although early Russian accounts describe the Konyag Eskimo of Kodiak Island, they do not include similarly detailed descriptions of the Konyag who occupied the south shore of the Alaska Peninsula. The extensive use of a route to the gold fields which took many persons directly through the Katmai Monument area added nothing to the vague descriptions of the local Eskimo. Anthropological researches have been conducted in the Aleutian Islands, on Kodiak Island, in Bristol Bay and in Cook Inlet, yet, prior to this project, there had been no excavations in the Katmai Monument.

The great antiquity and material wealth of Eskimo culture in southwestern Alaska is indicated by the large size of village sites on Kodiak Island, the 3,000 yr. radio-carbon date from Nikolski Village, Umnak Island and by such things as the dialectical variety in this general area. The formation of the Katmai Project by the National Park Service was therefore greeted with considerable enthusiasm by anthropologists as well as by scientists of other disciplines. The University of Oregon welcomed the opportunity to supply archaeological personnel and the background information of anthropological researches in the Aleutian Islands and Kodiak Island, as well as the necessary space and other facilities for the analysis.

It was thought that an excavation at the most widely separated sites in the Katmai Monument would provide the best estimate of the kinds of sites which exist in the area. As a consequence of this

plan two sites on the coast were excavated, Kukak and Kaguyak, and two interior sites, Savonoski and Brooks River. These excavations were carried out by Mr. Wilbur A. Davis and Mr. James W. Leach, with the assistance of myself on a portion of the Brooks River site near the end of the season.

One of the major contributions of these excavations has been information concerning the inland Eskimo. This has been bolstered to some extent by limited inquiries among the Eskimo of New Savonoski who lived at their old village in the interior until the Katmai eruption of 1912, and by inquiries among the Eskimo of North Naknek, who still go into the Monument area in the fall to secure winter fish supplies. The recovery of artifacts such as pottery, poorly known for this corner of Alaska, will aid greatly in the eventual reconstruction of the local history of the Eskimo and in comparative studies of their relationships to other Eskimo groups.

The shallowness of the coastal sites, when compared with the deep site at Uyak Bay across Shelikof Strait on Kodiak Island, is of considerable interest. Owing to the Eskimo habit of shifting habitation between winter and summer, many differences occur between sites occupied by the same group of people. Comparisons between these sites and with those of other areas, such as Kodiak Island, will not be sound until larger series of artifacts are recovered. It is apparent at this time that more extensive occupation of the interior existed than had been recognized prior to these excavations. The absence of skeletal remains prevents any final conclusions about the kind of sites these represent. The absence of bone fishhooks in the coastal sites is only one of the many puzzling problems which arise



in the early stages of such an investigation and which can only be dealt with adequately when larger series of artifacts become available. In some kinds of specimens, such as the pottery, it is already possible to detect changes in the material culture of these Eskimo with the passage of time. The greater frequency of pottery in the lower portion of the sites and its virtual absence in the upper portions suggests the eventual discovery of many changes in the historical sequence.

The effective planning of the National Park Service and the skillful facilitation of the project's personnel by Mr. Robert Luntz, Project Director, made possible the sampling of four separated sites in an area which is comparatively difficult to traverse.

W.S. Laughlin  
Associate Professor



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## Introduction

The Katmai Project was organized by the Washington, D.C., office of the National Park Service. Initial planning and the program of procedure was worked out by the National Park Service during the fall and winter of 1952-53. The purpose of the Project was scientific analysis of the resources of the Katmai National Monument, which is situated on the Alaska peninsula.

To further their program, the National Park Service enlisted the aid of several other government agencies. The agencies which participated in the Katmai Project besides the National Park Service were: the Office of Naval Research, The U.S. Coast and Geodetic Survey, the U.S. Geological Survey, the U.S. Fish and Wildlife Service, the U.S. Public Health Service, and the Office of the Quartermaster General. In addition the 357th Engineers Company, Major McCormack commanding, of the 30th Engineers, rendered invaluable supply and liason support in the field.

In June, 1953, Mr. Robert S. Luntz, project leader, established the Katmai Project headquarters at the King Salmon Air Force Base, Alaska. From there he ably directed the establishment, equipping, and supplying of the several field camps used by the scientists in the Monument.

The division of Archaeology and History of the Katmai Project was placed under the direction of Dr. William S. Laughlin of the University of Oregon. Two graduate students of the university, Mr. James W. Leach and Mr. Wilbur A. Davis, were appointed by him to do the archaeological field work. Mr. Leach had extensive field experience

in the Aleutian Islands under Dr. Laughlin, besides archaeological studies in Oregon under Dr. L. S. Cressman of the University of Oregon, and as an employee of the Smithsonian River Basin Surveys. Mr. Davis' previous field experience in archaeology was in the Columbia River Basin as an employee of the Smithsonian River Basin Surveys. Archaeological excavations and surveys were directed in the field by Mr. Leach.

A three month period, June 15th to September 15th, 1953, inclusive, was scheduled for field work. As travel time was included within this period, Dr. Laughlin felt it was desirable to set up a plan of operation which would enable the field party to do a maximum amount of archaeology in the time allotted. Accordingly, three historical village sites to be excavated were selected from ethnological and historical sources on the area.

The three sites were (1) the village of Savonski at the mouth of the Savonoski river in the interior of the Katmai National Monument, (2) the village of Katmai at Katmai Bay, and (3) the village of Kukak situated on Kukak Bay. The two latter sites are situated on Shelikof Strait (Map 1).

The sites were selected on the basis of three considerations. First, the location of each of the sites was known. This would obviate the necessity for prolonged areal surveys and search for suitable sites to excavate. Second, all of these sites were presumed abandoned at the same time, June, 1912, when Mt. Katmai erupted. We would therefore have the same terminal date for each village. Having such a fixed reference point in time for three widely separated sites is invaluable for purposes of comparing the artifact assemblages collected from each site. Third, these three sites would serve to

define the area. The artifact assemblages from these sites could be compared with each other and with data from adjacent areas, the Alaska peninsula, Kodiak Island, the Aleutians, Bristol Bay, and Cook Inlet, in order to determine relationships.

The inland village, Savonoski, situated at the head of Iliuk Arm of Naknek Lake was chosen for our first excavation. Mr. Luntey was informed of our tentative working schedule. Under his efficient direction supplies and equipment were flown into Savonoski in advance of our arrival. Therefore, it was only necessary for us to draw personal field equipment at King Salmon AFB before leaving for the field.

We found it necessary to revise our schedule. Because of weather and transportation exigencies, we substituted excavation of an hitherto unreported village site at Brooks River in the interior of the Monument for Katmai village. This choice was fortunate, as the site was far more productive than Savonoski and yielded valuable archaeological data from the interior of the Alaska peninsula which otherwise we would not have had.

The archaeological data is not presented in the order in which the sites were excavated. Kukak village is regarded as the type site for the purpose of comparison between the sites excavated, and is presented first. Katmai, Kaguyak, Savonoski, and Brooks River follow in that order.

We wish to express our appreciation to the National Park Service for giving us the opportunity to participate in the Katmai Project and for the honor of publishing this report. We also wish to thank Dr. L. S. Cressman and Dr. W. S. Laughlin for their criticism, counsel and assistance in editing this report, and P. T. Spaulding, David Cole, Miss Hester Davis, and Mrs. Janet Patterson, fellow graduate students,

for their criticism and assistance in preparing this report. The Department of Anthropology, University of Oregon, supplied the space and facilities for analysis of the artifacts.



### Eskimo Inhabitants

From the standpoint of history and ethnography very little is known about the aboriginal inhabitants of the northern portion of the Alaska peninsula. Early major works on the Eskimo people contain some mention of the peninsula and its inhabitants, yet in each case the data consists of generalities and the treatment is superficial. Ivan Petrof, special agent for the U. S. Census during the last decades of the nineteenth century, still remains the foremost source on the peoples of Bristol Bay and the Alaska peninsula.

Neglect of this area in early studies on the Eskimo is primarily due to theoretical assumptions by anthropologists that the purest examples of Eskimo culture lie north of the Arctic circle. Investigations of problems of antiquity and origin were thus focused upon the cultures east of Point Hope, Alaska. Recent studies have shown the importance of western Alaska in the development of Eskimo culture as we know it today (Kroeber, 1939; W. S. Laughlin, 1953), although its primacy was first stated by Sapir as early as 1916 (1916, p. 82).

Kroeber (1939, pp. 23-4) lists twenty-five regional variants of the Eskimo economic culture. The Katmai National Monument lies astride the boundary between two of these ecological regions: the inland sites on Naknek Lake belonging to the Bristol Bay region, and the Shelikof Strait sites to the Kodiak Island region, the dividing line being the summits of the Aleutian Range. Concomitant with the ecological boundary is a linguistic division, on the basis of which tribal distinctions have been made since contact times. Hence the former inhabitants of the inland sites are subsumed by Petrof under the Agle-

muts of Bristol Bay, while the Shelikof Strait inhabitants are identified with the Koniagmuts of Kodiak Island (Petrof, 1884, Map #2).

Aglemute

The name of the Aglemute tribe has appeared in various forms. The Handbook of American Indians (BAE 30) give Achkugmjuten, Aglegmnguten, Aglalmites, Aglegmuit, Agolegmutes, Agulmuten. Under Oglemuts, Dall reports

This tribe inhabits the north coast of Alaska /Alaska Peninsula/ from the 159th degree of west longitude to the head of Bristol Bay, and along the north shore of that Bay to Point Etolin. Their habits are essentially the same as those of the last-mentioned tribe /Koniagmit/, while their vocabulary differs somewhat from that of the latter. They live principally by fishing and hunting the walrus, seal, deer, and foxes; they are few in number. They are the Aglegmuts of Holmberg (1877, p. 405).

H. H. Bancroft speaks of them as Aglegmutes, a nation belonging to the "Koniagan" linguistic family (1875, vol. 1, p. 70). Hrdlicka (1928, p. 235) has both Oglemut and Aglegmute. For convenience, we will use Petrof's 'Aglemute'; of them he says "This tribe, numbering but a few hundreds, inhabits the north coast of Alaska peninsula, down to the Oogashik river, where the Aleutian settlements begin" (1884, p. 136).

Concerning the physical features and ecology of the Bristol Bay region Petrof writes

The country between Bering Sea and the alpine chain of mountains extending along the eastern shore is a gradually ascending plane, dotted with lakes fed from the glaciers and eternal snows in the east, and having their outlets in the west. In the northern portion of the peninsula a belt of timber reaches down in the center to the vicinity of Lake Bochorof, but beyond this the forest disappears, and only the deep ravines exhibit a stunted growth of creeping willow and alder brush. The reindeer browses and herds all over this region, retreating during the summer up to their inaccessible retreats among the snowy peaks of the mountain range, where they are often seen by the traveler below as a moving line of black dots winding around the summits. During the autumn and winter they

seek the vicinity of the lakes and scatter over the tundra, where they are hunted with comparative ease. Foxes, land-otters, martens, and minks are plentiful throughout this section, and the gigantic brown bear of continental Alaska rivals the native fisherman in the wholesale destruction of the finny inhabitants of lake and stream. (Ibid., p. 24).

In another place (Ibid., p. 72) he observes that they "derive a very large proportion of their subsistence from the various kinds of salmon, which frequent the rivers in the greatest abundance." Of sea-mammal hunting he reports "the natives of the coast villages are walrus-hunters, and occasionally put out to sea in pursuit of whales" (Ibid., p. 136). He states further that they are Christians, "but retain all their former customs and superstitions," are expert ivory carvers, and display only dialectic differences from their northern neighbors. In the 11th Census report we find that in common with their northern neighbors, the Kuskwogniut, Nushagagniut, and Kiatagniut, they possess the same types of semi-subterranean houses, sealskin canoes (kayaks), walrus-tusk spear, spruce bow and ivory tipped arrow, bone barbed harpoon, "and fish with the same kind of bobhooks, hand nets, and wicker fish traps." The kayaks "only display the usual tribal differences of design" (1893, p. 93).

A picture of village sites, house structures, and methods of preserving food is gained from the following quotations:

The Aglemiut, living on the low treeless coast of the Alaska peninsula, construct their dwelling chiefly underground, with a roof of driftwood and sods, the latter often reinforced with walrus hide. Whale ribs are often found in these structures, serving as rafters or posts. Their villages are all situated on the banks of salmon streams or tidal channels, and seem to have been located with but very little regard for a fresh water supply, being set on low ground to facilitate the "seasoning" of salmon heads in holes in the earth, half filled with stagnant water, forming quite a cordon of hidden pitfalls around each settlement. Where driftwood or other timber is too scarce to permit of the construction of Kuggats the blubber and meat of seal and

walrus are buried in pits in the ground for safekeeping, covered with a thin disk of soft clay (Ibid., p. 169).

The houses in all of this district outside of the missionary settlement of Nushegak are much the same as in the other northern divisions, and may be described as follows: A circular mound of earth, grass-grown and littered with all sorts of household utensils... The entrance to this house is a low, irregular square aperture, through which the inmate stoops and passes down a foot or two through a short, low passage onto the earthen floor within. The interior generally consists of an irregularly shaped square or circle twelve or fifteen or twenty feet in diameter, receiving its only light from without through the small opening at the apex of the roof, which rises, tent-like, from the floor. The fireplace is directly under this opening. Rude beds or couches of skins and grass mats are laid, slightly raised above the floor, upon clumsy frames made of sticks and saplings or rough-hewn planks, and sometimes on little elevations built up of peat or sod. Sometimes a small hallway with bulging sides is erected over the entrance, where by this expansion room is afforded for the keeping of utensils and water vessels and as a shelter for dogs. Immediately adjoining most of these houses will be found a small summer kitchen, a rude wooden frame, walled in and covered over with sods, with an opening at the top to give vent to the smoke. These are entirely above ground, rarely over five or six feet in diameter...

In the interior regions, where both fuel and building material are more abundant, the houses change somewhat in appearance and construction; the excavation of the coast houses, made for the purpose of saving both articles just mentioned, disappears and gives way to log structures above the ground, but still covered with sod...(Petrof, 1884, p. 15).

It is apparent from the above quotations that the common house type of the Bristol Bay region was of one-room construction. Yet an individual house sheltered a considerable number of persons.

The table appended to this chapter indicates that among the Aglemiut inhabiting the few scattered villages on the sandy north shore of the peninsula each dwelling is occupied by several families. Thus, at Pakwik we find 26 families living in 8 houses, at Unangashik 38 families in 10 houses, and at Meshik 15 families in 6 dwellings, while among the same tribe, in the timbered country about Bristol Bay, more than 2 families are rarely found under the same roof. It seems evident, therefore, that only the scarcity of building material caused them to herd together.

The only inland settlement of the Aglemiut is the village of Ighiak, on Lake Walker or "aknek, and here, within reach of the spruce timber which partially covers the northern slopes of the Alaska range of mountains, we find them in dwellings much more comfortable and rising higher from the ground, with wooden floor and platforms for sleeping. In this village a dwelling is rarely occupied by more than one family (Porter, 1893, p. 169).

Historical evidence discloses that apparently the Aglemute were unique in regard to their relationships with other ethnic aboriginal groups. The usual intertribal contact situation for most Eskimo groups, due to the linearity of their littoral distribution, was with ethnically close but dialectically varying Eskimo groups on either side of them and little or no contact with the linguistically and culturally separate Athapascan-speaking Indians to the interior. The Aglemute had close dialectic and cultural affinity with their northern littoral neighbors. Inland, their northern neighbors were Athapascan-speaking Indians, with the linguistic boundary roughly paralleling the north shore of Iliamna lake. Their southern neighbors, south of the Ogashik river and Becharof lake, were the Aleuts, who speak a different language, though related to the Aleut-Eskimo linguistic stock. West of the Aleutian Range their neighbors are Koniags, dialectically related but ethnically quite different.

The most important intertribal contacts of the people in Katmai Monument area apparently were with the Koniags along Shelikof Strait. Petrof (1884, p. 136) notes that

the Aglemute have lived from time immemorial upon the portage routes between Bering Sea and the north Pacific across the Alaska peninsula. The people of the eastern-most villages on Lake Walker even now maintain a more constant communication with the Koniagmutes of Katmai across the mountains than they do with their kinsmen on the coast of Bering Sea.

He continues with a comment on contacts with Eskimos to the northeast.

Among the Aglemute also traces of immigration from distant tribes exist. I found on the Naknek river, the outlet of Lake Walker, a family hailing from Ikogmute some 200 or 300 miles up the Yukon. Their immigration had taken place quite recently, and they still remembered many of the people in their old home by name.

Thus we have evidence for fairly extensive inter-group contacts among western Eskimo dialect divisions in which the people of "aknek Lake directly or indirectly shared. We have no data of Athapascan Indian influences extending this far south. Aglemute contact with their southern neighbors was not so salubrious.

In former times there existed another element among the Aglemute--Aleutian invaders, who for some time inhabited two settlements on the mouth of the Naknek River. As far as can be ascertained, the Aleutians retreated down the peninsula as far as Oogashik at the beginning of the present century (loc. sit.).

The people of Port Moller and Oogashik are of the Aleutian tribe, which in former years made warlike expeditions along this coast /Bristol Bay/, extending as far to the northward as the Naknek River and Lake Walker. At the village situated on one of the feeders of the latter lake the present inhabitants still tell the story of the night attack made by the "bloodthirsty" Aleuts long years ago, when every soul in the place was dispatched without mercy, with the exception of one man, who hid himself under a waterfall close by, and thus survived to tell the tale (Ibid., p. 24).

This village is without doubt the site at Brooks River, where the Katmai National Monument Ranger station and the fishing camp of the Northern Consolidated Airlines are now located.

### Koniags

Hrdlicka (1944) has discussed the prehistory, history, and ethnology of the Kodiak people so adequately that it seems pointless to review the data again. The picture of the Kodiak people one draws from his resume is that of a robust people speaking a dialect closely related to the mainland Eskimo, but physically and, to a lesser extent, culturally distinct from them. The population of the Kodiak islands

appeared to have been expanding at the time of Russian contact, so that the Kodiak territory included not only the Kodiak islands but also the shores of the mainland from Cape Ivanof in the west to the shores of Prince William sound in southeastern Alaska.

All authorities consulted agree that the village of Katmai is the most important of the main-land communities; the reasons for this are discussed more fully below (pp.39-45.). We found no comments attributing a like importance to the villages of Kukak and Kaguyak which lie north of Katmai. Porter (1893, pp. 167-8) gives the following interesting discussion on choosing a location for a desirable village site in the Kodiak area.

In the western part of the district /2nd or Kadiak/, on the treeless shores of Kadiak and adjoining islands and the bare coast of the Alaska peninsula, two chief considerations entered into the selection of a village site; first, the vicinity of an accumulation of driftwood, their only fuel and building material; and, second, a safe landing place for kayaks or bidarkas. The most favored situation with these maritime tribes, depending upon the sea for their subsistence, was a point of land or gravel spit extending into the sea in such a direction as to afford shelter on either side from the various winds. On this coast islands are frequently found consisting apparently of detached groups of hills connected with each other by low, narrow isthmuses or gravel spits, and forming sheltered bays on either side. At such points, if there be no settlement now, one may count with absolute certainty upon finding the grass-grown mounds representing former barabaras. The gravel spits separating salt-water lagoons from the sea were also favored village sites. In addition to the permanent villages of the Kaniagnute, a number of fishing camps are always found in their neighborhood to which the people resort for several months of the year, taking their households with them. The number of dwelling sites, occupied or abandoned, throughout this region, has been the cause of many erroneous estimates of population in the past and present.

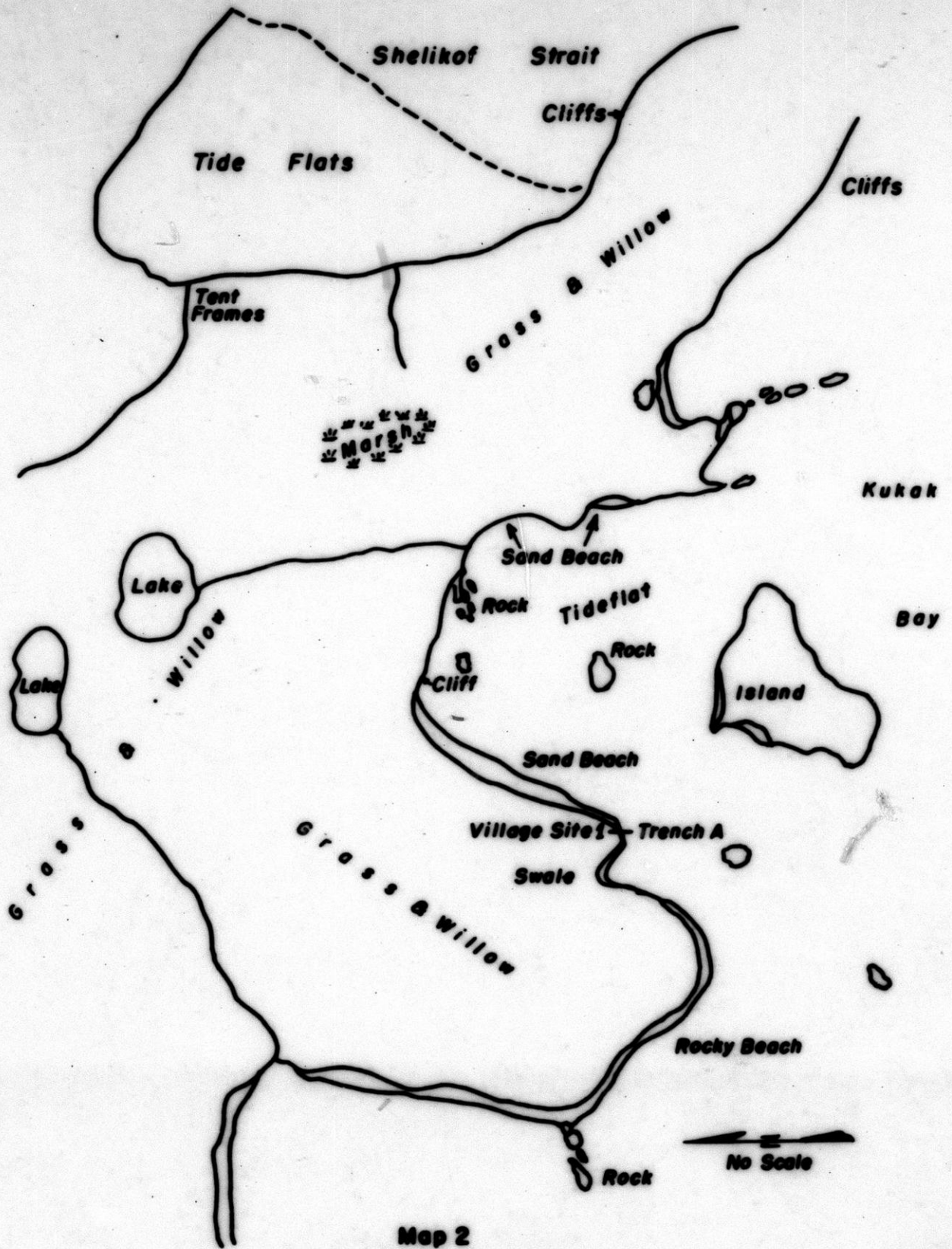
The Kodiak dwelling is also a semi-subterranean structure; but it is of greater architectural complexity. The house plan consists of a central room, or kitchen, with access from the outside by a low side entrance. A fireplace is in the center of this room below a

smokehole in the roof. Adjoining the central room may be several sleeping rooms, connected to the kitchen by low, narrow tunnels, and receiving light from small apertures in the roofs which are covered with transparent gut. Each of these sleeping rooms is occupied by two or more families, each family area marked out by logs laid on the floor. In addition, each community had a kashim, or men's house, which served as the village community center (Hrdlicka, 1944, pp. 26-30).

These structures have been replaced or modified since white contact.

Even before Holmberg's time and especially since the island has become American, the native houses were gradually replaced by log and frame dwellings resembling those of the Whites; but in 1932 during my survey of the island, I saw in the southwestern parts of the island a number of oval dome-shaped native structures, though these evidently were already modified inside and were no longer semi-subterranean (Ibid., p. 30).





**Map 2**  
**Village Site, Kukak**

-14-

Kukak

Physical Description

The village site at Kukak lies on the northern shore of Kukak Bay about three-fourths of a mile inland from Shelikof Strait (Map 2). It is situated on the northwestern bank of a small cove; its location affords a southern exposure. The waters of the cove are sheltered from storms by an island about an acre in extent (Plate XIII). Cover of the area consists of Elymus and other grasses, wild parsnip, scrub willow and occasional groves of cottonwood. Fresh water is supplied by two small streams which drain inland marshes and ponds. There is also, at the northeastern end of the site, a strong spring of fresh water which wells up through the sand and is exposed at low tide.

History

At the present time no people live at Kukak Bay. There is an abandoned cannery on the southern shore of the bay. On the beach facing the strait, east of the village site, are several tent frames formerly used by clam diggers. Kukak Bay is regarded by mariners as the best and safest harbor for larger ships to be found along the shores of the Alaska peninsula facing Shelikof Strait. It provides a safe, land-locked anchorage in 60 fathoms of water.

Mr. Roy Fure, a long-time resident of Alaska, states that the site was abandoned prior to the Mt. Katmai eruption. Petrof (1884, p. 28) gives a population of 37 Eskimo for Kukak; Porter (1893, p. 163) includes Kukak in the Cape Douglas area, for which he gives a

population of 85 Eskimos. It seems that final abandonment of the site could not have occurred too long before the eruption.

As for the history of the name, the only information is provided by Baker (1902, p. 254) who reports: "Kukak, Indian village, on Kukak Bay. Lutke, 1835, has Koukak Bay and village." Our research did not disclose any reasons why Baker referred to this site as an Indian village. On the contrary, all the available evidence points to occupation by Eskimo.

#### Method of Excavating

A test trench 14 meters long by 2 meters wide was excavated at the southern end of the site at the midden's greatest elevation. The baseline was oriented on a compass azimuth of 115° True, to take advantage of the prevailing winds which kept the mosquitos down. Stake 10A was placed at the highest point of the mound, with the surface at this spot being our datum point. A grid of one-meter squares was staked out to the north of the base line. The stakes were numbered consecutively from east to west and lettered alphabetically from south to north (Fig. 1). The trench was excavated in 25 centimeter levels for horizontal control (Plate XIV).

#### Stratigraphy: Geological and Cultural

The trench bisected a large oval housepit, approximately 9 by 7 meters in area. Another room, for sleeping or storage, 1.5 meters deep by 3 meters in circumference, lies 1.25 meters northwest of the larger housepit. A connecting tunnel was not disclosed by the excavation, although the proximity of the two pits makes such a connection probable.

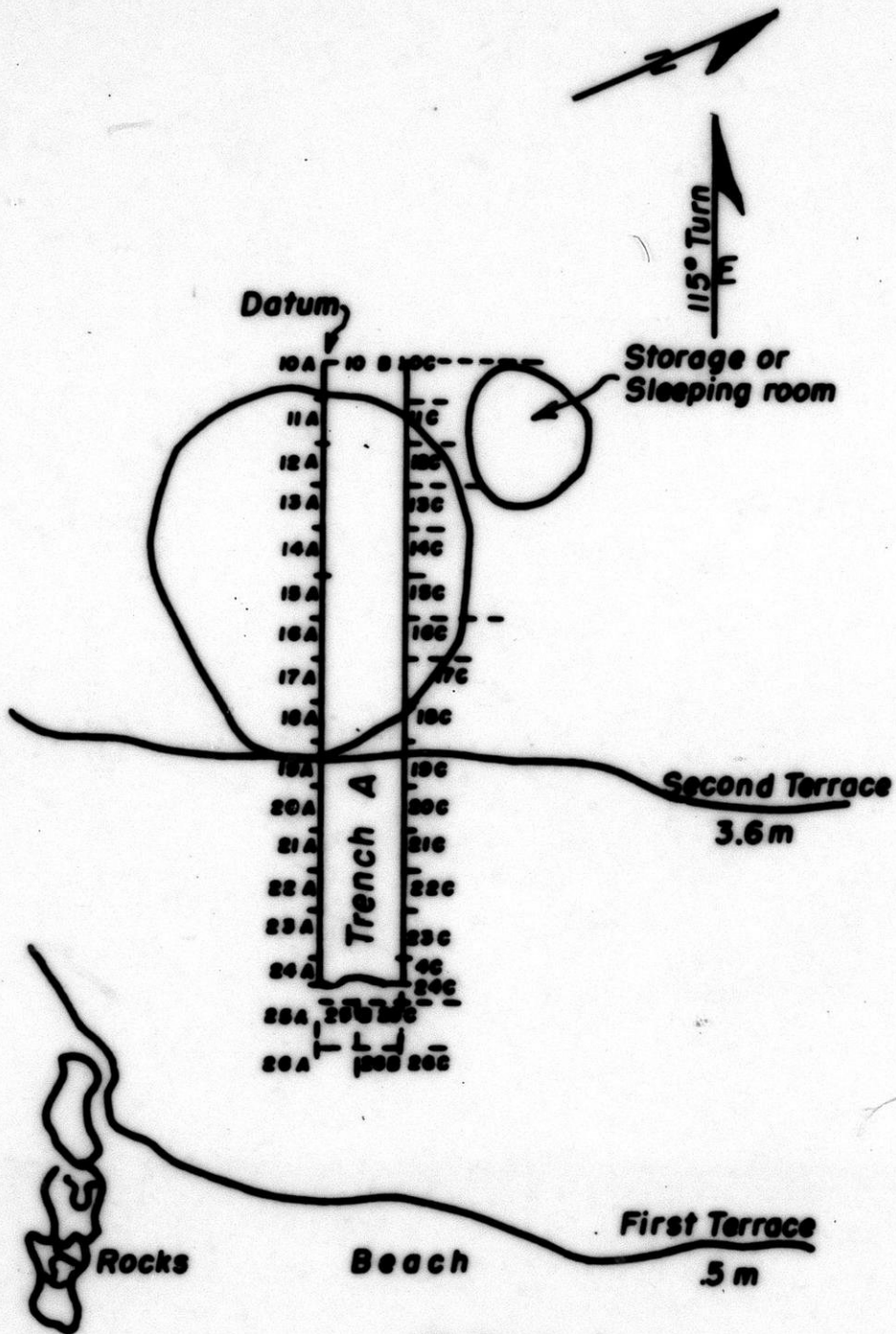


Figure 1  
Plan view of one meter square grid  
and Trench A, Kukak  
Scale 5mm=1m

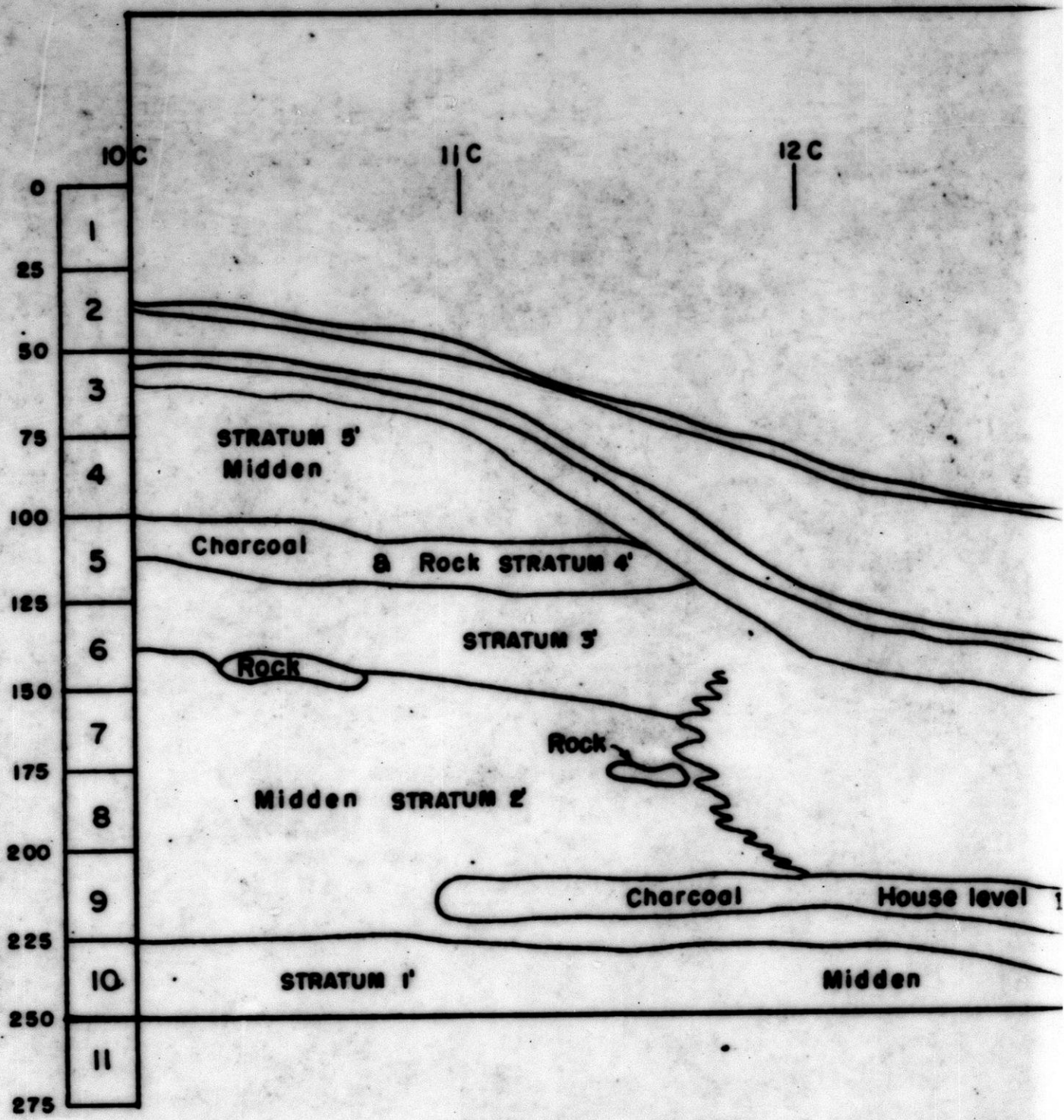
The luxuriant growth of grasses formed a tough, springy sod difficult to cut through. It was necessary to burn the grass covering the area around the proposed trench to facilitate digging. A thick band of Katmai ash and pumice lies under the sod. The volcanic deposit is composed of three strata: an upper 10 to 38 centimeters stratum of fine, white ash; an intermediate 4 to 7 centimeters stratum of light-tan pumice granules, about the texture of coarse beach sand; and a bottom 4 to 12 centimeters stratum of coarser, off-white pumice granules (Plate XV).

The midden deposit is composed of a sandy soil heavily impregnated with organic material. The soil becomes progressively more sandy in the lower levels of the excavation. Charcoal, gravel, and fire-burnt, cracked and broken rocks are scattered throughout the deposit. Two areas, in square 10A at 60-100 centimeters, and square 20A at 125-150 centimeters, contained heavy concentrations of broken rock and charcoal, but neither area showed positive evidence of having been hearths. Square 13B contained a hearth one meter in circumference and 30 centimeters in depth which is a part of cultural stratum 2 (Fig. 2). A pile of large basalt rocks up to 50 centimeters square was found between 100 and 175 centimeters in squares 10A, 10B, and parts of 11A and 11B. It is suggested by Mr. Leach that these rocks may have formed a part of the western wall of a barabara. Another, larger pile of rocks was excavated from squares 18A, 18B, to 20A and 20B between 125 and 180 centimeters datum depth. It is evident from the distribution of these rocks that they were probably thrown out of the housepit area.

A stratigraphic profile of the north wall reveals five super-



Plate XV - Beginning of excavation of Trench A, Kukak. Mr. Davis is removing the ash deposit. By J. W. Leash



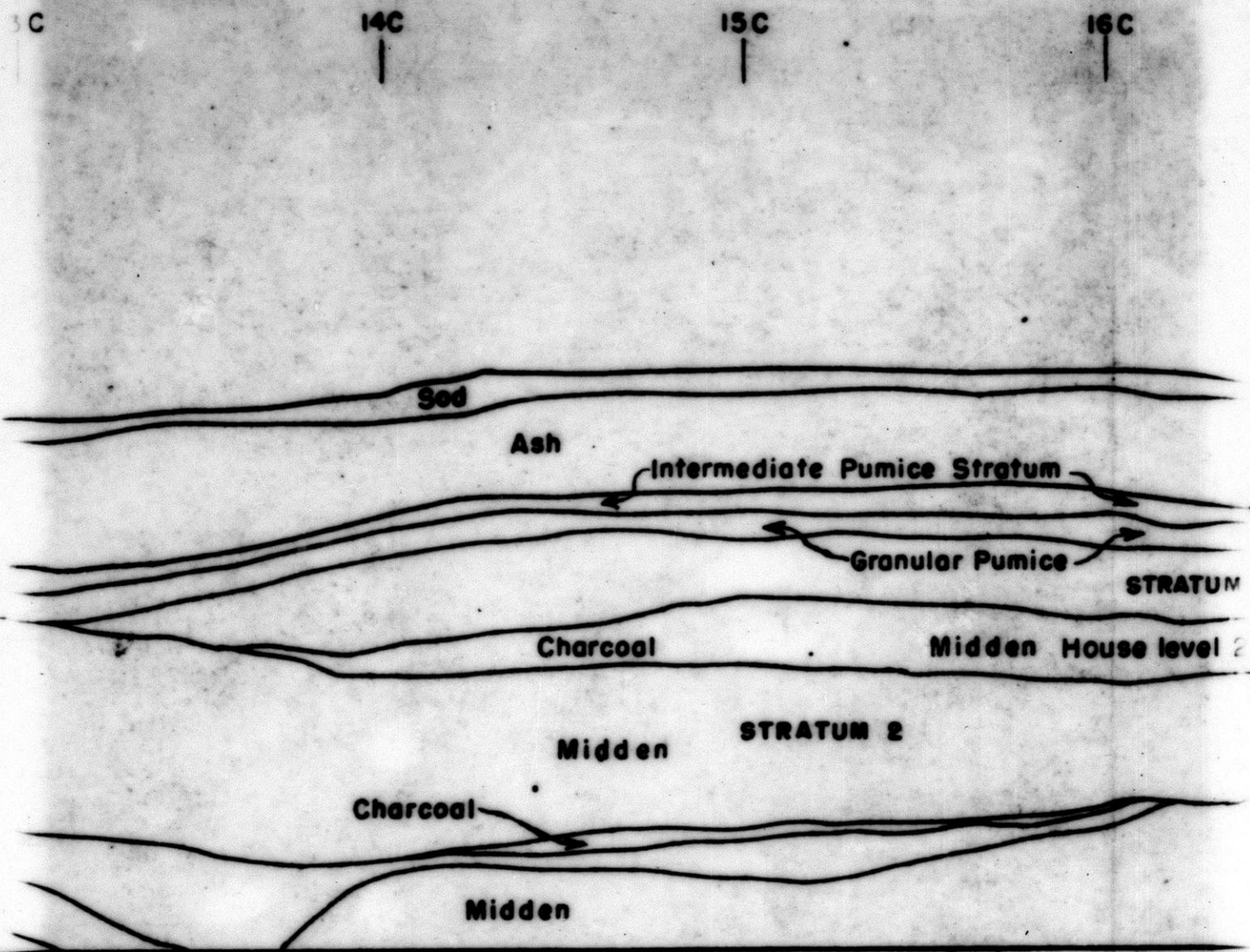


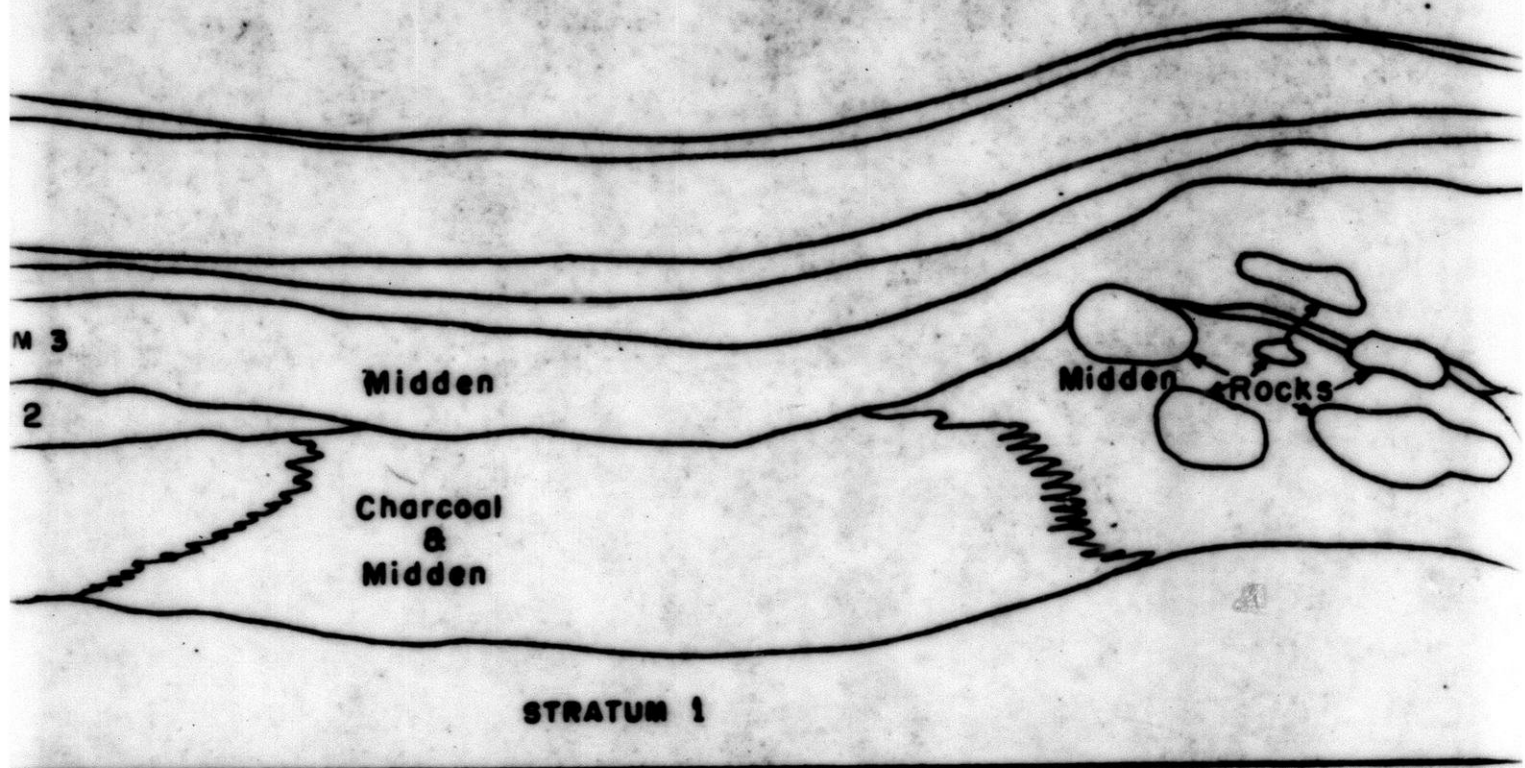
Figure 2. Stratigraphic profile of north wall, Trench A, Kukuk.



17C

18C

19C



20C

21C

22C

23C

Shell  
and  
Bone

3

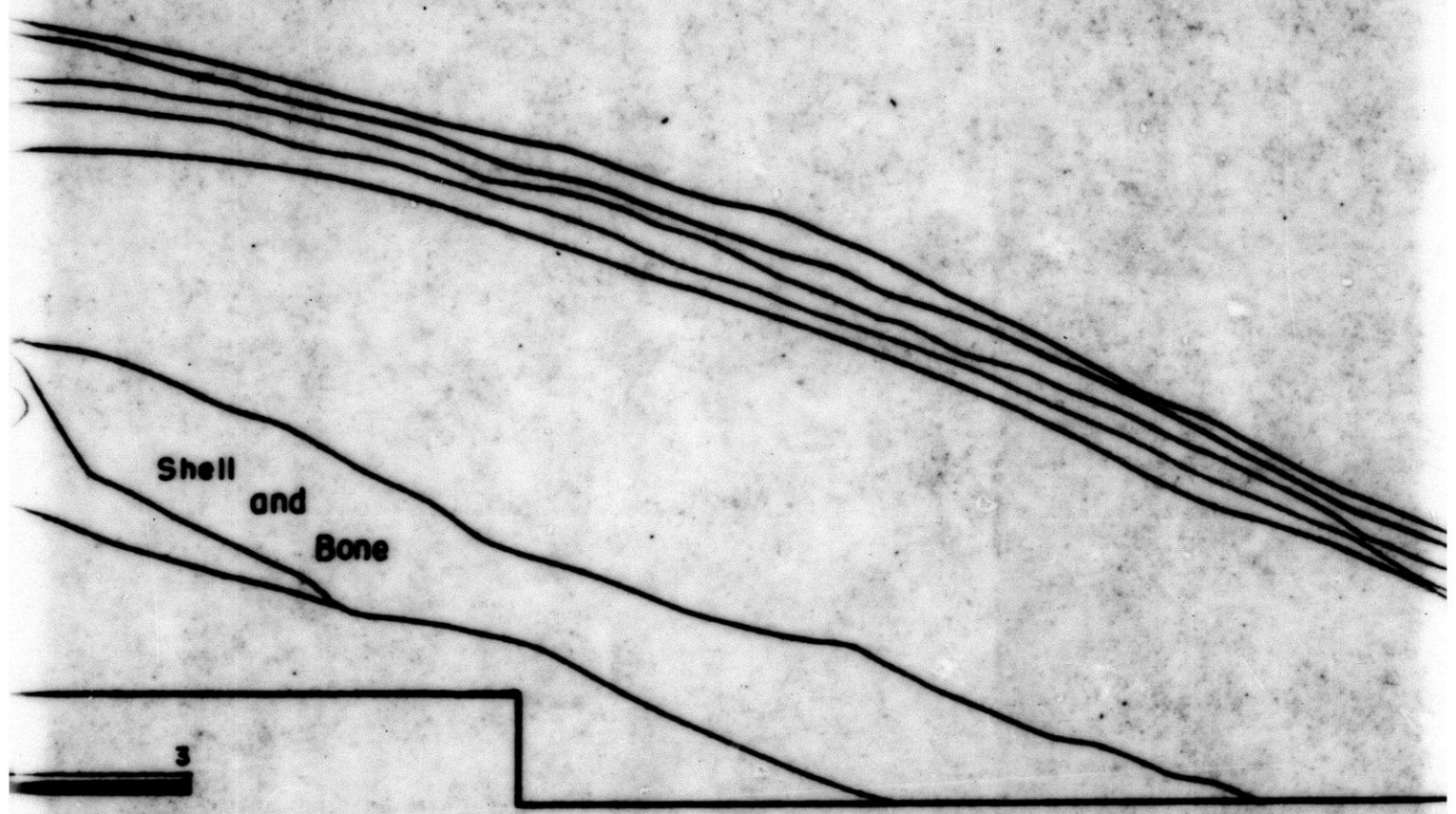
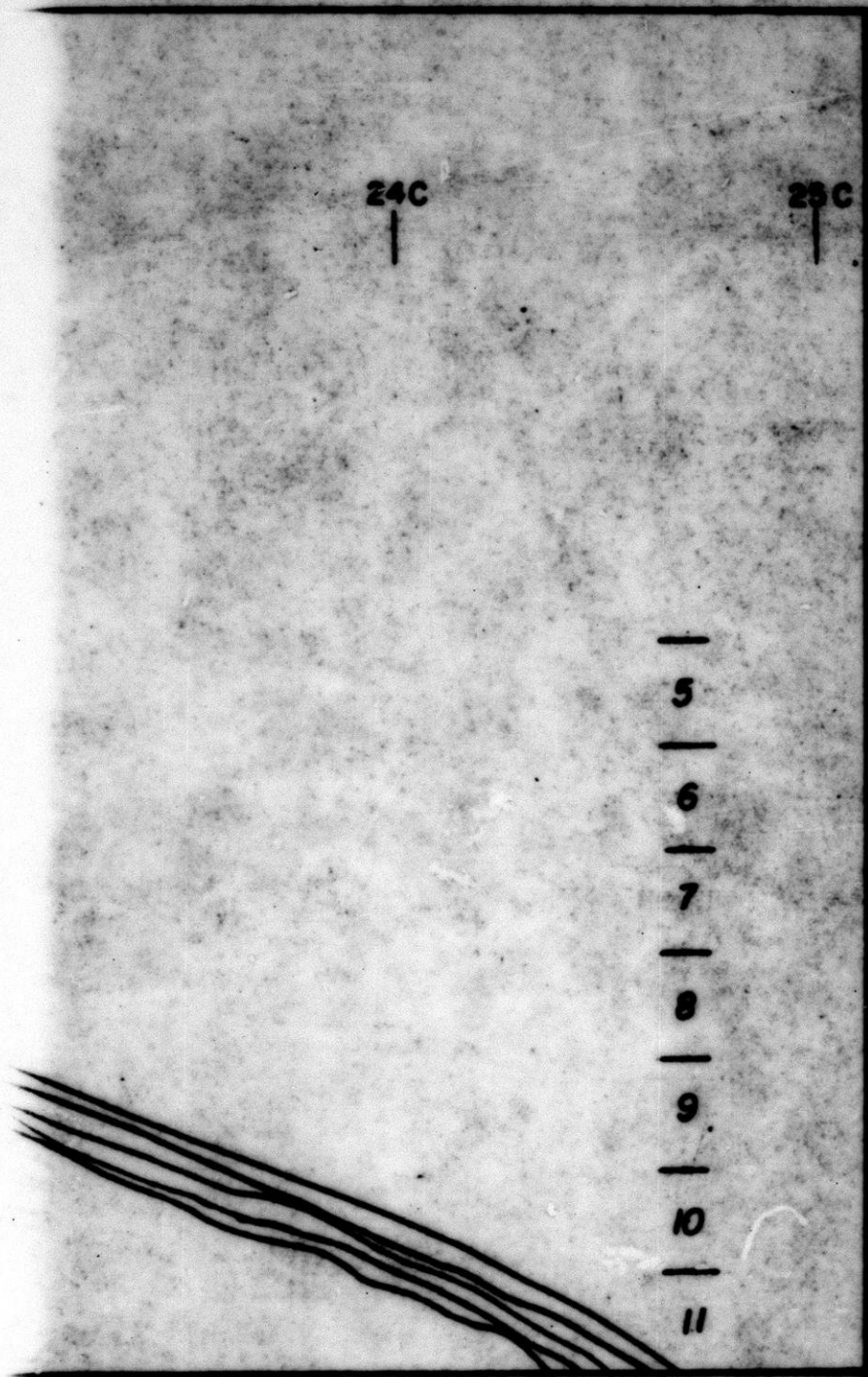


Figure 2



imposed cultural strata between stakes 10C and 12C and three super-imposed cultural strata between stakes 12C and 24C. The two groups of strata thus distinguished are quite distinct from one another (Fig. 2 ).

For the most part, the midden from squares 10 and 11 is more sandy and uniform in character. Greater amounts of staining and banding from organic materials and charcoal occur in the upper levels, with the midden becoming progressively more sandy and lighter in color toward the bottom of the trench.

Stratum 1' is delimited by a thin, dark brown line approximately 2 centimeters thick at about 225 centimeters datum depth. Only 7 artifacts were recovered from the upper portion of level 10 in squares 10 through 12 in which this stratum appears.

Stratum 2' is approximately 85 to 75 centimeters thick. A 20 centimeter wide finger of this stratum extends into square 13 underneath the first house level.

Stratum 3' is distinguished from stratum 2' only by being darker in color and having a thin line of darker material between them.

Stratum 4', of charcoal, sand, and rock at 101 to 120 centimeters datum depth, is presumed to be part of a house level as a natural formation stone lamp, S-65, sinker, S-62, chipped slate fragment, S-64, and a piece of hematite, S-65, were found in it. Moreover, it was interrupted by the excavation for house level 2.

Stratum 5' contains a considerable quantity of broken rock and is marked by pronounced charcoal banding. Its chief interest lies in the fact that a wolverine skull and rib of a large cervidae was excavated from square 10A at 100 centimeters datum level, approximately 50 centimeters below the volcanic deposit. These were

the best preserved of the bone specimens recovered from the midden which were not contained in the stratum of shell and bone.

The strata east of stake 12C are distinguished from the strata between stakes 10C and 12C by an uneven vertical line which occurs 15 to 20 centimeters west of stake 12C. East of this line the midden strata are characterized by greater amounts of charcoal, gravel, and broken rock.

Stratum 1 is almost identical in appearance to stratum 1'. It is almost devoid of cultural material. However, 11 artifacts were recovered from level 10, squares 14 to 20, 5 of which are definitely from stratum 1.

House level 1 appears at the bottom of stratum 2 in level 9. It contains the hearth mentioned on page 17. It begins abruptly 10 centimeters west of stake 11C. The floor level is relatively flat with a slight rise at each end, and is approximately 7 meters in length and 10 to 30 centimeters thick. It gradually pinches out between stakes 17C and 18C. A continuing line of charcoal, pebbles and other materials 2 to 3 centimeters thick extends into 20C where it merges with the shell and bone stratum.

This line may represent the ground surface at the time the house was occupied as it delineates the upper limits of stratum 1.

The large rocks excavated from squares 18, 19, and 20 lay above stratum 1; their distribution follows the downward curve of the mound at this point. Shell and bone were deposited on and among the rocks, indicating that part of the rocks were above ground when the shell stratum was deposited. Hence the stratum of shell and bone is associated with house level 1 and stratum 2. The remainder of

stratum 2 probably represents a filling in by deposition of cultural material at a later date. This may account for the observed discrepancies in the character of the midden in squares 12 through 16 with that in squares 17 and 18, the difference lying primarily in the texture of the midden matrix.

Stratum 3 is from 16 to 25 centimeters thick within the house-pit area, but is up to 75 centimeters thick east of stake 19C. In the area east of stake 19C it probably contains dirt from the excavation for house level 2 besides the usual accumulation of cultural detritus.

House level 2 is most pronounced between stakes 14C and 17C, achieving a depth of 25 centimeters. The concentration of charcoal bearing material thins out at both ends. The western end of the stratum rises until it meets the volcanic deposit at about stake 13C. To the east the stratum is reduced to a thin carbon-stained band similar to stratum 2, which ascends to 141 centimeters datum depth east of stake 19C and then descends to merge with the shell and bone stratum. The floor level thus outlined is between 7 and 8 meters in length, and more saucershaped than stratum 2.

The character of stratum 3 indicates that house level 2 was unoccupied for some time before the Katmai eruption. This conclusion is further borne out by the fact that no structural materials were recovered. It is assumed that the village area continued to be occupied for some time after this house was abandoned because 41 cultural items were recovered from the squares between stakes 12 and 19 above 150 centimeters datum depth.

## Artifacts

### Bone

Nearly all of the bones, including the bone artifacts, recovered from the excavation were obtained from the bone and shell stratum, with the exception of a wolverine skull and a large cervidae rib excavated from square 10A, level 4. Bone specimens were observed in nearly every square, but generally they were beyond salvaging. It is thought that the strong concentration of calcium from the shellfish acted as a preservative of the bone recovered from this stratum.

Dr. Arnold Shotwell, Curator of the University of Oregon Museum of Natural History, identified the species represented in the bone collection. Animals represented are: land mammals--bear, beaver, moose, caribou, porcupine, ground squirrel, fox, lynx, and wolverine; sea mammals--porpoise, whale, seal, sea lion, sea otter; fish--halibut, salmon; shellfish--chiton, razor clam, mud clam, cockle clam, sea urchin, periwinkle. No crab shells were observed in the cultural deposit. A few humeri and other elements of large birds, and a few vertebrae and gill plates of fish smaller than halibut were collected from the excavation.

### Stone

The following materials, identified on the basis of visual inspection, were used in the manufacture of artifacts.

Andesite. Material for sinkers, cutting tools, scrapers, and hammerstones.

Basalt. Most preferred material on the basis of presence; 121

specimens collected.

Chalcedony. A few scrapers of this material.

Chert. Used for scrapers and knives.

**Cannel** coal. Three specimens of this material were collected.

Pumice. Used for abrading and polishing implements. Common throughout the Aleutian Range.

Sandstone and Siltstone. Used for abrading and polishing implements and whetstones. Large sandstone outcroppings occur along the beach at Kaguyak.

Shale. Preferred material for sinkers. Depressions formed by the fracturing of large pieces were used as lamps. Dr. Lucke reported a deposit of slaty shale heavily encrusted with marine fossils on the north shore of Hallo Bay, which adjoins Kukak Bay on the north.

Slate. Preferred for the manufacture of abraded cutting and piercing instruments. Resembles the local basalt in color and texture to the extent that the criteria of streak, hardness, cleavage and fracture must be used to identify problematical specimens.

Stone materials of minor incidence include obsidian, quartzite, hematite, scoria, volcanic tuff, semivesicular lava, feldspar, and greenstone.

Clay. Blue and yellow clays of poor quality were used in the manufacturing of pottery.

Bone, wood, dentine, and ivory comprise the organic materials from which the collected artifacts were fabricated. Only one specimen each of ivory, dentine, and wood was collected. These materials were obtained from sea and land mammals and birds.



Tables showing the distribution of fabrication materials according to excavation levels and artifact categories are appended to this report (Appendix I). The distribution of the materials does not indicate any major trends of preference of one kind of material over another. However, approximately 52% of the slate specimens occur above 175 centimeters, a disposition at variance with the distributions of the other major materials.

Manufacturing techniques include percussion chipping and flaking, pressure flaking, pecking and abrading. Bone artifacts were carved. Four methods of working stone materials may be described. (1) The artifact is chipped by percussion or pressure to the desired shape and the working edges retouched by percussion or pressure flaking--scrapers, knives, and choppers. (2) The desired shape is obtained by chipping or flaking and the working surfaces and edges shaped by abrasion--knives, adze blades. (3) The shape is achieved by abrasion, including sawing, surfaces are polished and cutting edges honed--knives, arrow points, harpoon tips. (4) The artifact is fabricated by pecking and/or grinding--lamp, splitting adze, weights.

The above categories of fabrication methods were determined by visual examination, including microscopic inspection, of the artifacts. It must be pointed out that obviously not all of the necessary steps in the manufacture of stone artifacts can be adduced in this way, and also that the artifacts finished by abrasion techniques were probably first roughed out by percussion or pressure flaking.

### Classification of Artifacts

Artifacts are classified according to form, probable uses, and method of manufacture. Maximum diameters are given in the measurements. Hereafter, for convenience millimeters will be abbreviated to mm, centimeters to cm, and meters to m.

Three categories of specimens collected, stone flakes, ground stone fragments, and pebbles or cobbles, are not included in the following discussion of artifact types. Stone flakes were collected to help in obtaining data on materials preferred for artifacts. Sixteen and five-tenths per cent, or 89 of 541 of the collection are of this category.

Beach pebbles and cobbles occurred throughout the midden in such numbers that some significance was attached to them. Hrdlicka remarks that,

Among the many more ordinary specimens recovered hitherto from the site--Uyak Bay, Kodiak Island--there are two classes that call for a brief special mention. The first were whale vertebrae seats, the second stone balls...

The stone balls were of two varieties, those that closely resembled an egg, and those that were nicely rounded. The former, less frequent, may have served for some fetishism, the latter, ranging in size from that of an ordinary marble to over 4 inches in diameter, were often found several of a size together and in all probability had served for games, both those of children and those of adults. The balls were not made or dressed, but were carefully selected and matched natural formations (1944, pp. 285-7).

Round stones presumed to be bolas weights were excavated in Aleutian middens. The round and ovate stones collected from the excavation at Kukak do not yield to analysis, hence are disregarded as lacking significance. Six and five-tenths per cent, or 34 of 541 items are of this category.

Ground stone fragments are of value in assessing the abrading techniques employed in fabrication and for indications of preferred materials. The individual specimens are unidentifiable as to typology. Eleven and six-tenths per cent of the specimens, or 62 of 541, are so classified. Distributions of the above specimens are given in the tables in Appendix I.

Twelve specimens of bone, one worked tooth, and one wooden specimen were excavated. Only one harpoon head was recovered from the excavation. This is a unilaterally barbed point of whalebone (Plate I, 20). The tang is tapered, with a convex base, and has a drilled, round line-hole. A portion of the mid-section bearing a fourth barb is missing. Gross dimensions are: body portion, 141 x 26 x 12 mm; tip portion, 48 x 20 x 9 mm. Similar specimens illustrated by Giddings (1952, Plate XXVIII, 1-3) are identified by him as salmon harpoon heads.

One spear or arrow point of ivory was found; it is 133 x 11 x 9 mm, triangular in section, with three notch-like barbs along apex of body, long, tapering point; the tang is a shouldered, roughly carved cone (Plate I, 3). The conical, shouldered tang for spear or arrow points has a widespread distribution. Point styles having this type of tang were excavated at Chaluka and Tigalda in the Aleutians (University of Oregon collections, unpublished), and reported by Hrdlicka for Kodiak Island (1944, p. 234), Weyer for Port Moller (1930, pp. 268-9), Larsen for southwestern Alaska (1950, p. 178), Larsen and Rainey for Ipiutek (1948, Pl. 1). This type of arrow point persists throughout the Kobuk River assemblages (Giddings 1952, p. 49). Weyer comments that Mathiassen believes that its Thule

PLATE I

1. S-236, Wood fragment; Kukak.
2. 584, Flaking tool (?); Kukak.
3. 586, Arrow, ivory; Kukak.
4. 597, Awl, badly weathered; Kukak.
5. 519, Awl, bird bone; Kukak.
6. 531, Leister prong; Kukak.
7. 51, Carved puppet hand; Kaguyak.
8. 692, Shouldered awl, badly weathered; BR #1.
9. 25, Worked bone; Savonoski.
10. 55, Worked bone; Kaguyak
11. 525, Double-pointed awl; Kukak.
12. 520, Double-pointed awl; Kukak.
13. 526, Figurine of a bear; Kukak.
14. 89, Worked whalebone; Kukak.
15. 8, Flaking tool; Savonoski.
16. 3, Salmon harpoon head; Savonoski.
17. 620, Salmon harpoon head; BR #1.
18. 18, Awl, Savonoski.
19. 636, Flaking tool, BR #1.
20. 563, Salmon harpoon head; Kukak.
21. 598, Salmon harpoon head; BR #1, Root Cellar.

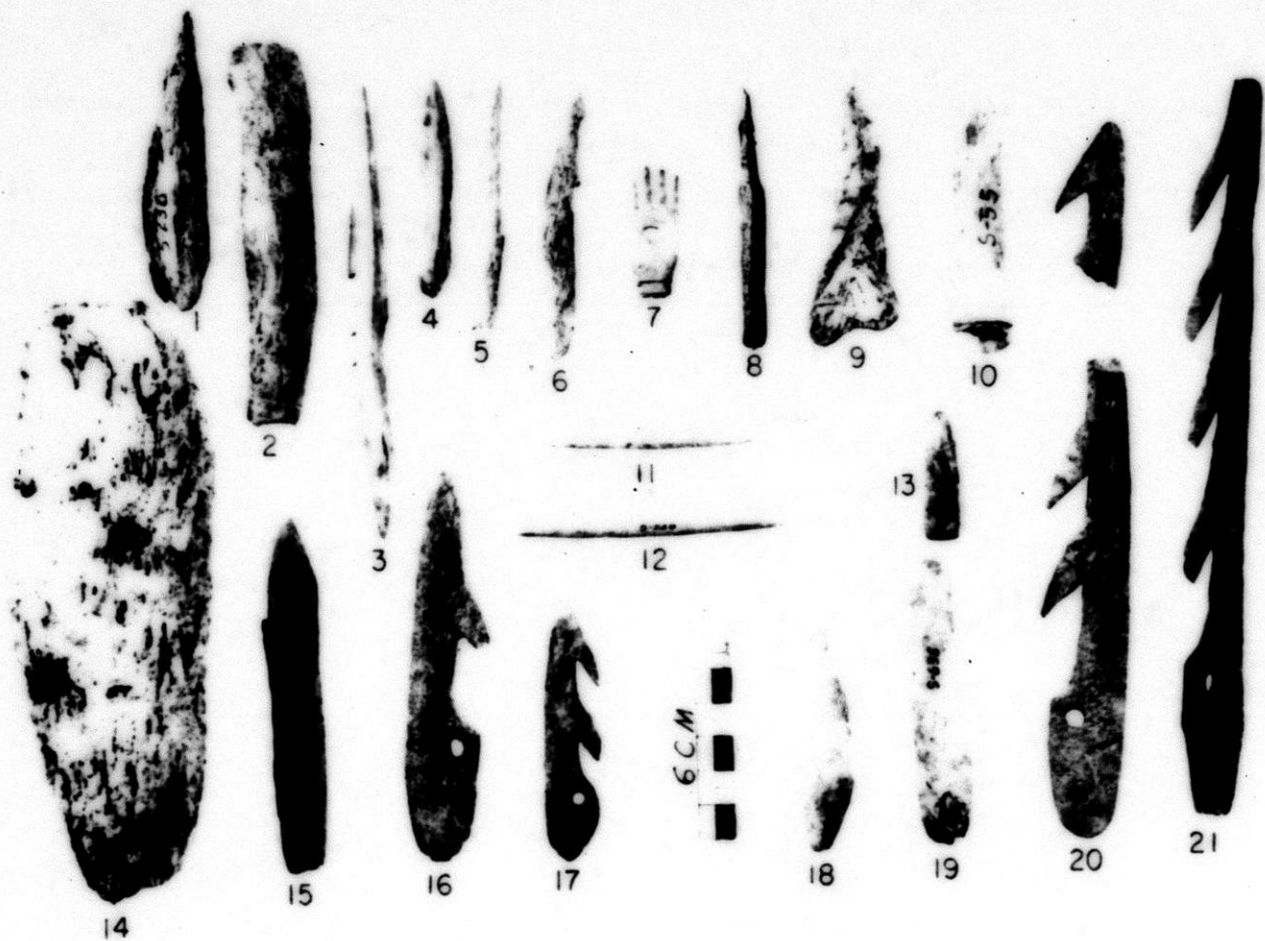


PLATE I

Photography— Plates I to XIII by L.S. Cressman.

forerunner "is an old form which has once been generally in use from Alaska to Greenland and that it persisted in the western regions after it had been superseded in the eastern parts" (1930, loc. cit.).

The excavation did not yield a true pressure-flaking tool. One bone specimen, #2, Plate I, is so classified, but it must be noted that the tip is broken off; hence, absolute identification is impossible.

The spear-fishing industry, if any, at Kukak is represented by one leister prong (Plate I, 6). Of the bone artifacts not discussed already, four are worked fragments, four are awls, and one is a fragment of whalebone. Two of the awls are single-pointed, one of the tibia of a small land mammal, the other of bird bone (Plate I, 4, 5). The other two awls are very slender, double-pointed specimens of dense bone (Plate I, 11, 12); the larger one may be for use in weaving baskets. The whalebone, #14, Plate I, could be either a part of a root-digger, fish-club, or some other object. The tooth is carved to represent a bear (Plate I, 13). It is somewhat eroded by weathering. The wooden specimen is awl-shaped, but this form could be due to deterioration (Plate I, 1).

One polished slate tip for a compound harpoon head was collected. It is 48 x 17 x 3 mm and has a faceted blade, beveled stem, straight base (Plate II, 19). Five stone arrow or dart points were excavated (Plate II, 10, 13, 14, 15, & 17). All are of polished stone, have faceted blades and diamond-shaped sections. The tangs of numbers 10, 13, 14, and 15 are tapered; that of number 17 is straight-sided. All five tangs agree in having a bifacial taper

PLATE II

1. S-663, Arrow or dart point, hollow ground edges; BR #1.
2. 521, Piercing instrument; Kukak.
3. 623, Piercing instrument; BR # 1.
4. 4, Harpoon blade fragment (?), hollow-ground edges, Savonoski.
5. 698, Piercing instrument; BR #1.
6. 562, Piercing instrument; (lance point); Kukak.
7. 580, Piercing instrument; Kukak.
8. 659, Harpoon blade; BR #1.
9. 673, Arrow point; BR #1.
10. 120, Arrow point; Kukak.
11. 207, Knife, type #2; Kukak.
12. 20, Lanceolate blade section hollow-ground on one surface only; Savonoski.
13. 596, Arrow point; Kukak.
14. 370, Arrow or dart point; Kukak.
15. 517, Arrow point; Kukak.
16. 625, Arrow point; BR #L.
17. 355, Arrow or dart point; Kukak.
18. 603, Arrow point, flaked, waterworn; BR #1, Root Cellar.
19. 264, Harpoon blade; Kukak.
20. 630, Harpoon blade; BR # 1.
21. 100, Point fragment, hollow-ground edges; Kukak.
22. 369, Piercing instrument; Kukak.

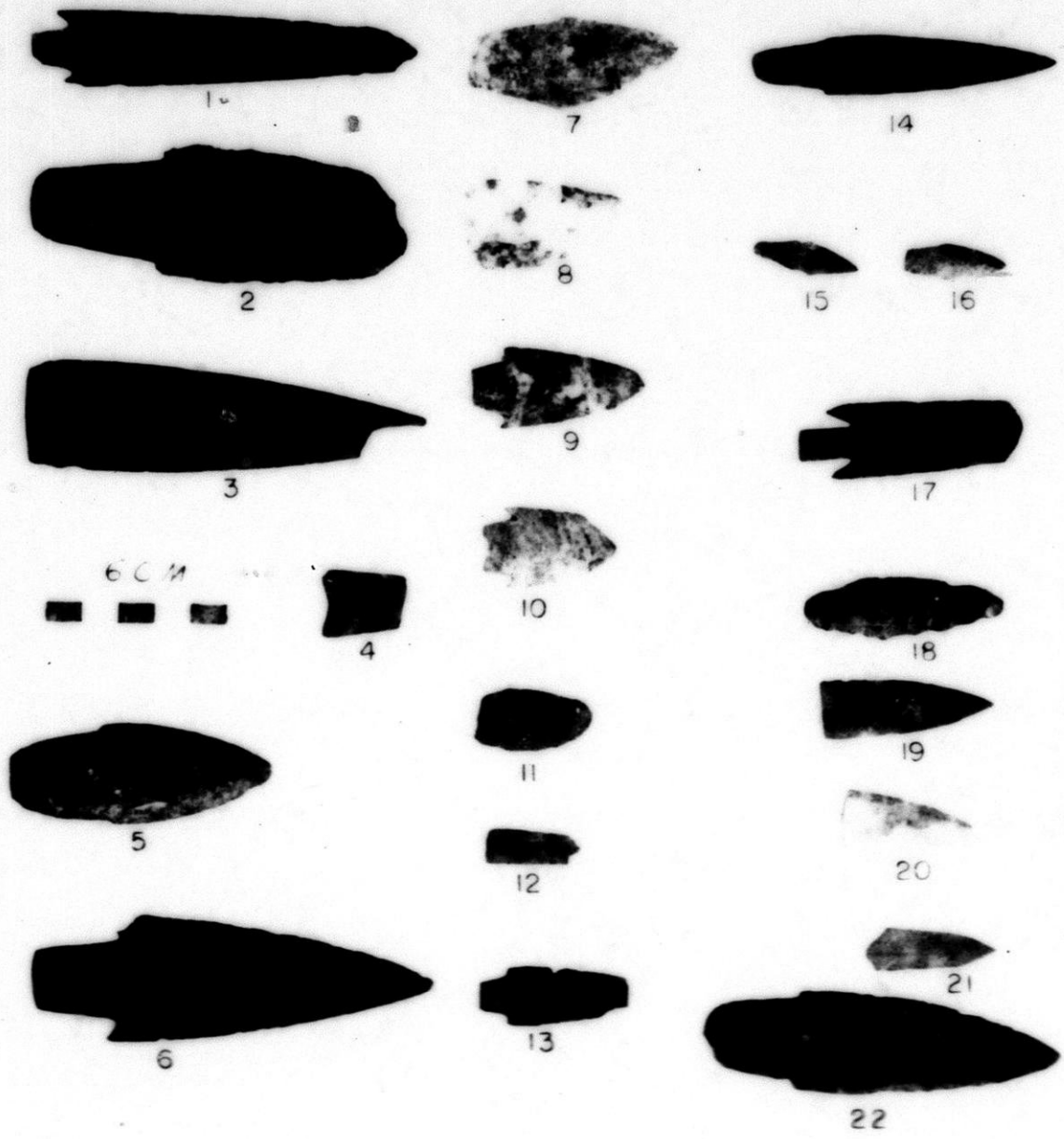




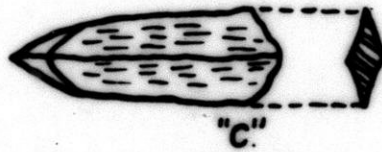
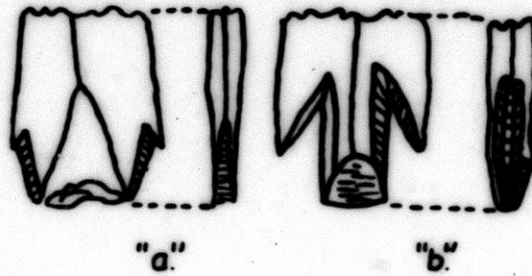


PLATE II

from the body of the point to the base. Figures 12a and 12b illustrate bifacial tapering of arrow tangs. Number 10 is of an inferior quality feldspar; the others are of slate. It can be seen from the plate illustration that all are of distinctive styles. Due to lack of data it would be unwise to assign them to specific typologies. It is assumed from ethnographic sources (Hrdlicka, 1944, pp. 56 ff.; Porter, 1893, p. 93) that these people possessed the bow and arrow, darts or harpoons propelled by throwing boards, and lances. Unfortunately, we do not know whether each of these above types of points is associated with a specific weapon, or used indiscriminately.

Specimen S-100 is worthy of comment. Although it is a point-tip fragment, hence unidentifiable as to typology, the blade is hollow-ground, (Fig. 12, c; Plate II, 21). Specimens S-663 from Brooks River #1 and S-4 from Savonoski also have hollow-ground blades (Plate II, 1, 4).

Four large points of ground slate have been tentatively classified as piercing instruments (Plate II, 2, 6, 7, 22). Stylistically, they have faceted, double-edged, symmetrical blades tapering to a point, are shouldered, except #6 which is barbed, have side- and bi-facially tapered tangs, and straight to convex bases. It may also be noted that, except for their size, they are of the same style as #14 (loc. cit). They were probably used as lance points (Lisianski, quoted by Hrdlicka, 1944, p. 56; de Laguna, 1934, p. 183, Plate 31). However, data from Point Barrow indicates that they may also have been used as knives as P. H. Ray (1885, Part III, Plate III, 3) illustrates a point similar to #22 hafted as a



**Figure 12**

**Illustration of methods of tapering arrow or  
dart fangs and hollow-grinding point edges.**

**"a." Barbed feldspar point.**

**"b." Barbed slate point.**

**"c." Slate point fragment. (actual size)**

PLATE III

Representative examples of the flat, waterworn, notched stone sinkers or net weights excavated at Kukak.

Figure 1 through 6: center-notched sinkers.

Figure 7 through 9: sinkers with two notches at one end and opposed by one notch at the other end.

Figure 10 through 17, offset-notched sinkers.

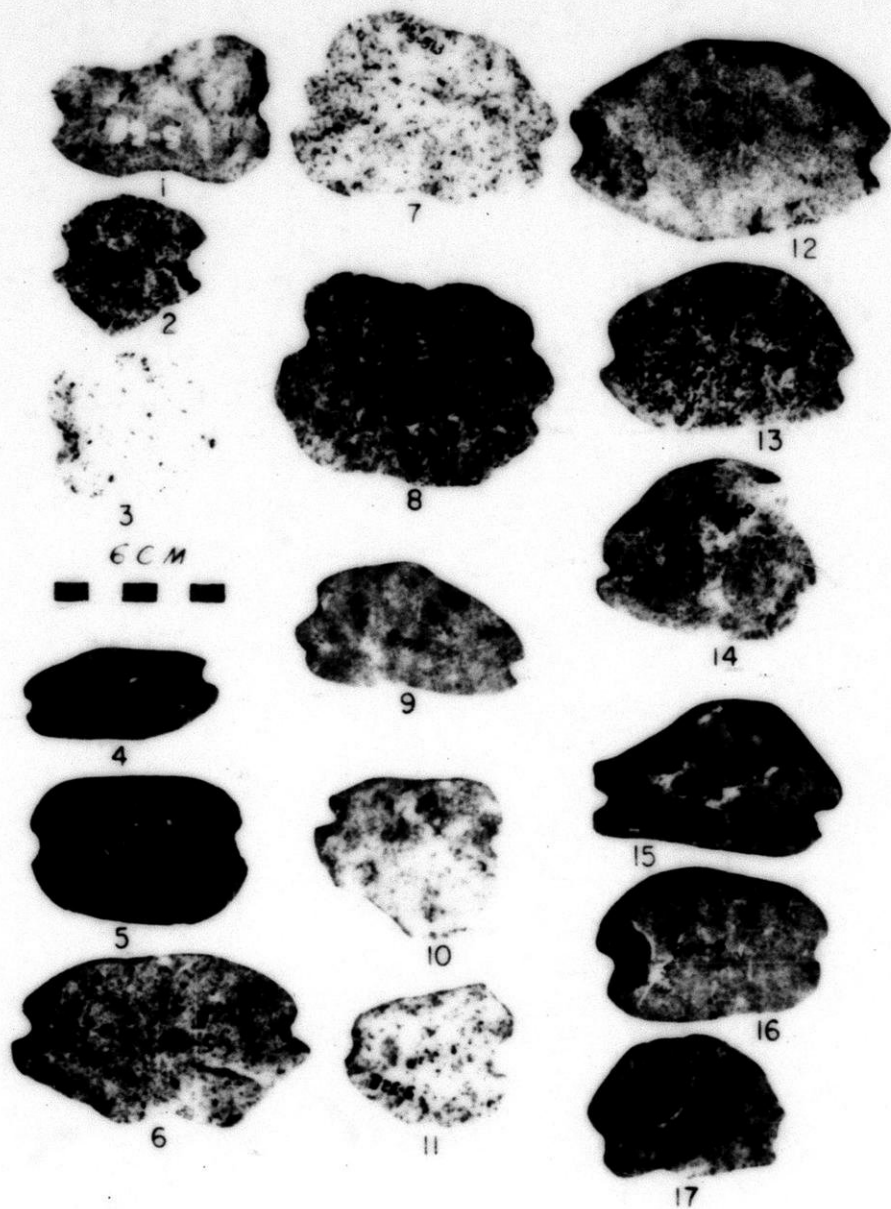


PLATE III

knife. Also, Larsen and Rainey (1948) illustrate similar specimens which they identify as "rubbed slate knives," (Plate 77, 7, 8; Plate 90, 21, 24; Plate 93, 10).

Four types of side-bladed knives were collected. Type #1 is the single-edged side-bladed knife, or ulu, of polished stone (Plate IV, 4, 11, 12, 15, 16). Besides the six complete specimens illustrated, 18 identifiable fragments were recovered. This type of knife is roughly trapezoidal in form. Apparently the original working edge was straight, becoming gradually curved with use. Manufacture of these tools was by roughing out the desired shape by chipping and then completing the finished tool by grinding. The preferred material was slate, but cherty shale, #16, and shale, #11, were also used. The hole for hafting or handling in #15 was drilled from both sides, i. e., by drilling part way through on one side and then completing the hole from the other side. These tools may have been hafted in much the same manner as those illustrated for Kodiak Island by Hrdlicka (1944, Fig. 112). Specimen S-129 (Plate IV, 14) is an uncommon form. It is interesting because it was severed from the original piece by a stone saw.

Type #2 is tanged double-edged knives (Plate V, 7, 10, 11, 12). The tools may be pointed or blunt, with asymmetrical, bi-facially flaked cutting edges and a straight or diagonal base. Six of this type were collected. Manufacture is entirely by flaking; the preferred material is basalt, although #6 (Plate V) may be a mid-section fragment of chert. Number 11 is a shouldered end knife. It is similar to the Chaluka and Tigalda knives of this type. Number 11, Plate II, is of type #2, except that it is much smaller, 32 x 27 x 5 mm.

- 39 -  
PLATE IV

1. S- 28, Knife, type # 1, may be complete; Savonoski.
2. 23, Knife, type #1, may be complete; Savonoski.
3. 9, Chipped and polished fragment, possibly fragment of a type #4 knife; Savonoski.
4. 265, Knife, type #1; Kukak.
5. 49, Knife, type #1; Kaguyak.
6. 676, Knife, type #2, subtype; BR #1.
7. 670, Knife, type #2, subtype; BR #1.
8. 131, Knife, type #2; Kukak.
9. 634, Knife, type #1; BR #1.
10. 644, Knife, type #1, fragment; BR #1.
11. 248, Knife, type #1; Kukak.
12. 105, Knife, type #1; Kukak.
13. 645, Knife, type #1; BR #1.
14. 129, Knife, type #1, backed, triangular section; Kukak.
15. 124, Knife, type #1, hand-drilled suspension or hafting hole; Kukak.
16. 368, Knife, type #1; Kukak.

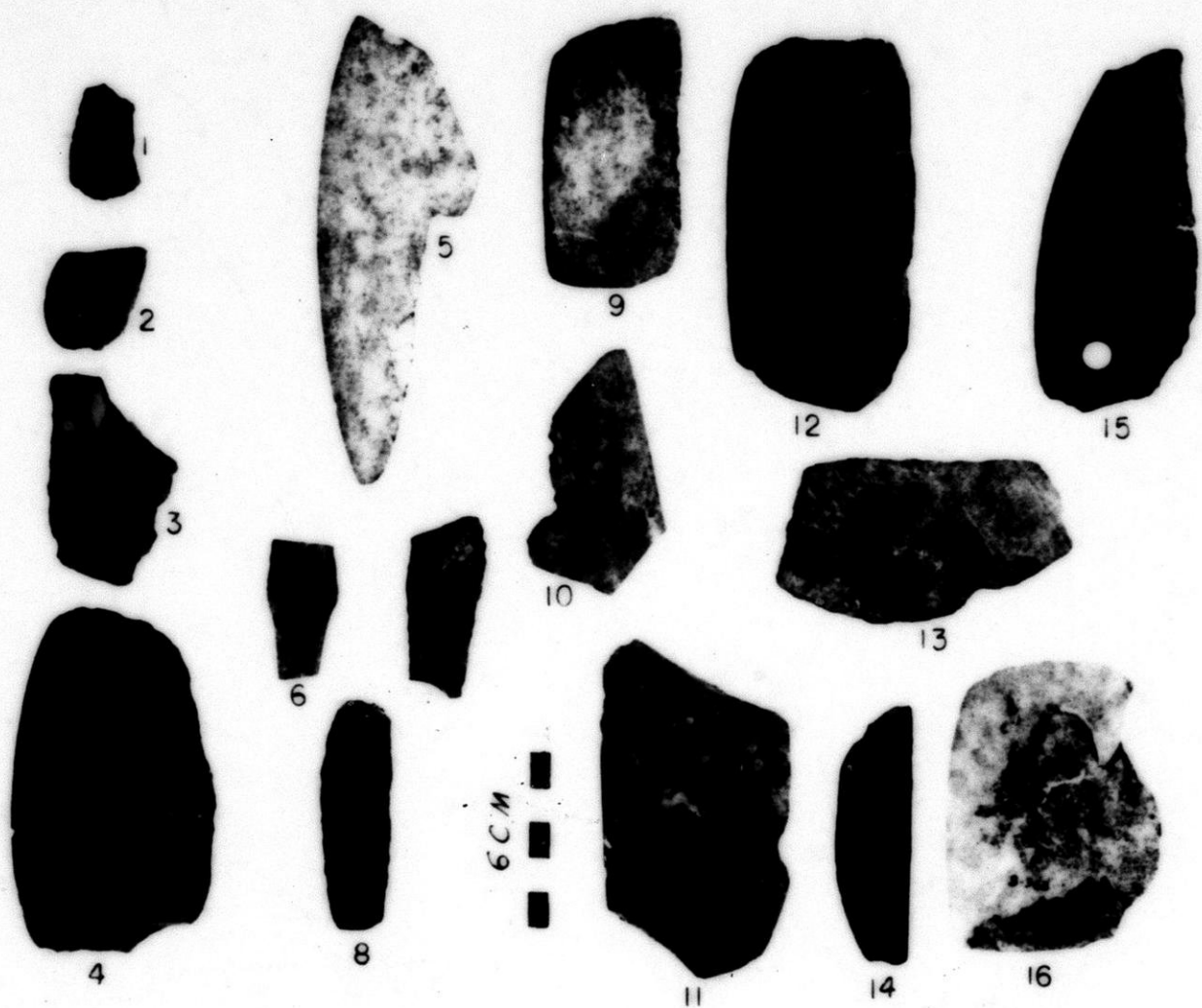


PLATE IV



PLATE V

1. S- 73, Knife, type #4, fragment; Kukak.
2. 653, Knife, type #3; BR #1.
3. 434, Knife, type #3; Kukak.
4. 604, Knife, type #3; BR #1, Root Cellar.
5. 235, Knife, type #3; Kukak.
6. 397, Knife, type #4, unifacially flaked scraping edge opposite bifacially flaked cutting edge; Kukak.
7. 502, Knife, type #2; Kukak.
8. 706, Knife, type #3; BR #1.
9. 650, Knife, type #2; BR #1.
10. 400, Knife, type #2; Kukak.
11. 178, Knife, type #2; Kukak.
12. 503, Knife, type #4; Kukak.
13. 501, Knife, type #2; Kukak.
14. 600, Knife, type #4; BR #1, Root Cellar.
15. 635, Knife, type #2; BR #1.
16. 718, Knife, type #2; BR #1.
17. 656, Knife, type #3; fragment; BR #1.
18. 209, Knife, type #3; Kukak.

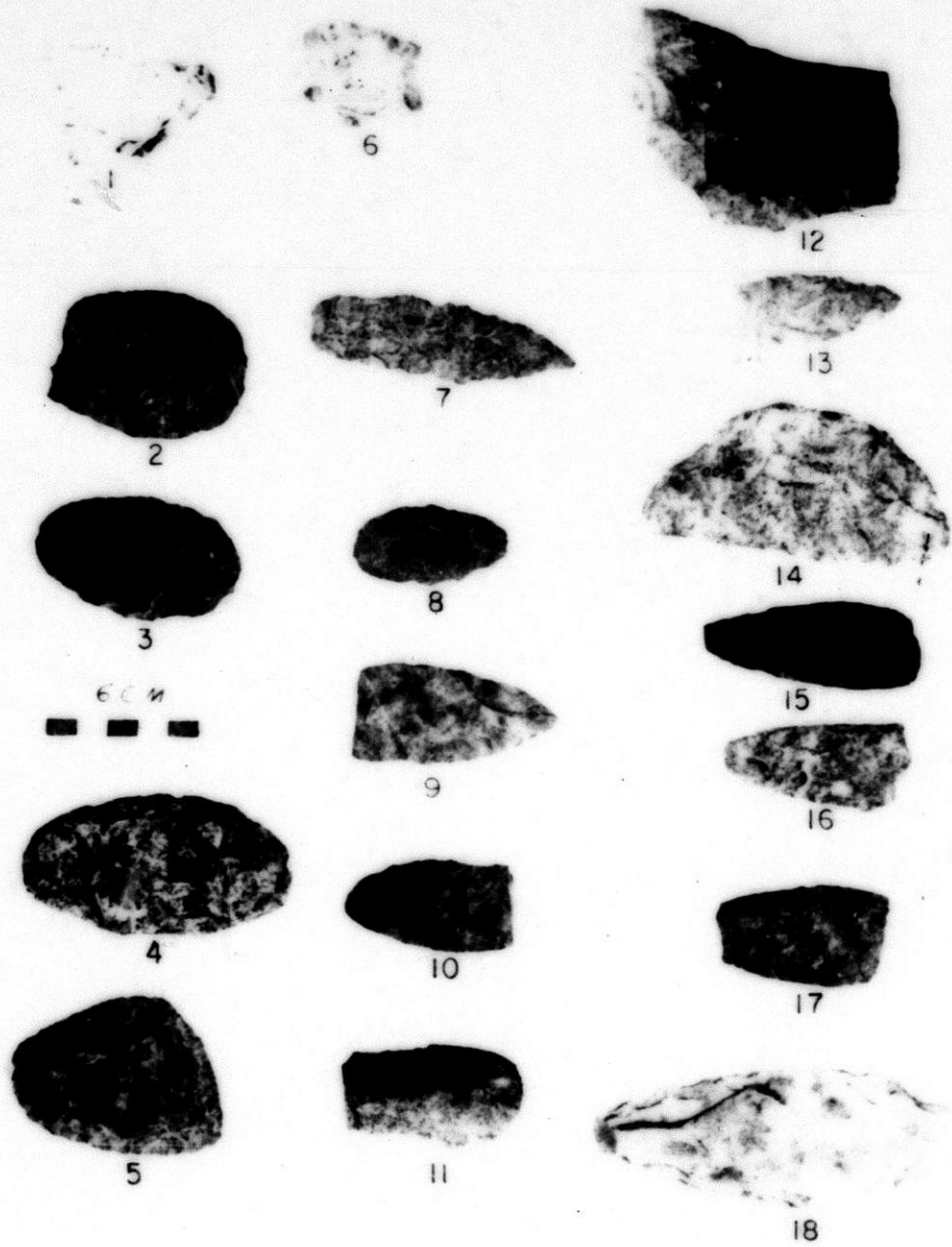


PLATE V

Type #3 is the flaked, discoidal side-bladed knife. Three specimens of this type were collected, each stylistically different (Plate V, 3, 5, 18). Number 3 is a percussion-flaked, ovate basalt core, 68 x 42 x 28 mm. Number 5 is a pressure-flaked, semi-lunar, serrated working edge, chert spall flake, 74 x 52 x 9 mm. Number 18 is a percussion flaked, double-edged, cherty shale spall flake, 119 x 46 x 12 mm. Similar blades were collected at Chaluka, and Larsen (1950, fig. 56, B. 10), Larsen and Rainey (1948, Plate 15), and de Laguna (1934, Plate 30) illustrate similar types.

Type #4 is the percussion-flaked cutting/chopping knife. Four specimens are illustrated of 12 excavated (Plate VI, 2, 3, 6; Plate V, 12). These specimens are very disparate in form. They have been classified on the basis of the extreme crudeness of their finished form. It appears that their primary function is to sever by chopping. Number 12, Plate V, and #3, Plate VI, are perhaps of the same style, as they have a bi-facially flaked cutting edge opposed by a percussion-flaked chopping edge. Tools similar to #2, Plate VI, are illustrated from the Kodiak Pre-Koniag collection (Hrdlicka, 1944, fig. 111), from Agatu (Hrdlicka, 1945, fig. 180), and were collected at Tigalda Island in the Aleutians by P. T. Spaulding (University of Oregon collections, unpublished).

Fifty-seven scrapers were excavated at Kukak. Of these, 23 are pressure flaked side scrapers of varying forms (Plate VII, 2, 8, 19); 5 are double-edged (Plate VII, 5), and 12 were flaked by use (Plate VII, 1, 11, 12). Nine are triangular side scrapers (Plate VII, 17). Seven are end scrapers (Plate VII, 13, 14), and two are

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PLATE VI

1. S-680, Sandstone hand ax (?); BR #1.
2. 263, Knife, type #4; Kukak.
3. 555, Knife, type #4; Kukak.
4. 679, Knife, type #4; BR #1.
5. 629, Knife, type #3; BR #1.
6. 241, Knife, type #4; Kukak.
7. 642, Knife, type #4; BR #1.



PLATE VI

PLATE VII

1. S-411, Side scraper; Kukak.
2. 566, Side scraper; Kukak.
3. 450, Side scraper; Kukak.
4. 715, Side scraper; BR #1.
5. 116, Side scraper; Kukak.
6. 564, Side scraper; Kukak.
7. 63, Concave side scraper, reworked from a polished slate fragment; Kukak.
8. 305, Side scraper; Kukak.
9. 147, Side scraper; Kukak.
10. 181, Triangular side scraper; Kukak.
11. 60, End scraper; Kukak.
12. 361, Side scraper; Kukak.
13. 90, End scraper; Kukak.
14. 71, End scraper; Kukak.
15. 45, End scraper; Kukak.
16. 77, Triangular side scraper; Kukak.
17. 42, Triangular side scraper; Kukak.
18. 65, Triangular side scraper; BR #1.
19. 17, Side scraper; Kukak.

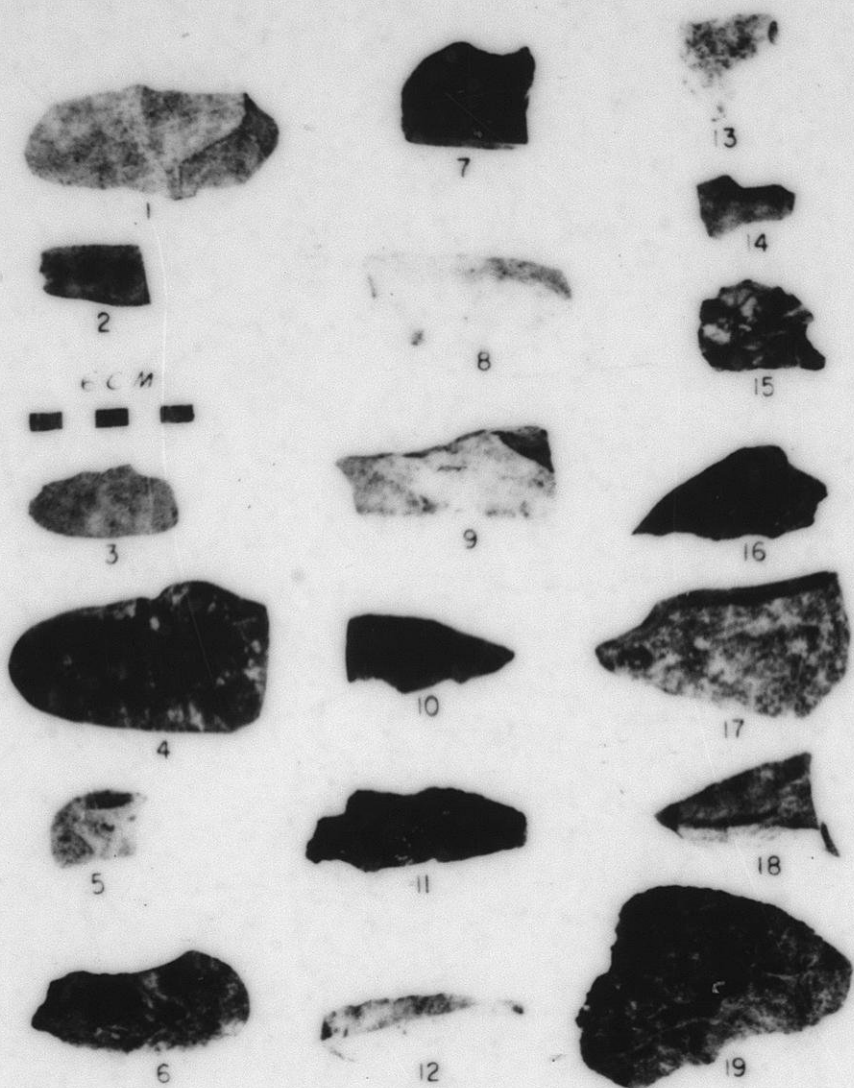


PLATE VII

concave side scrapers (Plate VII, 7). Scrapers are primarily of spall and cortical flakes, plus one lamellar flake. The preferred materials were chert and basalt. The scrapers are all flaked, either by intention or through use; the flaking technique is generally pressure. One face of the working edge only is retouched. The flaking varies from crude to extremely fine workmanship. Scrapers are of universal incidence in Aleut-Eskimo artifact assemblages.

Number 6, Plate VII, is a keeled side scraper which was recovered from a cave-in of the south wall in square 11. It is very well made by pressure flaking techniques and shows evidence of having been well used. It is unfortunate that it cannot be located stratigraphically.

Gravers are of two styles. Style #1 has a flaked, triangular graving point (Plate VIII, 1, 10, 12); three specimens of this style were excavated. Style #2, four specimens, is roughly triangular in outline, with the apex of the triangle truncated and ground or chipped to form a chisel edge 3.5 to 5 mm wide (Plate VIII, 8, 9, 13). It should be noted parenthetically that the triangular style scrapers could also function as gravers.

Gravers are mentioned in the literature for the Aleutian Islands; they should not be confused with true burins. Style #1 gravers, similar to #10 Plate VIII, were excavated in the Aleutians at Anagula Island and at Chaluka mound, Umnak Island. Meldgaard discusses similar "burin-like" forms in his discussion of the distribution of burins among the Central and Eastern Eskimo (1952, pp. 225 ff.).



PLATE VIII

1. S-550, Graver, type #1; Kukak.
2. 557, Cannel coal, appears to have been used as a marking stick, unclassifiable; Kukak.
3. 32, Quartz crystal, Savonoski.
4. 2, Quartz crystal, Savonoski.
5. 6, Quartz crystal, Savonoski.
6. 108, Cannel coal fragment; Kukak.
7. 59, Cannel coal fragment; Kukak.
8. 426, Graver, type #2; Kukak.
9. 456, Graver, type #2; Kukak.
10. 393, Graver, type #1; Kukak.
11. 649, Graver, type #2; BR #1.
12. 543, Graver, type #1; Kukak.
13. 58, Graver, type #2; Kukak.

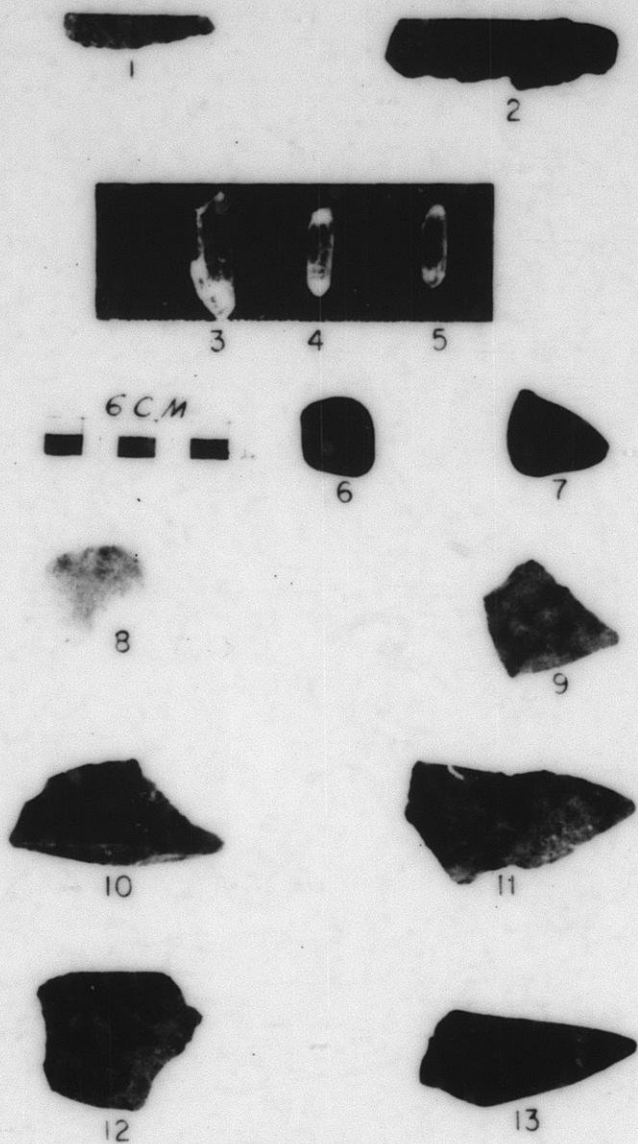


PLATE VIII

Eleven identifiable stone planing adze blades were collected. Eight are complete, or nearly complete, specimens; the rest are fragments. One adze blade, #13, Plate IX, was partially reassembled from fragments. It is of polished cherty shale, 136 x 52 x 11 mm, tapers bilaterally from bit to poll, probably for socketing, and has a beveled bit, still very sharp. No other adze blades of comparable workmanship are illustrated for the western Alaska area. Two adze blades (Plate IX, 3, 7) were manufactured entirely by flaking. Number 3 especially resembles one style of adze blades excavated at Chaluka. Numbers 5, 6, 9, 12 and 14, Plate IX, are small socketed style adze blades. The body is plano-convex or concave-convex, chipped to shape, with the working edge beveled by grinding. Hrdlicka (1944, Fig. 114) illustrates a blade of this style from Uyak Bay, and Jochelson (1925) also reports them in the Aleutians; Weyer (1930) and Larsen (1950) do not report this type from the eastern shores of the Alaska peninsula. Number 5, Plate IX, is uncommon in that it was made from a flat, waterworn stone 8 mm thick, which was chipped to shape.

Three problematical stone specimens are illustrated in Plate X, 1, 4, and 5. Number 1 is a striated sandstone block which may be a knife blank. However, it has a depression made by rotary grinding on one surface. Number 4 is a block of limey chert which was assumed to be an ulu blank. Part of its surfaces and edges show signs of wear, indicating that it may have been used as a piercing tool, judging by the worn surfaces just back of the tip.

Percussion tools used in the manufacture of stone artifacts, which were excavated at Kukak, are 7 hammerstones (i. e., waterworn

- 52 -  
PLATE IX

1. S-579, Polished greenstone fragment (adze poll ?); Kukak.
2. 655, Flaning adze body; BR #1.
3. 232, Flaning adze blade; Kukak.
4. 539, Flaning adze poll fragment; Kukak.
5. 240, Flaning adze blade; Kukak.
6. 433, Flaning adze blade; Kukak.
7. 148, Flaning adze blade; Kukak.
8. 681, Flaning adze blade; BR #1.
9. 81, Flaning adze blade; Kukak.
10. 652, Flaning adze blade; BR #1.
11. 627, Flaning adze blade; BR #1.
12. 383, Flaning adze blade; Kukak.
13. 233, Flaning adze blade; incomplete; Kukak.
14. 168, Flaning adze blade; Kukak.
15. 35, Splitting adze blade, surface collection; BR #3.

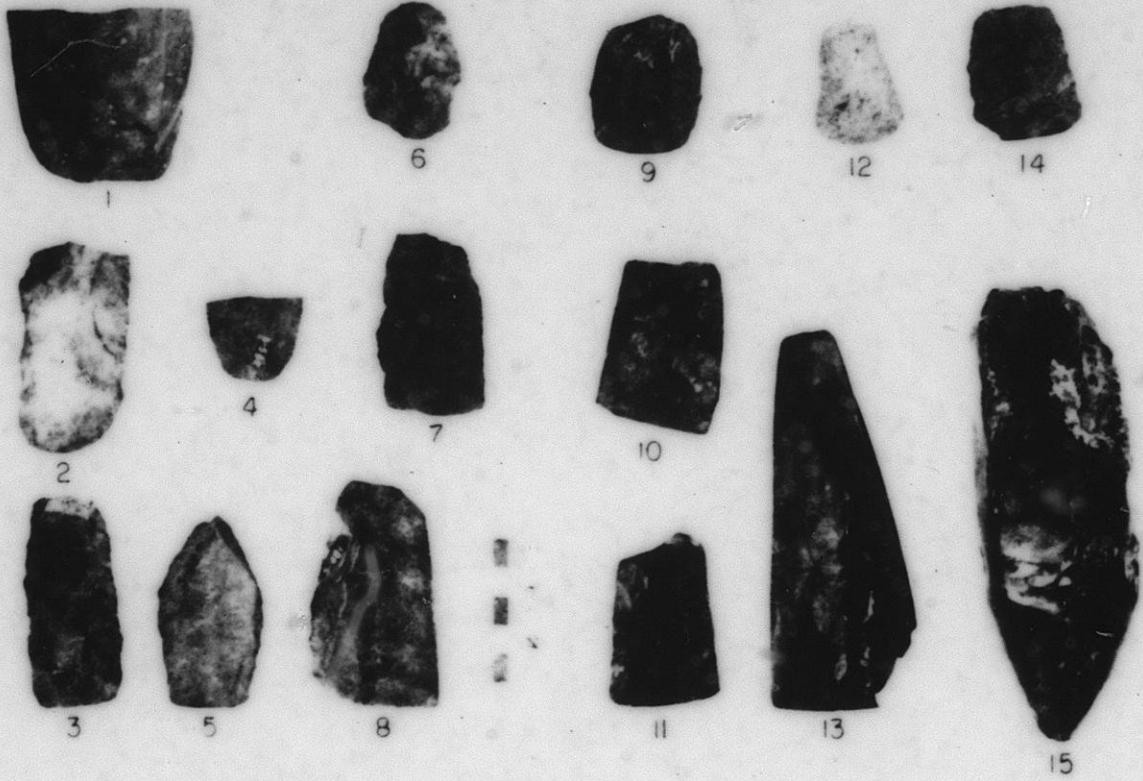


PLATE IX

**PLATE I**

1. S-593, Block of striated sandstone, possible tool blank, has been classified as a grinding stone because of abraded surface; Kukak.
2. 356, Semi-vesicular lava grinding stone; Kukak.
3. 483, Dressed sandstone slab, classified as a grinding stone; Kukak.
4. 427, Possible knife blank of altered basalt, polishing on part of its surfaces may indicate use as a hide dresser; Kukak.
5. 144, Triangular fragment, worn surfaces back of point may indicate use as a piercing instrument; Kukak.
6. 84, Scoria whetstone; Kukak.
7. 406, Scoria whetstone; Kukak.
8. 80, Grinding stone; Kukak.
9. 112, Knife, type #4, saw kerf visible on left side of illustration; Kukak.
10. 367, Sandstone saw fragment; Kukak.

" 55 "

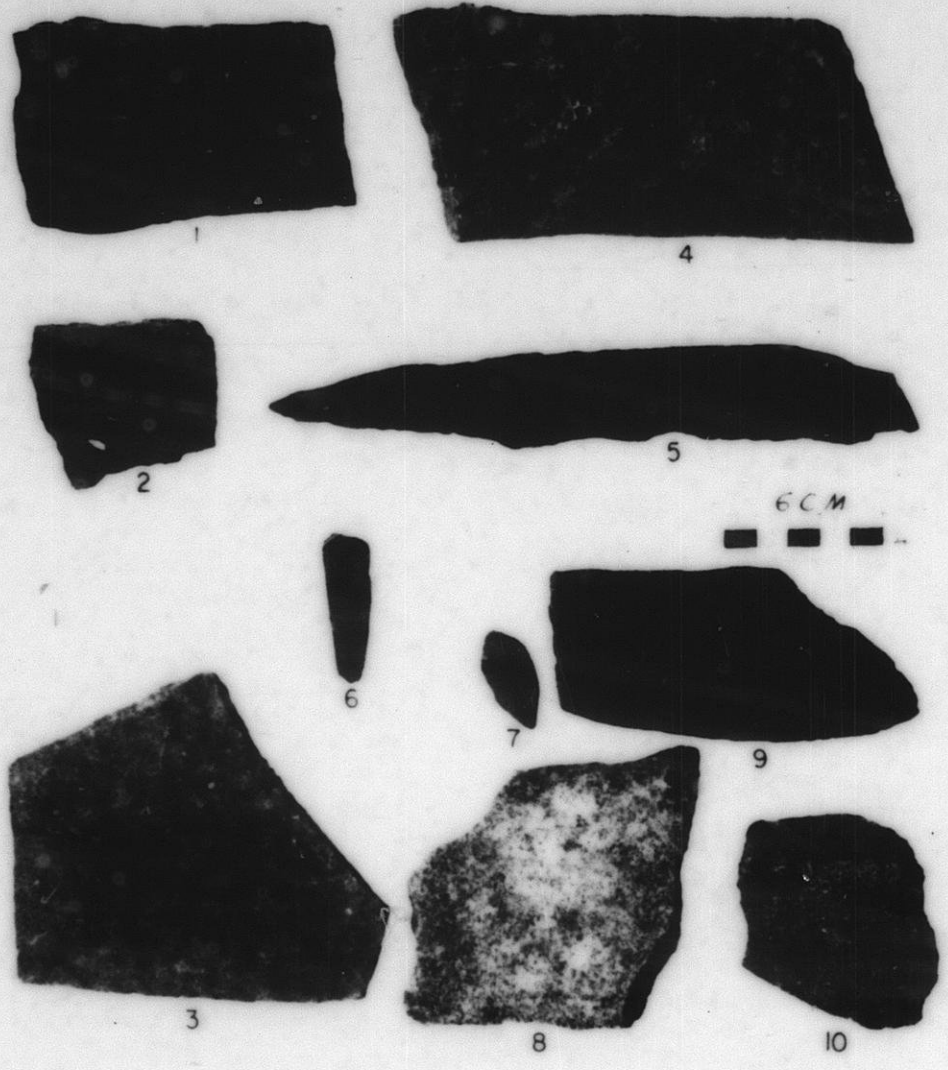


PLATE X

cobbles with battered surfaces or edges) and 5 pecking stones (i.e., waterworn, pestle-shaped cobbles with the ends showing the characteristic wear caused by pecking techniques). While their absence would be highly significant, their presence is not.

Abrading tools are represented by 30 specimens, most of which are fragments. The preferred material is a coarse sandstone, but pumice, vesicular lava, scoria, and very fine siltstone are also used. Grinding stones have more than one flat abrading surface, are occasionally polyhedral; 9 specimens. Whetstones are usually polyhedral, with concave abrading surface; 11 specimens. Honing whetstones are similar in form to the other whetstones, but are of siltstone; 4 specimens. Polishing stones are unworked except for a single, flat abrading surface; 4 specimens.

The working edges of the two stone saw fragments are an acute angle in section. Incidentally, the blade of the saw fragment illustrated in Plate X, 10, fits very neatly into the saw kerf of the flaked knife shown just above it, #9; no connection is inferred, however. It was by this method of comparison that we were able to identify these fragments as portions of saws.

Numbers 2, 3, 6, 7, 8, and 10, Plate X, illustrates several kinds of abrading implements. Hrdlicka (1944, pp. 328, 344) reports sharpeners, rubbing stones, and whetstones present in both Koniag and pre-Koniag deposits; de Laguna (1934, pp. 59 ff) discusses a variety of abrading implements. Giddings (1952, Plate VI, 10) presents an excellent illustration of the above type of sandstone saw.

Seven stone lamps were excavated. Six are of natural formation, 4 of andesite and 2 of shale. Three are carbon-stained similar to



#3, Plate XI. The 7th, #1, Plate XI, is half of an oval pecked and ground lamp of shale; the dimensions of the fragment are 236 x 100 x 49 mm. The bowl is from 15 to 19 mm in depth. A groove 1.5 x 7 mm circles the outer edge of the rim. Hrdlicka (1944, pp. 442 ff.) discusses several styles of pecked and ground stone lamps from Uyak Bay; de Laguna (1934, pp. 63 ff.) also describes similar lamps. Both pecked and ground lamps and lamps of natural formations were excavated at Chaluka. Another possible lamp of pottery is discussed below.

Sixteen fragments of clay vessels classified as pottery were collected from the excavation. It is apparent that these sherds are from at least three vessels. Material used in their construction is a yellow or bluish earthy clay, tempered with sand, gravel, and vegetal fibers. Typology is established on the basis of material and workmanship. Type A (Plate XII, 2) has finer tempering material, is thinner in section, exterior and interior walls are well polished, and is fired to a harder consistency. Type B (Plate XII, 1, 6) has much coarser temper with gravel up to 9 mm in diameter imbedded in it, is thicker in section, has a cruder finish, and is very coarse and crumbly to the touch. Both types appear to have been manufactured by the paddle and anvil method, and are extremely crude, soft and porous when compared with Southwestern pottery assemblages.

Dr. L. S. Cressman took a representative sample of the potsherds to Dr. Stanley Stubbs, Curator of the Laboratory of Anthropology, Santa Fe, New Mexico, for analysis. Dr. Stubbs reports that both types A and B were fired, and that the condition of the sherds is

PLATE XI

1. S- 424, Pecked and ground lamp fragment; Kukak.
2. 27, Pecked "hunter's" lamp; Savonoski.
3. 65, Lamp fragment, natural stone formation; BR #3.
4. 39, Lamp fragment, natural stone formation; Kukak.

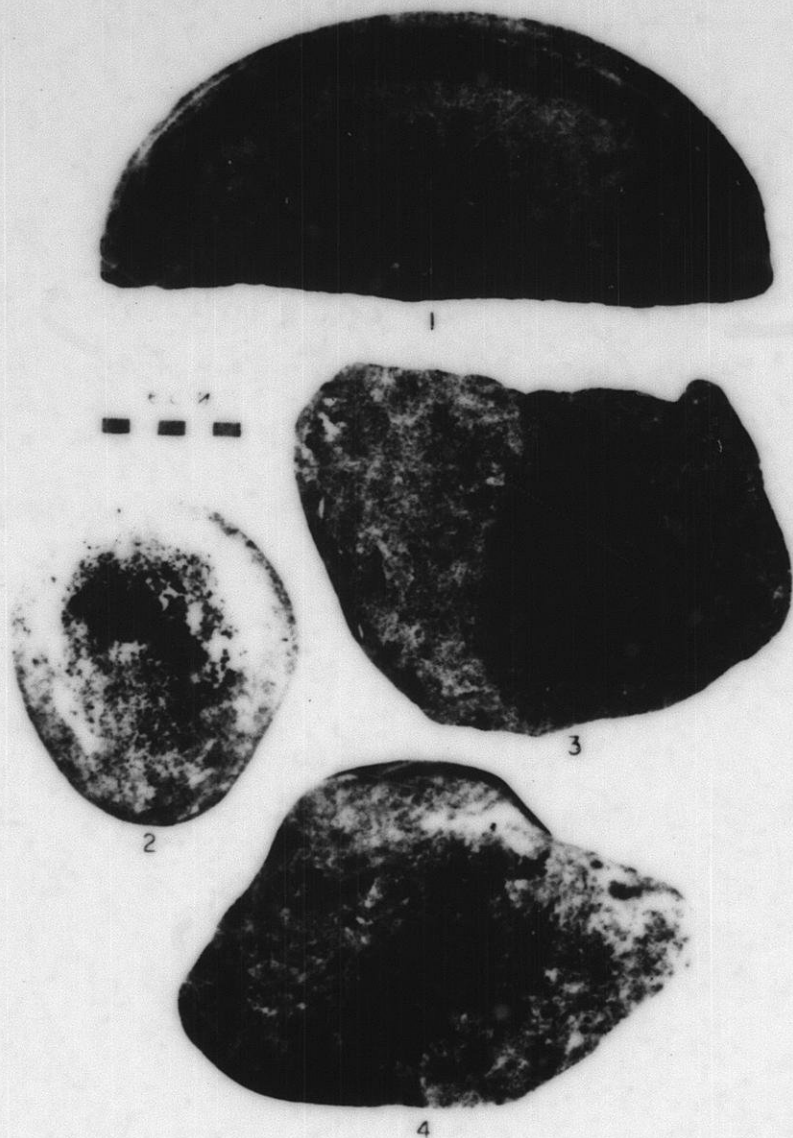


PLATE XI

PLATE XII

1. S-587, Potsherd, type B, base fragment; Kukak.
2. 258, Potsherd, type A; Kukak.
3. 703, Potsherd, type B, base fragment, bowl interior oil-stained; BR #1.
4. 666, Potsherd, type A, base fragment; BR #1.
5. 659, Potsherd, type B, rim fragment; BR #1.
6. 569, Potsherd, type B, base fragment, possible portion of a lamp; Kukak.
7. 704, Potsherd, type A, rim fragment; BR #1.
8. 657, Potsherd, type A, rim fragment; BR #1.
9. 643, Potsherd, type A, rim fragment; BR #1.
10. 660, Potsherd, type A, rim fragment; BR #1.

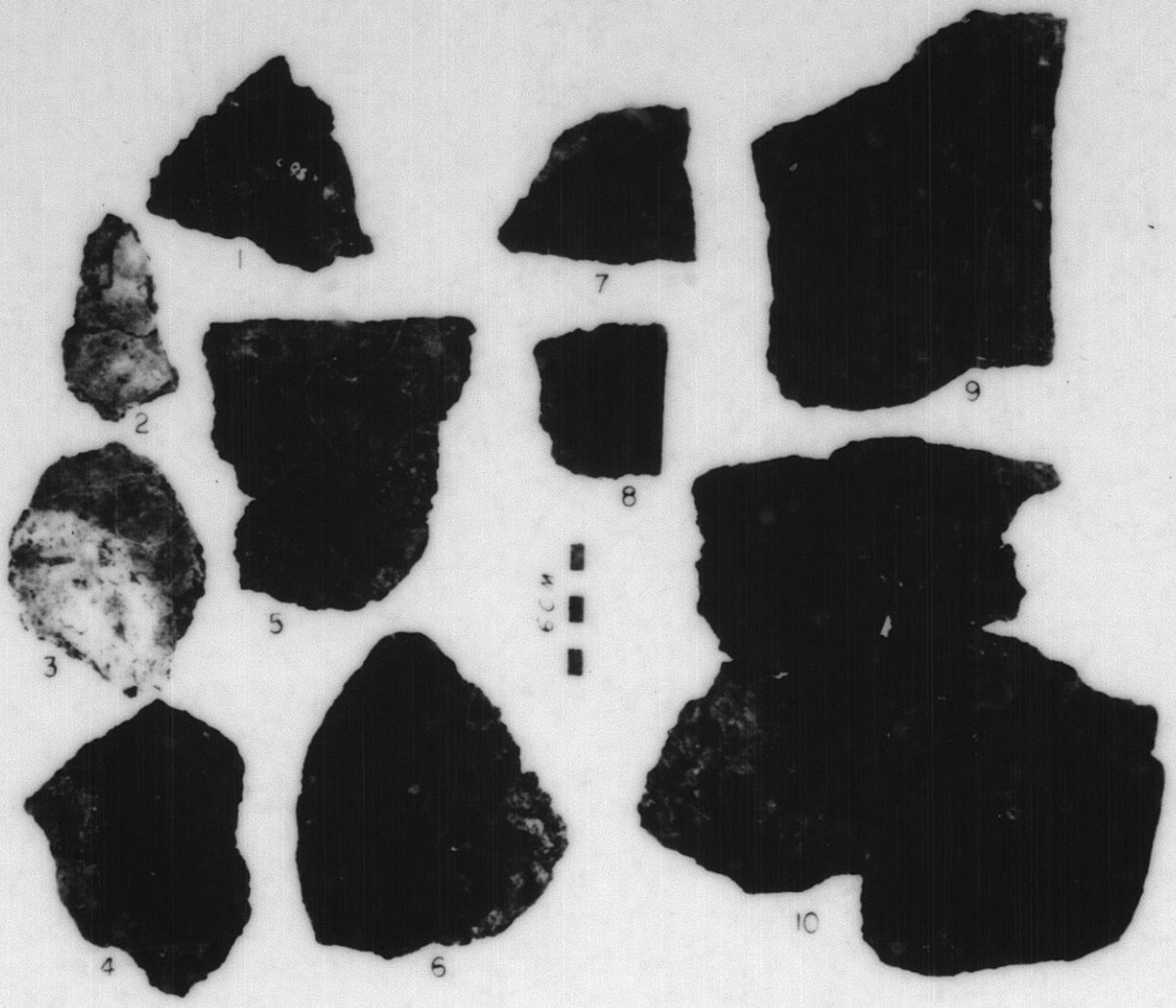


PLATE XII

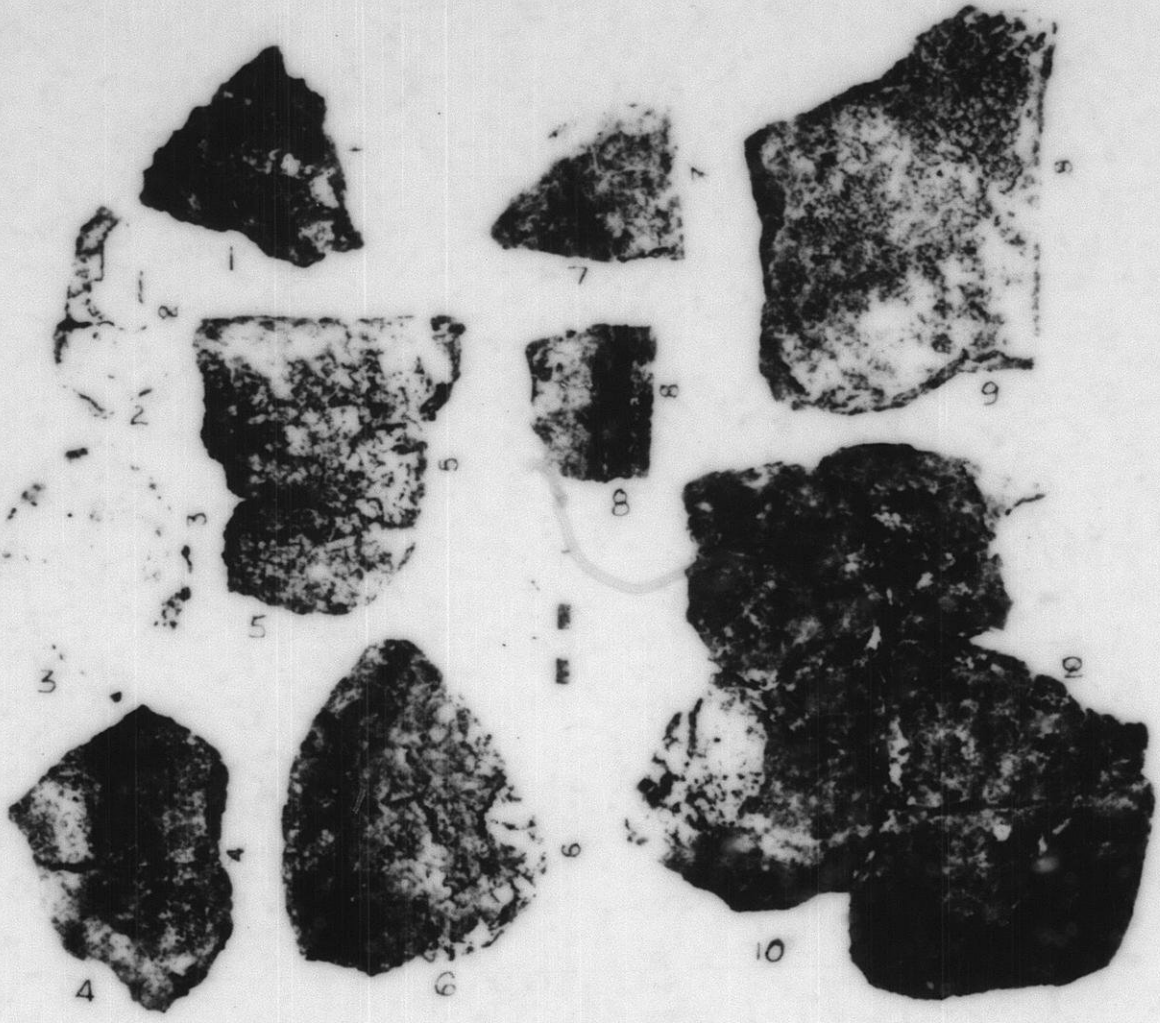


PLATE XII

due to moisture flaking caused by the damp matrix in which they were embedded.

The above typology is more for convenience in reference rather than intended to establish definitive categories. However, these sherds follow the typological grouping in their areal and stratigraphical distributions. Type A occurs in stratum 2, level 8; in squares 12A, 2 specimens; 12B, 4 specimens; and 13B, 3 specimens. Type B occurs in stratum 3, level 10; squares 22A, 2 specimens; 22B, 3 specimens; and level 11, 2 specimens in square 22B. They were excavated from just above the stratum of shell.

The areal distribution of the pottery types may indicate a time sequence in the development of pottery techniques. However, their close affinity with the shell stratum leads us to believe that they came from about the same time horizon. Their stratigraphic distribution does confirm the presence of two pottery styles.

Two sherds are of significance in indicating what kinds of pottery vessels were made. One, of type A, is a portion of a flanged rim, 72 x 70 x 19 mm; it is slightly curved horizontally and vertically, suggesting that it is a section of a fairly large bowl. The other, of type B, is a section with a rounded rim, 119 x 102 x 25 mm (Plate XII, 6). The vertical curve is abrupt, suggesting a flat, shallow bowl. Extrapolating from the arc of the rim, the interior diameter at the rim of the original bowl would be about 213 mm, if the bowl were round. Depth of the basin, about 26 mm, was determined by placing the rim on a flat surface and measuring the distance between the interior of the sherd at its most central point and the flat surface. The exterior vertical curve is unrelieved,

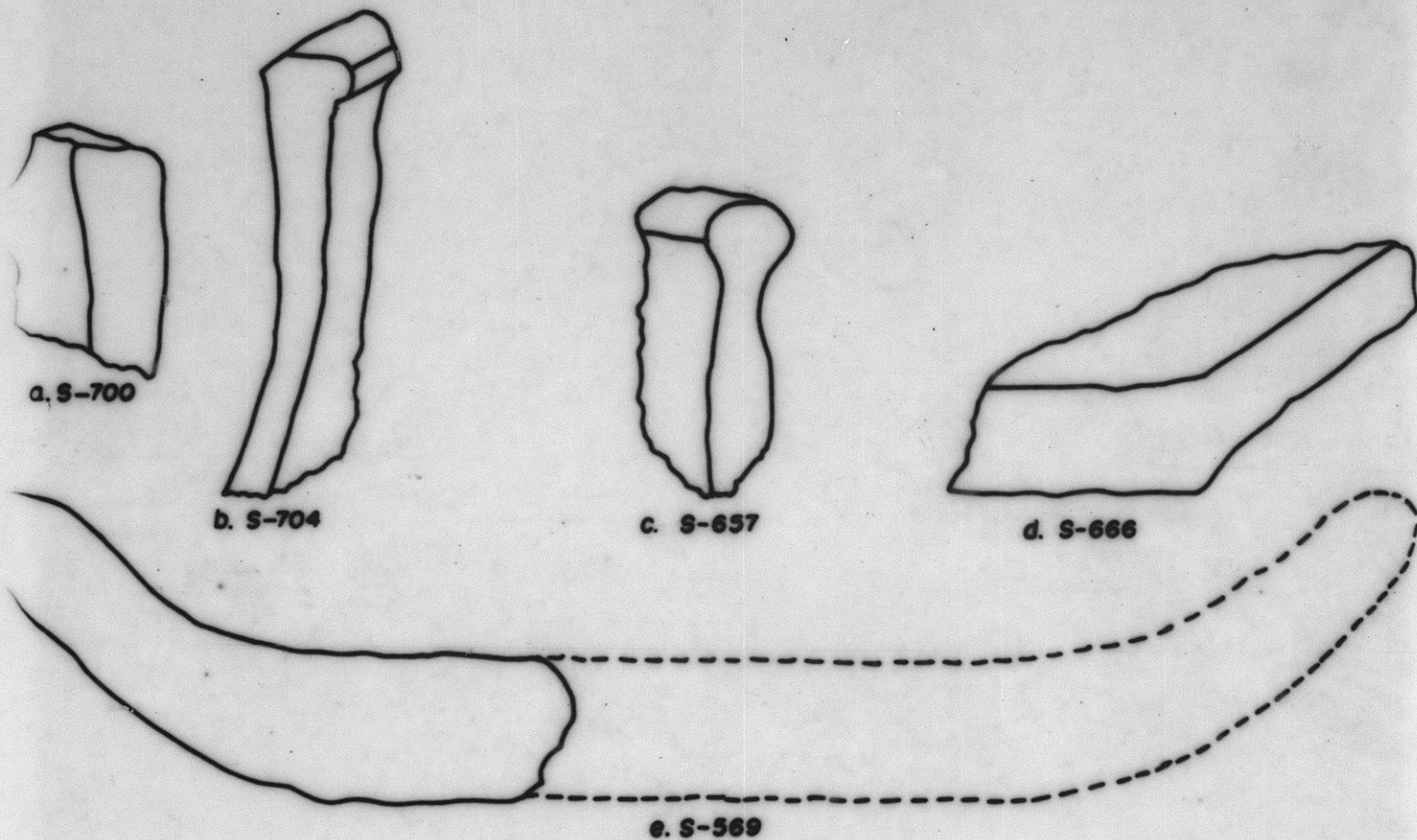
hence the original base was not shouldered, as the sherd is wedge-shaped, with the distance from the inside edge of the rim to the tip of the wedge about 16 mm shorter than the radius of the interior rim circle. To reconstruct, still assuming that the bowl was round, we would have a shallow basin, 51 mm in height, 243 mm in diameter, with a rounded rim 15 mm thick, flat base 25 mm thick, and having a basin 213 mm in diameter and 26 mm in depth. It is possible that the original vessel was used as a lamp, as the surface of the basin is encrusted with carbon which gives off a greasy odor when heated, while the exterior surface of the bowl is not. Figure 18, e, gives a cross-section view of the bowl.

Four cores were excavated. Two are chalcedony (agate) cores with prepared striking platforms. One is polyhedral in form, similar to the cores from which lamellar flakes are struck off.

One notched cobble has been tentatively identified as a maul. It is notched by pecking and one end shows evidence of wear. No wear from hafting is visible.

Three specimens of cannel coal were excavated. Two specimens are flat, waterworn pieces (Plate VII, 6, 7). The other specimen apparently was severed by sawing in from both sides and breaking off the remainder so that a piece 64 x 20 x 15 millimeters was obtained (Plate VII, 2). Besides the saw kerfs, two other facets were made by abrasion. The largest end is polished into several facets resembling the worn end of a large marking crayon. These specimens were identified in the field as cannel coal by Dr. J. B. Lucke, Katmai Project member from the University of Connecticut. He felt that they were probably obtained from pieces from underwater seams cast up on





e. S-569

**Figure 18**

**Cross-section views of pottery rim and base styles.  
(actual size)**

the beach by wave action. Hrdlicka (1945, fig. 204, p. 463) illustrates lignite used as inlay material for labrets.

Stone net-weights, or sinkers, of a distinctive typology represent 25% of the total specimens collected from this site. One specimen is a girdled weight, much cruder than the Aleutian styles obtained at Chaluka. The remainder are waterworn, flat, bi-notched stones, varying from 27 mm to 84 mm in length between notches. Two styles of these weights are represented in the collection. The offset notch style has a large proportion of the width of the stone to one side of a line drawn through the centers of the notches (Plate III, 10 to 17). These weights have an average length between notches of 56 - 60 mm, an average width of 46 - 50 mm, and an average thickness of 9 - 10 mm. There are a total of 62 sinkers of this style. In the center notch style, the notches vary from 0 to 4 mm about the center line of the stone (Plate III, 1 to 6). Their average length between notches is 51 - 55 mm, average width 46 - 50 mm, and an average thickness of 8 - 10 mm. Forty-three sinkers are of this style. Five weights are distinctive in having a single notch opposed by two notches on the opposite side (Plate III, 7, 8). The remaining specimens, 25, are unclassifiable single notched fragments. One quadrilaterally notched sinker was found. De Laguna (1934, Plate 16), Weyer (1930, Fig. 22), and Larsen (1950, Fig. 56) illustrate similar artifacts.

Except for a few scattered vertebrae and gill plates, bones from fish smaller than halibut were not found in any quantity in the midden. It is possible that the trench did not traverse the area where the fish bones were thrown. Mr. Leach points out that it is a common practice in the Aleutians to dress out fish on the beach in front

of the villages. The fish are cut into fillets and the ribs and vertebrae are discarded; the fillets are left attached to the head which is also eaten.

De Laguna encountered the same situation in Cook Inlet excavations. Noting the lack of fish bones and other evidence of a fishing complex, she argued that the flat, notched stones were weights for bolas (de Laguna, 1934, pp. 55 ff.). Dr. Laughlin feels that this solution is unlikely in view of the evidence of the use of nets for fishing among the Aleut and Eskimo, which appears to be an old tradition. It is suggested that perhaps this kind of weight is associated with the use of nets for fishing along the shores of the bays.

#### Distribution of Artifacts

Of the artifacts collected from the excavation, approximately 9% came from all the strata in squares 10 and 11; 3% from stratum 1; 54% from stratum 2; and 34% from stratum 3 (N = 502, that is, 541 specimens less 34 pebbles and 5 discards). Unfortunately, the limited number of significant artifacts, knives, points, harpoon heads, etc., do not permit interpretations to be made on the basis of the stratigraphic sequences of artifact types. For example, of the 24 specimens identified as polished stone knives, type #1, only 5 are fairly complete specimens; there are only 5 arrow or dart points, 4 piercing instruments ("rubbed" knives or lance points), 1 harpoon head, 1 conical-tanged arrow head, etc.

Comparison of the distribution of ground stone artifacts of all types, including fragments, with chipped stone artifacts by stratum levels does not indicate a preference of one manufacturing technique

over the other in any of the three major strata. Percentage-wise, there is a negligible increase of ground stone artifacts. These percentages are as follows: 109 chipped or ground stone artifacts are in stratum 3; 56 (51.4%) are ground stone and 53 (48.6%) are chipped stone. One hundred ten chipped or ground stone artifacts are in stratum 2; 51 (46.4%) are ground stone, 59 (53.6%) are chipped stone. Four chipped or ground stone artifacts are in stratum 1; 2 (50%) are ground stone, 2 (50%) are chipped stone. Twenty-eight chipped or ground stone artifacts are in squares 11 and 12; 9 (32%) are ground stone, 19 (68%) are chipped stone. The data indicate occupation of the site by people having a single cultural tradition.

#### Summary

Analysis of the archaeological data indicates a continuous occupation of the site until it was abandoned at the beginning of the 20th century by a people having a single cultural tradition which does not display any cultural trends in material culture. Ground, chipped and ground, and chipped stone artifacts occur with the same relative proportions in the major cultural strata excavated. The preponderance of flat, binotched weights indicates the probable presence of an important in-shore fishing complex based on the taking of fish with nets. The steady decrease in numbers of excavated artifacts per stratigraphic level from level 9 to the surface of the ground appears to verify the decrease in population of this region which is historically reported.

The artifact assemblage collected from this site lacks many of the artifact categories reported from sites in neighboring areas. Specifically, fish hooks, net gauges, "plumb-bob" sinkers, bone

wedges, harpoon foreshafts, weapons, decoration motifs on the bone artifacts collected, and articles of personal adornment are lacking. Human skeletal remains also were not recovered. However, only a very small portion of the village site was excavated, hence sampling error could account for the lack of most of these categories.

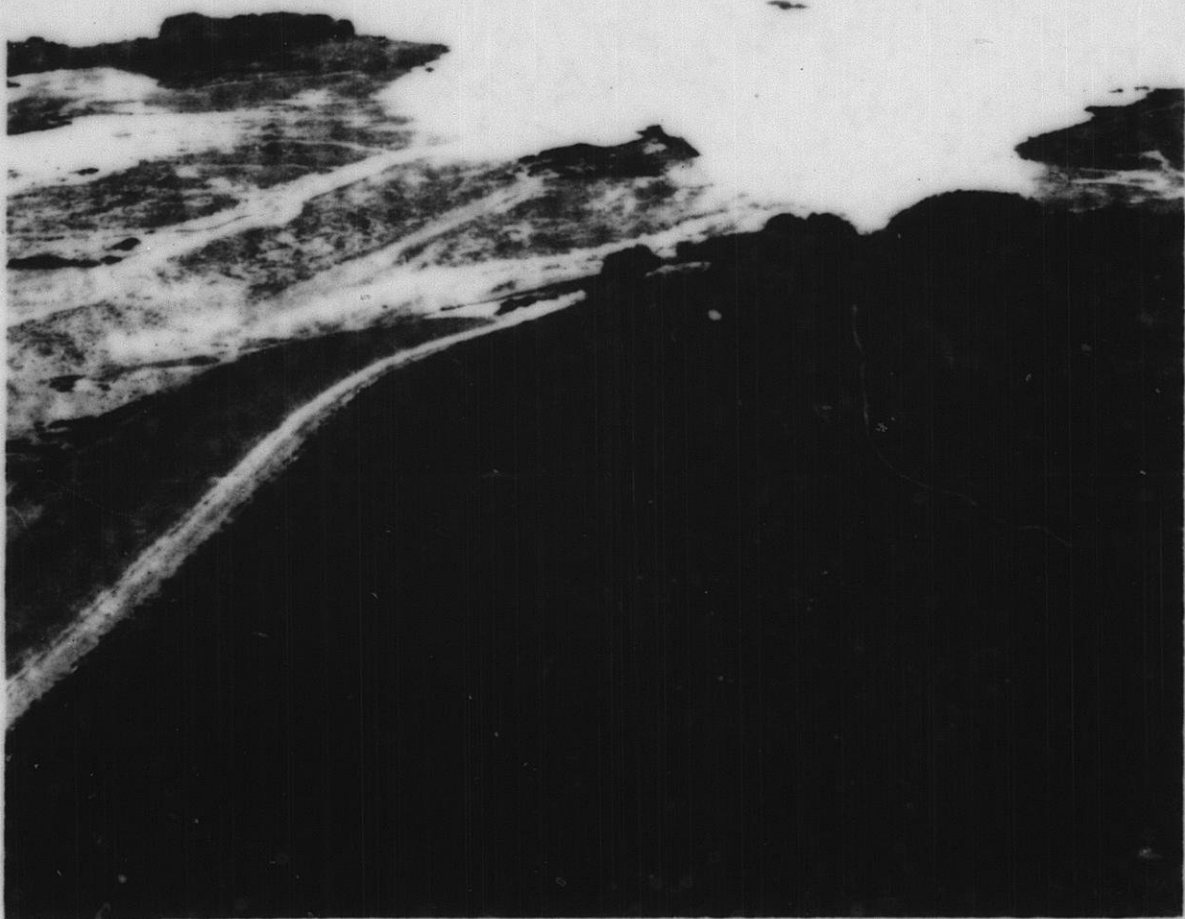


Plate XIII Aerial view of  
Kukak village site. House-  
pits are discernable in  
left foreground; taken from  
Project helicopter. By Leach

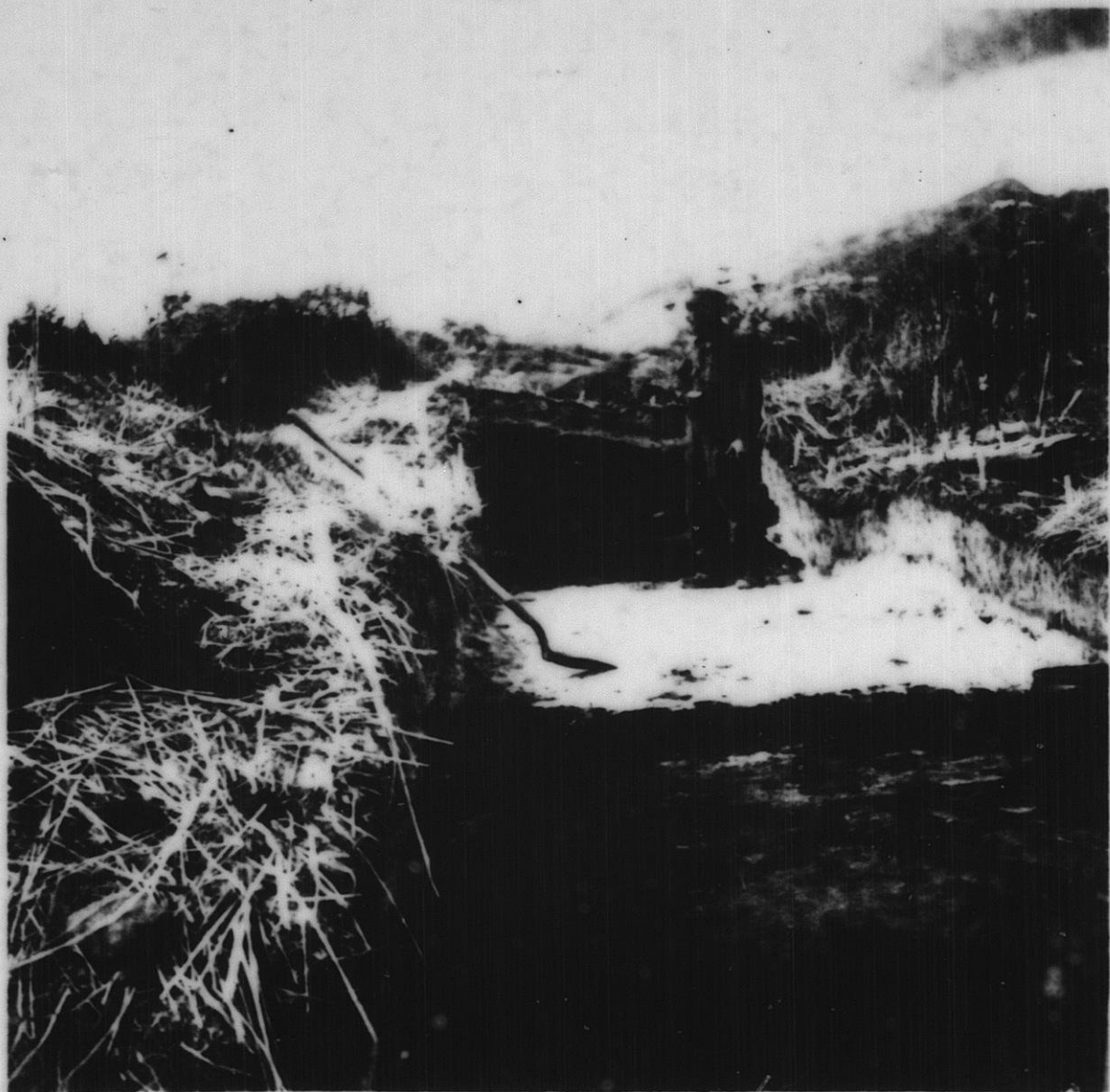


PLATE XIV

Trench A, Kukak, showing method of excavating by stratigraphic levels. Leach is standing on former ground surface which was covered by Katmai ash. By W. A. Davis.

## Katmai

Katmai village is situated off Shelikof Strait on Katmai Bay in the vicinity of 155° 6' W. L. and 58° 4' N. L. Our initial reconnaissance of Katmai Bay failed to locate the village site, primarily because the Air Force map we were using locates the village about a mile north and east of its actual situation. Mr. Stan Chmiel, Chmiel's Flying Service, Naknek, Alaska, made a hazardous landing by plane on the beach to enable us to explore the area on foot. But exploratory pits dug in promising locations revealed nothing in the way of habitation sites.

Mr. Victor Cahalane, Chief Biologist, National Park Service, had visited the site in 1940. Learning of our difficulties, he again located the site and informed us of its position. On August 7, we were flown to the site via helicopter for a preliminary survey preparatory to digging the site.

### History

Perhaps the earliest historical mention of Katmai was in a census taken by Delarov, a Russian agent of the Shelikof Company, in 1792. The name given by him is Yakatmak (Porter, 1893, p. 33). Baker writes:

Katmai; bay, creek, and village on north shore of Shelikof Strait. Native name, reported by the Russians. Lutke in 1828 calls it Katmaiskoi. (1900, p. 498).

In 1902 he wrote:

Katmai; village on Katmai Bay, Shelikof Strait, northwest of Kodiak. This one of the most important



of the native villages. Population in 1880, 218; in 1890, 132 (1902, p. 233).

The village of Katmai is shown on Map 6, in the Atlas of the Alaskan Boundary Tribunal, Washington, D. C., 1903. The legend reads:

Part of a Map published at St. Petersburg in 1802 by the Quartermaster General's Department, reduced by photography, the original size of the section here given being 16 3/8 by 21 5/8 inches. The full title in Russian is given on the page facing the map. Translated it reads: "Map of the marine discoveries of Russian navigators in the Pacific and Icy seas, accomplished in various years. Compiled at His Imperial Majesty's Department of Charts, corrected by the latest observations of foreign navigators, and engraved in the year 1802." The original map from which this extract is made was sent to the Department of State on September 21 (October 3) 1821, by Mr. Henry Middleton, United States Minister to Russia.

Petrof (1884, p. 24) notes:

The peculiar formation of this country led to the discovery at an early date of several easy portage routes across the peninsula. The Russian promyshleniks first made their way to Bristol Bay and Nushegak across the peninsula from Kodiak, and found abundant evidence to show that this route of communication had been an intertribal highway for ages past.

Writing of Katmai, he says:

The settlement...was once the central point of transit for travel and traffic across the peninsula. Three different routes converged here and made the station a point of some importance; now Katmai's commercial glory has departed, and its population, consisting of less than 200 Creoles and Innuits, depend upon the sea-otter alone for existence.

The people of two villages across the divide, in the vicinity of Lake Walker (Naknek), come down to Katmai to do their shopping and to dispose of their furs, undertaking a very fatiguing tramp over mountains and glaciers and across deep and dangerous streams in preference to the canoe journey to the Bristol Bay station (Ibid. p. 25).

In the Eleventh U. S. Census Report (1893, vol. 8, p. 72) we read:

The portage trail between Katmai and the headwaters of the Naknek River, though beset with difficulties, is considered one of the most feasible routes across the upper

peninsula, having been traversed by Lord Lonsdale, Mr. A. B. Shanz, of the Frank Leslie exploring expedition, Mr. J. W. Clark, and twice by agents of the Census Office.

Other routes across the peninsula are noted:

A small trading store has been maintained at Wrangell Bay for many years, depending partly upon the custom of the Aglemiut Eskimo living on the northern shore of the peninsula, which is here easily crossed by means of interlacing rivers and lakes (Ibid. p. 73).

The pre-eminence of the Katmai-Naknek River portage route is established by these historical observations:

A few miles to the northward of Katmai a group of small, barren islands forms the point of departure for native parties intending to cross in canoes Shelikof Straits, which are here about 26 miles wide (Porter, 1893, p. 73).

This island (Takli) is the place where those who risk the hazardous bidarka voyage across Shelikof Strait watch and wait for favorable weather (Martin, 1913, p. 167).

Takli Island is situated in Amalik Bay, of Geographic Harbor fame, which is about 20 miles east of Katmai Bay. Thus Katmai lies directly on the main line of communication between the formerly heavily populated Kodiak archipelago and the Alaska peninsula, the continental mainland, and the Aleutians. The Koniags carried on trade with the people of the peninsula and the coasts of the mainland, and large groups ("around 500 baidarkas") were quite accustomed to making long trips, sometimes as far as Sitka or Unalaska (Hrdlicka, 1944, pp. 80-1).

Concerning the physical and economic conditions of the Katmai region before the eruption of Mt. Katmai, we quote the following observations:

Katmai, a village and trading post situated on the shore of a bay of the same name in latitude 58° north, is the largest permanent settlement on this side of the coast, and was formerly quite an important trading center. At

present its inhabitants, numbering 132 Kodiak Eskimos, depend chiefly upon sea-otter hunting as a source of revenue, but they must journey far from home to find their quarry, and the number of skins brought home grows smaller and smaller every year. The village, consisting of sod huts surrounding the "store" and a small log chapel, was built upon a swampy flat along the banks of a salmon stream, and owing to the scarcity of dry ground about them their dead have been buried indiscriminately among the dwellings until the whole settlement presents the appearance of a graveyard. The summer visitor is impressed with an idea of what winter must mean in this desolate spot when he notices the heavy chains and ropes which are laid over the roof of the trading store and securely anchored in the ground as protection against the furious gales that sweep down the steep mountains but a few miles beyond.

The river, small as it is, furnished the Katmai people an abundance of salmon, the valleys and swamps abound in berries, oil is obtained from seals and occasionally from a stranded whale, and the more enterprising hunters kill cariboo in the mountains, while their traps yield them skins of foxes and land-otters. (11th census, vol. 8, p. 72).

Petrof comments that the preferred occupation of the hunters of Katmai is pursuit of the sea-otter.

The men could have reindeer in plenty by climbing the mountains that rear their snow-covered summits immediately behind them, but they prefer to brave the dangers of the deep and to put up with all the discomfort and inconvenience connected with sea-otter hunting, and in case of success purchase canned meats and fruit from the trading store, leaving the deer on the mountain undisturbed (1884, p. 25).

#### Physical Description

The entire site is covered with ash and pumice from the Katmai eruption to a depth of .75 to 1.50 m, and is probably deeper in some places. Erosion has completely filled the river channels with this volcanic debris. Mr. Cahalane told us that in 1940 the channel in front of the site was adequate for the seiner which brought his party to Katmai Bay. Now it appears to be from one to two feet deep. From

the air, the river appears to be no more than a fathom deep anywhere. This condition has resulted in a rise of the water table.

The rise in the water table has backed up the waters of the small creek flowing in from the northeast so that a swampy morass cuts off access to high ground. The site is now a series of grass-covered hummocks separated by pumice flats which appear to be solid (Plate XVI). However, these flats are treacherously deceptive. They may hold one up, much as will a frozen crust of snow; when the traveler breaks through this crust he discovers the water is just a few inches beneath the crust, and that the pumice behaves in much the same way as quicksand.

#### Survey of Site

The trading post is now buried to its eaves in pumice. We excavated inside the west wall of the building to determine the height of the walls, but were obliged to abandon digging when we struck water at 1.34 m. The former land surface here is undoubtedly now below the water level (Plate XVII). We found it necessary to use the helicopter to go from the trading post to the churchyard, a distance of about 125 m.

We counted 16 graves with their crosses still showing above the pumice in the graveyard. Undoubtedly there are more. One grave has a marble tombstone and a wrought-iron fence around it. The tips of the iron fence stakes and about 18 cm of the tombstone are above the present surface of the ground. The inscription on the tombstone was uncovered and found to be carved with Cyrillic characters. Translated, the inscription reads: "Martha Fomina, died December 24th,



PLATE XVI View of ruins of  
trading post, Katmai village,  
Don Williams, Project heli-  
copter pilot, in background.  
By J. W. Leach



PLATE XVII

Mr. Williams indicating depth to which Katmai trading post was explored before water prevented further digging.  
By J. W. Leach

1887, 29 years (summers) old, Peace to Thine Ashes."

A cupola-like structure, presumably mounted on the church roof, or perhaps a bell-house, was all that remained of the church. The remains of only four houses were found between the graveyard and the river. The area pictured in the National Geographic Magazine (Martin, 1913, p. 146) is now unrecognizable. Digging revealed the volcanic detritus to be from 1 to 1.50 meters in depth. The highest elevation of the site disclosed little sign of occupation. Here an eight-inch iron pipe projects a few feet above the ground near the highest point of the hummock.

Our investigations forced us reluctantly to decide against excavating the site at this time. A tremendous over-burden of ash and pumice would have to be removed before the cultural midden could be exposed. The rise of the water table makes excavation to the bottom of the culture-bearing strata practically impossible. All material, supplies, and personnel would have to be transported to the site by helicopter. Consideration of transportation and weather had the greatest weight in determining our decision. Helicopter flight time contracted by the Katmai Project was almost used up. A period of intermittent stormy weather had set in, further compounding the problems of establishing, supplying, and evacuating a camp set up here for any length of time.

#### Summary

The importance of Katmai during post-contact times is evident in the material cited above. Its position on a centuries-old trade route to Bristol Bay is of utmost significance for reconstructing Aleut-Eskimo pre-history. The evidence now at hand points conclusively to a large pre-contact aboriginal population on the Kodiak

archipelago, even though it was not nearly as large as some authorities claim (Porter 1893, pp. 33 ff.). Further anthropological investigations in the Aleutians have confirmed Hrdlicka's Kodiak and Aleutian findings (Laughlin, 1951).

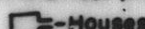
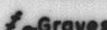
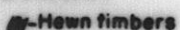
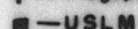
We have indicated the problems to be overcome should Katmai village be excavated. The difficulties are not over-emphasized. It is of the utmost importance to science that thorough archaeological research be done in this area for the reasons advanced above. Katmai village is of sufficient significance that an attempt should be made to recover as much data as possible from it. There are also other sites in this area which need to be investigated.

Takli Island is an example. Hrdlicka (1944, pp. 131 ff.) describes a "promising" site on the southeast corner of this island. He notes that "the deposits here are essentially pre-white, and they are substantial." His comment that the mound's composition gives the impression of seasonal occupation is mitigated in face of the knowledge that this island is probably a very old embarkation and landing point for aboriginal parties traversing the strait. The presumed antiquity of this site should be subjected to scientific verification. No doubt there are other coastal sites in this area still awaiting discovery which also may yield invaluable data.



A.M. High Tide Line, Tuesday, July 28, 1953

**Map 3**  
**Keguyak, Alaska, 1953**

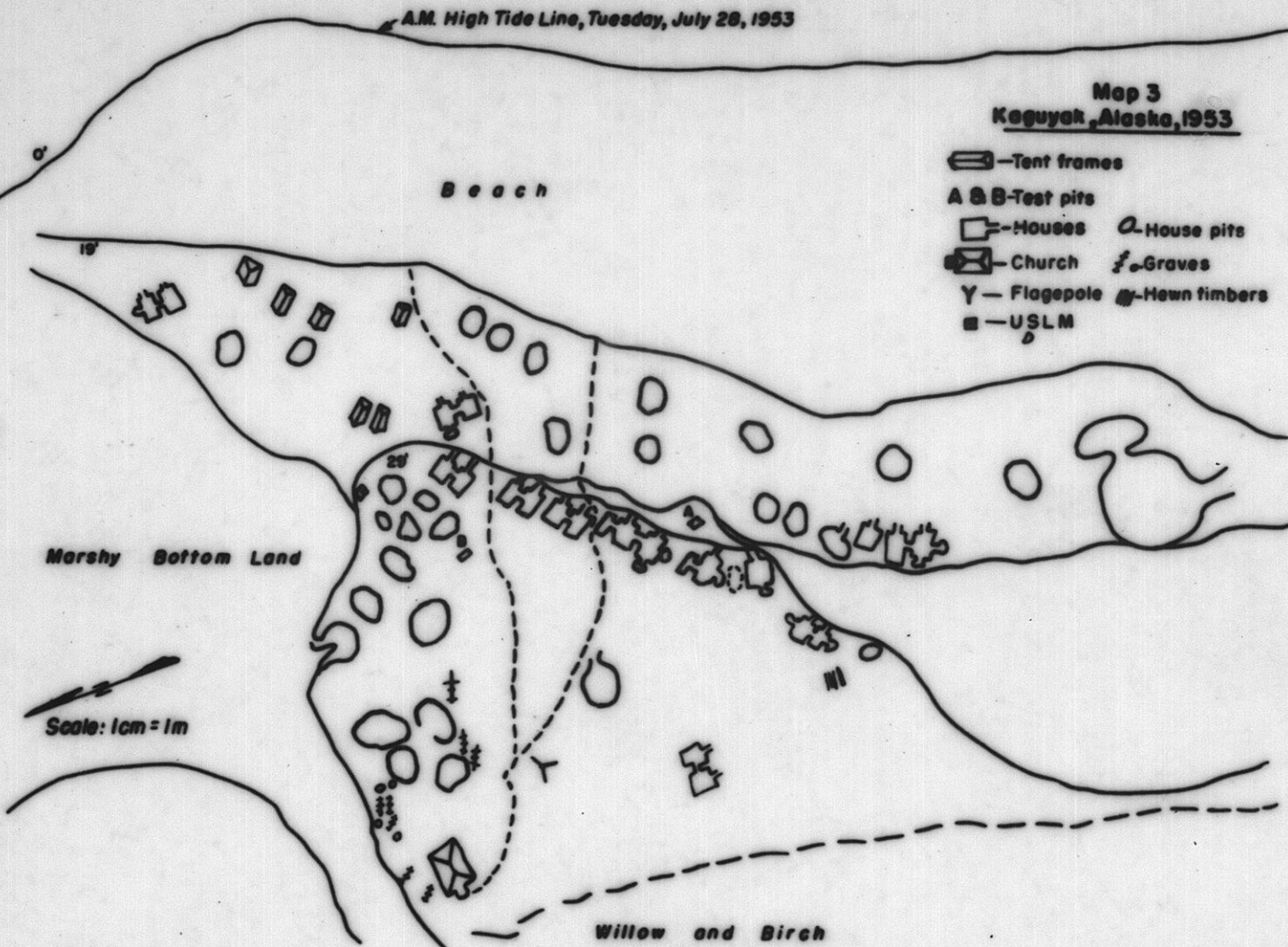
-  - Tent frames
- A & B - Test pits
-  - Houses
-  - House pits
-  - Church
-  - Graves
- Y - Flagpole
-  - Hewn timbers
-  - USLM

Beach

Marshy Bottom Land

Willow and Birch

Scale: 1cm = 1m



### Kaguyak

The abandoned village of Kaguyak was noted as an alternate site. When our initial effort to find Katmai village was unproductive, it was decided that a test pit should be dug at Kaguyak to determine its archaeological value in case the Katmai site was proved to be destroyed by erosion or other natural forces. An aerial reconnaissance of the site had seemed to promise a midden of some depth.

Accordingly, we were flown via helicopter from Kukak to Kaguyak on July 27th. Our plans were to survey the site and prepare an excavation grid in case the site proved fruitful; Mr. Leach was to return to Kukak that evening while Mr. Davis was to remain two more days to excavate a 1 x 2 m test pit and finish mapping the site. The survey of the site was completed and excavation of the test pit begun before Mr. Leach left. The initial test pit was very disappointing, yielding only 9 artifacts of European manufacture from the top 25 cm level (see below, p. 92). After mapping the site on the third day, Mr. Davis decided to remain one more day to dig a test pit on the upper terrace. Storms prevented him from returning to Kukak until August 4th. During lulls in the storm which at times reached gale proportions, he completed the second test pit and measured and wrote descriptions of the kashim and post-contact houses. His nights were spent making observations on the water permeability of the two-man mountain tent.

## History

Baker has the following remarks on the history of the name of Kaguyak:

Kaguyak; village on Swikshak Bay, Shelikof Strait, about 25 miles southwest of Cape Douglas. Lutke, 1835, says (nautical part, p. 275) "Kaiayak River and Kaiayakak village in Swikhchak golfe. The Russians wrongly call this village Naouchkak." The bay was called Noakchak on Manuscript map of the Western Union Telegraph Expedition, 1867. Tebenkof, 1849, has Kaiaiak settlement, which has on many charts appeared as Kayayak. Prior to 1884 the Coast Survey charts had Kayayak, but since that date Kaguyak. The change appears to have been accidental and unfortunate, there being a Kaguyak on the southwest shore of Kodiak Island. In the eleventh census, 1890, the village is called Douglass, after Cape Douglas. Kaguyak seems to be the proper name for what is sometimes called Alsentia, on the southwest shore of Kodiak (1902, p. 224).

There is still considerable confusion over this name. The Map of Alaska, Department of Interior, General Land Office, 1898, has Kaguyak; the Map of Alaska, Department of Interior, U. S. Bureau of Education, 1914, has Douglas; the Map of Alaska, American Geographical Society for the Alaska Road Commission, 1923, has Kayayak; the Map of Alaska, Department of Interior, General Land Office, 1917, has Douglas; Martin (1913) writes of Douglas village; and the map of Katmai National Monument, 1951, appended to this report (Map 1) has Kaguyak, as do present Air Force maps.

Apparently Petrof was responsible for the introduction of the name Douglas. However, "Map #1 of Alaska and adjoining Regions compiled by I. Petrof, Agent, 10th Census, 1880," locates Douglas at Cape Douglas, on the southern shore of Sukoi Bay (Petrof, 1884).

The error is traceable to the 11th Census, where we read:

The only settlements in the vicinity of Cape Douglas consists of a small trading post, with a few native houses and the village of Kukak, with less than 100 inhabitants

of the Kadiak Eskimo tribe (Porter, 1893, p. 72).

In the map of Alaska accompanying this volume, Douglas appears in place of Kaguyak; this map is "prepared by the U. S. Coast and Geodetic Survey for the Eleventh Census, to accompany the report on Population and Resources of Alaska."

For convenience we will continue to use the appellation, Kaguyak.

The presence of a Russian Orthodox Church building at Kaguyak indicates that it must have been of considerable importance in Russian times. There is some corroboration of this observation.

Formerly this vicinity was looked upon as one of the most important sea-otter hunting grounds, but of late years the trade in these valuable skins at Douglas station has become insignificant, and the natives are obliged to seek distant hunting grounds with the assistance of the traders. The natural food supply of these people is still quite abundant. The sea teems with codfish and halibut, and the streams with salmon, and hair seal are plentiful along the shore during the winter. Of land furs the land otter and fox are the most important (loc. sit.)

Since 1927, at the latest, the site has had intermittent occupation by clam-diggers. The U. S. Fish and Wildlife Service maintained a stream guard post there in 1953, manned by Mr. Otis Martin of Houston, Texas.

#### Physical description

The village of Kaguyak lies about one-quarter mile south of the promontory delimiting the southern shore of the body of water now called Big Bay. The site is bounded on the north by a marshy bottomland that is separated from the ocean by a low sand dune, through which a sluggish fresh water creek meanders. The village is bounded on the west by a brush cover of willow and birch with occasional

cottonwood trees. The two sand dune terraces upon which the village is situated extend to the south to a salmon stream half a mile distant (Map 3).

Dr. John B. Lucke kindly loaned Mr. Davis his altimeter to determine the height of the beach terraces. Not being able to determine the mean sea-level line, Mr. Davis set as his zero reading the AM high-tide mark of July 28, 1953. The elevation of the first terrace above this mark is 19'; that of the second terrace is 29 feet.

On the first, or lowest, terrace are located six tent frames erected by or for clam-diggers, three two-roomed and one single room post-contact Eskimo houses, sixteen oval depressions indicating the location of former houses, and the large oval excavation indicating the location of the kashim, or men's house.

On the second terrace are six two-room houses, one three-room house, and one single-room house, thirteen oval depressions of former houses, the church, and the graveyard, with thirteen identifiable graves (Map 3). On the northeasternmost corner of the second terrace and overlooking the beach is a cribwork monument hewn from the local sandstone, having a center-post of the same material. About three meters southeast of this monument stands a witness stone with the legend <sup>USLM</sup><sub>D</sub> carved on the side facing the monument. No other legends nor a date were found on the monument or witness stone. So far, our research has failed to find any mention of this monument in the geographical literature on this area.

### Structures

The church is a rectangular building 7.85 m in length, 5.95 m

wide, and having a vestibule 3.4 x 2.1 m. It is oriented east and west, 150° T, with the door and vestibule at the western end. The walls are 2.15 m in height. They are made of 20 mm square, hand-hewn, dove-tailed timbers. The exterior corners of the building are squared and the wall covered with horizontal cedar siding. The vestibule is a rough timber frame covered with cedar siding and a shed roof. The rafters and sheathing of the hip roof are of rough fir lumber; the roof is shingled. The roof is surmounted by a Russian Orthodox cross. The south and east walls have two windows each, the north wall one. The windows are 1.3 x .83 m; the lower halves are boarded up and a 6 pane window inserted in the upper halves. Sod was piled against the outside walls to a height of one meter. Figure 3 gives the plan view of the church; Martin (1913, p. 142) gives an excellent picture of the church and graveyard. Plate XVIII presents nearly the same view of the church as it appears now.

The interior of the church is divided into two rooms by the iconostasis. The floors are of 1 x 6 dressed lumber, the walls have been sealed with tongue-and-groove ceiling, and the ceiling is of rough, random width fir lumber. Hand-forged nails apparently were originally used throughout the building.

Since Russian times the church has been converted into a dwelling, probably by clam-diggers or fishermen. The iconostasis was converted into a partition and the walls were papered with the pages from 1927-28 periodicals, primarily the Saturday Evening Post and Country Gentlemen.

The graveyard lies north and east of the church, bordering a steep-sided gully. There are now thirteen ~~disconcernable~~ disconcernable graves.

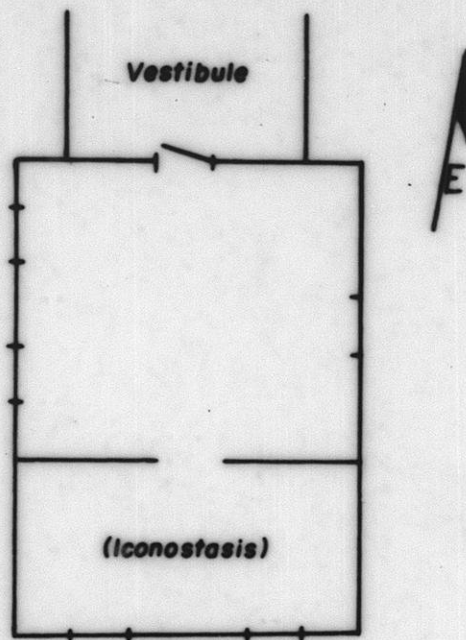


Figure 3  
Plan view of Church at Kaguyak.  
Scale 1cm = 1m.



PLATE XVIII  
View from edge of  
second terrace, looking north-  
west toward church building,  
Kaguyak. By J. W. Leach



About 32 can be counted in Martin's illustration (loc. sit.). The graves were all formerly marked by wooden Russian Orthodox crosses. Only four are still standing; the others have long since fallen. Several of the graves have been opened at the head, apparently to obtain the skull of the occupant.

The Kashim, or Kazim, lies at the southern extremity of the village, approximately 140 m due south of the church building. The large room is oval, 23.1 meters north to south and 16.16 meters east to west. The entrance appears to have been a sloping passageway or ramp 6.1 meters wide and 9.12 meters long. A small room 5.4 x 6.93 meters adjoins the east wall, possibly connected to the large room by a tunnel.

The kashim was apparently built completely underground, except for the roof. The dirt and sand from the excavation were thrown out to the north and east. Thus the northern wall is about 6 meters high, while the southern wall is about 4 meters. A portion of the south wall is still visible in situ. It was made of hand-hewn lumber, 5 to 8 cm thick, and 14 to 25 cm wide. A very decomposed, adzed beam 3 m in length lies on the present floor of the large room.

The post-contact native house in use at the time Kaguyak was abandoned by the Eskimo is semi-subterranean, rectangular in floor plan, with the long axis oriented east and west, and with the side entrance at the seaward (eastern) end. Multiple-room dwellings consist of two or more such structures built in a line, with passageways or tunnels between adjoining walls. Oval depressions of former residences indicate little more than that the houses were formerly

single-room structures with side entrances oriented toward the sea.

The average dimensions of these residences are: room, 2.75 x 4.5 m; entrance passageway, 65 cm wide by 1.2 m long; interior height of walls estimated to be about 1.25 m (entrance passageways somewhat lower); distance between rooms, 1 m; connecting tunnels, 65 x 65 cm; storage pits, round or oval, 2 to 2.5 m in diameter. Floor level is excavated to an estimated depth of 75 cm, and sod is piled around the walls and over the roof. Walls either are of vertical, hand-hewn lumber with log sills and plates, or horizontal, with rough one-inch fir lumber of hand-hewn planks and log corner posts, or any combination of these materials and methods of building. Pillars to support the roof are usually split halves of logs 20 to 25 cm in diameter. No details of roof structure were obtained, as all roofs had fallen in. Figure 4 gives the plan view of the three-room house; Martin (1913) presents excellent views of the exteriors and interiors of the houses.

Building materials are adze-dressed driftwood lumber of fir, cedar, cottonwood, or spruce; 10 to 18 cm poles of the same species; rough-sawed fir lumber, 1" x 12", 2" x 4", and other dimensions; small pieces of lumber from boxes and crates; hand-forged and wire nails. One room had a stove pipe of round terra cotta tile projecting from the northwest corner.

#### Archaeology - Test Pit A

Test pit A was excavated on an eight meter wide bench between the second and first terraces. The excavation grid was plotted to encompass both terraces. The excavation is one by two meters in extent and is excavated to a depth of one meter. The midden con-

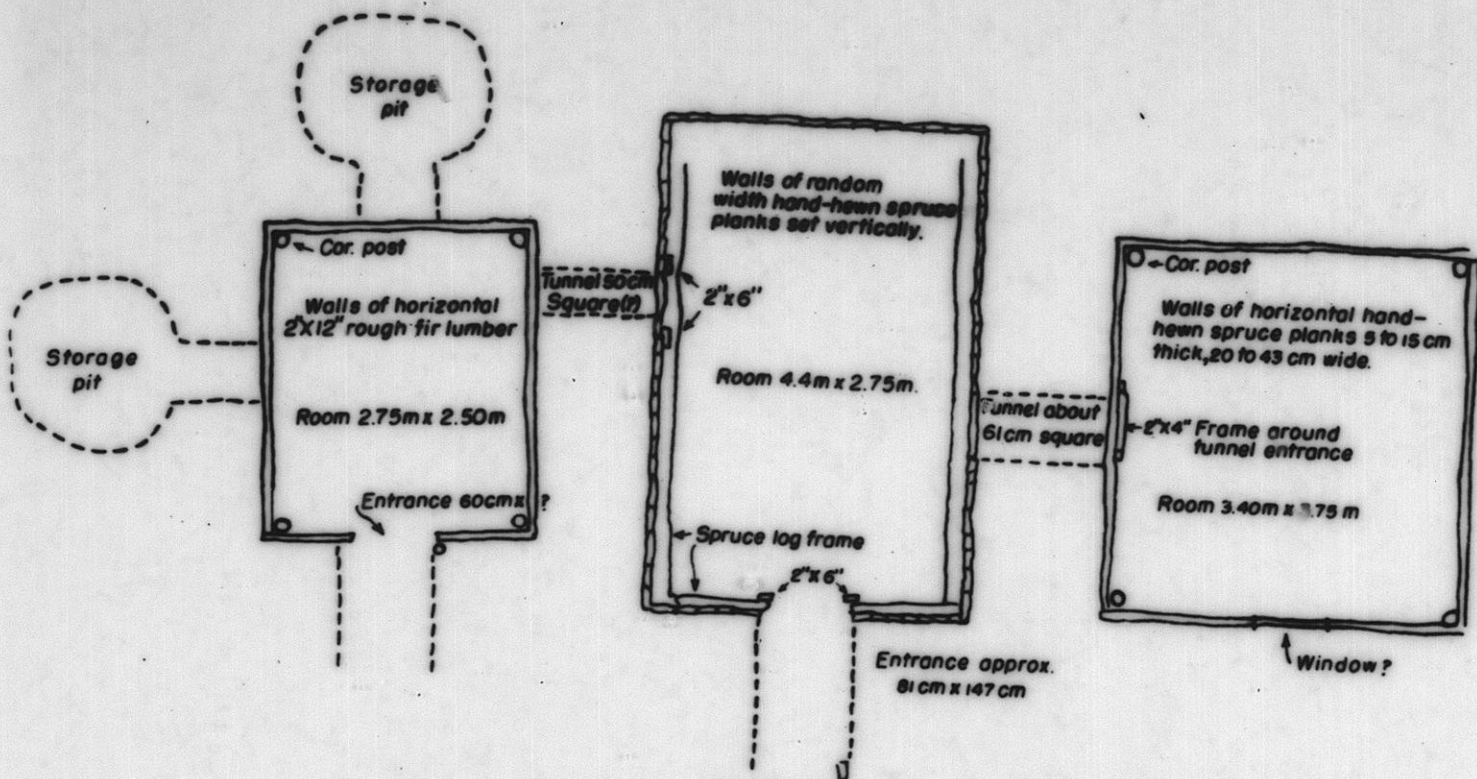


Figure 4

Plan view of remains of three-room house, Kaguyak. No sign of roof posts, entrance passage ways destroyed by fire, walls are charred by fire, structural details of storage pits not visible.

Scale 2cm = 1m

sists of a very sandy soil containing charcoal and a few broken rocks. The strata are from top to bottom; sod, 4-5cm; Katmai ash, 3-4 cm; midden, 22-18 cm; sterile sand, i.e., containing no cultural detritus, 7-18 cm; midden 36-25 cm; sterile sand and beach gravel (Fig. 5). The stratigraphy indicates two occupation periods in this area, separated by some length of time, judging by the deposition of sterile sand. A charcoal lens occurs at 100 cm in square 22B (Fig. 5, a) in the lower midden stratum, but there is no evidence of a floor or occupation level associated with it. No bones except a few fish vertebrae and gill-plates were found.

Artifacts were recovered from the first 25 cm level only. All were of European manufacture, consisting of pottery, 4 pieces; china, 1 piece; hand-forged nails, 2; window glass fragment, 1; and one ornamental cast iron fragment, presumably from a stove.

#### Archaeology - Test Pit B

Test pit B was excavated on the second terrace, 20 meters west and 15 meters south of the monument (Map 3). It also is one by two meters in extent, and is excavated to a depth of 1.25 meters. From top to bottom the strata are: sod, 5 cm; Katmai ash, 22-27 cm; shell and bone, 0-15 cm; midden 15-55 cm; sterile sand and gravel (Fig. 6). Only one occupation period is indicated. Again, no artifacts were recovered from the lower levels of the midden. All artifacts came from within the shell stratum or from just below the ash deposit.

Eight specimens were excavated from Test pit B. Unworked specimens include 2 basalt flakes and one waterworn pebble of chalk. One unidentifiable fragment of iron was excavated. Other artifacts ex-

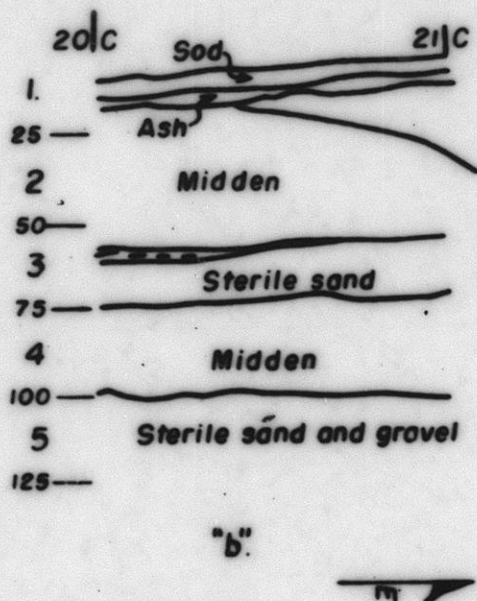
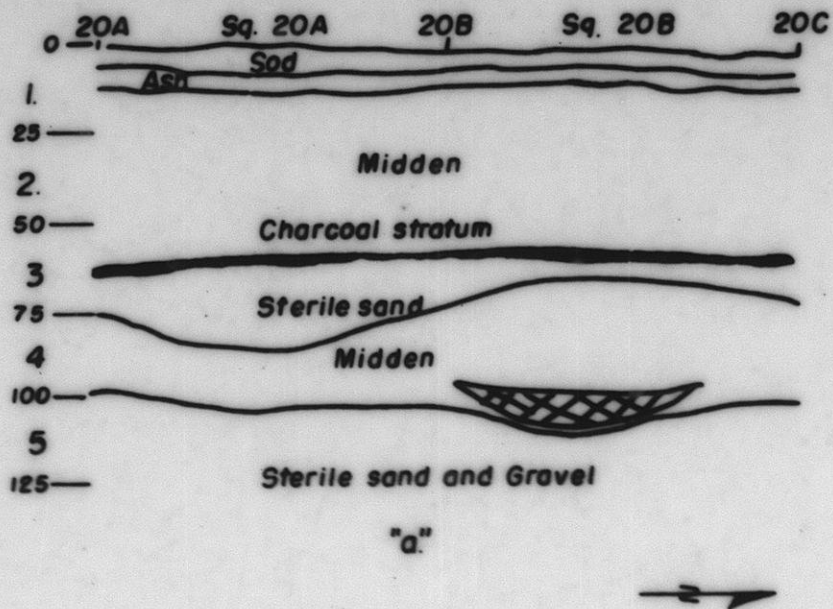


Figure 5

"a" Stratigraphic profile, west wall, Test pit A, Kaguyak.

"b" Stratigraphic profile, north wall Test pit A, Kaguyak

Scale 1mm = 2cm

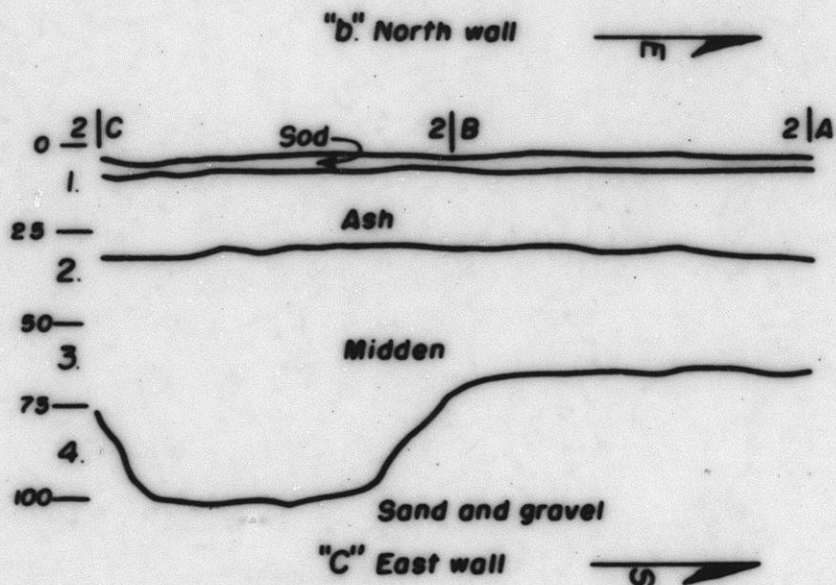
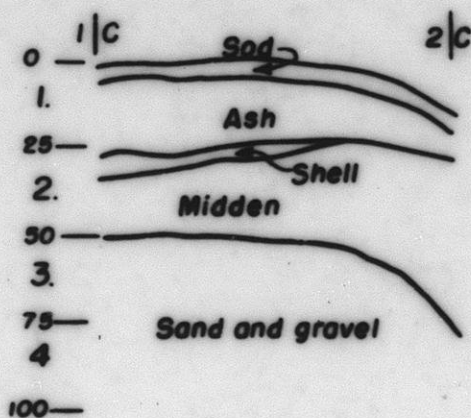
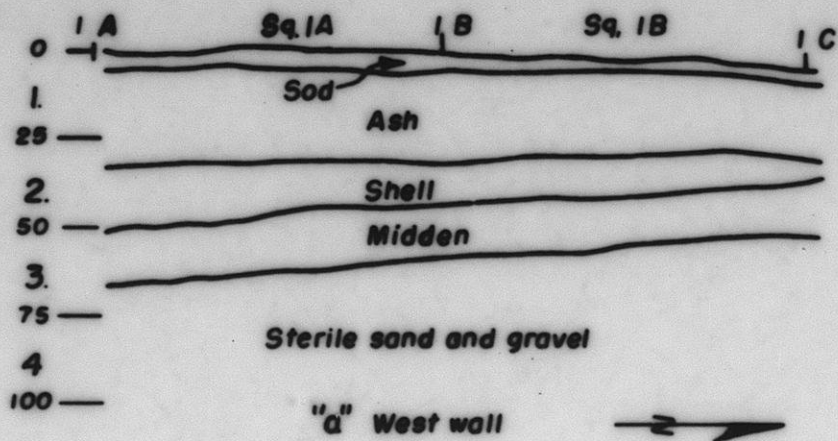


Figure 6  
Stratigraphic profiles of Test pit B, Kaguyak.  
Scale 1mm=2cm

cavated are: one fragment of a natural lamp, 207 x 195 x 58 mm, bowl depth about 27 mm, base flattened and traces of carbon in the bowl cavity; one carved human hand of bone, 39 x 17 x 5 mm, left hand, thumb missing, lines of palm and finger joints delineated, hole drilled through palm and groove cut around the wrist (from a puppet or doll?), (Plate I, 7); one specimen of worked bone, 77 x 20 mm, shallow 8 mm oval socket (?) at larger end, with 2 x 2 mm groove around the shoulder of the socket, most of the socket shoulder is broken off at the groove, opposite end notched and broken off (Plate I, 10); one indurated shale, shouldered ulu, chipped to shape, finished by polishing, curved edge still very sharp, 132 x 45 x 4 mm (Plate IV, 5).

#### Notes on the Economy

Land mammals represented in the stratum of bone and shell were moose, caribou and fox. Sea mammals were seal and porpoise. Various elements of a large bird and fish were also present. Shellfish represented in the deposits were razor clam, cockle, quahog, limpets, spirella, mussel.

Several species of seaweeds were observed around the sandstone outcropping which is exposed at low tide. Low tides also expose up to a quarter of a mile of tide-flats along the beach in front of the site. In Big Bay, one-half mile to the north, over a mile of tide flats are exposed at low tide. Putchki (wild parsnip) and Elymus were present. A little over a half mile south of the site is a turbulent salmon stream about 20 yards in width at its mouth. Dwarf blueberries and dwarf salmon berries are abundant on the sand-spit which separates Swikshak Lagoon from the Straits.

### Summary

The archaeological data indicates that this site was occupied the year around by native people during historical times, for not much more than an estimated one hundred years, if that long. We know from historical records that Kaguyak, or Kayayak, was in existence by 1849, and that it was occupied at the time of the Katmai eruption, (Martin, 1913). We know further, that it was the policy of the Russian American Trading Company to move groups of Aleut or Koniag hunters into non-permanently occupied areas in order to exploit local populations of fur-bearing animals. Off-shore rocks, such as Shakun Rocks, were probably sea-otter habitats. Thus it is possible that Kaguyak was a thriving community during the fur trade era, and that its importance waned rapidly thereafter.

We are informed from ethnographic data that the subsistence techniques of the Aleut-Eskimo peoples include seasonal movements to hunt and gather foodstuffs throughout their territories (see above, p. 11). An early account states that on Kodiak Island,

Out of 65 settlements in which up to that time lived the Aleuts (Konigs), or better said from which they lead a nomadic life over Kodiak and the islands that belong to it, there were formed seven communities.....(Tikhmeniev, quoted by Hrdlicka, 1944, p. 19, emphasis ours).

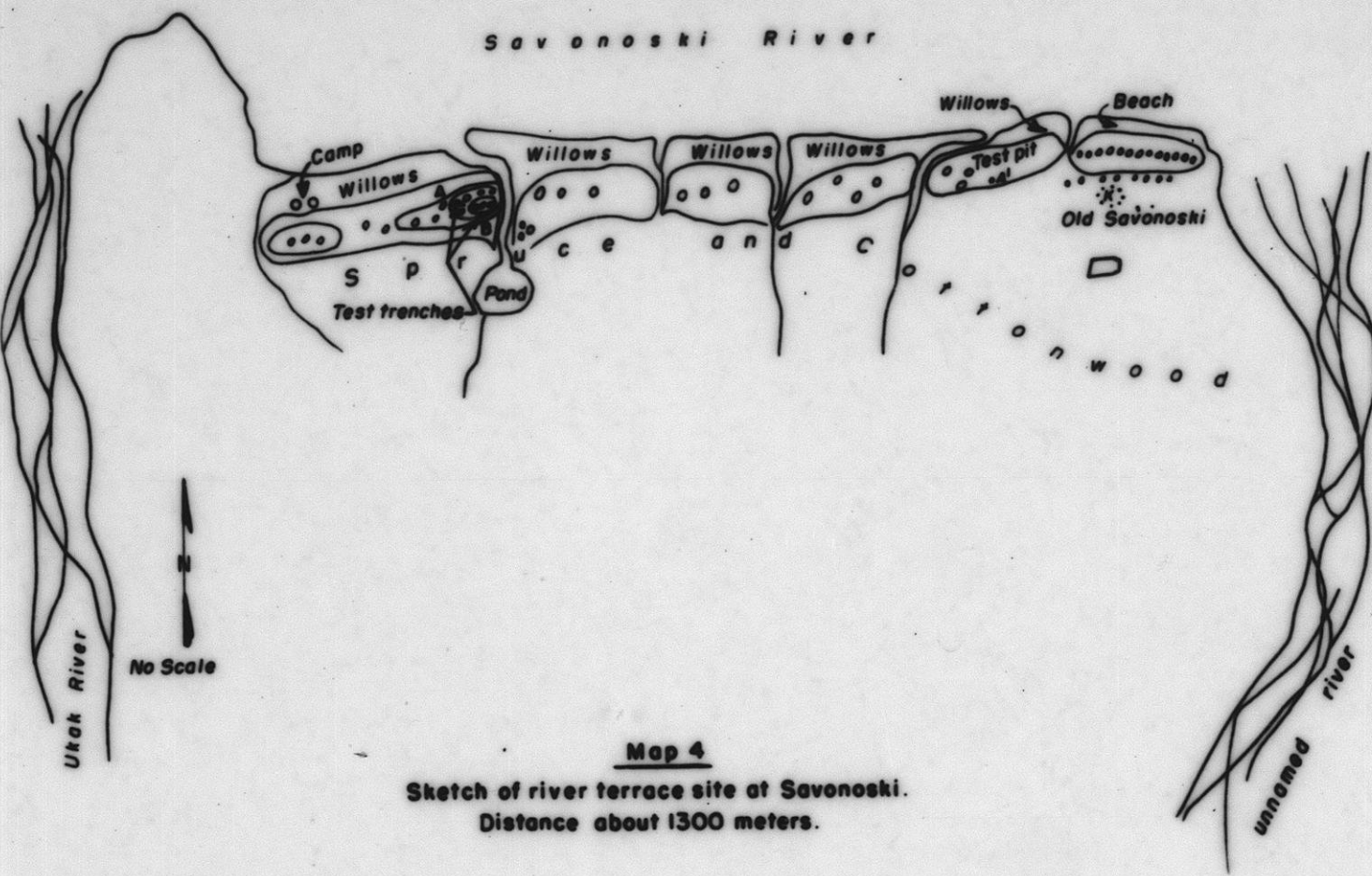
The presence of a fire lens under the sterile sand layer in test pit A indicates occupation prior to Russian contact (Fig. 5a). Hence we may assume intermittent occupation of the Kaguyak site which extended back to prehistoric times, prior to permanent occupation under the Russians.

Swikshak Lagoon gives the appearance of being a very favorable site for human habitation. Berries abound in season on the sandspit.



Extensive tidal flats at the mouth of the lagoon provide a bountiful supply of clams. Wild parsnip was observed along both shores. In addition to the lagoon and Big River at the head of Big Bay, two small salmon streams empty into the bay along its north shore between the lagoon and Big River. Numerous off-shore rocks and islands provide sanctuaries for seals and sea lions, sea-otter ground, and bird rookeries. The lagoon is deep enough to provide anchorage for fishing boats and cannery tenders; the Kukak Bay cannery had an auxiliary plant there, including a well-built dock. Yet a survey via helicopter by Mr. Davis, accompanied by Mr. Cahalane, failed to reveal a habitation site along the lower reaches of the lagoon.

However, a visiting fisherman at Kukak, Mr. Walter French of Kodiak, later informed us that the village site was further up the stream emptying into the lagoon. He assured us that this was an old site, but this observation should be checked by competent investigation. What little historical evidence we have points to a permanent settlement which was sustained by the fur trade. We have no data pointing to the existence of permanent prehistoric winter villages for the Cape Douglas area, despite the abundance of natural resources. The need for thorough archaeological research to resolve this problem is obvious.



Map 4  
Sketch of river terrace site at Savonoski.  
Distance about 1300 meters.

Savonoski

Physical Description

The village of Savonoski is situated along the south, or left, bank of the Savonoski River on the point of land which divides the Ukak and Savonoski Rivers where they empty into the head of Iliuk Arm of Naknek Lake. At the present time the mouths of the two rivers are separated by a large sand and pumice delta. An unnamed stream enters the Savonoski River at the upriver, or eastern, edge of the village site. This stream formerly flowed into the Ukak River; but in recent years its mouth became choked, and it veered abruptly to the north to find an outlet in the Savonoski (Map 4).

Two terraces border the left bank of the Savonoski. The first or lowest terrace averages from 2 to 4 feet in height (above water) and directly borders the river edge. The first terrace is flat and composed of sand, pumice, and sedimentary silt. During the summer run-off of melting water, the river rises almost even with its edge. Low lying areas of the first terrace are covered with seepage water at this time. The second terrace is inland from 20 to 150 feet, and is from 4 to 15 feet high (Plate XIX). The dunes which form the second terrace begin at the delta about 40 to 50 feet inland from the river. The line of dunes gradually swings toward the river, so that one-half mile from the delta the first and second terraces have merged into a single elevation of about 10 feet which rises abruptly from the river and slopes gently downward on its southern or inland side, a distance of



PLATE XIX. Aerial view of site at Savonoski, looking southeast toward Ukak River. Mound and trenches in left foreground. Taken from 30th Engineers helicopter. By W. A. Davis.

150 yards, until it gradually merges with the marshy bottom land of the Savonoski valley. At this place are the ruins of the village of Old Savonoski. From here on upriver, or east, the river is bordered by a single terrace. Depressions, singly or in groups, from semi-subterranean houses dot the second terrace along its entire length. Thus, the total inhabitation area is over one-half mile long and from 150 to 10 yards in width (Map 4).

The Savonoski valley is the eastern end of a wide trough scooped out by the Pleistocene glaciers. The valley lies nearly due east and west, its eastern end terminating at Hook Glacier, and its western half holding the waters of Iliuk Arm. The valley also provides drainage for Lakes Grosvenor and Coville, and via the circuitous American Creek, Lakes Hammersly and Murray. Savonoski River is broad; in some places its bed is well over a mile in width, but due to silt and pumice is greatly embraided throughout its length. Rainbow River, which drains Serpent Tongue Glacier and empties into Savonoski River above the outlet of Lake Grosvenor, is also very embraided. Glacial silt and volcanic ash and pumice have so filled the river beds that at their greatest depth there appears to be only three or four feet of water.

The valley bottom is covered with ponds, marshes, and murky bogs, interspersed by forests of spruce, cottonwood, and birch wherever the ground is high enough to permit their growth (Plate XX). Marsh grass, mosses and aquatic plants grow in the marshes and bogs, and the intermediate area between marsh and forest is fringed with willow, elderberry and other shrubs.

The site itself is covered with a rank growth of grasses, with extensive stands of cereal grasses, such as Elymus, predominating.

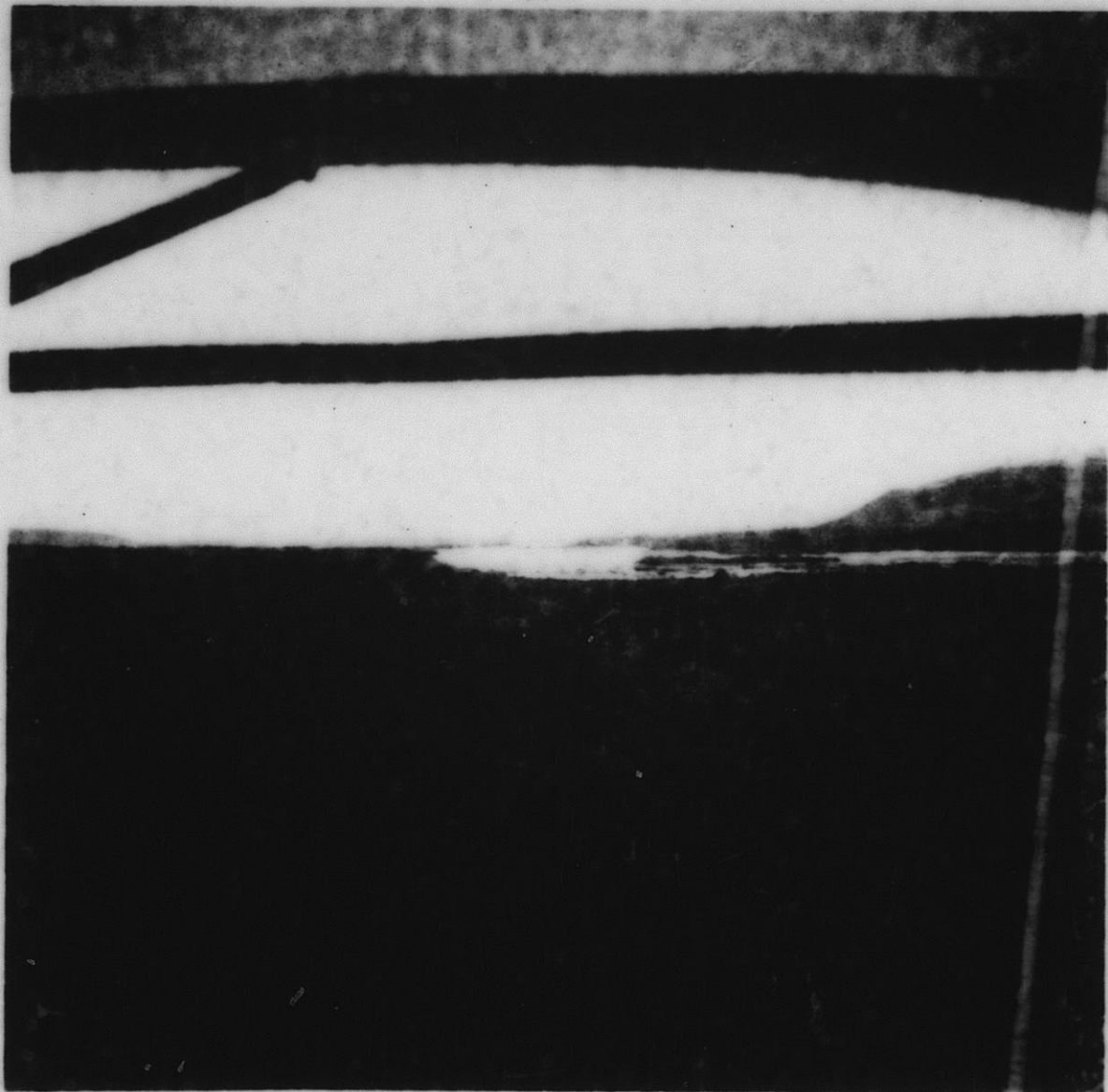


PLATE XX Aerial view of  
Savonoski River valley, looking  
east. Taken from 30th Engi-  
neers helicopter. By W.A. Davis

The first terrace has a dense stand of willows covering nearly all of it. The spruce and cottonwood forest grows upon the upland side of the second terrace (Plate XXI). Single trees, and in three places the forest itself, have encroached upon the habitation sites. Only where the people who fled the Katmai eruption lived is there a fairly wide clearing. This is undoubtedly the reason why this spot was chosen as it is the only place which affords room for houses and storage buildings and still allows the church to be built at some distance from the other buildings (Map 5).

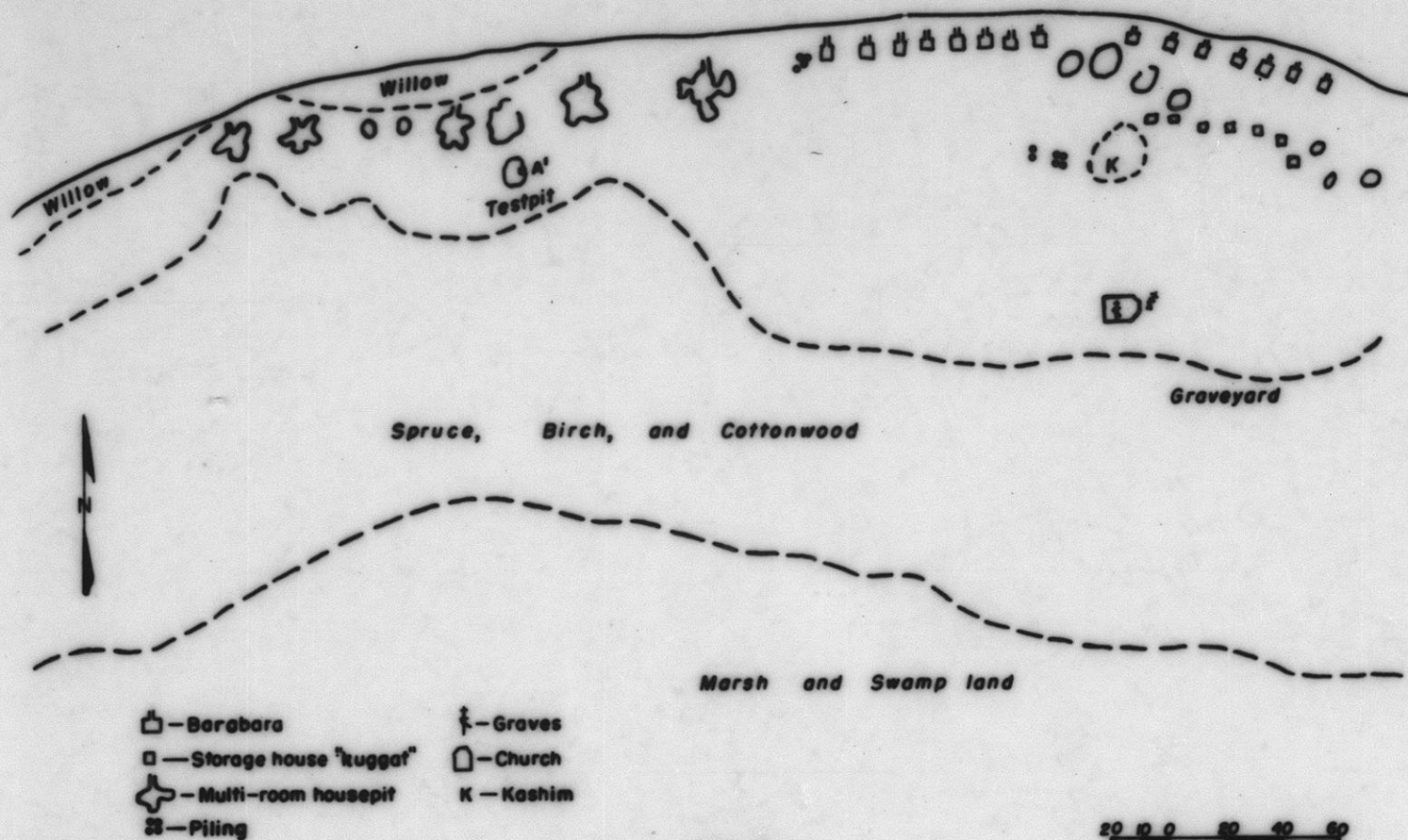
Land mammals seen or identified from their tracks at Savonoski and vicinity were: moose, Alaska brown bear, wolf, beaver, lynx, land otter, red squirrel, and mice. Land birds seen were: arctic song sparrow, rosy finch, robin, swallow (swift?), eagle, osprey, small hawk, jay, raven. Waterfowl were: mallard duck, loon, various species of gull, arctic tern. Shore birds were: greater yellowlegs plover, sandpiper. Fish: rainbow trout. Due to the silt-laden water we were unable to observe migration of salmon and other fish.



PLATE XXI

. View of site at  
Savonaki looking west. Mr.  
Thompson and Mr. Leach in  
foreground. By W. A. Davis.





970 meters to  
other end of site

Map 5  
Sevonoski Village, Alaska, 1953

20 40 60  
Scale in meters

History and Ethnographic Notes

Savonoski; Eskimo village, on the eastern shore of Naknek Lake, Alaska peninsula. Name from Spurr and Post, who obtained it, in 1898, from Rev. A. Petelin. Has also been written Savanoski. Of it Spurr says: "Ikchagamut or Savonoski, as it is now commonly called." (Baker, 1902, p. 187).

According to informants at New Savanoski, the place name of Old Savonoski was "Chikmalok." It is their custom to refer to villages by the name of the locality where it is situated. The place name is also applied to the residents of the village, and does not indicate a tribal distinction. Thus the name of the village, Igkiak, on Lake Walker (Naknek) mentioned by Porter (1893, p. 165) refers to the locality where the village was situated. The inhabitants are referred to by the same place name, adding the suffix "ist," meaning "people from--." If a village group moves to a new locality the villagers take the place name of the new locality. Thus village names do not represent political subdivisions. It is believed that a Russian monk (Savonof ?) was the person responsible for the name Savonoski.

Iliuk Aŕm was called by them "nunvianuk." Naknek Lake was called "nunbak." The church at Old Savonoski was dedicated to St. Mary; when the people moved to their present location at New Savonoski after the Katmai eruption, the name was carried to their new church.

The people who lived around Naknek Lake referred to themselves as "Nonamiut" (not to be confused with Petrof's Nunamiut) in distinction from the Aglemiut who lived at the mouth of Naknek River. This distinction is still recognized at New Savonoski and South Naknek (Pavik). Both Pavik and New Savonoski people recognize a difference in language between the coast and inland peoples. They believed that the inland dialect also differed from that of the Eskimo who lived at Katmai and Kaguyak, who reportedly spoke the Koniagmiut dialect. Lack of time prevented verification of this point.

Roy Fure, a 70 year old Lithuanian by birth and now a resident of the Monument, was living below Chignik at the time of the eruption but moved to the area shortly thereafter. He has the following to say concerning villages in the monument area:

The Kaguyak people moved to Chignik and Kodiak after the eruption. Except for a few trappers, no one was living at Kukak at this time. The Katmai people moved to Perryville after the eruption, some went there directly, but some stayed at Kanatsk for a year and then went to Perryville. I saw eight or ten houses at Hallo Bay in 1914. There were a few trappers' camps at Swikshak and a few at Nonvianuk (between Nonvianuk and Kulik Lakes). There were three barabaras between Colville and Grosvenor Lakes and these were in good condition in 1914. Two of the roofs were on all right. There was a village at the outlet of Grosvenor River. Old Savonoski was about halfway down the

river from this place to the village where you were digging. There were about twelve or fifteen barabaras there. They moved down to that village you call Old Savonoski about 1905-07. On kazims he says: They had kazims--these were dance halls and also a kasim is a cache--at North Naknek and South Naknek. There was one at Levelock, too. They used masks and drums, "chageeng"...they called thunder this also. The men and women dance and sing and ask for gifts from each other in the early spring (Inviting-in Feast). They had a leader, "angookakh."

The village at the outlet of Grosvenor River may be the village referred to as Kangeegmiut by a New Savonoski informant. A reconnaissance of the site was made by helicopter, but we were unable to land for closer inspection. This site appears to be quite extensive, and should be noted for future examination to determine its archaeological value.

Kazims or kasigas apparently were established features in all the permanent villages in the area. An informant at New Savonoski reports that the people danced, held the November festival, and played the stick gambling game, "gathak," in the kazim at Old Savonoski. While this feature was not carried to New Savonoski, in that a separate structure was built, it is likely that the functions and practices were carried on for some time after 1912. Ceremonial masks were deposited in a cave at the head of Iliuk Arm. A party of white men obtained them in 1926. One of the men at New Savonoski offered his services to Dr. Hrdlicka to take him to get the masks in the cave; Dr. Hrdlicka thought he was a fraud and refused to pay the \$30 requested for guidance to Iliuk Arm.

Bear were speared with a spear having a cross-piece on the spearshaft some distance back from the point which kept the spear from going too far into the bear, and as long as the hunter kept hold of the shaft the bear could not reach him. When the bear was

speared, he would grab the spear and pull it into himself as far as the cross-piece would let it go. Temporary boats were made to bring meat downstream by stretching two moose or bear skins over a "vee" or round-bottomed frame of birch or willow saplings.

The people who lived in the lakes area used to go across to the Shelikof Strait coast to hunt sea otter and gather shellfish. They went across the Hallo Bay pass or Douglas pass, but not the Katmai pass, keeping their kayaks and gear on the coast side. One of their camps was on the north shore of Hallo Bay. They used both the umiak and kayak and one and two-bladed paddles. According to one informant, seal bones were thrown back into the water, either the river or ocean.

Just before the flu epidemic in 1918 there were 54 people in New Savonoski who had come down from the upper village. Most of them died in the epidemic; today only eight are still living, one of whom is Mrs. Pegalia Melkohnok, widow of the former village leader of Old Savonoski (Plate XXII). New Savonoski now has 19 permanent residents.

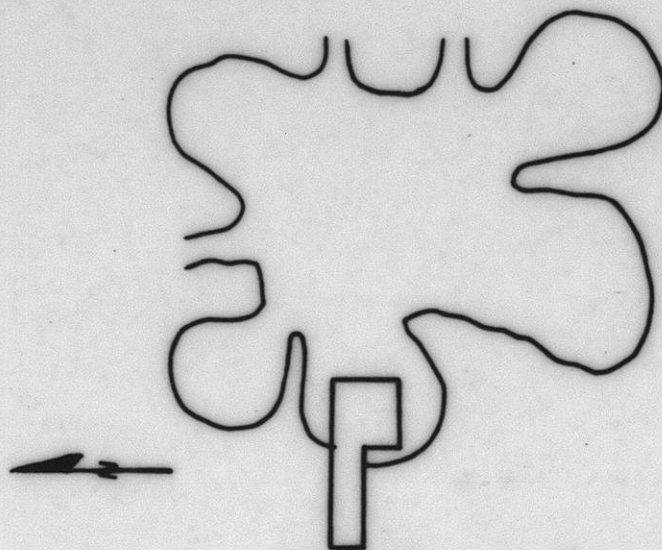
### Structures

Two dwelling house types are represented at Savonoski, a modern, e.g. post-contact, single-room, semi-subterranean house (Fig. 14); and an older, multi-roomed, semi-subterranean structure (Fig. 10). *The existence of the latter type is*  
^ indicated by depressions which occur throughout the length of the site. These depressions are oval in appearance, but enough of their outlines remain to indicate that the rooms were roughly rectangular. The floor plan shows a square central room (roughly three by four meters or a little larger) with one or more entrances



PLATE XXI

Mrs. Pegalia Melkoknok,  
oldest survivor of the group  
who fled old Savonoski when Kat-  
mai erupted. Village leader on  
right. By J.W. Leach.



**Figure 10**  
**Plan view of Trench B and multiple**  
**room house pit, Savonoski.**  
**No scale**

from the river side, and having two or more smaller rectangular rooms opening off it at random intervals. The depressions are now about one meter deep, with the walls extending a few centimeters above the ground level. Figure 10 shows the floor plan of one of the more complex houses of this type.

The single-room modern house was in use at the time of the Katmai eruption. Fifteen of these houses are situated in a row along the river bank at the modern village site. All but one of the houses have been filled in by drifting sand and pumice (Plate XXIII). Enough of the details of the house still uncovered remained to enable us to obtain fairly complete data on methods of construction. The house is three meters by 3.75 meters in outline. The walls are of split cottonwood logs, 10 to 20 centimeters in diameter set vertically, flat side in, around the outside of a log frame. Small logs or poles of spruce, about 15 cm in diameter, were used for the framework. Corner posts were used, with the plates also resting on the outer wall at each end. The entrance passageway, on the river end, is 71 cm wide and 132 cm long, built of slabs and poles like the room. In the wall opposite the entrance is a window aperture about 71 cm square. Additional logs frame the entrance and window, giving greater structural strength to the end walls which must bear the roof load. Actual height of the walls and entrance passageway was not determined; the present depth of the room is about 1.50 meters. Door and window sills are made of lumber from boxes and crates. Four roof stringers were laid the length of the room at about 70 cm intervals and rested on the plates of the end walls. The center stringers are about 20 cm in diameter, the other two



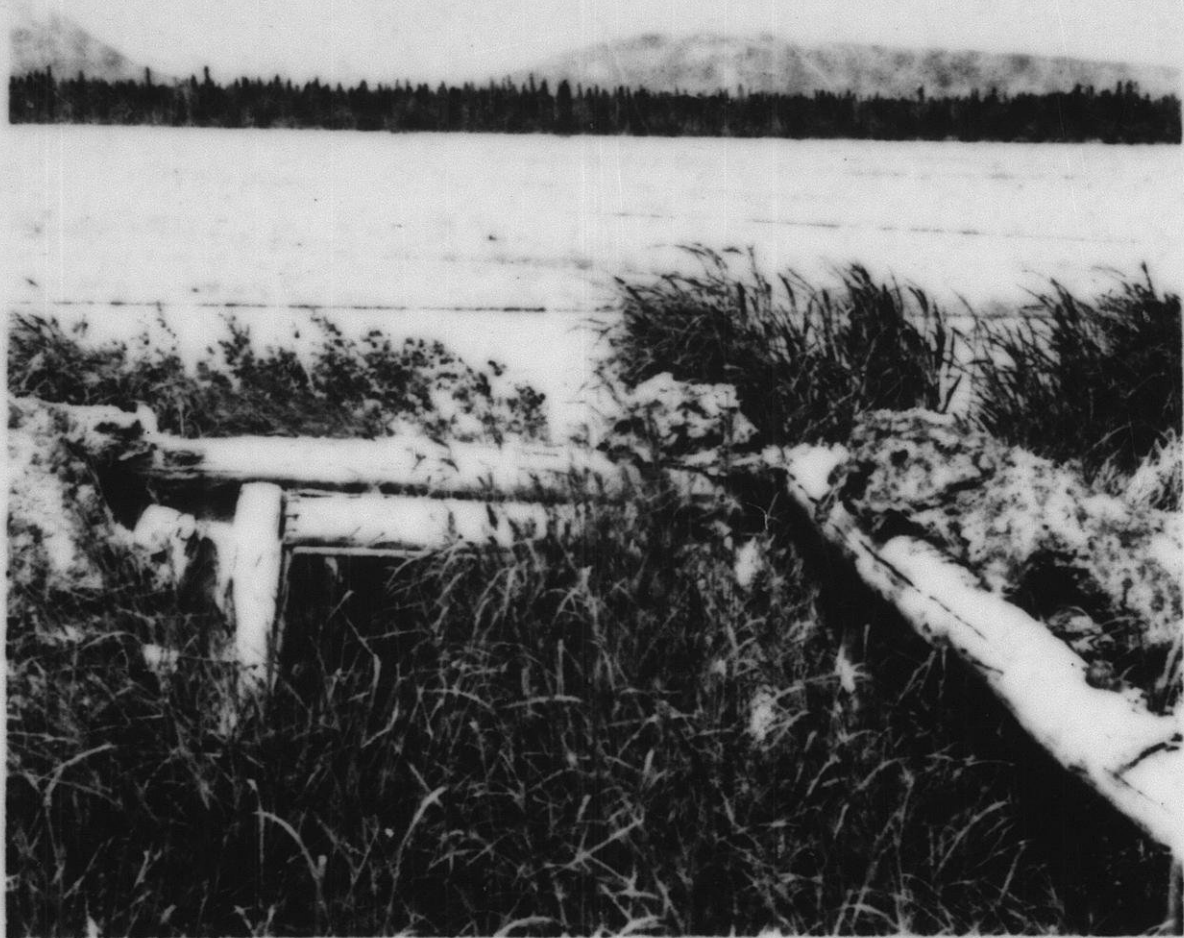


PLATE XXIII

• Ruins of semi-  
subterranean house, Savo-  
noski. By J. W. Leach

about 15 cm. Slabs of cottonwood were laid across the stringers as close together as possible. The walls are sodded up to the eaves, and the roof was covered over with a rounded mound of sod, with small poles of spruce, 7 to 10 cm in diameter, laid lengthwise to hold the sod in place. The entrance-way was covered across with slabs and also sodded over. Structural details of the house are diagramed in Figure 14, a, b.

Behind the dwellings is an uneven row of storage houses built on pilings (Plate XXIV). This type of storage house is found throughout the Bristol Bay area (Spurr, 1900, Pl. XII). Its structural details are quite simple. Four pilings of spruce logs, 20 to 25 cm in diameter, were set two meters apart to form a square extending from 1 to 1.25 meters above the ground. Stringers were placed on these pilings, the ends of which were notched, and a floor of roughly squared spruce logs built so that it projected out about 60 cm on the river side. The walls were made of hewn planks, 7 by 20 cm, notched and dovetailed together at the ends. Five planks were used, giving a wall height of about a meter, and forming a room about 2 meters square. Two spruce logs, about 25 to 30 cm in diameter, laid side by side were used to form the center roof beam or roof tree. Short slabs of cottonwood, butted together at the center-line, formed the sheathing. A layer of sod tied down by poles completed the roof. An entrance, roughly 75 cm square, was cut in the side facing the river, framed with box lumber with a hewn plank door hung by either flat strips of leather or pin-and-socket hinges. Figure 15 gives a schematic diagram of a storage house.

The church building lies at the southern edge of the village

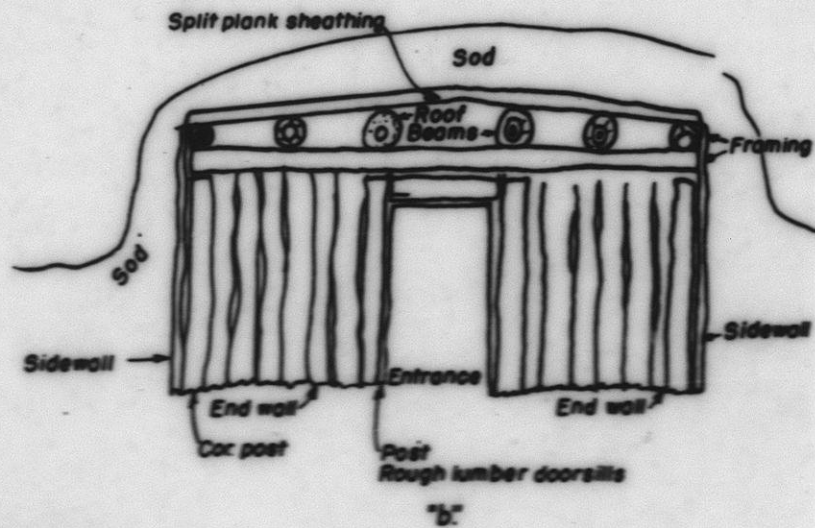
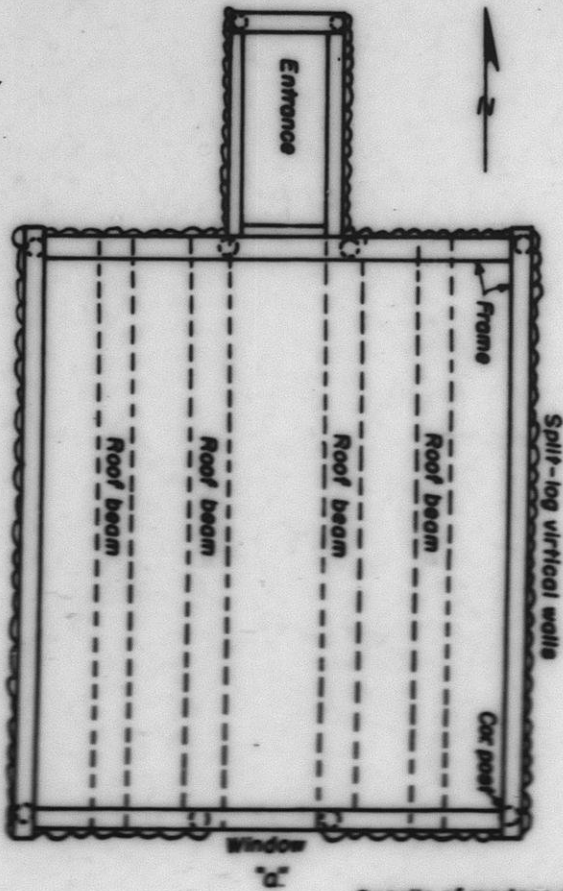


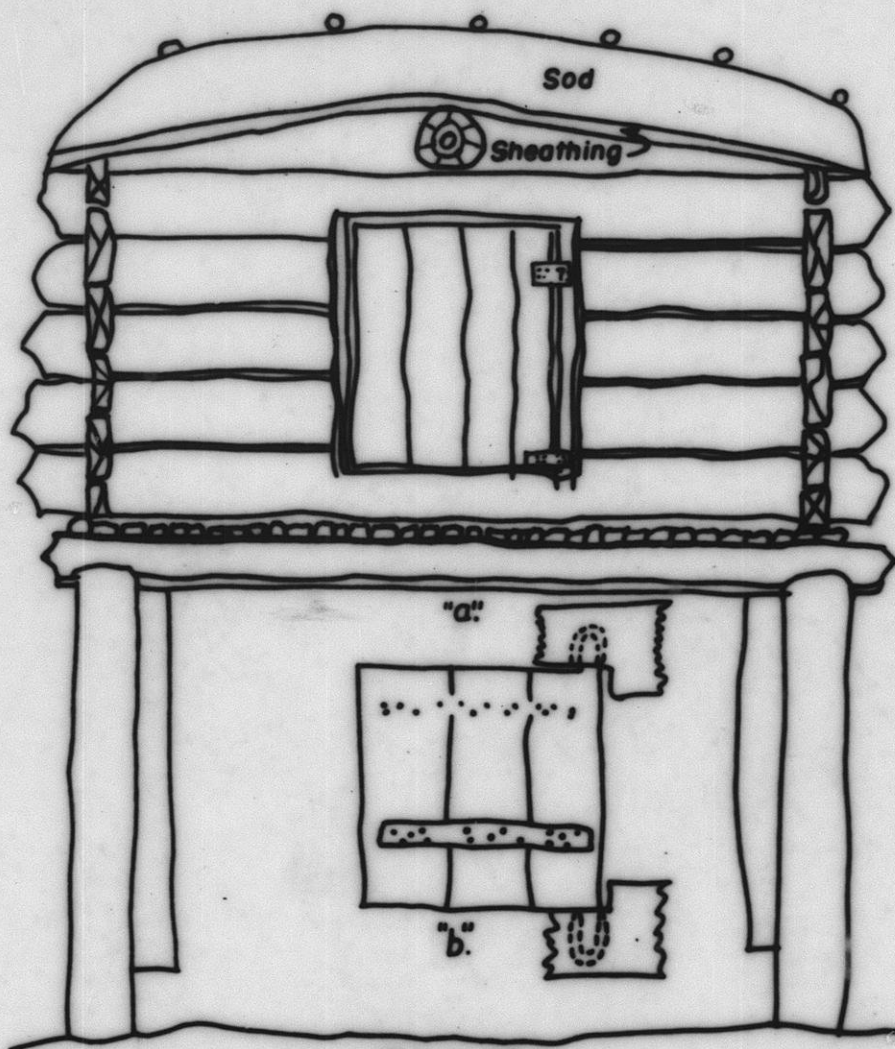
Figure 14

Details of modern semi-subterranean house structure, Savonoski.

"a" Plan view.

"b" Side view of north wall from interior.

Scale 1mm = 2cm



**Figure 15**  
**"a." Storage house, "kuggat," Savonoski. "b." Door with pin-and-socket hinge.**  
**Scale 1mm=2cm**



PLATE XXIV

View of storage  
houses or "kuggats" at  
Savonoski. By J. W. Leach.

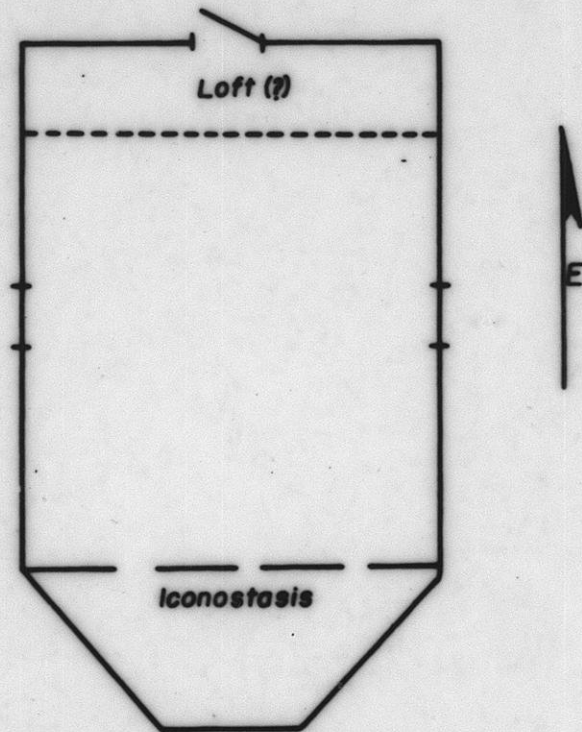
clearing about 55 meters from the river. It is a rectangular structure 9.75 meters long by 6 meters wide (Figure 16). The walls are made of hand-hewn timbers, 12 by 20 cm, notched and dovetailed at the corners. The ceiling beams are of spruce logs, and the rafters and sheathing of cottonwood and spruce poles. The building is oriented east and west with the door at the east end. The west end of the building forms a triangular cove which is partitioned off by the iconostasis. There appears to have been a small loft at the east end above the door.

The graveyard lies a few meters southeast of the church. We could not find any evidence of graves and presume that the floodwaters have obliterated surface indications. The grave west of the church is that of a man who died after Savonoski was abandoned; his body was brought back for burial (Plate XXV).

The kashim lies in back of the row of houses and inland about 20 meters. We were informed of its location, as well as that of the graveyard, by the people of New Savonoski, who lived here prior to 1912. The floodwaters have obliterated all but a slight indication of its location.

### Archaeology

A large mound located about 150 meters from the west end of the site was selected to be excavated. It was believed that this mound represented the area of most intense occupation. Accordingly, excavation of Trench A was begun at the western edge of the mound (Plate XXVI). The stratigraphy of both Trenches A and B indicates a possible intermittent occupation of this part of the site, with one occupation level defined (Fig. 7; Plate XXVI). Trench B uncovered the floor of the room it bisected, as we expected, but



**Figure 16**  
**Plan view of Church of St. Mary, Savonoski.**  
**Scale 1cm = 1m**



PLATE XXV  
View of church ruins  
at Savonoski, grave fence in  
foreground. By J. W. Leach





PLATE XXVI

Excavation of Trench  
A, Savonoski. Savonoski River  
in background.  
By W. A. Davis

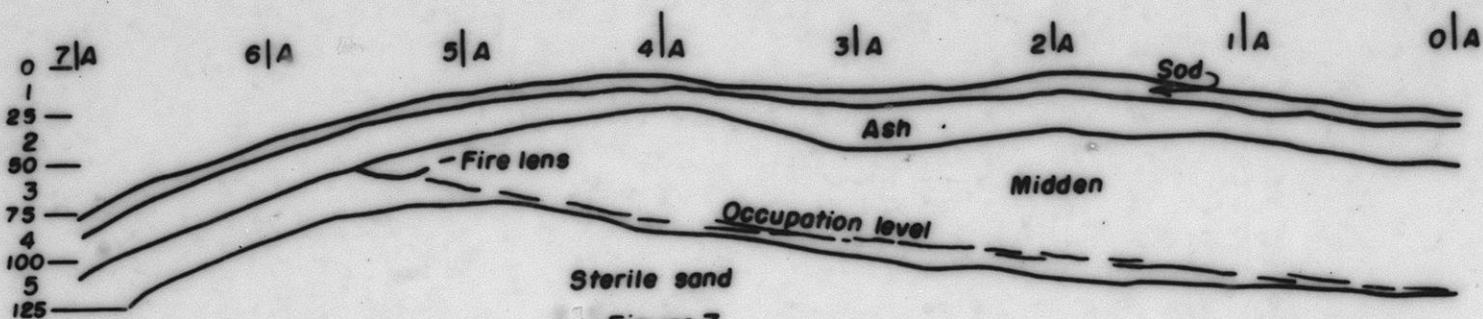


Figure 7  
Stratigraphic profile, North wall, Trench A, Savonoski. Scale 3cm = 1m.

showed only a few centimeters of midden beneath the floor.

#### Trench A

The strata of the north wall of Trench A are (1) a top stratum of sod, 8 - 11 cm thick; (2) a layer of volcanic ash, 10 - 27 cm thick; (3) a 2 cm band of grass roots directly under the ash; (4) midden, varying from 20 to 60 cm; and (5) sterile waterworn sand and pumice (Fig. 7; Plate XXVII). The midden deposit contained wood, charcoal, fire-burnt (sometimes) and broken stream cobbles, mostly of andesite, and scattered bone. There was very little scattering of charcoal in the midden aside from two fire lenses, which are not large or prominent. One lens occurred in the 50/75 cm level, in square 5A, at about 7 cm below the ash stratum. The other lens was in 1B, 75/100 cm level at about 60 cm below the stratum of ash. Numerous burnt and/or broken small stream cobbles were associated with this fire lens, as was a rib of a large cervidae.

Very few bones were found. Their condition suggests rapid deterioration in this type of soil. Various skeletal elements of land mammals and fish gill plates and vertebrae were recovered. Mammals represented in the bone collection are large cervidae (ribs), bear (radius), rabbit (mandible), beaver (tibia, pelvis, vertebrae, ulna). A limb element of a porpoise was also excavated.

Three fragments of small logs were encountered in the excavation. There was no indication that these pieces may have formed part of the walls or rafters of a house. The wood did not show evidence of working. The logs were still in the round with the bark attached.

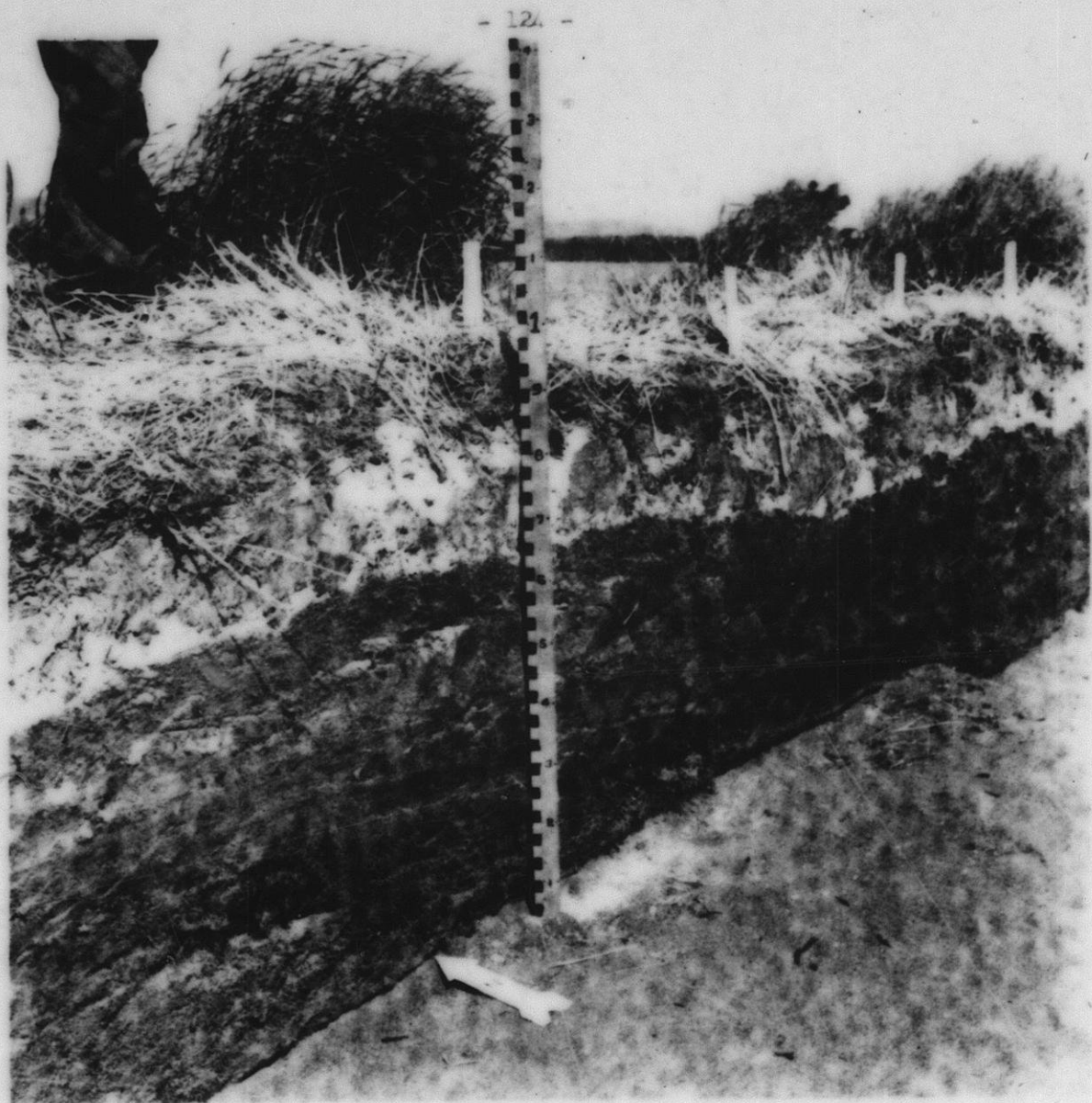


PLATE XXVII

Trench A, Savonoski. View of north wall.

By J. W. Leach.

Ten artifacts were excavated. Three artifacts of bone are: a worked bone object, 150 x 14 x 8 mm, blunt point on one end, opposite end polished, convex, probably a flaking tool (Plate I, 15); a single-barbed harpoon head, 118 x 22 x 10 mm, round line hole, tapered convex base (Plate I, 16; Plate XXVIII); an awl, 78 x 18 x 12 mm, bulbous, ovoid body. Three unidentifiable specimens of chipped and polished slaty shale were excavated (one figured, Plate IV, 3). <sup>Also uncovered were</sup> ~~A~~ Two quartz crystals (Plate VIII, 4, 5), use unknown (not reported in the literature for this area); one basalt hammerstone, 188 x 42 x 21 mm; and a basal portion of a distinctive polished slate point (Plate II, 4). The point fragment is unusual in that the base is concave, the sides are fluted, and the edges hollow-ground (Fig. 11). It is tentatively identified as a portion of a stone tip for a compound harpoon head. Larsen illustrates stone harpoon tips, fluted in this manner, from Pavik at the mouth of the Naknek River and Platinum South Spit, near Dillingham, Alaska, (1950, Fig, A - 14, 15; B-9).

#### Trench B

Trench A was excavated to a depth of 1 meter. The disappointing results from this excavation led us to choose a spot at the highest point on the mound to open another test trench (Plate XXIX). Trench B was planned to intersect a south room of a five-room house-pit (Fig. 10). It was 1 meter wide by 5 meters long; later it was enlarged one meter to the south between stakes 20 and 22 to explore the room farther.

Trench B was excavated to a depth of 1.75 meters. Outside of the housepit area the midden was divided by a stratum of sterile



**Figure 11**  
**Cross section of S-4, showing**  
**fluting and hollow-grinding.(X2)**



PLATE XXVIII  
Mr. Leach examining  
harpoon head, Trench A,  
Savonoski. By W. A. Davis



PLATE XXIX  
Trench B after  
removal of sod, Savonoski.  
By W. A. Davis.



sand from 12 to 17 cm thick at an average depth of 60 cm below the ash (Fig. 8). The profile of the south wall reveals the floor of the room to be saucershaped, 165 cm at its deepest, and having a poorly defined hearth at this point.

The midden strata were characterized by being stained a dark tan, presumably from decomposition of organic material, containing a large amount of cracked or broken stream pebbles, some fire-burnt, and having bits of charcoal and bone scattered through it. Small logs, 10 to 16 cm in diameter, were also scattered through the midden, (Fig. 9), but again we could find no evidence that they were used for structural purposes. We also believed we had uncovered house posts, but when excavated they proved to have attached root systems. No materials, organic or mineral, which could be construed as structural material were found where the trench intersected the outer wall of the room.

It is not easy to conclude that the room must be older than the logs which lay but a few centimeters above its floor. Yet the floor plan of the house indicated a considerable structural complexity. Descriptions of houses by Jochelson, Hrdlicka, Petrof and others repeatedly stress the use of wood and/or whalebone for house building. The utilization of wood is borne out by our own observations. Thus, it would appear that the logs are more recent than the room. However, it is possible that different building techniques were used. A type of Eskimo house is described as having its walls outlined by stakes driven into the ground a foot or two apart, the interstices sodded up, and the whole surmounted by a roof of walrus hides (Burroughs, et. al., 1910, vol. 1, p. 173). Porter

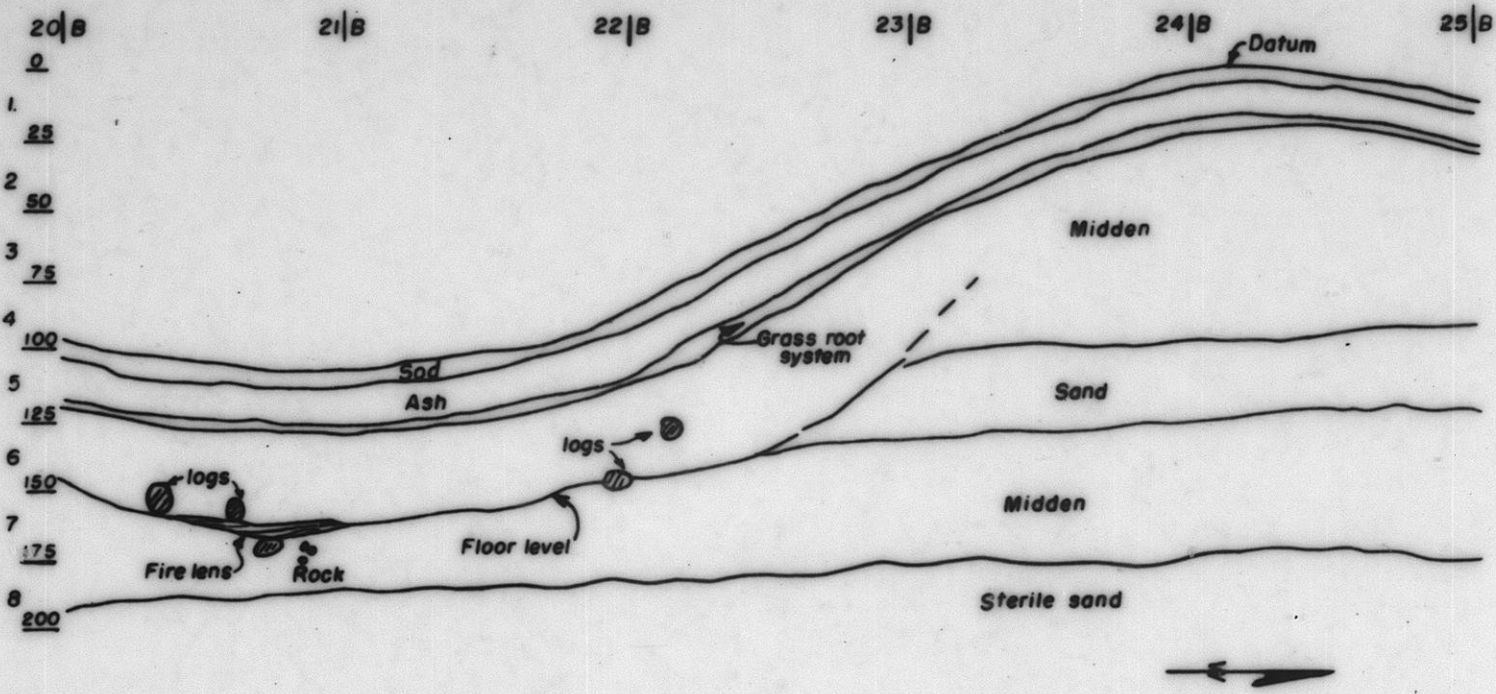


Figure 8

Stratigraphic profile, South wall, Trench B, Savonoski.

Scale 1mm = 2cm

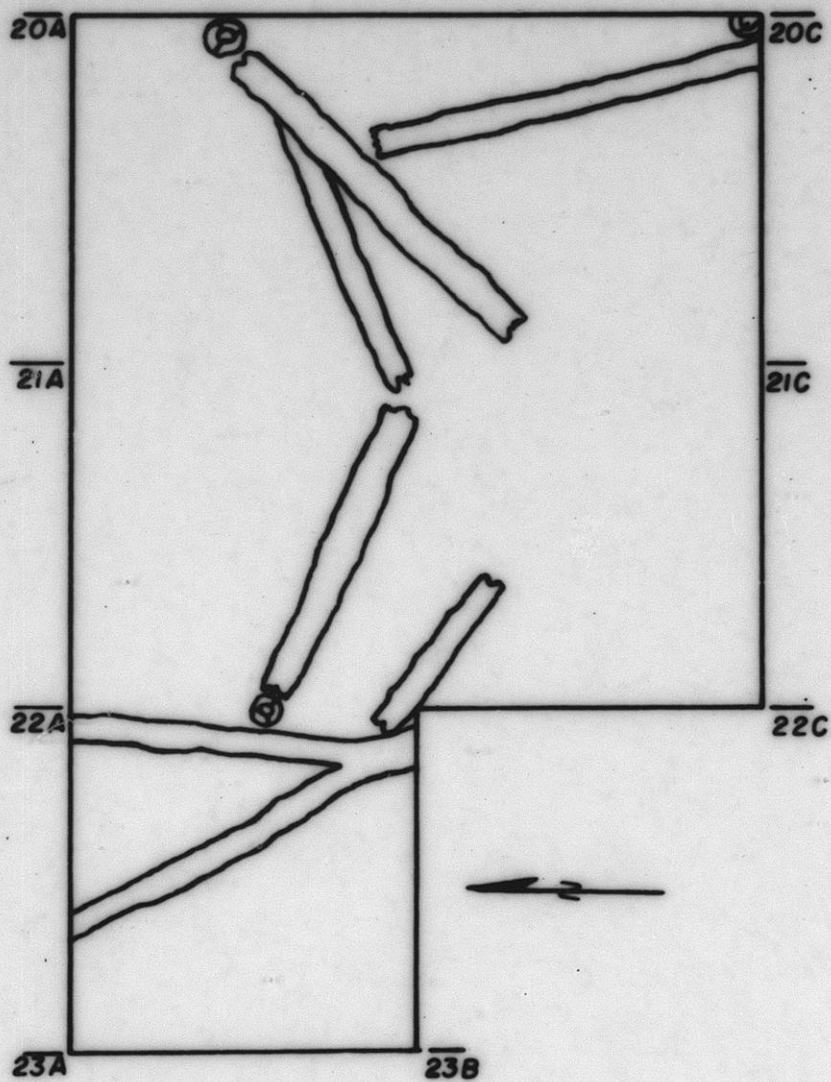


Figure 9

Plan view, Squares 20-22 A & B, Trench B, Savonoski,  
showing distribution of small logs (and posts )

Scale 5 cm=1m

(1893, p. 169) also mentions walrus hide roofing for the Bristol Bay area. Such a structure may have been built here, perhaps for seasonal use, without the staked components and with land mammal skins in place of walrus hides. Such an hypothesis is based on speculation, but the problem deserves serious attention.

Nineteen specimens were collected from Trench B. Nothing of significance is apparent in their distribution, except the notation that polished stonework occurs in all levels, an indication of relative recency for this site. The specimens collected are chalcedony flakes, 3; hammerstones, all basalt, 6; small ground slate side-bladed knives (?) 2 (Plate IV, 1,2); polished slate flake, 1; triangular basalt scraper, 1; chalcedony flake end scraper, 1; shale chopper, Kukak Type #4, 1; necked, oval, indurated sandstone hunter's lamp, 1 (Plate XI, 2); diagonally grooved bone object, use unknown, 1 (Plate I, 9); possible awl from the distal end of a small mammal tibia, 1; one double-edged, triangular section, hollow-ground, slate, mid-section of a cutting or piercing instrument, (base of a harpoon insert blade?), (Plate II, 12).

#### Test Pit A'

The flood waters which had inundated the modern portions of the site shortly after we arrived had receded by the end of our period of excavation at Savonoski. We were thus able to map the village (Map 5). The timely arrival of the helicopter and crew on our last day at the Savonoski camp enabled one of us to dig a meter square test pit about 50 meters west of the village.

The test pit, designated A', was dug on the edge of a multi-roomed housepit depression. The profile shows 8 cm of sod, 25-60cm

of ash, 47-70 cm of unstriated midden resting on fine, water-lain silt. The pit was sunk to a depth of 125 centimeters (Fig. 13).

Four cultural items were recovered: a basalt hammerstone from level 4, and a roll of birch bark; a small, type A potsherd, 24 x 23 x 7 mm, and a quartz crystal from level 5 (Plate VIII, 3).

#### Summary

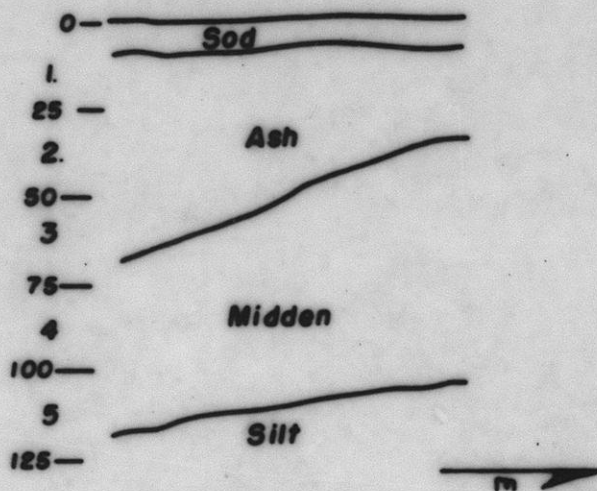
The habitation area on the left bank of the Savonoski River at its mouth is roughly 1300 meters long by 50 meters wide. The area lies on a second river terrace composed of pumice and water-worn sands. Test trenches were excavated at the highest mound on the terrace, where it was presumed that occupation had been most intense. The archaeological data suggests that the site was not intensively occupied, although some antiquity is indicated by the change in house types.

Thirty-nine artifacts were excavated, all of native manufacture. Absence of human skeletal remains, artifacts of European manufacture, articles of personal adornment, decoration motifs, ownership marks, weapons other than projectile points, are noted. In short, the same categories lacking at Kukak are again absent here.

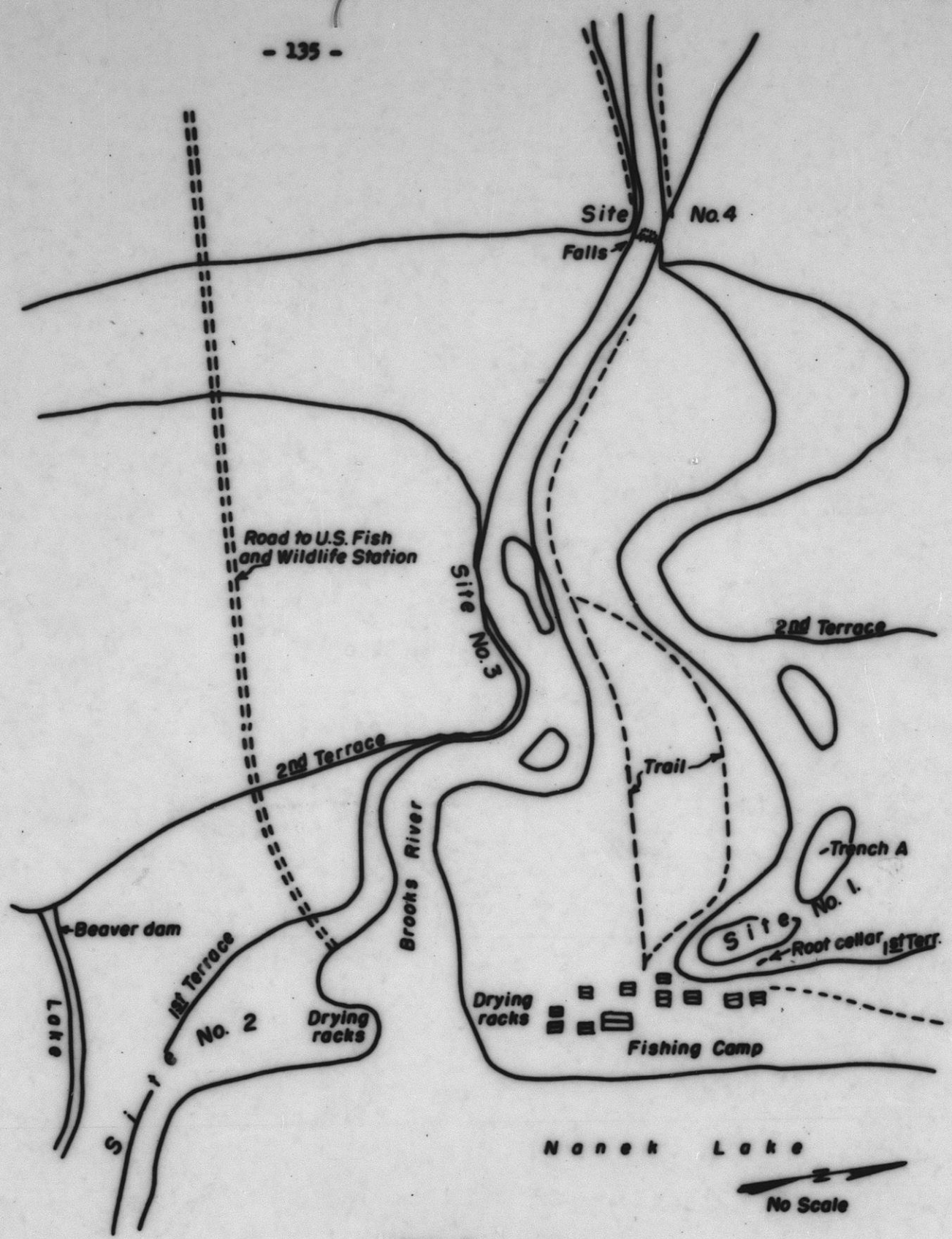
The Eskimo inhabitants referred to people living in various localities by the place name of the locality where their village was situated. Thus the name of the village of Igkiak on Lake Walker (Neknek) mentioned by Porter (1893, p. 165) refers to the locality where the village was situated, not to its inhabitants.

The former inhabitants of Old Savonoski utilized not only the economic resources of the interior region, but were also accustomed in the spring to go to the vicinity of Hallo Bay, on

Shelikof Strait, to gather sea-foods and hunt sea mammals. Their baidarkas, harpoons, and other sea mammal hunting gear were left at the coast.



**Figure 13**  
**Stratigraphic profile, North wall**  
**Test pit A, Savonoski**  
**Scale 1mm=2cm**



Map 6  
Sketch of Patowick, Brooks River

### Brooks River

Brooks River is a short, rapid stream which connects Brooks and Naknek Lakes. Only about a mile and a half long, and very swift, it empties into Naknek Lake where the lake curves to the south and east of Dumpling Mountain. It is an important route for migrating salmon, being used almost continuously from spring to fall by several species; red, king, silver, and humpback. Rainbow trout, Dolly Varden, and Greyling are also found in its waters. Ascent up the river by migrating fish is made difficult by a nine foot high falls, seven-tenths of a mile from the river's mouth. This natural barrier holds great schools of salmon below it, a fact of great economic importance to native inhabitants.

The shores of both lakes, and for a considerable distance inland, are covered by a dense forest of spruce, cottonwood, birch, and willow. Berries, wild cherries, and elderberries abound. Aconite is also found here. The forest grows down to the edges of the lakes. Clearings are choked with waist-high grasses and low shrubs. Thus, overland travel, while possible, is very difficult. Marshes and ponds are encountered in the low-lying areas surrounding the lakes.

Concerning fauna, the same species observed at Savonoski also occur here. Fish observed are those mentioned above.

#### History

At the present time the Northern Consolidated Airlines operates a fishing camp for sportsmen at the mouth of Brooks River. About



150 yards north along the edge of Naknek Lake is the headquarters camp for the N. P. S. ranger in charge of the Katmai National Monument. The U.S. Fish and Wildlife Service maintains a station on Brooks Lake at its outlet where annual studies of the migrating fish are conducted.

No direct reference to this vicinity is to be found in the literature. Indirectly, we have a mention of the locality in the account of the massacre quoted in the introduction above, p. 10.

The Eskimo of New Savonoski and South Naknek continue to use this area to catch fish for their own use during the winter. They have several drying racks for salmon on both sides of the river at its mouth. Both banks are used as camp grounds. There is one house built by them on the south bank of the river. In September after the annual commercial and sport fishing seasons are over, the people camp here. They were waiting for the blow-flies to disappear before coming to Brooks River when interviewed by Dr. Laughlin and Mr. Leach. The name given by them for the former village is "Kitowik." Brooks River is also called by the same name. They called Brooks Lake "Kulik."

#### Physical Description

Habitation sites are found on both banks of Brooks River from its mouth upstream to the falls. Altogether there are four occupation mounds in this area (Map 6).

Site #1 covers an extensive area on the first terrace along the left bank of the river behind Brooks Camp. It is about 150 meters long and varies from 20 to 30 meters in width. The site follows the curve of a former channel of the river, and presumably

was inhabited when the river occupied this channel. Site #2 occupies the whole area between the right bank of the river at its mouth and the large beaver-dammed lake about 200 meters to the south. At the western end of this area the land rises about twenty feet, its configuration indicating that it was a former shore-line of Naknek Lake. Site #3 is on this terrace on the right bank of the river. There are 13 partial or complete housepits along the river bank. It is evident that the river has cut through the site, possibly cutting most of it away. Site #4 consists of a few housepits on both sides of the river at the falls. The sites here do not appear to have been occupied recently. A test pit dug in the mound on the left bank (north) of the river revealed a cultural occupation depth of only 40 to 61 cm. No artifacts were recovered.

#### Artifact collections

Archaeological specimens were collected from two of the Brooks River sites, #1 and #3. The latter is a surface collection washed out by the river. The midden here is about a meter deep, heavily impregnated with charcoal, and is very dark, almost black, and greasy in appearance. Though shallow, this midden gives the appearance of greatest use of all the sites examined, as it looks almost saturated with fatty organic materials probably from fish and animal offal.

#### Root Cellar

An assemblage of eighteen specimens was collected for us by Mr. John Walatka, manager of the fishing camp, from a pit for a root cellar dug in the edge of the BR #1 site directly behind the camp. The excavation is over 3 meters square and the west wall is 1.61 meters deep (Plate XXX). Analysis of the strata reveals 4-6 cm of

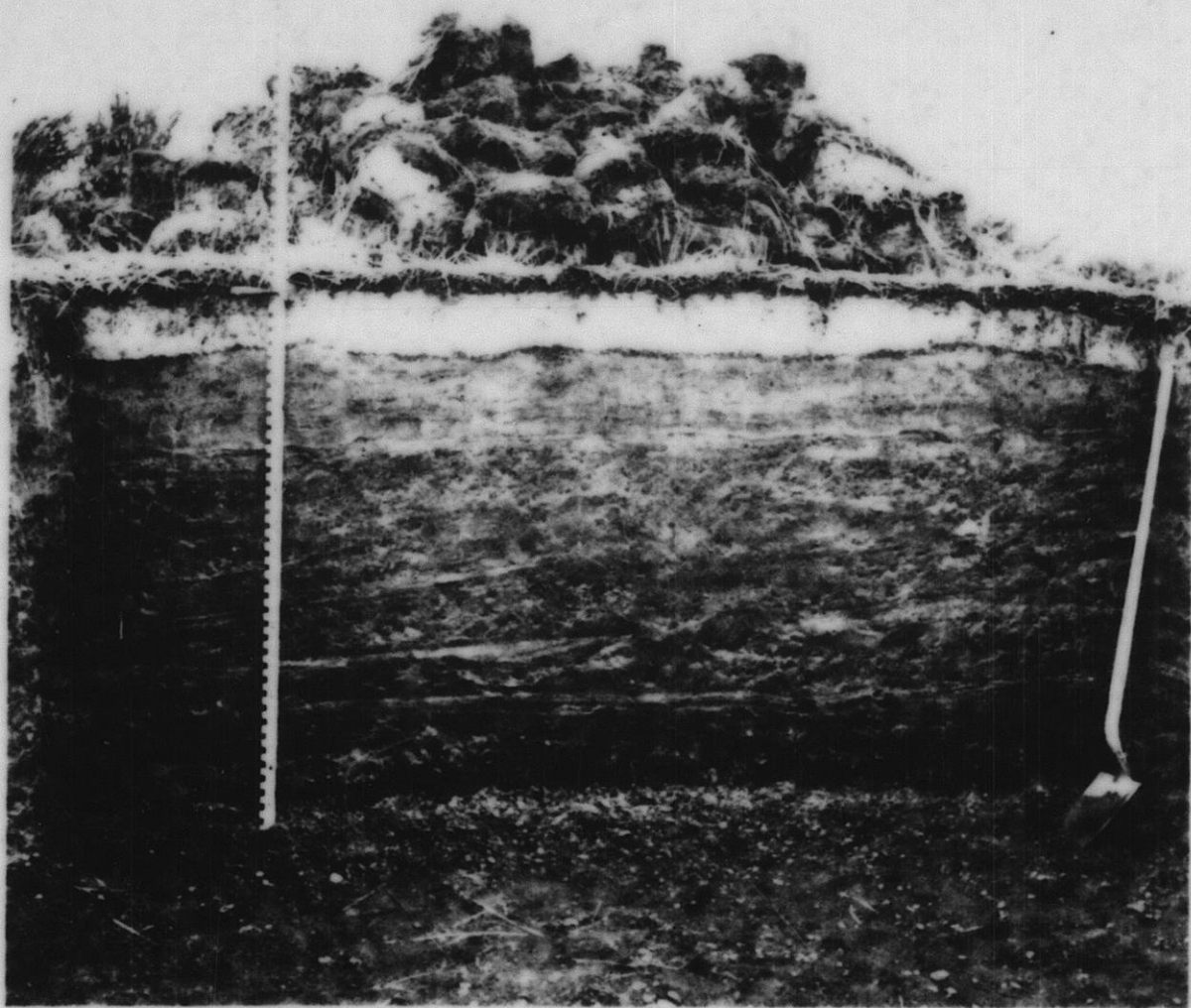


PLATE XXX  
View of root cellar,  
BR#1, showing deposition of  
cultural strata. By J. W.  
Leach.

sod, 16-18 cm of ash, and 112 cm midden deposit. A stratum of silt, 4-6 cm, occurs 15-20 cm below the ash stratum. The midden between the ash and the silt stratum is quite sandy, with a thin layer of charcoal almost on the silt. Below the silt stratum the midden is darker and contains badly deteriorated bone, charcoal, gravel and stream cobbles. The midden rests on sterile sand and gravel. Four occupation levels are discernable. Layers of sand a few centimeters thick are superimposed on each occupation level. This association is most pronounced with levels two and three, and the sand stratum occurs again directly under the silt stratum. The occupation levels are of compacted midden material and charcoal; they do not appear to be house floors. A charcoal sample was obtained from 150 cm below the surface.

The following specimens were collected from the root cellar excavation at Site #1.

One whale-bone harpoon head, 217 x 18 x 9 mm, tip missing, four unilateral barbs, slotted line hole, straight-sided, tapered tang, straight base. The line hole was first drilled then elongated. This type of line hole occurs in the early strata of the mound at Chaluka, Umnak Island, but the holes in the Chaluka specimens were carved, not drilled. De Laguna (1934, Plate 39, 11) illustrates an unilaterally barbed dart point with a transverse slotted line hole from Yukon I horizon. Geist and Rainey illustrate toggle-head harpoon points and dart points having slotted line holes from nearly all levels of their excavations, but apparently they do not regard this trait as significant since slight reference is made to its occurrence (1936, Plates 20, 21, 42, 52, 77). Drucker describes three types

of barbed harpoon heads having slotted line holes (1943, pp. 46-7, Fig. 3, j,h,k). We were told by Mr. Walatka that this specimen was found near the edge of the mound about 35 cm below the ash stratum.

Two single-edged, side-bladed knives of Kukak Type #1, chipped to shape, sides and working edges ground. One of them is apparently a complete tool, though small, 69 x 34 x 3 mm. Both are of indurated shale.

One flaked discoidal knife, Kukak Type #3; shale, "lozenge" shape, 89 x 46 x 8 mm (Plate V, 4). It corresponds to specimens illustrated from Agatu by Hrdlicka (1945, Fig. 186) and from the modern house and meat cache at Kukulik figured by Geist and Rainey (1936, Plate 34, 1-4).

One chipped semi-lunar knife, Kukak Type #4; basalt, chipped from a waterworn, flat stream or beach cobble (Plate V, 14); similar to the specimen from Agatu illustrated by Hrdlicka (1945, Fig. 185).

One whetstone of siltstone, 88 x 66 x 15 mm. These blocks are used as hones to sharpen cutting edges, formerly of stone, and they are still valued in the Aleutians. The men of Akutan Island desired very much to obtain a fine specimen of this type excavated by Messrs. P. T. Spaulding and J. Pierce from the large midden on Tigalda Island, during the summer of 1953 (oral communication).

One extremely waterworn chipped basalt point, shouldered, convex stem, 55 x 18 x 4 mm (Plate II, 18).

One fossil pecten shell, not an artifact.

Ten potsherds were collected, representing the remains of at least two vessels. All are classified as Type B. Two rim fragments

were found, both rounded, but from different vessels. The size of the fragments prevent analysis of form. Under microscopic examination it was found that seven pieces had about a 32nd (estimated) concretion of carbon in the bowl, with a slight amount of carbon on the exterior surfaces, while the remaining three pieces had an even heavier concentration of carbon on the exterior surfaces and very little carbon on the interior surfaces.

Unfortunately, archaeological data is lacking for the above specimens, hence they are only of typological interest.

B.R. #3

Six specimens were found along the bank of the river at Site #3. These are: one unworked patella of a large cervid; one basalt pecking stone; two basalt side scrapers; one natural stone lamp of shale (Plate XI, 4); and one pecked and ground basalt splitting adze blade (Plate IX, 15).

The splitting adze blade, S-35, is 160 x 57 x 61 mm in size; the body is shaped by pecking; the bit is polished, rounded and slightly asymmetrical; width is greater than height; oval in cross section; two three-quarter, parallel, transverse lashing grooves, the one nearest the bit is polished, the other pecked; roughly blocked poll; polished hafting plane. The implement corresponds to Drucker's rough-polled adzes, ~~type~~ VII, from southeast Alaska, which he says are "distinguished chiefly by their crudeness" (1943, p.46). De Laguna (1934, p. 56, Plate 18, 2) and Hrdlicka (1928, pp.147 ff; Plate 10) discuss similar grooved tools. Grooved adze blades are not reported for Kodiak Island, and are rare in the Aleutians.

Trench A, B.R. #1

Method of excavating and description of strata

A test trench six meters by two meters was excavated in Site #1, about 60 meters inland from Naknek Lake. The long axis of the trench was oriented about 45° true north. Due to lack of time only part of the trench, four by two meters, was excavated to sterile gravel. Total depth was 2.25 meters, with pockets of the midden extending to about 2.40 meters. The midden is similar in composition to that revealed by the root cellar, but strata are very poorly defined. Interrupted strata of silt varying from 3 to 18 cm in thickness occur throughout the midden. There were no definable occupation strata. The impression gained from a study of the strata is that the site seems to have undergone periodic disturbances, probably due to floods (Fig. 17).

Classification of artifacts

Distribution of artifacts according to typology and material from Trench A, Site #1, is given in appendix I. Potsherds comprise the largest category, 25.7% (27 of 106 specimens). Basalt is the most preferred material, 23.8%. 44 (42%) of the artifacts were excavated from above the 125 cm level, 3 (2.8%) from the 125/150 cm level and 58 (55.2%) from below the 150 cm level. We cannot help but wonder if the lack of artifacts from the 125/150 level might possibly coincide in point of time with the massacres reported by Petrof (see above, p.10 ).

One unilaterally barbed bone harpoon head was excavated. There are two barbs, a drilled line hole, and tapered tang with convex base (Plate I, 17). Typologically, it is the same as the other

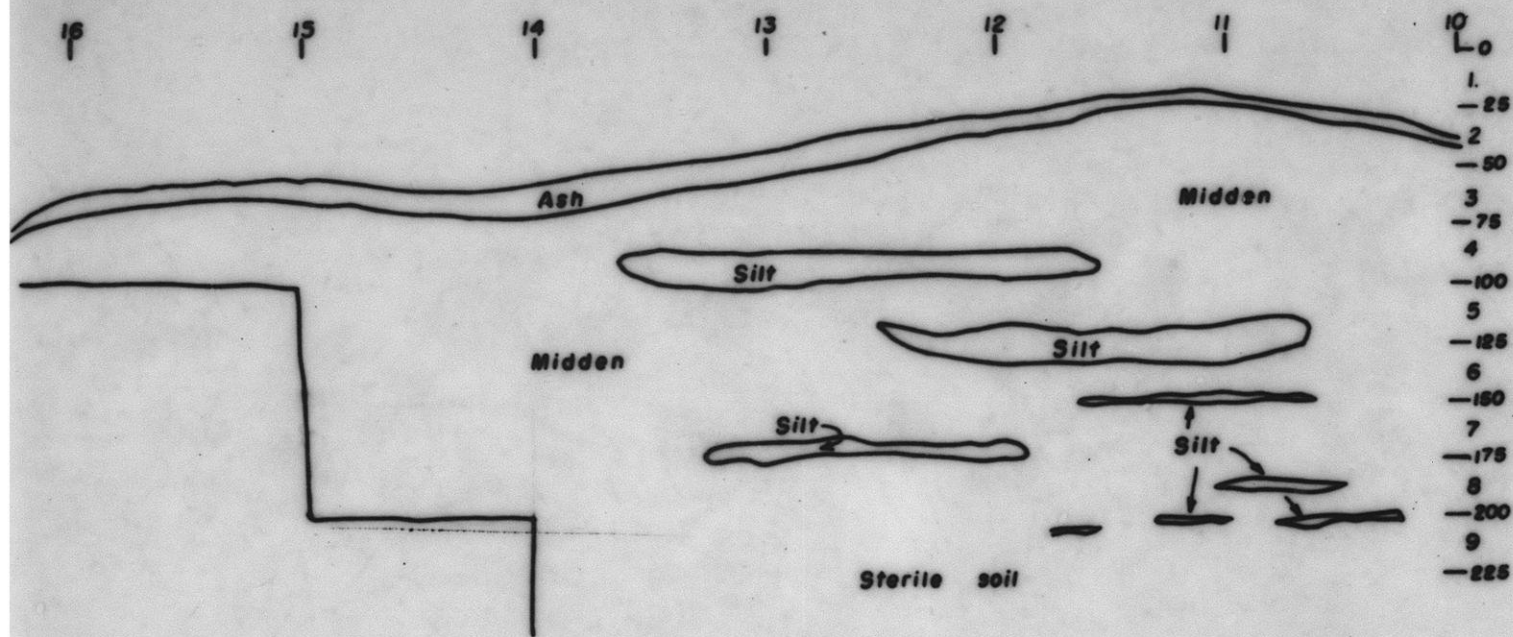


Figure 17

Stratigraphic profile, northwest wall, Brooks River No.1, Trench A. Midden floor is just below 225 cm. except for pockets extending to about 240 cm; stratigraphy is poorly defined.

Scale: 4 cm = 1m



harpoon heads collected (Plate I, 16,20,21), but it can be seen that each specimen belongs to a different style. Stylistically, they are similar to de Laguna's Yukon Island III (1934, Plate 39, 15). Giddings illustrates each of these styles which he categorizes as salmon harpoon heads which he reports are split from antler and "are for harpooning salmon and shee" (1952, p. 39, Plate XXVII, 1,2,3).

An unusual single-pointed awl, having a conical tip, flared shoulder, and round cross-section was found in level 8 (Plate I, 8). One diamond shaped fragment of cut whalebone was also found.

Two stone tips for compound harpoon heads were excavated (Plate II, 8, 20). They are the same style as the slate harpoon tip from Kukak (Plate II, 19), but are of feldspar.

Three arrow or dart points were excavated; each is of a different style. The styles are also represented in the Kukak collection (p. 25). These artifacts are: a slender, barbed slate dart point, 118 x 21 x 12 mm, hollowground, tip missing (Plate II, 1, compare with 17 and 21); an arrow point, barbed, tapered tang, straight base, of polished feldspar, 47 x 23 x 3 mm (Plate II, 9, compare with 10); and a flaked basalt shouldered arrow point, slightly tapered tang, diagonal straight base, 29 x 10 x 4 mm (Plate II, 16, compare with 15). Arrow points of the latter style, but usually up to 40 mm in length, are reported by Weyer (1930, p. 274), Larsen (1950, Pl. 56A), and Giddings (1952, pp. 47 ff.).

Two polished stone points have been classified as piercing instruments (see above, p. 26); #5, Plate II is the same style as #6, of Kukak, while #3 has a straight base and lacks a tang and

shoulders or barbs.

Knives - two complete specimens and six identifiable fragments are classified as Type #1 (Plate IV, 9, 10, 13). Six knives are classified as Type #2 (Plate V, 9, 15, 16, 17). <sup>Number</sup> ~~558~~ and #7, Plate IV, are tentively assigned to Type #2 as examples of an interesting sub-type. The hafting stems are flaked and the double-edged blades are ground (the blade of #7 was reworked by flaking) and oval in cross-section. Unfortunately, both blades are broken, leaving only a stub, hence precise classification is impossible. Five knives are assigned to Type #3: three are complete specimens (Plate V, 2, 8; Plate VI, 5), and two are classifiable fragments. No #8 is noteworthy as it was excavated from level 9 and is as waterworn as the shouldered point collected from the root cellar (Plate II, 18). The sides of #5, Plate VI, are polished but the edges are flaked. Eight specimens are classified as Type #4, two of which are illustrated (Plate VI, 4, 7).

Artifact S-680, (Plate VI, 1) is a fascinating anomaly. It is a large, 131 x 108 x 32 mm, trapezoidal piece of coarse sandstone with a well-made, polished, asymmetrical bit. Aside from the bit the piece is untouched. Its use is problematical. The stone is soft, hardness of 3, with unimportant cleavage, and friable; its use as a woodworking tool seems improbable. Yet its size precludes categorizing it as a knife. There is no sign of battering which would indicate its use as a wedge. Possible use for butchering large game animals or fleshing skins is suggested, but its use as a woodworking tool cannot be ruled out completely.

Six scrapers were excavated: two basalt end scrapers; one basalt

triangular side scraper; one slate double-edged side scraper, reworked from a polished fragment; one shale double-edged side scraper; one basalt spall flake side scraper.

Two triangular graters were recovered, one of which is illustrated (Plate VIII, 11).

Seven planing adze blades, four complete and the other identifiable fragments (Plate IX, 2,8,10,11) form a distinctive collection. Typologically, they resemble Drucker's Type 1 celts from the Northwest Coast (1943, p. 47) and are similar to the jade blades of Kobuk River (Giddings, Plate XXXI, 2,3,5; Plate XLVI, 20). All but one of the blades have roughly squared polls, the exception has a round poll. No. 2 has a round asymmetric bit, #8 has a symmetric straight bit; three have beveled asymmetric straight bits, and two have their bits missing. All were finished by polishing. All are straight-sided, with no lashing grooves. All were modified by having one or both sides converted to a rough, percussion-flaked cutting edge similar to the Type #4 knives. The two fragments lacking bits had both sides converted to such cutting edges; these cutting edges show evidence of extensive use.

The distribution of the adze blades by levels indicates that such modifications were traditional. The distribution by excavation level is: level 4--3; level 5--2; level 7--1; level 8--1. The double-edged fragments occur in levels 4 and 5. Stratigraphic superimposition is fairly good. The most probable explanation is that damaged or worn-out adze blades were not discarded but were converted to Type #4 knives.

Adze blade S-681 from level 8 (Plate IX, 8) presents an interesting problem. The side retaining the original finish was neatly

squared with an extremely hard, sharp instrument which left fine transverse grooves. Examination of the grooves under a binocular microscope revealed that the work was done by percussion or heavy pressure technique. The only material native to this area which is hard enough to provide such a tool is quartz. The faceted ends of the quartz crystals that we collected at Savonoski (Plate VIII, 3,4, 5) fit the grooves very nicely. It seems improbable that a quartz crystal could withstand the force requisite for dressing stone in this manner without fracturing. The only other source of material for a stone-dressing tool of this sort is meteoric or smelted iron. We have no data on the availability or use of meteoric iron. Smelted iron has been obtainable from Siberia from about the middle of the seventeenth century (Jochelson, 1928, p.1), or perhaps even earlier (Geist and Rainey, 1936, pp. 226-7). Iron was obtained from traders or from wrecked ships by both the Aleuts and Koniags (Hrdlicka, 1944, p. 50) apparently long before the advent of the Russians. Hence a sharp-pointed iron tool could very likely have been used.

One pecking stone and six hammerstones were excavated.

One problematical pressure or flaking tool of doubtful identity was excavated. It is of cut whalebone, both ends blunted, 84 x 16 x 6 mm (Plate I, 19).

No stone lamps were found.

Twenty-seven potsherds representing at least six different vessels were excavated. All came from below the 100 cm level. Distribution of types A and B is given in the appendix; ~~see~~ above, page 32, for a discussion of pottery typology. Plate XII, 3,4,5,7,8,9, and 10, illustrates the several kinds of potsherds collected. Two

type A sherds and four type B sherds have their interior surfaces encrusted with carbon; the rest are heavily encrusted on the outside, although all sherds show traces of carbon on their interior surfaces. Rims are straight and either straight-sided or flanged outward (Plate XII, 7,8). Both base fragments, from two different vessels, are shouldered (Plate XII, 3,4)

Sherd S-660. (Plate XII, 10) was found in seven pieces in level 6. Its dimensions are 248 x 192 x 12 mm. Computing the diameter from the arc of the fragment, we find that the original vessel was about 228 mm in diameter at its greatest girth; its height was over 200 mm.

It has been determined that the pottery of the Monument region was fired, as noted above, page 32. Thus we may say that true pottery-making techniques were known by the people of this area. We found no evidence of the large, unbaked clay vessels described by Hrdlicka (loc.sit.) and Weyer (1930, p. 274).

In the BR #1 site we note again that potsherds are not found in the upper levels of the midden. Two type A sherds were excavated from level 5, and one type A sherd from level 6. The remainder, 24 sherds— 13 type A and 11 type B, were excavated from below the 150 cm level, the largest number of sherds, 15 (55.5%), coming from level 8. Like Kukak, type A pottery appears alone in the upper levels of occurrence, but unlike the coastal site, type A sherds are present together with type B, in all levels below 150 cm (three sherds in level 9). The absence of pottery in the upper levels of both the Kukak and BR #1 trenches appears to substantiate observations by Holmberg: "It is related that once upon a time the Koniags

made also vessels of clay which they baked, but the art has disappeared", and Davydov: "Formerly they knew, too, how to burn pottery, but now this art is lost" (quoted by Hrdlicka, 1944, p. 34).

Observation of deposits of carbon on the interior surfaces of some sherds and exterior surfaces of other sherds from Kukak and BR #1 leads us to conclude that the samples we have are from utilitarian, undecorated ware of two styles, cooking pots and lamps. Figure 18 diagrams rim and base types.

Ethnologic data (Nelson, 1899, p. 201; Oswalt, 1952, p. 20; Geist and Rainey, 1936, p. 129) which described the making of pottery consistently agree that women made the pottery. However, one informant from New Savonoski stated that men made the pottery here.

A basalt flake, one basalt core, and an unclassifiable object of wood complete the BR #1 artifact assemblage.

#### Distribution of artifacts

The only evidence of changes in cultural manifestation through time is indicated by a comparison of (1) the pottery and (2) all stone specimens showing abrasion techniques with these showing chipping techniques.

The distribution of 16 type A potsherds is: level 9--3(18.5%); level 8--8(50%); level 7--2(12.5%); level 6--1(.5%); level 5--2(12.5%). The distribution of 11 type B potsherds is: level 9--2(18%); level 8--8(73%); level 7--1(9%). Three type A potsherds of a total of 27 collected of both types occur alone in the upper levels: 1 in level 6 and 2 in level 5. Comparison of these sherds should be made on the actual numbers and not the percentages since the base number is too small to make the percentages useful.

By arbitrarily dividing the total number of artifacts into two groups, those occurring above 150 centimeters datum depth and those occurring below 150 cm, and by lumping all stone artifacts into two groups, those showing manufacture by abrasion (38) and those which were made by flaking only (34), we find that 36% of the of the ground stone (70% of total ground stone) and 19.5% of chipped stone (41.2% of total chipped stone) occur above 150 cm, and 16.5% of the ground stone (30% of total ground stone) and 28% of the chipped stone (58.8% of total chipped stone) occur below 150 centimeters.

Unfortunately, both comparisons of pottery and worked stone are of manufacturing techniques, not of artifact typologies, since the pottery typology is based on workmanship, and also since we are comparing polished stone with chipped stone. We can only say that the preferred method of manufacture of stone artifacts appears to have changed from chipping to grinding, and that perhaps pottery-making techniques were improving.

#### Summary

A village site on Naknek Lake at the mouth of Brooks River was excavated in place of an excavation planned for Katmai village. Only a passing reference to this site is contained in the literature. The habitation area encompasses both sides of Brooks River upstream seven-tenths of a mile to a nine foot high falls in the river. Four habitation sites are defined in this area; artifacts were collected from two of them. A test pit dug at the falls did not yield any artifacts.

The artifact assemblage contains the same artifact categories

which were collected at Savonoski and Kukak. Again the same artifact categories, and cultural traits are lacking that were noted as absent at Savonoski and Kukak.

The distribution of the artifacts suggests an increase in preference for manufacturing stone artifacts by abrasion over manufacture by chipping. However, ground, chipped, and ground, and chipped stone artifacts were collected from all levels. There is a bimodal distribution of artifacts when plotted on the basis of excavation levels. The stratigraphic profile of the midden revealed by the test trench is poorly defined and contains several randomly deposited strata of river silt. The profile suggests that the midden may have been subjected to periodic flooding during its formation.



## Summary and Conclusions

### Summary

Two coastal sites on Shelikof Strait and two inland sites on Naknek Lake were excavated. One coastal site, Kaguyak, and one inland site, Savonoski, proved unproductive, yielding only 50 artifacts between them. Data on the structural details of post-contact houses were obtained from these two sites. Kaguyak is seen as a modern site of about 100 years of age overlying a shallow midden deposit of presumed aboriginal derivation. Savonoski is also very shallow, but the presence of a change from multiple-roomed semi-subterranean houses to single-roomed post-contact houses of a different style indicates occupation of the area for some hundreds of years, as multiple-roomed houses of a style similar to those indicated by old house-pit depressions at Savonoski are described by early historical sources for Kodiak Island.

The other two sites were more productive in artifacts; 541 archaeological specimens were collected from Kukak of which 353 were classifiable artifacts, 60 were worked fragments, and 89 were flakes which are useful indicators of the kinds of stone and minerals preferred for tools; the remaining items lack cultural significance. Brooks River yielded 106 specimens from the test trench, of which 92 were classifiable, while the balance consists of fragments of artifacts. In addition, 22 artifacts lacking archaeological data were collected, 5 from the river bank at site #3, and 17 from a root cellar at site #1. Conclusions given below are based primarily upon the archaeological data from these two sites plus ethnological data obtained from the former inhabitants of Old Savonoski.

Comparison of the artifact assemblages from Kukak and Brooks River #1 indicates that the material culture of the coastal and inland sites cannot be differentiated on the basis of artifact typologies, with the exception of the strictly modern Kugayak site. The stratigraphic distributions of artifact categories also show a similar agreement. As at Kukak, ground, chipped and ground, and chipped stone artifacts occur in all levels at Brooks River #1; the distribution at Brooks River #1 of artifacts manufactured by these techniques demonstrates an increase in the upper levels of stone artifacts fabricated by abrasion over those fabricated by percussion and pressure techniques which <sup>increase is</sup> ~~are~~ not present at Kukak. Specifically, comparisons reveal the following relationships:

#### Similarities

← Cultural traits present in both sites:

1. Unilaterally barbed bone harpoon heads with tapered tangs, drilled line holes, and convex bases.
2. Ground slate lanceolate dart or arrow points.
3. Barbed, polished feldspar arrow points of extremely fine workmanship.
4. Technique of hollow-grinding employed in manufacturing stone projectile points.
5. Large, ground slate piercing instruments, either knife or lance blades.
6. Ground knives, **type #1**; tanged knives, **type #2**; discoidal knives, **type #3**; straight- or semi-lunar edged knives, **type #4**.
7. Polished stone insert blades for compound harpoon or arrow heads.
8. Abrading tools of sandstone or siltstone.

9. Plain pottery ware which disappears in the upper levels. Specifically, pottery occurs below 100 cm at BR #1 and 175 cm at Kukak.

10. Planing adze blades.

11. Semi-subterranean houses having a rectangular floor-plan and side entrances oriented toward the water, either river or ocean. Cultural traits absent at both sites:

1. Dot-and-circle, ownership marks, and other decoration styles.  
2. Suspension knobs, suspension holes, and decorative motives on pottery.

3. Compound harpoon head, harpoon head socket piece, harpoon foreshaft, or other parts of weapons.

4. Composite fishhook.

5. Hafted flaking tools and rib flakers.

6. Bone wedges, mauls, and other heavy woodworking tools; with the exception of one questionable notched stone from Kukak and one splitting adze from BR #3.

7. Labrets, pendants, and other articles of personal adornment. The cannal coal from Kukak may have been obtained for this purpose.

8. Root diggers as evidence of plant gathering.

9. Human skeletal remains.

10. European trade goods, with the exception of Kaguyak. This is not too valid an observation, since European trade goods undoubtedly <sup>would have been found</sup> at the village at Old Savonoski had we dug there.

Absence of human skeletal remains is probably due to sampling

error, in view of the well-documented Eskimo practice of inhumation in village middens followed throughout the area. Porter cites the condition of the surrounding ground as the reason for this burial custom (1893, p. 72). A less likely hypothesis is that the people of this region may have followed the widespread western Alaskan practice of tomb burials in wooden coffins in graveyards some distance from the village sites (Hrdlicka, 1928).

Absence of European trade goods in three of the four excavations may be due to consolidation of the population elsewhere under Russian rule.

Apparently the most valid evidence of cultural change is that of house types. However, this change is due to European influence and is not evidence for internal cultural change. Evidence of change within the culture lies primarily in manufacturing techniques.

#### Differences

1. Presence of flat, bi-notched sinkers at Kukak. The presence of these artifacts at Kukak is really the only distinctive trait which separates the two artifact assemblages from one another. The presence of these sinkers at Kukak indicates that inshore fishing with nets was of considerable economic importance.

2. Stylistic differentiation of planing adze blades. The dominant adze blade type at Kukak is the small, truncated, socketed adze blade which is a common feature of Eskimo artifact assemblages. The only style of adze blade from Brooks River (excepting the splitting adze blade from the surface collection) is a straight-sided, well-polished tool similar to Northwest Coast and Kobuk River adze blades. These adze blades are further distinguished

by having a cutting edge flaked along one side, apparently after the adze bit became too dulled or broken for use..

3. Houses at the coastal sites of Kaguyak and Katmai usually have two rooms; the inland dwellings at Savonoski are one-roomed; and wooden storage houses on piling are also present. These houses are of the post-contact period; multiple-roomed houses appear to be an old inland feature.

The above lists of salient features demonstrate the cultural homogeneity of the region surveyed. Data from informants substantiate this observation in that the people of Naknek Lake were accustomed to make seasonal trips to the coastal areas on Shelikof Strait. Since the coastal site at Kukak Bay yielded projectile and thrusting points similar to those obtained at Brooks River and which are presumed to be used for hunting land mammals, there is no reason to suppose that coastal dwellers did not also go inland to hunt or gather food at appropriate times of the year. At any rate, the coast line between Hallo Bay and Cape Douglas should be considered a part of the ecological territory of the inland group, on the basis of ethnological data. The historical records deal with villages dominated by Russian or American rule, hence do not throw light on this problem.

Comparison of the assemblages with those of neighboring and distant regions indicates that the material culture of the Monument area primarily consists of widespread basic Eskimo traits.

The above summary is subject to two factors which may have skewed the data. The first factor is that of the size of the sample. It is admittedly almost impossible for two men to do much more than

a general survey of the area. We could not do justice to any one site and still remain within our time schedule. The second factor is that, in addition to lack of burials, data from informants indicate that we do not have a full archaeological inventory of the material culture.

#### Pottery as a time indicator

The full significance of pottery as a time indicator was not realized until de Laguna (1946, pp. 140-49) made her study of the ware. Larsen (1950, p. 186) points out that potsherds may be "very important time indicators in regions like southwestern Alaska, where conditions of preservation are poor...." Such indications of time due to deterioration should be treated with caution, as excellence of workmanship may nullify effects of moisture and perhaps freezing. Sherd S-704 is a well fired, finely made fragment of type A pottery. It is from level 8, square 14 B (175/200 cm below the surface). This sherd shows minor signs of deterioration due to weathering. Sherds S-665, type B, from level 7, square 10 B, S-683, type B, from level 8, square 11 B, and S-709, from level 9, square 10 B, are all badly deteriorated due to moisture flaking. Hence the quality of the materials used and workmanship may be critical factors in determining rates of deterioration due to weathering. Giddings (1952, p. 102) also notes the importance of firing for durability. Since the Monument area is well wooded, the difference in hardness between types A and B pottery in this region cannot be laid to absence of fuel for proper firing.

Stylistic changes through time may be more reliable for establishing chronologies based on pottery sequences. In his summary on

changes through time Giddings (ibid., p. 112) reports

8. Pottery was various in form and surface treatment in the earliest period, including wide-mouthed pots with conical bases that were paddle-impressed outside and textile impressed inside; vessel forms persisted without much change until 1400 /A.D./, although both types of impression declined in popularity, and by 1550, plain, straight sided pots had become standardized.

On the basis of the evidence at hand, we feel that the Monument pottery possibly coincides with the later Kobuk River sequences.

### Conclusion

On the basis of comparison with the Kobuk River material (Giddings, 1952), the closest area for which there is absolute dating by dendrochronology, we find that the Monument material demonstrates closest relationships with the Ekseavik site, which is dated 1400 A.D. However, such a relative date may be too early for the Monument material, since the Monument pottery style compares with Intermediate Kotzebue plain ware dated 1550 A.D. , and even later forms from Ambler Island, dated 1730-60 A.D. (ibid., p. 94). Recognizing that the Monument material may be earlier or later than the Kobuk River material, we tentatively assign a beginning date of around 1500 A.D., and a terminal date of 1912 A.D. for continual occupation of the Katmai National Monument area. The region surveyed archaeologically is seen as one cultural and economic unit, with fluctuating seasonal movements to utilize fish and both land and sea mammals.

### Recommendations

In view of the above considerations, the following projects are recommended for future research in the Monument region:

1. Continued archaeological investigations, (a) to obtain larger

artifact collections from the village sites, (b) excavation of coastal sea-mammal hunting station<sup>9</sup>, (c) excavation of Katmai village or its vicinity. As long as the Katmai village area remains unexplored there will exist a lacuna in our knowledge of Kodiak Island-Alaska Peninsula cultural relationships.

2. Recovery of human skeletal remains. The type of burial plus associated grave furniture would contribute materially to knowledge of the culture of this area. Skeletal remains would contribute much needed pertinent information of physical type, population genetics, indigenous diseases, etc.

3. Ethnological and physical anthropological studies of the living people from this area. In point of priority, these studies are most important as they should be carried out before the former residents of Old Savonoski die and the information they possess is lost.

4. Establish a chronological dating from tree-rings based on the stand of spruce at Hallo Bay, and correlated with the inland forests. An increment core from a nine-inch spruce tree at the Fish and Wildlife station at Brooks Lake had a count of 92 rings. The stand of spruce at Hallo Bay contains many trees over 60 inches in diameter. Hence one would expect to obtain a chronological sequence of over 600 years. Aside from its archaeological value, such a project would be of great interest to climatologists and biologists.

In the light of our present knowledge, there is every indication that such projects could be successfully completed. The data gained would form a major contribution to scientific knowledge.





PLATE XXXI

Pot excavated by  
Northern Consolidated Airlines  
employee while digging root  
cellar at Kulik. By J. W.  
Leach.

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APPENDIX I

The following tables present (a) distribution of artifact materials by stratigraphic levels, (b) distributions of artifacts and materials by stratigraphic levels, and (c) comparison of numbers of artifacts between sites.

For convenience of organization, level numbers are used, rather than centimeter designations. In each case, the number represents a division of 25 centimeters starting with 0, e.g., 1--0/25 cm; 2--25/50 cm; etc. Materials have been designated by number also; that is, 1 represents andesite; 2, basalt; 3, bone; etc.

Table I  
Distribution of Artifact Materials: Kukak

	Level 3	4	5	6	7	8	9	10	11	Total
1. Andesite		1		10	8	18	30	4		71
2. Basalt			1	8	22		6	1	4	120
3. Bone				1	22		6	1	4	12
4. Chalcedony				1	1	2	4			8
5. Chert			1	6	5	24	16	7		59
6. Clay						9		5	2	16
7. Cannel coal	1			1				1		3
8. Feldspar				1						1
9. Greenstone				4						4
10. Hematite			1							1
11. Ivory									1	1
12. Obsidian	1			1						2
13. Pumice				1	2	2				5
14. Quartzite				1	7	1	8	1		18
15. Sandstone			1	3	5	8	7	3	1	28
16. Scoria							2			2
17. Shale	1		2	4	32	22	13	10	3	93
18. Siltstone				3			1			4
19. Slate		1	1	19	23	17	13	6	3	83
20. Tuff							1			1
21. Semi-vesicular lava					1					1
22. Wood					1					1
23. Dentine							1			1
24. Discarded				1	2	1	1			5
Total	1	4	7	65	109	133	160	47	14	541

Table II

Distribution of Artifacts and Materials by Levels: Kukak

Level 3: 50/75 cm.  
 Material number 16 Total  
 Knife, type #1, fragment 1 1

Level 4: 75/100 cm.  
 Material number 1 7 12 19 Total  
 Scraper, side 1 1  
 Sinker, offset 1 1  
 Graver 1 1  
 Cannel coal 1 1  
1 1 1 1 4

Level 5: 100/125 cm.  
 Material number 2 5 10 15 17 19 Total  
 Sinker, offset 1 1  
 Lamp, natural formation 1 1  
 Worked fragment 1 1 2  
 Flake 1 1 2  
 Scraper, end 1 1  
1 1 1 1 2 1 7

Level 6: 125/150

Material number	1	2	3	4	5	7	8	9	12	13	14	15	17	18	19	24	Total
Whalebone fragment		1															1
Worked fragment	3		1			1		4				1	1		7		18
Lamp, natural formation	2																2
Scraper, side			3		1												4
Scraper, end					1												1
Scraper, triangular			1														1
Scraper, concave																1	1
Whetstone										1				3			4
Grinding stone												1					1
Stone saw												1					1
Pecking stone	1		1														2
Flake			1		3			1								2	7
Pebble	2										1						3
Core					1												1
Arrow point							1										1
Adze blade, planing			1														1
Knife, type #1															7		7
Knife, type #2															1		1
Knife, type #4					1										1		2
Sinker, girdled	1																1
Sinker, 3-notch													1				1
Sinker, offset	1												1				2
Sinker, centered													1				1
Discard																1	1
Total	10	1	8	1	6	1	1	4	1	1	1	3	4	3	19	1	65

## Level 7: 150/175

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Material number	1	2	4	5	13	14	15	17	19	21	22	24	Total
Worked fragment		1			1	1		3	10		1		17
Tool blank		1											1
Hammer stone							1						1
Pecking stone	1	1											2
Grinding stone					1					1			2
Whetstone							1						1
Lamp, natural	1							1					2
Side scraper		3		3					2				8
End scraper						1							1
Triangular scraper		3											3
Planing adze blade		3						1	2				6
Knife, type #1									4				4
Knife, type #2		2											2
Knife, type #3								2					2
Knife, type #4								1	1				2
Sinker, offset	1						1	10					12
Sinker, centered	2						1	10					13
Sinker, fragment	2						1	2					5
Sinker, 3-notch								2					2
aul, notched	1												1
Pebble		1					5						6
Flake		7			2				4				13
Core			1										1
Discarded											2		2
	8	22	1	5	2	7	5	32	23	1	1	2	109

## Level 8: 175/200 cm.

Material number	1	2	4	5	6	13	14	15	17	19	24	Total
Planing adze blade		1										1
Lamp, natural		1										1
Hammerstone	1	1										2
Stone saw								1				1
Grinding stone						2		4				6
Whetstone	1											1
Scraper, side		3		5						1		9
Scraper, end			1									1
Knife, type #1									2	5		7
Knife, type #4									1			1
Piercing instrument										1		1
Arrow or dart point										2		2
Sinker, offset	3	2							11			16
Sinker, centered	2							1	3			6
Sinker, fragment	4							2	3			9
Sinker, 3-notch	1								1			2
Potsherd, type A					9							9
Pebble	6	3	1				1					11
Worked fragment				2						4		6
Flake		17		17					1	3		38
Core		1										1
Discarded											1	1
Harpoon blade										1		1
	18	29	2	24	9	2	1	8	22	17	1	133

Level 9: 200/225 cm.

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Material No.	1	2	3	4	5	14	15	16	17	18	19	20	24	23	Total
Lamp fragment									1						1
Worked bone			2												2
Leister prong			1												1
Awl, single point			1												1
Awl, double point			2												2
Figurine, bear														1	1
Arrow point											1				1
Tool blank					1										1
Graver				2	1	1									4
Planing adze bl.	1				1										2
Hammer stone	2	1													3
Pecking stone	1														1
Grinding stone							3								3
Whetstone					2	2				1					5
Piercing instrument												1			1
Knife, type #1												3			3
Knife, type #2		3													3
Knife, type #3		1													1
Knife, type #4		2			1				1		1				5
Scraper, side	2	7			5										14
Scraper, end		1		1											2
Scraper, triangular	3					1			1						5
Scraper, concave												1			1
Sinker, offset	11	3							8			1			23
Sinker, centered	6	5					2		3						16
Sinker, fragment	1	1							5						7
Sinker, 3-notch	1														1
Sinker, 4-notch	1														1
Worked fragment		3		1	1						3				8
Flake	1	16			6	2					3				28
Pebble	4	4				4									12
Discard														1	1
	30	51	6	4	15	8	7	2	19	1	13	1	1	1	160

Level 10: 225/250 cm.

Material Number	1	2	3	4	5	6	7	13	14	15	17	19	Total
Planing adze blade		1											1
Harpoon head			1										1
Hammerstone	1										1	1	2
Graver		2											2
Piercing instrument											1	1	2
Knife, type #1												2	2
Knife, type #4		1			1								2
Grinding stone										1			1
Whetstone										2			2
Scraper, side			1		3								4
Sinker, offset	1										4		5
Sinker, centered	1	2									1		4
Sinker, 3-notch											1		1
Sinker, fragment		1									2		3
Potsherd, type B						5							5
Core									1				1
Flake												1	1
Pebble	1	1											2
Worked fragment					3		1				1	2	7
	4	9	1		7	5	1		1	3	10	6	47



Level 11: 250/275 cm.							Total
Material number	3	7	11	15	17	19	
Arrow point			1			1	2
Worked bone	2						2
Flaking tool	1						1
Awl	1						1
Grinding stone						1	1
Whetstone				1			1
Potsherd, type B		2					2
Sinker, offset					1		1
Sinker, centered					2		2
Worked fragment						1	1
	4	2	1	1	3	3	14

Level Unknown:		
Side scraper	1	1

Table III  
Distribution of artifact materials: Kaguyak

	Testpit A		Testpit B	
	Level 1	Level 2	Level 1	Level 2
1. Basalt				2
2. Bone				2
3. Chalk				1
4. Glass	1			
5. Iron	3			1
6. Shale				2
7. Ware	5			
	3			8

Table IV  
Distribution of artifacts and materials: Kaguyak

Material number	Testpit A							Total
	1	2	3	4	5	6	7	
Testpit A, Level 1								
Cast-iron fragment					1			1
China cup fragment							1	1
Glazed porcelain							4	4
Hand-made nail					2			2
Window pane fragment			1					1
Testpit B, Level 2								
Knife, type #1						1		1
Fragment					1			1
Carved hand			1					1
Flake	2							2
Lamp, natural						1		1
Worked bone		1						1
Pebble			1					1
	2	2	1	1	4	2	5	17

Artifact materials from surface collection, BR #3, and  
Root Cellar, BR #1:

1. Basalt	6
2. Bone	2
3. Clay	10
4. Shale	4
5. Shell	1
6. Siltstone	1
Total	<u>24</u>

Distribution of artifacts and materials

Surface Collection, BR #3, no datum.

Material number	1	2	4	Total
Patella, unworked		1		1
Splitting adze blade	1			1
Scraper, triangular	1			1
Flake	1			1
Pecking stone	1			1
Lamp, natural			1	1
	<u>4</u>	<u>1</u>	<u>1</u>	<u>6</u>

Root Cellar, BR #1, no datum

Material number	1	2	3	4	5	6	Total
Harpoon head		1					1
Whetstone						1	1
Knife, type #1				2			2
Knife, type #3				1			1
Knife, type #4	1						1
Flaked point, waterworn	1						1
Potsherd, type B			10				10
Pectin shell					1		1
	<u>2</u>	<u>1</u>	<u>10</u>	<u>3</u>	<u>1</u>	<u>1</u>	<u>18</u>

Table VI

Distribution of artifact materials: Savonoski

Site	Trench A		Trench B					Testpit A'		Total			
	Strata.	Level	2	3	2	3	4	5	6		7	4	5
1. Bark												1	1
2. Basalt				1		3		1	1	2	1		9
3. Bone			1	2		1			1				5
4. Chalcedony					1	2		1					4
5. Clay												1	1
6. Quartz			1	1								1	3
7. Sandstone										1			1
8. Shale				2					1				3
9. Slate				2		1		1	1	1			6
			<u>2</u>	<u>8</u>		<u>1</u>	<u>7</u>	<u>3</u>	<u>4</u>	<u>4</u>	<u>1</u>	<u>3</u>	<u>33</u>

## Distribution of artifacts and materials: Savonoski

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		Material number									Total
		1	2	3	4	5	6	7	8	9	
Trench A											
Level 2, 25/50 cm	Awl			1							1
	Crystal						1				1
Level 3, 50/75 cm.	Harpoon head			1							1
	Harpoon blade fragment								1		1
	Worked fragment								1		1
	Knife, type #4, frag.								2		2
	Crystal						1				1
	Flaking tool			1							1
	Hammer stone	1									1
		1		3			2		2	2	10
Trench B											
Level 2, 25/50 cm	Flake				1						1
Level 3, 50/75 cm.	Hammer stone	2									2
	Scraper, triangular	1									1
	Awl			1							1
	Flake				2						2
	Worked fragment								1		1
Level 4, 75/100 cm.											
Level 5, 100/125 cm	Hammer stone	1									1
	Point fragment								1		1
	Flake				1						1
Level 6, 125/150	Hammer stone	1									1
	Knife, type #1								1		1
	Knife, type #2								1		1
	Worked bone			1							1
Level 7, 150/175 cm.	Hammerstone	2									2
	Pecked lamp						1				1
	Knife, type #1, fragment								1		1
		7		2	4		1	1		4	19
Testpit A'											
Level 4, 75/100 cm.	Hammer stone	1									1
Level 5, 100/125 cm.	Birch bark roll			1							1
	Crystal						1				1
	Potsherd, Type A					1					1
		1	1			1	1				4

## Distribution of artifact materials: BR #1

Stratigraphic level	2	3	4	5	6	7	8	9	Total
1. Basalt	1	2	4	10	2	4	5	8	36
2. Bone		2	1				1		4
3. Clay				2	1	3	16	5	27
4. Chert			1	1					2
5. Feldspar			2	1		1			4
6. Sandstone		2				2			4
7. Shale			6	4		4	2	3	19
8. Slate		4		1		4			9
9. Wood								1	1
	1	10	14	19	3	18	24	17	106

## Distribution of artifacts and materials: BR #1

Level 2, 25/50 cm.

	Material number	Total
Hammer stone	1	1

Level 3, 50/75 cm.

	Material number	1	2	6	8	Total
Scraper, side					1	1
Harpoon head			1			1
Worked bone			1			1
Flake		1				1
Worked fragment					2	2
Piercing instrument					1	1
Arrow point		1				1
Grinding stone				2		2
		2	2	2	4	10

Level 4, 75/100 cm.

	Material number	1	2	4	5	7	8	9	Total
Scraper, end		1							1
Knife, type #1						2			2
Knife, type #2		1							1
Knife, type #3						1			1
Worked fragment					1	3			4
Harpoon blade					1				1
Planing adze blade		2		1					3
Flaking tool			1						1
		4	1	1	2	6			14

Level 5, 100/125 cm.

	Material number	1	3	4	5	7	8	Total
Knife, type #1				1		1	1	3
Knife, type #2		2						2
Knife, type #3		2						2
Knife, type #4						1		1
Planing adze fragment		1			1			2
Worked fragment		2						2
Harpoon blade					1			1
Hammerstone		1						1
Graver		1						1
Grinding stone						1		1
Potsherd, type A-			2					2
Scraper, side		1						1
		10	2	1	1	4	1	19

Level 6, 125/150 cm.

	Material number	1	3	Total
Potsherd, type A			1	1
Worked fragment		1		1
Hammerstone		1		1
		<u>2</u>	<u>1</u>	<u>3</u>

Level 7, 150/175

	Material number	1	3	5	6	7	8	Total
Knife, type #1							1	1
Knife, type #2		1					2	3
Knife, type #4		1			1	3		5
Adze blade, planing		1						1
Ax					1			1
Arrow point				1				1
Arrow or dart point							1	1
Greaver						1		1
Hammerstone		1						1
Potsherd, type A			2					2
Potsherd, type B			1					1
		<u>4</u>	<u>3</u>	<u>1</u>	<u>2</u>	<u>4</u>	<u>4</u>	<u>18</u>

Level 8, 175/200 cm.

	Material number	1	2	3	7	Total
Scraper, triangular		1				1
Knife, type #4		1			1	2
Adze blade, planing		1				1
Awl			1			1
Piercing instrument		1				1
Arrow point, reworked					1	1
Hammer stone		1				1
Potsherd, type A				9		9
Potsherd, type B				7		7
		<u>5</u>	<u>1</u>	<u>16</u>	<u>2</u>	<u>24</u>

Level 9, 200/225 cm.

	Material number	1	3	7	9	Total
Scraper, end		1				1
Scraper, side				1		1
Hammer stone		1				1
Pecking stone		1				1
Core		1				1
Knife, type #1		1		1		2
Knife, type #2		1				1
Knife, type #3		2				2
Knife, type #4				1		1
Worked fragment					1	1
Potsherd, type A			3			3
Potsherd, type B			2			2
		<u>8</u>	<u>5</u>	<u>3</u>	<u>1</u>	<u>17</u>

Typology	Site Distribution of Artifacts									Total
	Savonoski			Kukak Kaguyak			Brooks River			
	A	E	A'	A	A	B	#1	#3	RC	
Adze, planing				11			7			18
Adze, splitting								1		1
Arrow and dart points				5			3		1	9
Arrow, ivory				1						1
Awl, double-end				2						2
Awl, single point	1	1		2			1			5
Ax							1			1
Bark roll			1							1
Bone, worked		1		5		1	1			8
Carving				1		1				2
Cast-iron fragment						1				1
Core				4			1			5
Discarded				5			1	1	1	8
European ware						5				5
Flake		4		89		2	1	1		101
Flaking tool	1			1			1			3
Glass fragment						1				1
Graver				7			2			9
Grinding stone				14			3			17
Hammer stone	1	6	1	7			6			21
Harpoon blade	1			1			2			4
Harpoon head	1			1			1		1	4
Knife, type #1	1	2		24		1	8		2	35
" " #2				6			7			13
" " #3				3			5		1	9
" " #4	1	1		12			7		1	22
Lamp, natural form.				6		1		1		8
Lamp, pecked & ground		1		1						2
Leister prong				1						1
Maul, notched				1						1
Nail, hand-made						2				2
Pebble				34		1				35
Pecking stone				5			1	1		7
Piercing instrument				4			2			6
Potsherd, type A			1	9			16			26
" " B				7			11		10	28
Quartz crystal	2		1							3
Scraper, concave				2						2
" end				6			2			8
" side				41			3			44
" triangular		1		9			1	1		12
Sinker, girdled				1						1
" flat, notched				135						135
Stone saw				2					1	3
Tool blank				2						2
*Unclassifiable worked fragments	1	2		60		1	12			76
Whetstone				14					1	15
	10	19	4	541	9	8	106	6	18	721

\*Point fragments, cannel coal, wood fragments and other items described separately in the text or artifact catalog are included in this category.

Distribution of Stone Artifacts--Trench A, Kukak

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	Ground stone		Chipped stone		Total	
	N	%	N	%	N	%
Stratum 3	56	51.4	53	48.6	109	100.0
Stratum 2	51	46.4	59	53.6	110	100.0
Stratum 1	2	50	2	50	4	100.0
Sqs. 11/12	9	32	19	68	28	100.0

Distribution of Stone Artifacts--Trench A, B.R. #1

	Ground stone		Chipped stone		Total	
	N	%	N	%	N	%
Levels 2-6	26	65	14	35	40	100.0
Levels 7-9	12	48.7	20	51.3	32	100.0

## ARTIFACT CATALOG

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Savanoški - 1953Trench A

Level 25/50 cm.

Sq. 4A

- S-1 Bone Awl, bulbous, tapering to a sharp point, ovoid cross section, large end blunted; 78 mm long, 18 mm wide, 12 mm thick.

4B

- 2 Quartz crystal, 26 x 6 x 6 mm.

Level 50 cm.

1B

- 3 Bone Harpoon point, single barb, round hole, tapered tang, convex base; 118 x 22 x 10 mm.

Level 50/75 cm.

2A

- 4 Blade fragment, ground slate, double-edged, basal fragment fluted; hollow ground on both sides, base of harpoon tip(?); 24 x 19 x 3 mm.

3B

- 5 Knife fragment, slaty shale, chipped cutting edge, ground on one surface, other surface rough; 54 x 52 x 6 mm.

5B

- 6 Quartz crystal, 24 x 6 x 7 mm.

2A

- 7 Knife fragment, type #1, ground slate, convex ground edge, ground on one side, sawed on edge for break; 29 x 22 x 4 mm.

4B

- 8 Flaking tool, point and butt polished, lines on cortical side, possible ownership marks(?); 150 x 14 x 8 mm.

OA

- 9 Knife fragment, slaty shale, long edge chipped, one side ground, short cutting edge chipped on ground side and ground on unfinished side; 61 x 35 x 5 mm.

Trench A

Level 50/75 cm.

Sq. 3A

- S-10 Hammer stone, basalt, percussion marks on both ends, some evidence of use on sides; 188 x 42 x 21 mm.



- 24A  
11 Flake, chalcedony, some evidence of flaking; 16 x 13 x 13 mm.

Level 50/75cm.

- 22A  
12 Hammerstone, basalt, percussion marks on ends and sides, large flake knocked off one side; 169 x 80 x 65 mm.
- 23A  
13 Hammerstone fragment, basalt, triangular fragment, waterworn, large end battered; 55 x 40 x 23mm.
- 14 Triangular side scraper, basalt, scraping edge has secondary flaking on one side, pronounced bulb of percussion on large end.

Level 50 cm.

- 24A  
15 Bone Awl (?), distal end of a small mammal tibia; length, 53mm.

Level 50/75 cm.

- 24A  
16 Chalcedony flake.  
17 Worked slate flake, faceted flake from some polished tool, scratches on polished side very plain, opposite side and edges untouched; 23 x 16 x 2 mm.

Level 100/125 cm.

- 22A  
18 Hammerstone, basalt, slight evidence of pecking on ends and edges, rhomboid in cross-section; 288 x 83 x 47 mm.

Level 50/75 cm.

- 24A  
19 Chalcedony flake; 13 x 7 x 4 mm.

Level 100/125 cm.

- 22A  
20 Point fragment, slate, mid-section from possible stiletto-shaped blade, triangular in cross-section, striations from grinding process visible on all sides; 26 x 10 x 3 mm.

- 22A  
21 Chalcedony flake; 39 x 12 x 5 mm.

Level 100/125 cm.

- 24A  
22 Hammerstone, basalt, shows extensive use; 179 x 70 x 53

Level 150/175 cm.

- 22A  
23 Knife fragment, type #1, slate, both sides of cutting edge ground convex, may be complete tool; 26 x 28 x 2 mm.

Level 150/175 cm.

Sq. 21A

- 24 Chopper, shale, chopping edge worn, numerous fossil casts;  
255 x 166 x 61 mm.

Level 125/150 cm.

20A

- 25 Bone fragment, may have been worked; 78 x 26 x 10 mm.

Level 150/175 cm.

21A

- 26 Hammerstone, basalt, waterworn, flat, heavily battered  
around the edges; 101 x 82 x 32 mm.

20A

- 27 Lamp, sandstone, pecked bowl, small "hunters lamp"; 114 x  
98 x 46 mm.  
28 Knife fragment, type #1, slate, both sides show signs of  
polishing, cutting edge has four notches  
across it; looks as if made from percussion  
bulbed flake, may be complete; 32 x 22 x 3  
29 Hammerstone, basalt, waterworn, oblate, well used; 103 x  
83 x 49 mm.

Test Pit A'

- 30 Hammerstone, basalt, dense, waterworn, veined, well worn  
around edges; 101 x 97 x 74 mm.  
31 Birchbark rolls, three pieces, formerly one roll of birch-  
bark; width about 8 cm., about 15-20 cm.  
thick.  
32 Quartz crystal; 36 x 12 x 9 mm.  
33 Pottery fragment, thin, fairly hard, temper of fine sand;  
Type A; 24 x 23 x 7 mm.

Brooks River, Site No. 3  
Surface collection

- 34 Discard, not an artifact.  
35 Adze blade, basalt, Cook Inlet type, pecked and ground;  
two three-quarter binding grooves; polished  
hafting plane; 160 x 57 x 61 mm.  
36 Triangular scraper, basalt, very fine, well-worn flakes,  
might be caused by use; 85 x 48 x 35 mm.  
37 Basalt spall, a few flakes taken off along thin edge;  
40 x 30 x 11 mm.  
38 Pecking stone, basalt, cylindrical, slightly tapering;  
evidence of use on ends and on body at its  
largest diameter.  
39 Lamp, shale, natural formation (fossil molds), both sides  
have a shallow depression showing evidence of carbon;  
185 x 121 x 37 mm.

Kaguyak

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Test Pit A

Level 0/25 cm.

Sq. 20B

- 40 Window glass fragment; 16 x 16 x 1.5 mm.
  - 41 European pottery ware fragment, small specimen of glazed pottery, colored rose (2 shades) white and green on outer side, white glaze inside.
- 20A
- 42 European porcelain, portion of a cup and basal portion of handle.
  - 43 European pottery, white glaze, outside portion, fits No. 45.
  - 44 European glazed pottery, white glaze.
  - 45 European glazed pottery, fits No. 43.
  - 46 Hand-made iron nail, fragment, badly rusted.
  - 47 Hand-made iron nail, badly rusted fragment.
  - 48 Cast iron fragment, appears to be part of decorative portion of stove.

Test Pit B

Level 25/50 cm.

Sq. A

- 49 Greystone knife, type #1, semi-lunar, prepared shoulder for hafting, edge and sides ground, back edge chipped to shape, small portion broken off end, shale; 132 x 45 x 4 mm.
- 50 Iron fragment, unidentifiable.
- 51 Carved bone hand, left hand, thumb lost, lines of palm delineated, hole drilled through palm and groove cut around wrist, finger joints well indicated; 39 x 17 x 5 mm.
- 52 Basalt flake; 65 x 34 x 8 mm.
- 53 Basalt flake; 49 x 31 x 6 mm.
- 54 Lamp, natural formation, shale, fragment of a large lamp, traces of carbon in bowl, base polished; 207 x 195 x 58 mm; bowl is 27 mm. deep.
- 55 Worked bone, (foreshaft?) shallow, oval socket, 8 mm. deep; square bottom, groove around shoulder of socket 2 x 2 mm.; 77 x 20 mm.
- 56 Pebble, edge may have been chipped, chalk; 37 x 45 x 15 mm.

Kukak

Trench A

Level 50 cm.

Sq. 10A

- 57 Knife fragment; type #1, shale, ground on one side, ground edge; 56 x 39 x 8 mm.

Level 75/100 cm.

10B

- 58 Slate Graver, type #2, ground on both sides, ground on both edges, chisel point is 3.5 mm. wide; 60 x 26 x 9.
- 59 Cannel coal, triangular, waterworn; 28 x 24 x 6 mm.

## Sq. 10B

- 60 End scraper; obsidian, a primary flake taken off and end retouched; 68 x 26 x 5 mm.  
61 Two-notched sinker; andesite, offset notches: 53 x 45 x 11 mm.

Level: 100/125 cm.

## 10A

- 62 Two-notched sinker; sandstone, offset notches; 56 x 45 x 13 mm.  
63 Flake, chert: 84 x 62 x 10 mm.  
64 Slate flake, beveled edge possible on one side, waterworn, fine chipping visible on mid-section; 32 x 27 x 2 mm.  
65 Lamp, natural formation, shale, base flattened slightly by pecking; 121 x 179 x 69 mm.

## 11A

- 66 Hematite.

Level 125/150 cm.

## 10A

- 67 End scraper (?), chert, edge shows secondary chipping, could be a chopper fragment; 32 x 34 x 15 mm.

## 10B

- 68 Grindstone, sandstone saw (?), ground two sides, ground two edges; 44 x 67 x 11 mm.  
69 Chert flake; 59 x 36 x 5 mm.

## 11A

- 70 Whetstone, siltstone, all surfaces appear to be ground; 80 x 22 x 22 mm.  
71 Scraper, triangular basalt side scraper, secondary flaking along one side of edge forming hypotenuse; 60 x 31 x 19 mm.  
72 Ground slate knife fragment, Type #1 cutting edge ground, both sides ground; 49 x 30 x 3 mm.

## 11B

- 73 Knife, Type #4, secondary flaking on both sides of cutting edge, chert; 54 x 42 x 10 mm.  
74 Polished stone, greenstone flake, ground on one surface, unclassifiable; 43 x 30 x 3 mm.  
75 Polished stone, ground stone fragment, andesite (?) portion with rounded-off edge; 49 x 11 x 7 mm.  
76 Polished stone, slate fragment, unclassifiable; 26 x 23 x 2 mm.  
77 Polished stone, ground slate fragment, unclassifiable; 24 x 17 x 1.5 mm.  
78 Polished stone, ground andesite fragment; 36 x 24 x 5 mm.  
79 Polished stone, ground andesite fragment, unclassifiable; 21 x 18 x 24 mm.

## Level 125/150 cm. (continued)

## Sq. 12A

80 Grindstone, ground sandstone, ground on both sides, one surface flat, opposite surface concave; 90 x 89 x 27 mm.

## 16A

81 Basalt planing adze blade, flaked body, cutting edge ground; 51 x 40 x 11 mm.

82 Basalt flake side scraper, edge flaked on one side; 88 x 54 x 24 mm.

83 Polished stone, ground slate fragment, unclassifiable; 29 x 23 x 5 mm.

84 Pumice whetstone; 49 x 15 x 10 mm.

85 Cherty flake side scraper, fine flaking along parallel edges on concave surface; 39 x 27 x 7 mm.

86 Basalt side scraper, fine flaking along one edge on convex surface; 33 x 26 x 4 mm.

## 16B

87 Basalt flake scraper, side convex, fine flaking on convex surface; 43 x 68 x 15 mm.

88 Two-notched sinker, offset notches; shale; 45 x 45 x 9 mm.

## 17A

89 Whale bone fragment; 171 x 58 x 22mm.

90 Cherty flake, flaking inconclusive; 35 x 35 x 8 mm.

91 Non-polyhedral agate core, has a prepared striking platform; 32 x 20 x 23 mm.

## 17B

92 Ground slate knife fragment, Type #1, cutting edge ground on both sides, both surfaces ground, back edge ground to shape; 31 x 35 x 4 mm.

93 Concave scraper, slate, made from fragment of a ground ulu; 39 x 32 x 8 mm.

94 Siltstone whetstone fragment, one surface and one end ground; 48 x 39 x 10 mm.

95 Siltstone whetstone fragment, one surface and one end ground; fits No. 94; 42 x 43 x 9 mm.

96 Polished greenstone fragment, unclassifiable; 34 x 21 x 7 mm.

97 Pebble, ovoid, andesite; 31 x 29 x 27 mm.

## 18A

98 Pebble, ovoid, andesite; 35 x 30 mm.

99 Ground greenstone fragment, chipped to shape; then surfaces of edges and sides finished by grinding; 60 x 43 x 12 mm.

100 Ground slate point fragment, stilleto-shaped, double-edged diamond cross-section, both edges hollow-ground; 38 x 12 x 4 mm.

## Level 125/150 cm. (continued)

## Sq. 18A

- 101 Basalt flake; 23 x 10 x 2.5 mm.  
 102 Greenstone ground fragment, same kind of stone as Nos. 96 and 99; 29 x 16 x 6 mm.  
 103 Ground sandstone knife(?) fragment, edges ground on both sides, both surfaces ground; 30 x 18 x 5 mm.  
 104 Chert flake; 22 x 18 x 5 mm.  
 105 Slate ulu, Type #1, chipped to shape, cutting edge ground, also surfaces ground; 105 x 52 x 6 mm.  
 106 Lamp, natural formation, base may be smoothed from polishing or use, andesite (?); 119 x 104 x 39 mm.

## 18B

- 107 Obsidian flake; 28 x 19 x 3 mm.  
 108 Cannel coal; 23 x 21 x 5 mm.

## Level 100/125 cm.

## 19A

- 109 Flake side scraper, secondary fine flaking along edge on concave surface, basalt; 52 x 22 x 7 mm.

## 19B

- 110 Ground fragment, shale, unclassifiable; 84 x 38 x 10 mm.

## Level 125/150 cm.

## 19A

- 111 Ground fragment, slate, unclassifiable; 43 x 28 x 10 mm.

## 19B

- 112 Chipped knife, Type #4, cutting edges chipped on both sides, end chipped to form acute angle point, opposite end sawed and broken off, slate; 114 x 56 x 14 mm.  
 113 Ground fragment, unclassifiable; 34 x 27 x 4 mm.

## 20A

- 114 Ground ulu, Type #1, polished surfaces and edges chipped to shape secondary cutting edge, probably after original tool was broken, slate; 71 x 71 x 6 mm.  
 115 Ground knife fragment, Type #1, ground both surfaces and cutting edge, slate; 48 x 34 x 7 mm.

## 20B

- 116 Ground fragment, unclassifiable; shale: 33 x 14 x 3 mm.  
 117 Lamp, natural formation, fragment, depth of bowl 33 mm., andesite (?); 148 x 136 x 56 mm.

## 11A

- 118 Waterworn pecking stone, slight evidence of use; andesite; 172 x 23 x 4 mm.

## 11B

- 119 Two-notched sinker, offset notches; andesite; 77 x 48 x 10 mm.

## Level 125/150 cm. (continued)

- Sq. 12A
- 120 Barbed arrow point, polished barbed faceted body, tapered tang, formerly straight base, point broken off, feldspar; 37 x 23 x 4 mm.
- 121 Two-notched sinker, slightly worn notches centered, shale; 45 x 63 x 9 mm.
- 122 Elongate waterworn pecking stone, slight evidence of use on both ends, basalt; 241 x 78 x 70 mm.
- 13A
- 123 Slate flake; 80 x 25 x 17 mm.
- 13B
- 124 Ground and drilled ulu, Type #1; Nos. 124 and 125 form a complete specimen, surfaces and cutting edge ground, hole 7 mm. in diameter drilled for suspension, back unretouched, slate; 105 x 45 x 4 mm.
- 125 See No. 124. Discard.
- 126 Spall flake, slate; 56 x 22 x 5 mm.
- 127 Quartz pebble, ovoid, waterworn, quartzite; 23 x 21 x 19 mm.
- 14A
- 128 Chipped and ground basalt fragment, flakes taken off after polishing, unclassifiable; 28 x 19 x 7 mm.
- 14B
- 129 Knife, Type #1, slate, thick-backed, edge semi-lunar, triangular cross-section, back sawed, ground; 74 x 22 x 7 mm.
- 15B
- 130 Girdled sinker, andesite pebble, could be either a net weight or a maul; 83 x 67 x 45 mm.
- 20A
- 131 Ground and chipped knife, Type #2, double edges chipped, one side ground, blunt ends, slate; 66 x 20 x 7 mm.
- Level 150/175 cm.
- 10A
- 132 Two-notched sinker, notches centered, shale; 67 x 42 x 10 mm.
- 133 Two-notched sinker, notches centered, shale; 50 x 52 x 9 mm.
- 10B
- 134 Flake side scraper, chert, fine secondary flaking along one edge on convex surface; 45 x 35 x 6 mm.
- 11A
- 135 Two-notched sinker, centered notches, shale; 77 x 50 x 9 mm.
- 136 Triangular scraper (?), fine secondary flaking on scraping edge, basalt; 60 x 37 x 13 mm.
- 137 Triangular scraper, fine secondary flaking, basalt; 42 x 42 x 15 mm.
- 138 Cortical flake, possible secondary flaking, basalt; 54 x 51 x 7 mm.
- 139 Flake fragment, basalt; 25 x 37 x 5 mm.

## Level 125/150 cm. (continued)

## Sq. 11B

- 140 Ground double-edged blade section, tapered, faceted, slate;  
41 x 29 x 3 mm.
- 141 Flake side scraper, fine flaking along edge, slate; 82 x  
51 x 9 mm.
- 142 Two-notched sinker, notches centered, shale; 75 x 50 x 12 mm.

## 12A

- 143 Lamp, natural formation, shale, child's toy (?); 82 x 87  
x 28 mm.
- 144 Long, triangular tool blank, basalt; 205 x 32 x 22 mm.
- 145 Two-notched sinker, offset notches, shale; 40 x 34 x 10 mm.
- 146 Ground stone fragment, unclassifiable, shale; 45 x 29 x 9 mm.
- 157 Side scraper, flaking along concave surface of edge, slate;  
65 x 34 x 6 mm.

## 12B

- 148 Planing adze blade, slate, shaped by percussion flaking,  
questionable that it is an adze; 63 x 38 x 10 mm.
- 149 Triangular flake, not retouched, probably a knife blank,  
slate; 95 x 44 x 9 mm.
- 150 Slate flake, may be a scraper, but flaking is inconclusive;  
67 x 35 x 8 mm.
- 151 Ground knife fragment, Type # 1, ground on edges only,  
cutting edge is semi-lunar, slate; 35 x 31 x 3 mm.
- 152 Shale fragment, surface hollowed, unclassifiable (portion  
of whetstone?); 27 x 26 x 4 mm.
- 153 Two-notched sinker, notches centered, one side heavier,  
shale; 51 x 56 x 7 mm.

## 13B

- 154 Hafted maul(?), pecked side notches, andesite; 79 x 76 x 39 mm.
- 155 Ground stone fragment, unclassifiable, cherty shale  
(cf., 99, 102); 52 x 18 x 7 mm.
- 156 Side scraper, fine secondary flaking on concave surface  
along edge, chert; 35 x 42 x 7 mm.

## 14A

- 157 Two-notched sinker, center notched, shale; 43 x 37 x 7 mm.
- 158 Two-notched sinker, notches centered, double notched end,  
shale; 71 x 61 x 9 mm.
- 159 Ground stone fragment, unclassifiable, slate; 41 x 17 x 5 mm.
- 160 Flake, slate; 40 x 35 x 5 mm.
- 161 Ovoid pebble, quartzite; 41 x 33 x 21 mm.
- 162 Pebble, quartzite; 28 x 16 x 13 mm.
- 163 Pebble, quartzite; 40 x 35 x 25 mm.
- 164 Chipped blade fragment, slate; apparently complete except  
for missing portion of chipped edge; chipped;  
47 x 39 x 4 mm.
- 165 Two-notched sinker, shale; offset notches; 79 x 50  
x 12 mm.
- 166 Pestle-shaped pecking stone, basalt; 118 x 35 x 31 mm.
- 167 Whetstone, sandstone; 61 x 41 x 13.5 mm.
- 168 Planing adze blade; basalt; chipped body, ground edge;  
59 x 39 x 12 mm.



## Level 150/175 cm. (continued)

## Sq. 14A

- 169 Triangular side scraper, basalt; fine flaking on concave surfaces of edge; 39 x 28 x 12 mm.  
 170 Pumice fragment, unworked; 39 x 24 x 15 mm.

## 14B

- 171 Two-notched sinker; shale, double notched end; 44 x 48 x 11 mm.  
 172 Two-notched sinker; shale, cross-offset notches; 62 x 52 x 8 mm.  
 173 Two-notched sinker; andesite; offset notches, double notched end(?); 55 x 47 x 8 mm.  
 174 Discard; not artifact or flake.  
 175 Notched sinker fragment, shale; width only significant; 36 x 29 x 8 mm.  
 176 Notched sinker fragment, sandstone; width only significant; 57 x 61 x 10 mm.  
 177 Notched sinker fragment, andesite; width only significant; 26 x 56 x 10 mm.  
 178 Shouldered knife, Type #2, basalt; semi-lunar edge; shaped by flaking; flaking on convex surface; 59 x 35 x 9 mm.  
 179 Core end-scraper(?), quartz; scraper or graver or gouge, shape inconclusive; 34 x 27 x 12 mm.  
 180 Polyhedral core, agate; prepared striking platform, cortical surface; 32 x 41 x 39 mm.  
 181 Edge fragment, slate; portion of cutting edge, unclassifiable; 19 x 22 x 2 mm.  
 182 Sheet flake, slate; unworked; 42 x 21 x 2 mm.  
 183 Edge fragment, slate; portion of cutting edge; 32 x 10 x 215 mm.  
 184 Ground fragment, slate; unclassifiable; 27 x 10 x 2 mm.  
 185 Ground edge fragment, slate; edge only ground; 30 x 25 x 3 mm.  
 186 Ground fragment, slate; unclassifiable; 29 x 17 x 4 mm.

## 13A

- 187 Two-notched sinker, shale; offset notches; 63 x 48 x 8 mm.  
 188 Ground knife fragment, Type #1, slate; cutting edges and surfaces ground; back edge chipped; 27 x 43 x 3 mm.  
 189 Splintered flake, chert; secondary flaking, but size makes identity impossible; 38 x 8 x 3.5 mm.

## 15A

- 190 Ground knife fragment, Type #1, veined slate; ground surfaces and edge; 62 x 36 x 8 mm.  
 191 Flake, basalt; 38 x 63 x 5 mm.

## 15B

- 192 Ground Fragment, slate; parallel scratches of grinding process indicative that piece was sawed in half; 47 x 23 x 8 mm.

## Sq. 15B

- 193 Cortical waterworn flake, basalt, unworked; 41 x 72 x 9 mm.  
 194 Cortical waterworn flake, basalt; fits #193; 45 x 67 x 8 mm.

## Level 125/150 cm.

## 16B

- 195 Chipped knife(?), slate; chipped edges, double-edged mid-section; 11 x 41 x 4 mm.

## 16A

## Level 150/175 cm.

- 196 Three-notched sinker, shale; offset notched; 68 x 59 x 15 mm.  
 197 Two-notched sinker, sandstone, offset notches; 59 x 52 x 11 mm.  
 198 Notched fragment, shale; one surface appears to have been ground; 50 x 47 x 6 mm.

## 16B

- 199 Flake, basalt, unworked; 70 x 72 x 15.5 mm.  
 200 Two-notched sinker, shale; offset notches; 47 x 49 x 6 mm.  
 201 Two-notched sinker, sandstone, centered notches; 51 x 46 x 10 mm.  
 202 Two-notched sinker, shale; offset notches; 61 x 46 x 9 mm.  
 203 Two-notched sinker, shale; centered notches; 50 x 48 x 12 mm.  
 204 Two-notched sinker, andesite; offset notches; 75 x 51 x 12 mm.  
 205 Grinding stone, vesicular lava; one surface ground; 87 x 83 x 18 mm.  
 206 Pebble, quartz; 34 x 28 x 18 mm.

## 16BC

- 207 Flaked knife, basalt; Type #2, asymmetrical blade, straight slanted base, rounded point; 32 x 27 x 5 mm.  
 208 Discard; not an artifact.

## 16B

- 209 Cortical flake knife, Type #3, shale; ovoid, flaked, double edged; 119 x 46 x 12 mm.

## 16A

- 210 Lamp, natural formation, andesite; 128 x 105 x 58 mm.  
 211 Hammerstone, sandstone; 97 x 71 x 58 mm.  
 212 Two-notched sinker, sandy shale; offset notches; 62 x 59 x 10 mm.  
 213 Two-notched sinker, shale; offset notches; 58 x 52 x 14 mm.  
 214 Two-notched sinker, shale; centered notches; 76 x 56 x 10 mm.  
 215 Flaked fragment, quartz; unclassifiable; flaked edge and body; 22 x 38 x 9 mm.  
 216 Flaked adze blade fragment, basalt; body and edges flaked; basal portion of an adze blade(?); 37 x 31 x 8 mm.  
 217 Semi-lunar knife fragment, Type #4, slate; edge finely flaked on both sides; 29 x 26 x 3 mm.  
 218 Side scraper, basalt; finely flaked, one side of edge only; semi-lunar blade shaped like #217; 28 x 23 x 3 mm.  
 219 Flake side scraper, basalt; semi-lunar edge, finely flaked on subconchoidal surface; hafted knife(?); 44 x 38 x 7 mm.

## Level 150/175 cm. (continued)

## Sq. 17A

- 220 Two-notched sinker, shale; centered notches: 66 x 65 x 11 mm.  
 221 Two-notched sinker, shale; centered notches: 56 x 44 x 8 mm.  
 222 Two-notched sinker, andesite; centered notches: 49 x  
 55 x 13 mm.  
 223 Pecking stone(?), andesite; slight evidence of use: 46 x  
 93 x 20 mm.  
 224 Flake side scraper, chert; finely flaked along edge on convex  
 surface; 43 x 28 x 7 mm.  
 225 Flake, basalt; 24 x 32 x 6 mm.

## 17B

- 226 Two-notched sinker, shale; offset notches; 44 x 38 x 8 mm.  
 227 Flake side scraper, basalt; fine flaking along concave  
 surface of one edge; 32 x 21 x 4 mm.  
 228 Pebble, basalt; 34 x 28 x 23 mm.  
 229 Pebble, quartz; 48 x 35 x 25 mm.

## 18A

- 230 Grinding stone, pumice, one surface smoothed by grinding;  
 90 x 87 x 28 mm.  
 231 Ground stone fragment, basalt; unclassifiable; 49 x 31 x  
 10 mm.  
 232 Planing adze blade, basalt; flaked body and edge, binding  
 grooves flaked; convex-concave profile worked;  
 75 x 34 x 10 mm.

## 18B

- 233 Polished planing adze blade, cherty shale; ground; tapered  
 body, beveled edge for socketed head(?); 136 x  
 52 x 11 mm.  
 234 Two-notched sinker, shale; offset notches; 66 x 65 x 8 mm.  
 235 Flaked doscoidal knife; Type #3, shale; finely flaked  
 edges; plano-convex flake chipped to shape; 74  
 x 52 x 9 mm.  
 236 Flake, chert; secondary flaking indicates some use; 26 x 26  
 x 9 mm.

## 19A

- 237 Two-notched sinker, andesite; centered notches; 42 x 32  
 x 8 mm.

## 20A

- 238 Pointed wood fragment; awl(?); 68 x 18 x 14.5 mm.

## 20B

- 239 Ulu fragment, Type #1, slate; chipped to shape, then  
 polished, honed edge; 69 x 42 x 8 mm.  
 240 Adze blade, slate; chipped to shape, edge honed, surfaces  
 polished; 68 x 37 x 8 mm.

## 21B

- 241 Knife(?), shale; Type #4, single edge crudely chipped; sides  
 ground; 85 x 41 x 10 mm.  
 242 Polished stone, slate; unclassifiable; 56 x 41 x 6 mm.

## Level 175/200 cm.

## Sq. 11A

- 243 Two-notched sinker, offset notches; basalt; 50 x 43 x 10 mm.  
 244 Ovoid pebble, some evidence of pecking and staining on one end, waterworn; andesite; 95 x 80 x 64 mm.

## 11B

- 245 Pestle-shaped pebble, waterworn, andesite; 107 x 70 x 61 mm.  
 246 Knife fragment; Type #1, slate, honed edge and ground sides; 32 x 39 x 3 mm.  
 247 Side scraper, chert, fine flaking along concave edges; 48 x 28 x 4 mm.

## 12A

- 248 Ground ulu, Type #1, shale; honed edges, ground sides, chipped to shape; 86 x 54 x 7 mm.  
 249 Potsherd, sand and gravel temper; Type A, sent for analysis; vegetal fiber; 51 x 45 x 9 mm.  
 250 Side scraper, chert, fine flaking from use; 34 x 25 x 5 mm.  
 251 End scraper, chipped lamellar fragment, convex edge flaked from use; 34 x 19 x 7 mm.  
 252 Ovoid pebble, quartz-veined jasper; 41 x 28 x 32 mm.  
 253 Ovoid pebble, andesite, waterworn; 89 x 72 x 57 mm.  
 254 Ovoid pebble, andesite, waterworn; 73 x 64 x 56 mm.  
 255 Ovoid pebble, basalt, waterworn; 21 x 19 x 19 mm.  
 256 Potsherd, sand and gravel temper, Type A, vegetal fiber; 44 x 33 x 11 mm.  
 257 Side scraper, chert, percussion flake, parallel edge scraper, flaking on both edges on convex side; 50 x 32 x 5 mm.

## 12B

- 258 Potsherd, Type A; 38 x 40 x 10 mm.  
 259 Discard, not an artifact.  
 260 Potsherd, Type A, sand and gravel temper, fragment; 35 x 22 x 8 mm.  
 261 Potsherd, Type A, vegetal fiber, cortical layer; 22 x 22 x 3 mm.  
 262 Potsherd, Type A, vegetal fiber, cortical layer; 26 x 47 x 8 mm.  
 263 Flake knife, Type #4, shale, half-moon shape, chipped edge; 132 x 82 x 11 mm.  
 264 Harpoon insert blade, slate, square bi-facially tapered base, faceted blade, honed edges; diamond cross-section; 48 x 27 x 3 mm.  
 265 Ground and chipped ulu; Type #1, slate, chipped to shape, ground sides, honed edge; 100 x 58 x 9 mm.

## 13B

- 266 Pumice grinding stone; 152 x 100 x 67 mm.  
 267 Ovoid pebble, andesite, waterworn; 66 x 59 x 49 mm.  
 268 Ovoid pebble, andesite, waterworn; 59 x 58 x 49 mm.  
 269 Side scraper, basalt, parallel sides, one edge straight, fine flaking, opposite edge curved, fine flaking; 55 x 51 x 9 mm.  
 270 Potsherd, Type A sand and gravel temper, fired(?); 27 x 26 x 8 mm.

## Level 175/200 cm. (continued)

## Sq. 13B

- 271 Potsherd, Type A, see #272.  
 272 Potsherd, Type A, joined with #271, sand temper, vegetal fiber; 54 x 48 x 10 mm.

## 14A

- 273 Adze blade fragment, basalt, chipped body, honed edge, beveled; 21 x 35 x 10 mm.  
 274 Side scraper, chert, fine flaking on convex side of edge, fluted center; 34 x 26 x 2 mm.  
 275 Non-polyhedral core, basalt; 28 x 29 x 14 mm.  
 276 Plano-convex flake, basalt, might have been used as a scraper; 20 x 30 x 5 mm.  
 277 Plano-convex flake, basalt; 22 x 23 x 4 mm.  
 278 Cortical flake, chert; 31 x 18 x 5 mm.  
 279 Flake; chert; 48 x 21 x 3 mm.  
 280 Flake, slate; 31 x 10 x 3 mm.  
 281 Flake, basalt, rectangular; 38 x 27 x 6 mm.  
 282 Flake, basalt; 49 x 26 x 4 mm.  
 283 Cortical flake, basalt; 37 x 27 x 6 mm.  
 284 Flake, basalt; 24 x 18 x 3 mm.  
 285 Flake, basalt, secondary flaking(?); 39 x 23 x 4 mm.  
 286 Flake, basalt; 46 x 39 x 3 mm.  
 287 Flake; shale, scraper(?); 63 x 69 x 12 mm.  
 288 Two-notched sinker, shale, offset notches; 55 x 41 x 7 mm.  
 289 Two-notched sinker, shale, centered notches; 43 x 45 x 11 mm.  
 290 Notched fragment, shale; 57 x 45 x 10 mm.  
 291 Two-notched sinker, shale, offset notches; 72 x 60 x 15 mm.  
 292 Two-notched sinker, shale, offset notches; 53 x 49 x 12 mm.  
 293 Two-notched sinker, shale, centered notches; 35 x 43 x 7 mm.  
 294 Notched fragment, shale; 50 x 60 x 9 mm.  
 295 Two-notched sinker, shale, offset notches; 53 x 48 x 8 mm.  
 296 Two-notched sinker, shale, offset notches; 74 x 34 x 13 mm.

## 14B

- 297 Knife fragment, Type #1, slate, ground sides, honed edge, chipped and ground back; 64 x 41 x 3 mm.

## 15A

- 298 Two-notched sinker, shale, offset edges; 74 x 76 x 13 mm.  
 299 Notched fragment, sandstone; 42 x 41 x 11 mm.

## 15B

- 300 Pumice grinding stone; 162 x 123 x 88 mm.  
 301 Ground slate fragment; 33 x 38 x 2 mm.  
 302 Side scraper, slate, triangular, polished, one side worked by flaking after polishing; 65 x 49 x 2.5 mm.  
 303 Side scraper, basalt, fine flaking on one side of edge; 32 x 28 x 10 mm.  
 304 Flake, basalt; 25 x 21 x 2 mm.  
 305 Side scraper, chert, plano-convex, fine flaking on convex side of edge, serrated edge; 64 x 31 x 10 mm.  
 306 Two-notched sinker, shale, offset notches; 27 x 29 x 7 mm.  
 307 Two-notched sinker, andesite, offset notches, waterworn flat pebble; 51 x 35 x 14 mm.

## Level 175/200 cm. (continued)

## Sq. 15B

- 308 Notched fragment, andesite; 35 x 47 x 12 mm.  
 309 Two-notched sinker, shale, offset notches; 46 x 40 x 10 mm.

## 16A

- 310 Notched fragment, sandstone; 39 x 40 x 10 mm.  
 311 Two-notched sinker, shale, centered notches; 79 x 39 x 9 mm.  
 312 Two-notched sinker; andesite, offset notches, waterworn;  
 46 x 46 x 7 mm.  
 313 Double-end notched sinker, shale, offset notches; 69 x  
 55 x 10 mm.

## 16B

- 314 Chipped fragment, scraper(?), basalt, plano-convex, flaking on  
 convex side of edges; 33 x 15 x 5 mm.  
 315 Side scraper, basalt, percussion flaking on convex side of  
 edge; 52 x 30 x 12 mm.  
 316 Ground fragment, slate, unclassifiable; 38 x 29 x 2 mm.  
 317 Battered fragment, comparison indicates smooth surface  
 waterworn, basalt; 37 x 43 x 10 mm.  
 318 Ground fragment, slate, unidentifiable; 42 x 41 x 2.5mm.  
 319 Flake, slate, percussion flaking; 40 x 36 x 4 mm.  
 320 Flake, slate; 18 x 14 x 3 mm.  
 321 Spall flake, basalt; 31 x 27 x 3 mm.  
 322 Flake, basalt, conchoidal; 24 x 21 x 3 mm.  
 323 Ovoid pebble, basalt, waterworn; 41 x 38 x 23 mm.  
 324 Two-notched sinker, basalt, offset notches; 43 x 40 x 8 mm.  
 325 Two-notched sinker, shale, offset notches; 75 x 60 x 13 mm.  
 326 Two-notched sinker, shale, offset notches; 59 x 61 x 6 mm.  
 327 Notched fragment, shale; 48 x 38 x 8 mm.

## 17A

- 328 Sinker, andesite, centered notches; 42 x 42 x 6 mm.  
 329 Notched fragment, andesite; 27 x 43 x 8 mm.  
 330-32 Flakes, basalt.  
 333-36 Flakes, chert.  
 337-45 Flakes, basalt, rest chert.  
 346 Adze blade fragment(?), limey chert, chipped edges, ground  
 sides; 30 x 33 x 12 mm.

## 17B

- 347 Hammerstone, andesite, both ends used; 178 x 73 x 35 mm.  
 348 Sandstone grinding stone; 95 x 68 x 33 mm.  
 349 Flake, chert; 48 x 32 x 10 mm.  
 350 Notched fragment, andesite; 41 x 53 x 7 mm.  
 351 Flake, basalt; 41 x 31 x 6 mm.  
 352 Pebble, basalt; 93 x 60 x 48 mm.

## 18A

- 353 Triangular flake, basalt, inconclusive evidence of use;  
 44 x 33 x 14 mm.  
 354 Two-notched sinker, sandstone, centered notches; 37 x  
 41 x 7 mm..

Sq. 18B

- 355 Dart or arrow point, slate, tip missing, diamond cross-section, barbed, ground, facted blade, straight stem, slightly beveled, square base; 62 x 22 x 6mm.
- 356 Whetstone, andesite, grinding surface concave; 53 x 59 x 18 mm.
- 357 Ovoid pebble, quartz; 40 x 30 x 18 mm.
- 358 Two-notched sinker, andesite, centered notches; 55 x 56 x 13 mm.
- 359 Two-notched sinkers, shale, offset notches; 50 x 50 x 13 mm.

19A

- 360 Grinding stone, sandstone; 41 x 42 x 14 mm.

19B

- 361 Flake, chert, unworked; 64 x 20 x 9 mm.

20A

- 362 Grinding stone, sandstone, probably from same piece as #363; 24 x 38 x 7 mm.
- 363 Grinding stone, sandstone; 58 x 41 x 8 mm.
- 364 Notched fragment, andesite; 45 x 42 x 12 mm.

20B

- 365 Ground fragment, slate, unclassifiable; 17 x 9 x 2mm.
- 366 Lamp, natural formation, basalt; 104 x 89 x 35 mm.

21A

- 367 Saw, sandstone, beveled edge; 66 x 61 x 12 mm.
- 368 Ulu, Type #1, cherty shale, honed edge, ground sides, ground to shape, back edges not retouched; 82 x 61 x 4 mm.
- 369 Piercing instrument, ground point, slate, ground finish, faceted blade, honed double edges, tapering stem, round base, shouldered; 98 x 28 x 5.5mm.

21B

- 370 Dart or arrow point, slate, ground finish, faceted blade, honed edges, shouldered, tapering stem, convex base; 84 x 18 x 5 mm.
- 371 Straight edged knife, Type #1, slate, chipped to shape, ground sides, honed edge; 115 x 52 x 5 mm.
- 372 Knife fragment, Type #1, slate, chipped to shape, ground sides, honed edge; 30 x 35 x 4 mm.
- 373 Two-notched sinker, andesite, offset notches; 65 x 45 x 13 mm.
- 374 Double-notched sinker, andesite; 53 x 55 x 13 mm.

22B

- 375 Ground fragment, chert, unclassifiable; 21 x 9 x 3 mm.

Level 200/225 cm.

11A

- 376 Flake, quartzite; 31 x 20 x 6 mm.

## Level 200/225 cm. (continued)

## Sq. 11B

- 377 Ovoid pebble, andesite, waterworn; 85 x 70 x 57 mm.  
 378 Ovoid pebble, semi-vesicular basalt; 70 x 61 x 57 mm.

## 12A

- 379 Pebble, quartzite; 39 x 21 x 15 mm.  
 380 Two-notched sinker, basalt, centered notches; 52 x 28  
 x 9 mm.  
 381 Notched fragment, shale; 71 x 59 x 14 mm.  
 382 Pebble, andesite; 70 x 65 x 58 mm.

## 12B

- 383 Adze blade, chert, chipped to shape, flaked edge, convex-  
 concave; 46 x 32 x 11 mm.  
 384 Triangular side scraper, basalt, plano-convex, fine flaking  
 on flat surface of edge; 39 x 57 x 13 mm.  
 385 Convex side scraper, basalt, lamellar flake shaped by  
 chipping, fine flaking; 36 x 24 x 4 mm.  
 386 Flake, basalt; 36 x 25 x 7 mm.  
 387 Two-notched sinker, shale, offset notches; 38 x 38 x 9 mm.  
 388-90 Flakes, chert.  
 391 Side scraper; chert, secondary flaking on concave surface  
 of edge; 74 x 49 x 7 mm.

## 13A

- 392 Chipped fragment; chalcedony, single edge flaked on both  
 sides; 27 x 23 x 8 mm.  
 393 Graver, Type #1, chalcedony, fine flaking on concave side  
 of edges; 60 x 32 x 28 mm.  
 394 Spall side scraper, basalt; crude flaking on spall surface;  
 58 x 44 x 12 mm.  
 395 Core side scraper, andesite; crude flaking on concave side;  
 60 x 45 x 23 mm.  
 396 Flake, basalt; 63 x 39 x 16 mm.  
 397 Single-edged knife fragment, chert; Type #4, chipped to  
 shape, edge flaked both sides; 40 x 37 x 7 mm.  
 398 Flake, slate; 47 x 23 x 5 mm.  
 399 Drilled ulu fragment, Type #1, slate; ground sides, honed  
 edge, chipped to shape; 64 x 45 x 3 mm.  
 400 Knife fragment, Type #2, basalt; chipped to shape, flaking on  
 both sides of edges, finer work on one edge;  
 56 x 31 x 7 mm.  
 401 Two-notched sinker, andesite; offset notches; 61 x 42  
 x 6 mm.  
 402 Two-notched sinker, basalt; offset notches; 58 x 46 x 11 mm.  
 403 Side scraper, basalt; fine flaking on concave surface of  
 edge; 50 x 28 x 3 mm.  
 404 Flake, chert; 48 x 25 x 5 mm.  
 405 Scoria fragment; 38 x 30 x 28 mm.  
 406 Scoria whetstone fragment; 33 x 21 x 14 mm.

## 13B

- 407 Ulu fragment, Type #1, slate; chipped to shape, ground  
 sides, honed edge; 43 x 46 x 2.5 mm.  
 408 Ground rectangular fragment, slate; unclassifiable: 35 x  
 23 x 2 mm.



## Level 200/225 cm. (continued)

## Sq. 13B

- 409 Triangular side scraper, quartzite; 30 x 25 x 10 mm.  
 410 Side scraper, chert; fine flaking on convex edge; 59 x 37 x 5 mm.  
 411 Flake, basalt; 79 x 35 x 7 mm.  
 412 Cortical flake, andesite; 56 x 38 x 6 mm.  
 413 Flake, basalt.  
 414 Flake basalt: 74 x 37 x 8 mm.  
 415 Flake, basalt.  
 416 Two-notched sinker, andesite; centered notches; 42 x 33 x 14 mm.  
 417 Double-notched sinker, shale; offset notches; 60 x 39 x 9 mm.  
 418 Two-notched sinker, basalt; centered notches, waterworn; 51 x 29 x 8 mm.  
 419 Two-notched sinker, andesite: offset notches; 52 x 51 x 14 mm.  
 420 Two-notched sinker, shale; offset notches; 49 x 52 x 10 mm.  
 421 Two-notched sinker, basalt; offset notches; 60 x 46 x 10 mm.  
 422 Double-notched sinker, shale; offset notches; 62/54 x 55 x 10 mm.  
 423 Notched fragment, shale; 40 x 34 x 7 mm.

## 13-14B

- 424 Heating lamp fragment, shale; oval bowl, grooved rim, pecked and ground; 19-15 depth of bowl; 236 x 100 x 49 mm. 50 cm. west of stake 14B at 225 cm.

## 14A

- 425 Discard, not an artifact.  
 426 Chisel-pointed graver, Type #2, quartzite; chipped transverse edge on chisel point; other edges flaked for scraper(?); 51 x 27 x 7 mm.  
 427 Ulu blank, limey chert; end used as a chopper, polishing on surface(?); 142 x 74 x 17 mm.  
 428 Flake, chert; 33 x 18 x 8 mm.  
 429 Flake side scraper, chert; fine flaking on convex side of edge; 41 x 28 x 9 mm.  
 430 Flake side scraper, basalt; fine flaking along one side of edge; 25 x 24 x 2 mm.  
 431 Ground fragment, slate; ground surfaces; 31 x 25 x 2 mm.  
 432 Whetstone fragment, sandstone; 41 x 39 x 10 mm.  
 433 Adze blade fragment, basalt; tapered body chipped to shape, remnant of grinding on both sides of edge; 50 x 37 x 16 mm.  
 434 Ovoid knife, #3, basalt; chipped to shape, chopper edge; 68 x 42 x 28 mm.  
 435 Flake, basalt; evidence of flaking inconclusive; 28 x 30 x 4 mm.  
 436 Triangular side scraper, basalt; plano-convex, fine flaking on convex surface of edge; 47 x 37 x 13 mm.  
 437 Triangular knife, Type #4, basalt; chipped chopping edge; 85 x 75 x 47 mm.  
 438 Pebble hammer stone, andesite; ovoid, battering on one end; 86 x 75 x 47 mm.  
 439 Two-notched sinker, shale; centered notches; 51 x 38 x 9 mm.

## Level 200/225 cm. (continued)

## Sq. 14A

- 440 Two-notched sinker, andesite; centered notches; 49 x 41 x 9 mm.  
 441 Two-notched sinker, andesite; centered notches; 61 x 58 x 8 mm.  
 442 Two-notched sinker, andesite; centered notches, depressions on opposite sides not made; 68 x 56 x 9 mm.  
 443 Two-notched sinker, andesite; offset notches; 84 x 60 x 13 mm.

## 14B

- 444 Pebble hammerstone, basalt; pecking stone(?); 89 x 72 x 57 mm.  
 445 Pebble hammerstone, andesite; chipped from battering; 80 x 70 x 51 mm.  
 446 Ovoid pebble, andesite; 79 x 68 x 54 mm.  
 447 Pebble, andesite; 72 x 61 x 53 mm.  
 448 Pebble, basalt; 77 x 61 x 57 mm.  
 449 Ground fragment, slate; unclassifiable; 25 x 17 x 4 mm.  
 450 Side scraper, chert; longitudinal flaking on convex surface, fine flaking on convex side of edge, one side and one edge flaked, hafted(?); 46 x 23 x 2 mm.  
 451 End scraper, jasper; chipped and flaked to shape, flaking on convex surface; 29 x 38 x 12 mm.  
 452 Triangular side scraper, basalt; fine secondary flaking on convex side of edge; 76 x 36 x 15 mm.  
 453 Spall flake, basalt; secondary flaking from use(?); 34 x 24 x 3 mm.  
 454 Spall scraper, basalt; opposing sides finely flaked on convex surface, fluted lamellar; 27 x 22 x 3 mm.  
 455 Flake, basalt; 31 x 27 x 4 mm.  
 456 Chisel-nosed graver, Type #2, chert; only secondary flaking occurs on apex of the fragment; 32 x 29 x 11 mm.  
 457 Pebble, quartzite; waterworn half; 33 x 29 x 11 mm.  
 458 Notched fragment, shale; 44 x 33 x 9 mm.  
 459 Two-notched sinker, andesite; offset notches; 60 x 53 x 8 mm.  
 460 Two-notched sinker, basalt; centered notches; 51 x 46 x 11 mm.  
 461 Two-notched sinker, basalt; centered notches; 55 x 47 x 12 mm.  
 462 Two-notched sinker, sandstone; centered notches; 50 x 50 x 10 mm.  
 463 Two-notched sinker, andesite; offset notches; 62 x 51 x 2 mm.  
 464 Two-notched sinker, andesite; offset notches; 40 x 37 x 7 mm.  
 465 Two-notched sinker, andesite; offset notches; 46 x 34 x 11 mm.  
 466 Two-notched sinker, andesite; 7 mm. thickness.  
 467 Double-notched sinker, andesite; offset notches; 44 x 45 x 10 mm.  
 468 Two-notched sinker, andesite; centered notches; 48 x 49 x 10 mm.  
 469 Two-notched sinker, tuff; offset notches; 55 x 54 x 16 mm.

Sq. 15A

- 470 Ovoid pecking stone, andesite; small area shows battering; 63 x 60 x 51 mm.
- 471 Pebble, basalt; 37 x 38 x 35 mm.
- 472 Flake, basalt; side scraper(?), evidence of flaking inconclusive; 37 x 39 x 8 mm.
- 473 Flake, basalt; 42 x 21 x 7 mm.
- 474 Side scraper, basalt; fine flaking on convex side of edge; 35 x 26 x 4 mm.
- 475 Flake end scraper, basalt; fine flaking on convex side of edge; 32 x 23 x 8 mm.
- 476 Flake, quartzite; 48 x 14 x 11/2 mm.
- 477 Whetstone, sandstone; 47 x 29 x 22 mm.
- 478 Grindstone, sandstone; 85 x 53 x 21 mm.
- 479 Knife, type #4, slate; chipped cutting edge; 118 x 37 x 11 mm.
- 480 Two-notched sinker, basalt; centered notches; 77 x 40 x 9 mm.
- 481 Two-notched sinker, shale; offset notches; 60 x 48 x 9 mm.
- 482 Four-notched sinker, andesite; longitudinal notches offset; 63 x 47 x 11 mm.
- 483 Two-notched sinker, andesite; offset notches; 53 x 53 x 10 mm.
- 484 Double-notched sinker, andesite; offset notches; 83 x 52 x 13 mm.
- 485 Double-notched sinker, andesite; offset notches; 69 x 50 x 9 mm.
- 486 Two-notched sinker, sandstone; centered notches; 49 x 48 x 10 mm.
- 487 Side scraper, basalt; flaking on convex side of edge; 52 x 26 x 8 mm.
- 488 Grindstone, sandstone, pentagonal, parallel surfaces, both smoothed, one edge rounded; 135 x 116 x 14 mm.
- 489 Two-notched sinker, shale; centered notches; 54 x 44 x 18 mm.
- 490 Notched fragment, shale; 14 mm. thick.
- 491 Two-notched sinker, basalt; offset notches; 69 x 42 x 9 mm.
- 492 Two-notched sinker, andesite (conglomerate); offset notches; 69 x 45 x 13 mm.
- 493 Sinker-chopper, andesite; center notches; elliptoid, both edges chipped, definitely used as a chopper; 75 x 58 x 13 mm.
- 494 Notched fragment, basalt; 11 mm. thick.
- 495 Two-notched sinker, shale; centered notches; 60 x 54 x 14 mm.
- 496 Two-notched sinker, shale; offset notches; 56 x 39 x 9 mm.
- 497 Notched fragment; sinker-chopper(?); shale; possibly four-notched sinker originally; longitudinal notch flaked off and cutting edge made in its place; 84 x 55 x 10 mm.

17B

- 498 Concave scraper; slate; reworked from polished fragments; 50 x 18 x 3 mm.
- 499 Two-notched sinker, shale; offset notches; 58 x 52 x 9 mm.

## Level 200/225 cm. (continued)

## Sq. 18A

- 500 Side scraper, chert; secondary flaking from use; 39 x 26 x 4 mm.

## 18B

- 501 Flaked knife, basalt; Type #2, chipped, elliptical, pointed, slanting base; 60 x 25 x 9 mm.  
 502 Flaked knife, Type #2, basalt; pointed, slanting base, chipped to shape; 90 x 27 x 10 mm.  
 503 Knife, type #4, basalt; percussion flaking primarily along one side of surface, scraper?; 87 x 64 x 18 mm.  
 504 Flake, basalt; 39 x 20 x 3 mm.  
 505 Flake, basalt; 37 x 27 x 8 mm.  
 506 Chipped edge fragment, chert; percussion flaking, knife fragment?; 31 x 24 x 10 mm.  
 507 Graver(?), Type #1, jasper; flaking suggests that a burin point was made and broken off; 40 x 29 x 12 mm.  
 508 Two-notched sinker, shale; offset notches; 66 x 50 x 11 mm.

## 20A

- 509 Whetstone(?), siltstone; one ground surface, flat, opposite surface slightly concave, portion of edge polished; 70 x 34 x 18 mm.  
 510 Cortical flake, basalt; 39 x 29 x 8 mm.  
 511 Polished fragment, basalt; polished surface slightly concave, unclassifiable; 39 x 20 x 13 mm.  
 512 Polished stone, basalt; unclassifiable; 38 x 23 x 7 mm.  
 513 Flake, basalt; scraper?; evidence of flaking inconclusive; 31 x 23 x 5 mm.

## 20B

- 514 Burnt stone fragment, basalt; flaked, unclassifiable; 43 x 33 x 13 mm.  
 515 Flake, basalt; 28 x 17 x 8 mm.  
 516 Flake, slate; unworked; 39 x 30 x 2 mm.  
 517 Arrow point, slate; ground point and blade, side notched, tapered stem, convex base; 30 x 10 x 2.5 mm.  
 518 Cut bird bone; cut at one end; 55 x 9 mm.  
 519 Single-end awl, bone; 76 x 7 mm.  
 520 Double-ended awl, bone; 79 x 4 mm.

## 21A

- 521 Piercing instrument, slate; ground, honed edges, point missing; tapered stem, convex base, shouldered; 104 x 38 x 12 mm.  
 522 Ulu, knife Type #1, slate; chipped to shape, ground surfaces, honed edge; 90 x 52 x 4 mm.  
 523 Pebble, basalt; pestle-shaped; 106 x 50 x 49 mm.  
 524 Faceted grinding stone, sandstone; 75 x 49 x 46 mm.

## 21B

- 525 Slender, double ended awl, bone; 65 x 2 x 1 mm.  
 526 Carved bear, dentine; weathered; 38 x 12 x 10 mm.  
 527 Pebble, quartzite; 52 x 41 x 16 mm.  
 528 Flake, chert; used?; 36 x 18 x 6 mm.  
 529 Side scraper, andesite; fine flaking on concave side; 49 x 29 x 5 mm.

## Level 200/225 (continued)

## Sq. 21B

- 530 Flake, slate; scraper(?), edge dulled as if use; unretouched; 33 x 27 x 5 mm.
- 531 Leister, bone; two small barbs, shouldered one side, stem curved, convex pointed base; 82 x 10 x 4 mm.
- 22A
- 532 Pebble, quartzite; 57 x 40 x 34 mm.
- 533 Polished fragment, part of 579; 51 x 43 x 10 mm.
- 22B
- 534 Core Knife fragment, type #4, cherty-shale; chipped body, chipped edge; 66 x 47 x 18 mm.
- 535 Worked bone, ends appear worn by use; extremely deteriorated; 99 x 21 x 3 mm.
- Level 225/250 cm.
- 10A
- 536 Ground fragment, slate; unclassifiable; 40 x 14 x 2 mm.
- 10B
- 537 Core, cherty-quartzite(?); nonpolyhedral; 42 x 36 x 34 mm.
- 538 Knife, type #4, chert; rough chopping edge opposite cutting edge; 47 x 42 x 20 mm.
- 11A
- 539 Adze blade fragment, basalt; basal portion, chipped to shape; 31 x 34 x 9 mm.
- 540 Double-notched sinker, shale; offset notches; 56 x 55 x 7 mm.
- 541 Hammerstone, conglomerate; 83 x 52 x 48 mm.
- 11B
- 542 Two-notched sinker, shale; offset notches; 52 x 50 x 9 mm.
- 13A
- 543 Chipped graver, type #1, basalt; chipped triangular graving point; 43 x 38 x 12 mm.
- 544 Side scraper, basalt; bulb of percussion worked into concave edge; both straight edge and concave edge; scraper; pentagonal; 38 x 36 x 6 mm.
- 13B
- 545 Hammerstone, semi-vesicular basalt; ovoid; 82 x 68 x 45 mm.
- 546 Two notched sinker, shale; offset notches; 61 x 51 x 16 mm.
- 547 Two notched sinker, shale; offset notches; 71 x 50 x 14 mm.
- 14A
- 548 Two-notched sinker, basalt, centered notches; 50 x 50 x 8 mm.
- 549 Two-notched sinker, basalt; centered notches; 59 x 33 x 8 mm.
- 15B
- 550 Graver, type #1, basalt; chipped edge and triangular point; polishing on edge suggests this is entire piece rather than fragment; side blade(?); 42 x 10 x 8 mm.

## Level 225/250 (continued)

## Sq. 15B

- 551 Notched sinker fragment, basalt; 52 x 38 x 7 mm.
- 16B  
552 Two-notched sinker, andesite; offset notches; 60 x 53 x 10 mm.
- 19A  
553 Side scraper, chert; fine flaking on convex surface of edge; 56 x 50 x 8 mm.
- 19B  
554 Two-notched sinker, cherty shale; centered notches; 61 x 55 x 13 mm.  
555 Knife fragment, Type #4, basalt; serrated edge, flaked outside; large flaked serrated edge opposite finely flaked edge, flaked on both sides; 53 x 41 x 15 mm.  
556 Whetstone, sandstone; 48 x 33 x 8 mm.
- 20B  
557 Cannel coal, lignite(?); sawed, end faceted from rubbing; 64 x 20 x 15 mm.  
558 Slab flake, slate; 43 x 33 x 2 mm.
- 21A  
559 Whetstone, sandstone; 67 x 50 x 12 mm.  
560 Ground fragment, slate; grooved on both surfaces for fracturing; 52 x 47 x 3 mm.  
561 Ulu fragment, #1, slate; ground surfaces, honed edge, chipped back; 63 x 47 x 8 mm.
- 22A  
562 Piercing instrument, slate; faceted blade, honed edge, barbed, tapered tang, roughened convex base; 110 x 37 x 7 mm.  
563 Harpoon head; bone; 4 barbs, 1 barb section missing; tapered tang; convex base; round drilled hole; tip: 48 x 20 x 9 mm.; body: 141 x 26 x 12 mm.  
564 Two-notched sinker, shale, offset notches; 54 x 47 x 7 mm.  
565 Polished fragment, limey chert; unclassifiable; 31 x 26 x 5 mm.  
566 Parallel edged side scraper, chert; fine flaking on opposite edges on convex surface; 33 x 20 x 4 mm.  
567 Two-notched sinker, andesite; centered notches; 64 x 53 x 13 mm.  
568 Pebble, andesite; 24 x 23 x 21 mm.  
569 Potsherd, type B; rim; thick, coarse gravel temper and vegetal fibers, gravels up to 6 x 9 mm; 119 x 102 x 25 mm.  
570 Potsherd, type B; sent for analysis; 72 x 70 x 19 mm.  
571 Potsherd, type B; 45 x 55 x ?mm.

## Level 225/250 cm. (continued)

Sq. 22B

- 572 Potsherd, type B; 49 x 39 x ?mm.  
 573 Potsherd, type B; exfoliated bowl fragment; 79 x 64 x ?mm.  
 574 Notched sinker fragment, shale; thickness: 12 mm.  
 575 Notched sinker fragment, shale; thickness: 6mm.  
 576 Side scraper, chert; straight edge flaked by use; 61 x  
 36 x 5 mm.  
 577 Knife fragment, shale; chipped to shape, honed edge, backed;  
 58 x 38 x 10 mm.  
 578 Polished fragment, chert; 52 x 43 x 11 mm. Part of 579.  
 579 Chipped and polished fragment, chert; sides chipped  
 finished by grinding; 61 x 35 x 22 mm. Body of  
 splitting, a size blade(?)  
 580 Piercing instrument, shale; ground, shouldered, tapered  
 stem, straight diagonal base, point and edge  
 refinished by chipping; 59 x 27 x 6 mm.  
 581 Grinding stone, sandstone; 97 x 75 x 37 mm.  
 582 Knife fragment, type #1, slate; honed edge, ground body;  
 36 x 27 x 5 mm.

## Level 250/275 cm.

22B

- 583 Worked bone, unclassifiable; 57 x 21 x 10 mm.  
 584 Pressure flaker(?), bone; 110 x 22 x 15 mm.  
 585 Worked bone; 73 x 22 x 10 mm.  
 586 Arrow point, ivory; 3 barbs, triangular body, tapered round  
 stem, pointed base; 133 x 11 x 9 mm.  
 587 Potsherd, type B; basal portion; 87 x 72 x 22 mm.  
 588 Potsherd, type B; interior bowl fragment; 50 x 41 x ?mm.

23A

- 589 Point fragment, slate; ground tip, honed edges, tapered;  
 41 x 15 x 4 mm.  
 590 Two-notched sinker, shale; centered notches; 60 x 40 x  
 8 mm.

23B

- 591 Two-notched sinker, shale; centered notches; 78 x 47 x  
 9 mm.  
 592 Whetstone, sandstone; 40 x 39 x 6 mm.  
 593 Grinding stone, sandstone; laminated block; 102 x 67  
 x 14 mm.

## Cave-in

11A

- 594 End Scraper, basalt; edge chipped on convex side all around  
 elliptical curve; keeled; 66 x 33 x 10 mm.

## Level 250/275 cm.

21A

- 595 Two-notched sinker, shale; offset notches; 56 x 33 x 10 mm.

## Level 250/275 cm. (continued)

## Sq. 21A

- 596 Arrow point, slate; ground blade; honed edge, shouldered, tapered base, straight base, tip broken off; 41 x 11 x 3 mm.  
597 Single-pointed awl, bone; 64 x 10 x 10 mm.

Brooks River, root cellar (no datum)

- 598 Harpoon head, bone; 4 barbs, elliptical hole, tapered stem, square base; 217 x 18 x 9 mm.  
599 Whetstone, siltstone; honing block; 88 x 66 x 15 mm.  
600 Knife, type #4, basalt, chipped edges; 101 x 51 x 13 mm.  
601 Knife, type #1, straight edge, shale, ground sides, honed edge, ground surfaces; 69 x 34 x 3 mm.  
602 Knife fragment, type #1, shale; curved edge, honed edge, ground surfaces; 61 x 39 x 4 mm.  
603 Harpoon tip (?), basalt; waterworn, chipped point; tapered stem, convex base; 55 x 18 x 4 mm.  
604 Elliptical knife, type #3, shale; chipped; 89 x 46 x 8 mm.  
605 Potsherd, type B; rim fragment; 71 x 50 x 14 mm.  
606 Potsherd, type B; 100 x 71 x 10 mm.  
607 Potsherd, type B; 95 x 50 x 15 mm.  
608 Potsherd, type B; sent for analysis to Laboratory of Anthro; 91 x 68 x 11 mm.  
609 Potsherd, type B; interior bowl fragment; 81 x 52 x ?mm.  
610 Potsherd, type B; 82 x 59 x 15 mm.  
611 Potsherd, type B; 141 x 75 x 15 mm.  
612 Potsherd, type B; 110 x 91 x 11 mm.  
613 Potsherd, type B; 65 x 53 x ?mm.  
614 Potsherd, type B; 90 x 41 x 14 mm.  
615 Discard, not an artifact.

Brooks River, #1

## Level 25/50 cm.

## Sq. 10A

- 616 Hammerstone, basalt; 113 x 75 x 41 mm.

## Level 50/75 cm.

## 11A

- 617 Point fragment, slate; tip; ground, honed edges, unclassifiable; 30 x 19 x 3 mm.

## 11B

- 618 Grinding stone, sandstone, tapered; 135 x 122 x 23 mm.  
619 Grinding stone, sandstone; 102 x 89 x 55 mm.

## 12A

- 620 Harpoon head, bone; 2 barbs, round hole, tapered tang, convex base; 73 x 17 x 9 mm.  
621 Worked bone; diamond shaped fragment; 50 x 21 x 6 mm.  
622 Cortical flake, basalt; 59 x 22 x 11 mm.



## Level 50/75 cm. (continued)

Sq. 13B

- 623 Piercing instrument, lance point or knife blade, slate, ground, honed edges, no stem, square base; 112 x 30 x 7 mm.
- 624 Side scraper, slate; reworked ground fragment (faceted) opposite edges chipped on opposite sides; 40 x 20 x 4 mm.
- 625 Arrow point, basalt; chipped, shouldered, tapered stem, square base; 20 x 10 x 4 mm.
- 626 Polished fragment, slate; chipped and ground; 30 x 33 x 13 mm.

## Level 75/100 cm.

10A

- 627 Planing adze blade; basalt; chipped and ground, tapered body, chipped sides, beveled cutting edge; 60 x 39 x 11 mm.

12A

- 628 Knife fragment, **type #4**, shale; chipped and ground, chipped back edge; 65 x 41 x 5 mm.
- 629 Knife, **type #3**, shale; chipped and ground, surfaces ground, edges chipped; 89 x 67 x 11 mm.
- 630 Harpoon tip, feldspar; ground, faceted blade, honed edges, no stem; **faceted**, convex base; 37 x 29 x 3 mm.
- 631 Point tip fragment, feldspar; ground, honed edges, unclassifiable; 21 x 15 x 2 mm.

13A

- 632 Polished fragment, shale; ground surfaces, unclassifiable; 54 x 35 x 6 mm.

13B

- 633 Chipped and ground fragment, adze blade fragment (?); limy chert; chipped to shape, surfaces ground; 80 x 52 x 16 mm.

14A

- 634 Knife, **type #1**, shale; chipped to shape, ground surfaces, honed edge; 76 x 38 x 3 mm.
- 635 Knife (hafted?), **type #2**, basalt; chipped to shape, chipped edge; 71 x 29 x 8 mm.
- 636 Pressure tool, bone; 84 x 16 x 6 mm.

13A

- 637 Chipped and ground adze blade fragment, basalt; honed, beveled edge; sides and body chipped; 38 x 35 x 7 mm.
- 638 End scraper(?), basalt; prepared cortical flake; working edge unretouched, worn with use; 35 x 26 x 7 mm.
- 639 Polished fragment, shale; shaped like a curved knife blade, but no working along edges; 88 x 33 x 4 mm.
- 640 Polished stone, shale; unclassifiable; 27 x 16 x 5 mm.

## Sq. 10A

641 Spall side scraper, basalt; chipping on cortical surface of edge; spall surface stained; 77 x 58 x 9 mm.

## 10B

642 Knife, **type #4**, shale; waterworn cobble fragment; (chopper?), both sides of edge chipped; 165 x 95 x 27 mm.

## 11A

643 Potsherd, **type A**; rim fragment, finer temper, harder texture than other type A samples; 126 x 110 x 15 mm.

## 11B

644 Knife fragment, **type #1**, flint; ground surfaces, honed edge, straight edge, back chipped; 59 x 39 x 5 mm.

645 Knife, **type #4**, shale; chipped to shape, ground surfaces, chipped straight edge; variant of chipped and ground ulu; 83 x 47 x 6 mm.

646 Grinding stone, shale; stained (oil?), used as unretouched scraper; 79 x 63 x 6 mm.

647 Polished stone, basalt; unclassifiable; 36 x 20 x 5 mm.

648 Chipped and polished fragment, basalt; ground surfaces, chipped side; 40 x 13 x 8 mm.

649 Graver, basalt; triangular chisel-nosed point; one side chipped for concave scraper(?), surfaces ground; 63 x 34 x 8 mm.

650 Knife blade, basalt; chipped edges; straight, slightly slanted base; 67 x 37 x 8 mm.

651 Hammerstone, basalt; 102 x 53 x 27 mm.

## 12A

652 Planing adze blade, basalt; chipped sides, polished surfaces, chisel edge, honed edge, slightly tapered body; 61 x 43 x 10 mm.

653 Discoidal knife, **type #3**, basalt; chipped, bifacially flaked, portion broken off; 64 x 51 x 9 mm.

654 Knife fragment(?), slate; ground surfaces, honed edge, straight edge; 39 x 28 x 3 mm.

655 Adze blade fragment, cherty shale; chipped to shape, ground surfaces, one edge reworked as a **type #4** knife; 71 x 39 x 12 mm.

656 Double edged knife(?), basalt; chipped, could be basal portion of an adze blade; 57 x 39 x 9 mm.

657 Potsherd, **type A**; decorated rim fragment, outer surface below rim flange grooved with a stick before firing; rim width 15 mm; 69 x 51 x 11 mm.

## 13A

658 Chipped fragment, basalt; chipped knife(?); 36 x 44 x 7 mm.

659 Lance point or harpoon tip, feldspar; ground; one side faceted, slightly slanted straight base, one edge honed, other dulled; 53 x 26 x 4 mm.

## Level 125/150

## Sq. 10A

660 Potsherd, Type A; external measurements: 248L x 192H x 12 mm.; Arc - 248, cord - 205, depth - 64, diameter - 228 mm.

## 10B

661 Concave unworked scraper, basalt; unretouched, concave edge worn, ridge between two flake grooves flattened by polishing, patina from weathering; 40 x 16 x 3 mm.

## 11A

662 Pebble hammerstone, basalt; 74 x 64 x 36 mm.

## Level 150/175 cm.

## 10A

663 Dart point, slate; ground, blade faceted, hollow-ground edges; barbed, tapered stem; base and tip broken; 118 x 21 x 12 mm.

## 10B

664 Potsherd, Type A; 95 x 71 x 10 mm.

665 Potsherd, Type B; 67 x 44 x ? mm.

666 Potsherd, base fragment, Type A; 115 x 84 x 21 mm.

## 11B

667 Semi-lunar knife fragment, Type #4 shale; chipped, half of #668; complete measurement; 65 x 25 x 7 mm.

668 Semi-lunar knife fragment; see #667

## 12A

669 Adze blade fragment, basalt; chipped; 66 x 41 x 15 mm.

670 Knife fragment, Type #2, slate; originally double edged blade, from flat, waterworn slate, honed edges have been rechipped, leaving little of previous ground surface; 52 x 21 x 4 mm.

## 12B

671 Hammerstone, basalt; foursided, tapered fragment used for hammering or as percussion tool; 94 x 25 x 29 mm.

672 Semi-lunar knife, Type #4, shale; chipped; 85 x 58 x 16 mm.

673 Arrow point, feldspar; ground, faceted blade; barbed, small tapered stem, straight base; tip broken off and crudely reground; 47 x 23 x 3 mm.

## 13B

674 Knife edge fragment, slate; ground; curved, honed edge; 33 x 17 x 2 mm.

675 Graver(?), shale; triangular flake; edges worn, but not retouched; tip chipped but does not show use; 59 x 35 x 3 mm.

676 Double edged, hafted knife fragment, Type #2, slate; base chipped; blade ground; honed edges; point broken off; oval cross-section (blade); slanted base; 40 x 20 x 4 mm.

## Level 150/175 (continued)

## Sq. 13B

- 677 Chopper knife, type #4, basalt; chipped core, ends battered; 104 x 42 x 23 mm.  
 678 Knife fragment/ (?), basalt; chipped, double edged; 47 x 22 x 5 mm.  
 679 Knife, type #4, sandstone; chipped, straight edge; 114 x 52 x 10 mm.  
 680 Axe, sandstone; honed edge, unworked tapered body; for cutting meat(?); 131 x 108 x 32 mm.

## Level 175/200 cm.

## 11A

- 681 Adze blade, basalt; formerly small, tapered axe, chopping edge chipped along side; opposite side squared by coarse abrasions; 78 x 45 x 16 mm.  
 682 Potsherd, type A; 72 x 48 x 11 mm.  
 683 Potsherd, type B(?); 57 x 36 x ? mm.

## 11B

- 684 Knife, type #4, shale, chipped, straight edge; 91 x 63 x 13 mm.  
 685 Triangular side scraper, basalt; possibly chopper fragment; edge chipped on both sides; 59 x 39 x 16 mm.  
 686 Point tip fragment, shale; chipped; formerly ground, re-touched by flaking, unclassifiable; 26 x 12 x 4 mm.  
 687 Potsherd, type B; rim fragment; 46 x 25 x 15 mm.  
 688 Potsherd, type A; rim fragment; width 14 mm; 55 x 45 x 11 mm.  
 689 Potsherd, type A; 39 x 40 x 10 mm.  
 690 Potsherd, type A; 45 x 44 x 13 mm.  
 691 Potsherd, type A; 51 x 35 x 12 mm.

## 12B

- 692 Awl, bone; pointed conical tip, flared shoulders, round body; 79 x 9 x 7 mm.

## 13B

- 693 Knife, type #4, basalt; chipped edge, straight edge, body untouched; patina; opposite edge scraper; 74 x 36 x 15 mm.  
 694 Hammerstone, greenstone basalt; 56 x 43 x 31 mm.  
 695 Potsherd, type B; rim width 16 mm; 101 x 110 x 13 mm.  
 696 Potsherd, type B; rim fragment; 101 x 66 x 12 mm.  
 697 Potsherd, type B; 119 x 91 x ? mm.

## 14A

- 698 Piercing instrument, point, basalt; ground; faceted blade, shouldered, tapered tang, convex base; 72 x 28 x 6 mm.  
 699 Potsherd, type A; sent for analysis; 59 x 49 x 17 mm.  
 700 Potsherd, type B; straight rim; 51 x 49 x 16 mm.  
 701 Potsherd, type B; 51 x 43 x 6 mm.  
 702 Potsherd, type A; 54 x 51 x 11 mm.

## 14B

- 703 Potsherd, type B; base fragment; 92 x 72 x 21 mm.  
 704 Potsherd, type A; rim fragment, flanged; rim width 15 mm; 74 x 58 x 12 mm.

## Level 200/225 cm.

## Sq. 10A

- 705 Potsherd, type A; 54 x 48 x 11 mm.  
 706 Point or knife, type #3, veined basalt; chipped, convex-concave, waterworn; 52 x 28 x 5 mm.

## 10B

- 707 Core, basalt; 41 x 38 x 15 mm.  
 708 Potsherd; 67 x 65 x 12 mm; type B.  
 709 Potsherd, type B; base fragment(?); 73 x 60 x 21 mm.

## 12B

- 710 Knife fragment, basalt; polished edge and surfaces, waterworn, then broken later; 43 x 37 x 5 mm.  
 711 Curved knife, type #1, fragment, shale; ground sides, honed edge; 53 x 32 x 3 mm.  
 712 Potsherd, type A; 70 x 69 x 15 mm.  
 713 Potsherd, type A; 148 x 91 x 13 mm.

## 13A

- 714 Knife fragment, type #2, basalt; double edged, chipped, tapered; 46 x 35 x 6 mm.  
 715 Scraper, shale; waterworn, chipped on opposite edges; 80 x 42 x 6 mm.  
 716 End scraper, basalt; 28 x 22 x 6 mm.

## 13B

- 717 Hammerstone, basalt; 96 x 56 x 37 mm.  
 718 Double-edged knife fragment, type #2, basalt; chipped; 62 x 30 x 8 mm.  
 719 Pecking stone, basalt; elliptical, ovoid cross section; 92 x 50 x 46 mm.  
 720 Fragment of cutting tool, shale; chipped and ground, edge chipped; burnt half; 40 x 40 x 6 mm.

## Level 75/100 cm.

## 11A

- 721 Worked wood, unclassifiable; 82 x 31 x 28 mm.