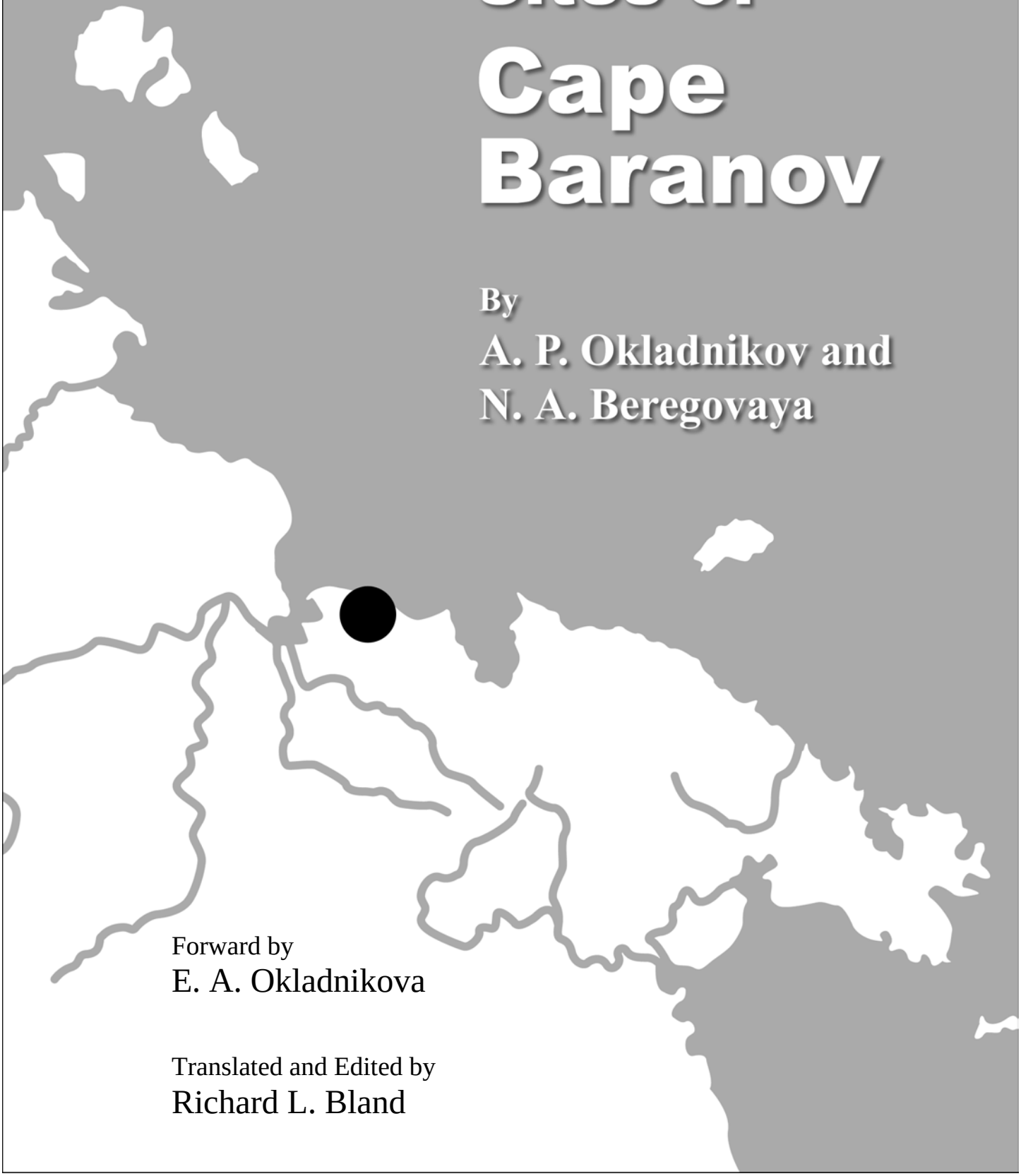
The Early Sites of Cape Baranov

By
A. P. Okladnikov and
N. A. Beregovaya



Forward by
E. A. Okladnikova

Translated and Edited by
Richard L. Bland

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SHARED BERINGIAN HERITAGE PROGRAM

Twelve to fifteen thousand years ago, Asia and North America were once joined by a massive "land bridge" in a region now popularly called "Beringia." In order to promote the conservation of the unique natural history and cultural heritage of this region, the presidents of the United States and the Soviet Union (now Russia) endorsed in 1990 a proposal to establish of an international park in the Bering Strait area. The Shared Beringian Heritage Program of the National Park Service, established in 1991, thus recognizes and celebrates the contemporary and historic exchange of biological resources and cultural heritage in this region. The program seeks local resident and international participation in the preservation and understanding of natural resources and protected lands, and works to sustain the cultural vitality of Native peoples in the region. To these ends, the Beringia Program promotes the free communication and active cooperation between the people and governments of the United States and Russia with regard to Central Beringia.

ПРОГРАММА «ОБЪЕДИНЕННОЕ НАСЛЕДИЕ БЕРИНГИИ»

12 – 15 тысяч лет назад Азия и Северная Америка были связаны «сухопутным мостом» в районе, который теперь называют Берингия. В 1990 г. Президенты Советского Союза (ныне Россия) и Соединенных Штатов подписали соглашение о намерении создать международный парк в районе Берингова пролива с целью сохранения уникальной истории, природы и культурного наследия этого района. Программа «Объединенное наследие Берингии» Службы национальных парков США, организованная в 1991 г. отмечает и признает современный обмен биологическими ресурсами и культурным наследием этого региона. Цель программы – вовлечь местных жителей и международных участников в дело сохранения природных ресурсов и охраняемых территорий, а также в работу по поддержанию жизнеспособности культуры коренных народов этого района. Помимо этого, названная программа содействует свободному общению и активному сотрудничеству между народами и правительствами России и США по вопросам, касающимся Берингии.

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TRANSLATOR'S INTRODUCTION

This work was originally published by A. P. Okladnikov and N. A. Beregovaya in 1971 as *Drevnie poseleniya Baranova Mysa* (Novosibirsk: Nauka). It is an important work in that it deals with the westernmost known Eskimo settlements. The work is based on materials collected in 1946.

A very frustrating aspect of this or any translation from Russian is trying to settle on a suitable form of English transliteration for names. None of the three systems available to us (U.S. Board of Geographic Names [BGN], Library of Congress [LOC], or "Linguistic" system [Ling]) was entirely adequate for our needs. We therefore created our own system. In this we use some of the BGN system with a slightly modified version of the LOC system. For example, the "ye" of BGN is written as "e" following LOC. The Russian "ë" is also written as "e" (not "yo"), following Ling. The Russian "^" is written as "e," following BGN. Both the Russian "4" and "6" are transliterated as "i," unlike in any of the three systems. The Russian soft sign appears as an apostrophe, and though often dropped in transliterations, is retained here. The Russian " ` " and "b" are written as "yu" and "ya," respectively, following the BGN. We have also settled on a single ending for words, as the English language forces us to do, rather than the four endings (masculine, feminine, neuter, and plural) available in Russian. There is also the problem of established forms, that is, the transliteration of some names, such as Wrangell instead of the Russian Vrangel', which have already been adopted in English. Other names are "semi" formalized in English and leave the translator with a variety of endings to choose from, for example, the name ending in the Russian "-skii" is found in English as "-sky," "-skiy," "-skij," and "-ski". This in no way exhausts the possibilities and problems, but rather provides a notion of the difficulties attendant upon any translation project. Nonetheless, we hope the explanation of our method will forewarn the reader.

On occasion one finds that some artifacts are given different names by different authors (for example, spokeshave-drawing knife-scraper planes). I have tried to designate the artifacts in this work by the names given them in Paul Tolstoy's 1972 translation of S. I. Rudenko's work (1947).

Abbreviations can be found at the end of the monograph (p. 181).

I would like to thank Anna Gokhman for proofreading of the translation, Mary Sharon Moore for copyediting the manuscript, Sue Roberts for layout, and Julia Knowles for making sure all was correct in the final form. My special thanks go to Historical Architect Katerina Wessels of the Shared Beringian Heritage Program for the enormous effort she puts into getting everything arranged, as well as to Beringia Program Manager Peter Richter and Superintendent Robert Greenwood, also of the Shared Beringian Heritage Program, who have made this project possible. Finally, we all owe a special debt of gratitude to Dr. Elena Okladnikova, professor of History and Culture at the Peter the Great Museum of Anthropology and Ethnology (Kunstkamera) in St. Petersburg, for permission to publish a translation of her father's work and for writing a Preface.

Richard L. Bland

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FORWARD

By Elena A. Okladnikova

The settling by man of Northern Asia and the Siberian Arctic is one of the most exciting chapters in world history. The scientific problems connected with the history of man in the Arctic have stirred many generations of researchers in many countries. By 2008, 100 years have passed since the birth of one of the authors of this monograph—A. P. Okladnikov, who dedicated the first decades of his scientific activity to archaeological study at sites of the early culture of the aboriginal population in the vast regions of northern Siberia, the Lena River basin, and the Baikal area.

Aleksei P. Okladnikov, along with Vera D. Zaporozhskaya and I. I. Barashkov, occupied himself during the chaotic years of the Second World War investigating the early cultures of the native population on the Okhotsk coast, in the difficult-to-access regions of northern Siberia, the mouth of the Lena, and in the Magadan region.

The monographic publication of archaeological materials excavated from the site at Cape Baranov, examined by Okladnikov and Zaporozhskaya in 1946, long awaited its hour. Not until 1971 did it come to light in the Novosibirsk Division of the publisher Nauka. At the end of the 1960s Nina A. Beregovaya, a member of the Paleolithic section of the Leningrad Division of the Institute of Archaeology, took an active role in the work on the text of this monograph. Beregovaya was studying the materials of Paleolithic sites in the USSR.

Aleksei P. Okladnikov and Vera D. Zaporozhskaya (Irkutsk, 1932) (archive of E. A. Okladnikova, St. Petersburg, 2008).

The first reports on the work of the Kolyma Archaeological Team on Cape Baranov appeared in newspaper articles in Yakutia and in the publications of the State Academy of the History of Material Culture (GAIMK) in Leningrad (Okladnikov 1947a, 1947b, 1947c). At the end of the 1940s, Okladnikov's work in northern Yakutia, at the mouth of the Lena, and in the vicinity of Magadan served as materials for his immense publication, *Outlines of the History of Yakutia—From the Paleolithic to the Annexation into the Russian State*.

Okladnikov's interest in archaeology of Arctic peoples arose at the end of the 1930s, while he was investigating Paleolithic sites of the Baikal region. This interest was closely connected with his love for the homeland, the Baikal region, where he was born. With youthful passion Aleksei Okladnikov went "on trips" for stone tools along the banks of his native Angara. Once in an interview with the correspondent of the *Literaturnaya gazeta* [Literary Gazette] (Novosibirsk, December 1976), G. M. Prashkevichts, Okladnikov, in the museum at the Institute of History, Philology, and Philosophy in Novosibirsk, which he had created, said: "My fellow countryman!" – pointing to a showcase where in a sleeping pose was displayed the skeleton of a Neolithic period hunter extracted from the earth near the old Lena village where Okladnikov had spent his childhood.

In the graduate program at GAIMK, Okladnikov, along with his wife and assistant Vera Dmitrievna Zaporozhskaya continued to investigate the Stone Age in the Baikal area and on the Angara and Lena.

Aleksei P. Okladnikov and Vera D. Zaporozhskaya (1936, at excavations of the Paleolithic site of Buret', Angara) (archive of E. A. Okladnikova, St. Petersburg, 2008).

During archaeological investigations of Paleolithic sites on the Angara, in 1936 Okladnikov discovered the unique Stone Age site of Buret', which yielded an anthropomorphic sculpture, skulls of rhinoceroses, and surface and semisubterranean dwellings. These houses were analogous, on the one hand, to Paleolithic European houses, and on the other, to ethnographically studied houses of the Eskimos, Chukchi, and Koryaks (Okladnikov 1941c, 1941d).

Years later, his discoveries achieved broad scientific resonance when he characterized the local Neolithic cultures of Siberia, indicating the presence of three independent cultural worlds: the Baikal (hunting), the Amur (fishing), and the Arctic (a distinctive maritime economy of fishermen). He proposed that, behind the cultures of antiquity, which are different in character, are concrete ethnic developments of the past, that is, cultures, the distant ancestors of modern ethnic arrangements (Okladnikov 1941a).

Archaeological sites, which he discovered while investigating the Lena basin in the 1940s, rendered evidence that the history of Yakutia and the Arctic coast of the Arctic Ocean was more ancient than represented by historians (that is, much older than the seventeenth and eighteenth centuries). Okladnikov distinguished a zone of northern taiga cultures connected with sites of the Paleolithic of the Yenisei, and a southern taiga zone connected with Paleolithic sites of the Baikal area. The discovery of the unique Paleolithic site of Buret' (Angara) gave Okladnikov the possibility of correlating the Arctic Chukchi-Eskimo cultures with those of Paleolithic Siberia. Adhering to the concept of the formation of a Yakutian Neolithic on a "Baikal base," Okladnikov perceived connections of a Yakutian Neolithic with the cultures of the Amur area of the Neolithic period. In works dedicated to the study of the early history of Yakutia, Okladnikov constantly turned to questions of the cultural origin of taiga and Arctic hunters (Okladnikov 1941b, 1941e, 1941f, 1942, 1943a, 1943b, 1944, 1982). Until Okladnikov's investigations in the territory of Yakutia, only occasional insignificant archaeological finds were known. To compose an idea of the character of the antiquity for the cultures of this huge region, joining the Baikal area on the south, was impossible. Therefore, before the investigations of Okladnikov, which embraced more than 5,000 km of the course of the Lena up to the coast of the Arctic Ocean, the history of Northern Asia and Yakutia began with the sixteenth and seventeenth centuries. This time directly preceded the appearance there of the first Russian explorers, whose events were preserved in folk memory in the form of stories and legends, and from the period of contact of the Russians with the Yakuts, which was reflected in the written sources and "reports" of leaders of Cossack detachments.

From six years of work in the Lena River valley, Okladnikov discovered throughout the region several dozens of different early sites: dwelling sites, cemeteries, rock art, workshops, and smelters. Excavations of sites and burials produced a huge amount of physical material that belonged to the Paleolithic, Mesolithic, Neolithic, Bronze Age, and Iron Age – which is the early stages of the historic ancestors of the Yakuts. Thus the history of Yakutia was moved back many thousands of years (Okladnikov 1946a).

The primary importance of Okladnikov's work in the Lena River Basin was the fact that Paleolithic man, opening up Siberia, penetrated substantially farther north than was presumed earlier: Okladnikov

discovered in Yakutia the northernmost sites (at that time) of the Old Stone Age in Asia and the European part of Russia.

Okladnikov concluded that the Lena River basin contained a developed Neolithic culture of taiga hunters and fishermen, subdivided into two large local variants. The Yakutian Neolithic, as was revealed, did not represent an isolated cultural area. It was formed under the influence of and contacts with southern Siberia, especially with the Baikal area and the far west. In this remote time, by about 4,000-5,000 years ago, Neolithic Yakutian tribes had connections south as far as the sources of the Angara, and west to Scandinavia.

Over a span of six years, from 1940 to 1945, Okladnikov headed the Lena Historical-Archaeological Expedition, a joint scientific undertaking of the Institute of the History of Material Culture (AN SSSR), the Institute of Language and Culture of the Council of the Peoples Commissars of Yakutia (ASSR), and the Yakutsk and Irkutsk Regional Museums.

Parallel with work in Yakutia, in 1945 Okladnikov was instructed by the Institute of the History of Material Culture and the Arctic Institute of Glavsevmorput' to begin excavations of the remains of a camp of a Russian polar expedition, from the first decades of the seventeenth century, on the northern island of Faddeya and in Simsa Strait (Taimyr Peninsula region) and early sites on the Khatanga River (Okladnikov 1948).

During the work on Faddeya Island, Okladnikov found traces of a so-called Arctic Paleolithic (Okladnikov 1945a, 1946b, 1947d, 1954). Several crude stone tools, found on the shore, attested to man's early appearance in the Taimyr Peninsula region of northern Siberia. In 1946 Okladnikov, together with Zaporozhskaya and Barashkov, carried out excavations in northeastern Siberia—on the shore of the Sea of Okhotsk (Ol'skii Island, the Koni Peninsula, Cape Alevina, the district of Atargan), in the Kolyma River valley from its source to its mouth and in Sarychev Bay on the coast of the Arctic Ocean.

One of the goals of the investigations was to study different houses (wood and earth structures), which the early population of this region built on natural hills. These houses were examined for the first time by the renowned Russian navigator G. A. Sarychev at the end of the eighteenth century. The primary occupation of the population of this region in antiquity was hunting and fishing. During archaeological work vast archaeological material—hundreds of different objects, animal bones, and the plans of houses—was collected and recorded.

Another goal was to discover on these severe shores the date of appearance of aboriginal people, the character of their culture, and even more important, questions of interaction of this population with that of adjoining regions of Northern Asia, above all Yakutia on the one hand and North America on the other.

The third goal was to trace the route of formation of the early Eskimo and Old Koryak cultures. On the coast of the Sea of Okhotsk, in the Magadan region and in the Kolyma River valley, Okladnikov discovered and excavated a series of sites belonging to different chronological stages, from the Neolithic—possibly very early—up to the time preceding the appearance of Russians in northeastern Siberia.

The conclusions Okladnikov reached attested that these dwellings were built by hunters who were culturally different from the Old Koryak. These houses belonged to early Eskimos whose culture was analogous in appearance to the early cultures of the Chukchi and Eskimos of Alaska and the Bering Strait. The experimental investigation of sites of the Paleolithic, Neolithic, and Bronze Age of the Baikal area and Angara and Lena River basins permitted Okladnikov to conclude that two different cultural worlds existed in the Kolyma valley. One of these worlds was represented by a group of Neolithic hunters and fishermen who advanced along the forest tundra into the north from the west, from the Yenisei

basin. The other group arrived at Cape Baranov from the east, from the territory that had long been occupied by sea mammal hunters—the ancestors of the Eskimos and Settled Chukchi.

The ethnographic data (legends about "bearded people"), collected by Okladnikov and presented in this monograph, attest not only to probable early connections between the hunters of continental Siberia and residents of maritime islands. They also reveal contacts between the early population at the mouth of the Kolyma, the Chukchi Peninsula, and the shores of the Bering Strait. A contribution of Okladnikov's was scientific activity striving to connect ethnographic data and archaeological artifacts, allowing archaeological evidence to acquire vividly visible features.

As Okladnikov wrote 40 years later: "Our tent, mine and Vera Dmitrievna Zaporozhskaya's—faithful companion and friend—has stood in the extreme north of the Soviet Union and by the eternal ice of the Taimyr, by Cape Chelyuskin in the northern Arctic Ocean, and in the extreme south—at the Afghan border." The materials in this monograph reflect the creative scientific quest carried out by Okladnikov on the shores of the Sea of Okhotsk. It permitted reconstructing the huge panorama of the early history of northern Eurasia in its interconnections with the early cultures of the native population of Beringia and the American Eskimos of North America.

Elena Alekseevna Okladnikova

St. Petersburg

January 2008

PREFACE

This monograph is dedicated to work at early sites on Cape Bol'shoi Baranov, located 70 km east of the mouth of the Kolyma River. The work is written on the basis of materials collected in 1946 by the Kolyma Archaeological Expedition of the Institute of History of Material Culture (the present-day Institute of Archaeology) of the Academy of Sciences of the USSR and the Arctic Scientific Research Institute of the Chief Administration of the Northern Maritime Route.[1]

The fieldwork of the Kolyma Expedition was begun by investigation of early Koryak sites in the vicinity of the city of Magadan: on Zav'yalova (Ol'skii) Island, on Cape Alevina, the Koni Peninsula, and in the vicinity of Atargan near Ola. Then a trip was undertaken down the Kolyma River, first in small wooden boats, and then in a launch. After archaeological investigation of the sites in the Kolyma River valley the trip continued upon entrance onto the sea. The locality of Rauchua, or Malaya Baranikha, at the mouth of the river of the same name was visited. Then the expedition landed in one of the bays at Cape Bol'shoi Baranov, where early houses were found. These had been first investigated by the famous Russian mariner of the eighteenth century, Gavriil Sarychev (Okladnikov 1945b, 1947e, 1947f).

Taking part in the expedition at Cape Baranov, as well as on the Kolyma River in general, in addition to A. P. Okladnikov were research associates V. D. Zaporozhskaya, I. I. Barashkov, and two workers. Zaporozhskaya carried out all the graphic and photographic work of the expedition, conducted the excavations of the complexes, and did the field processing of the finds.

The excavations showed that the houses found by Sarychev belonged to sea mammal hunters whose culture was strikingly different from the early Koryak. Even the first accounts of the excavations noted that the culture of the villages' occupants on Cape Bol'shoi Baranov belonged not to the Koryak, but to a completely separate ethnic group, an entirely different tribe. Almost all the finds at Cape Baranov are strikingly similar in type and technique to artifacts found in Alaska and on the Chukchi coast along Bering Strait. In all its various features this was clearly an Eskimo culture. Among the finds excavated from the houses in 1946 were objects closely or directly analogous to finds from sites of the Birnirk and Thule type, as well as from sites of the Old Bering Sea stage.

The general conclusion from these investigations was that in the Kolyma valley were two tribal groups distinct in culture and origin. One of them had moved from the west through the forest-tundra in the earliest times. These were Neolithic hunters and fishers. Later, sea mammal hunters—the ancestors of the Eskimos and Settled Chukchi—began to settle along the shores of the ocean and on the maritime islands, from east to west, in a coastal expanse deserted up to this time.

The present work offers a description of the early houses on Cape Bol'shoi Baranov based on excavations of 1946. The authors decided to limit themselves here to the documentary materials that are represented by the journals of the excavations, which are now, after 25 years, a significant historical document. In addition, the archaeological material of the different categories is analyzed in detail. In the concluding part, on the background of comparative analysis with other early Eskimo sites of the Arctic, questions are posed of the chronology of the houses on Cape Bol'shoi Baranov and the ethnic association of the population that left them.

The authors' conclusion that these sites belonged to one of the early Eskimos groups (the westernmost) is fully substantiated. In the legends of the aboriginal population recorded at the beginning of the nineteenth century, the sites bore the name Shelagi. Cape Shelagskii obtained its name based on them.

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[1] The present-day [that is, 1971.—*Trans.*] Arctic and Antarctic Scientific Research Institute of the State Administration of the Hydrometeorological Service under the Council of Ministers of the USSR.

The materials from the excavations of 1946, summarized in this work, are therefore an essentially new contribution in the early history of Northeast Asia as well as the history of people opening up the Arctic regions of the Soviet Union. The materials are interesting also in that they significantly expand and enlarge the history of the Eskimo population and its culture, the history of one of the peoples who especially did much in the initial conquest of the North despite its severe climate.

Chapter 1

Investigations of Early Houses at Cape Bol'shoi Baranov

Cape Bol'shoi Baranov (the Chukchi name means Foggy Cape) is the continuation of a chain of coastal mountains extending from Chaun Bay to the mouth of the Kolyma, and located 70 km east of the latter (Fig. 1). It was discovered by the first investigators of the coast of the East Siberian Sea in the seventeenth century and was probably named after the Kolyma Cossack Ivan Baranov, the first to reach this cape in 1647. In the opinion of F. P. Wrangell, however, the cape "got its name from the large number of wild sheep,[2] or argali, which roamed there" (Nekrasov 1961; Wrangell 1841:197).

The cape consists of two separate flat-topped mesa-like peaks. A gently sloping eminence in the form of an ancient terrace about 60 m high recedes from them. Three ridges of picturesque stone outliers rise isolated from the terrace like the ruins of an ancient castle. The ridges of the outliers are oriented from south to north. The shore in the vicinity of the cape is cut up by small bays, along the shores of which are traces of the early population of this place, the remains of houses, in Chukchi *val'kary*. One *val'kar* was found in an eastern bay; in the bay near the lighthouse (east of it) was another *val'kar*; and in "Sarychev Bay" were five *val'kary*. Farther to the west, skipping one bay, three more *val'kary* are in a small bay. Then 15 to 30 km to the west of Rauchua is the Val'karem District, where early houses were also preserved.

Traces of the sojourn on Cape Bol'shoi Baranov of an early population, in the form of its houses, were found and investigated for the first time at the end of the eighteenth century by the Russian navigator and Arctic researcher, Gavriil Sarychev (Fig. 2).

[2] In Russian *baran* means sheep, *baranov* is the possessive plural.—*Trans.*

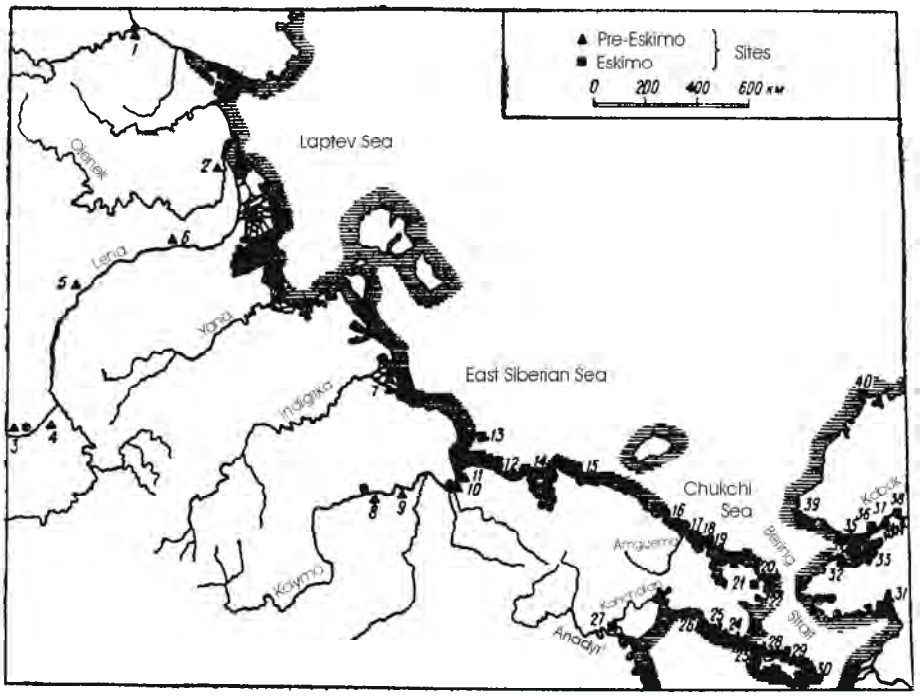

Figure 1. Map of early sites on the shore of the Laptev and East Siberian Seas and Bering Strait.

I. Northeast Asia: 1. Khatanga (Khatanga R.); 2. Buolkalaakh (Olenek R.); 3. Kullaty; 4. Ymyyakhtaakh; 5. Uolba; 6. Sikteekh (Lena R.); 7. Lake Tat'ynino and Ularov Channel (Indigirka R.); 8. Lobuya; 9. Pomazkino; 10. Kresty Kolymskie; 11. Petushki (Kolyma R.); 12. Cape Bol'shoi Baranov; 13. Chetyrekhstolbovyi I. (Medvezh'i Islands); 14. Aion I.; 15. Shalaurova I.; 16. Cape Ryrkaipii; 17. Dvukh Pilotov Spit; 18. Nut Lagoon; 19. Cape Vankarem; 20. Uelen; 21. Naukan; 22. Ekven; 23. Kivak; 24. Sirenik; 25. Nunligran; 26. Enmylen; 27. Kanchalan (Kanchalan R.).

II. Northwestern North America: 28. Gambell; 29. Kukulik (St. Lawrence I.); 30. Okvik (Punuk Islands); 31. Cape Denbigh (Norton Sound); 32. Cape Espenberg; 33. Choris Peninsula; 34. Cape Kruzenstern; 35. Kotzebue (Kotzebue Sound); 36. Ekseavik; 37. Ateut; 38. Ambler I. (Kobuk R.); 39. Ipiutak, Tigara, and others (Point Hope); 40. Birnirk, Kugusugaruk, Utkiavik, Nuvuk, and others (Point Barrow).

Figure 2. Baranov Rock. Figure by Luk Voronin (after F. P. Wrangell, 1841).

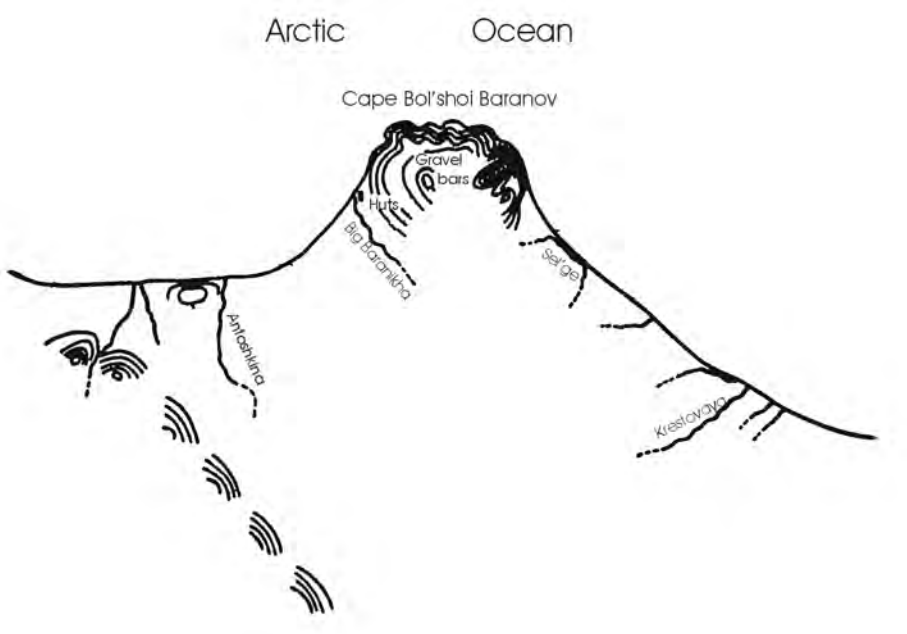

Figure 3. Sketch of shoreline of the Arctic Ocean at Cape Bol'shoi Baranov.

In the summer of 1787 Sarychev, stopped by ice at Baranov Kamen' [Baranov Rock] on his voyage to Bering Strait, conducted the first Arctic archaeological excavations in a small bay where the shore was protected from western and eastern winds and from the ice by two rocky capes (Fig. 3). Sarychev wrote of his observations (1802:95-96):

> The shore in the middle of its curve is sandy and sloping; above it grew good grass with flowers; on both sides rose mountains from which a stream of fresh water flowed. This small valley, though it is not particularly notable, is at least the best place along the whole Arctic Ocean. On the bank of the stream I found collapsed earthen yurts located not far from each other. They rose above the ground and appeared round, three fathoms in diameter. In digging up the ground in the middle we found bones of seal and deer, as well as many fragments of broken clay pots and two triangular stone knives in the shape of a geometric sector; the curved side—sharp, the other two—straight and thick.

After more than 150 years the Kolyma Expedition of 1946, under the direction of A. P. Okladnikov, found the bay described by Sarychev, where excavations of early houses were again conducted (Okladnikov 1947e). The expedition obtained information about these houses from the Chukchi Tal'vakhten in Rauchua. Tal'vakhten reported that in the bay at the foot of Cape Bol'shoi Baranov were earthen mounds, which the old people had told him about, and that these were houses (*val'kary*). In the words of the old people, "there was a war, people hid in them. The war was most likely with the Chuvan people" (Okladnikov 1946c).

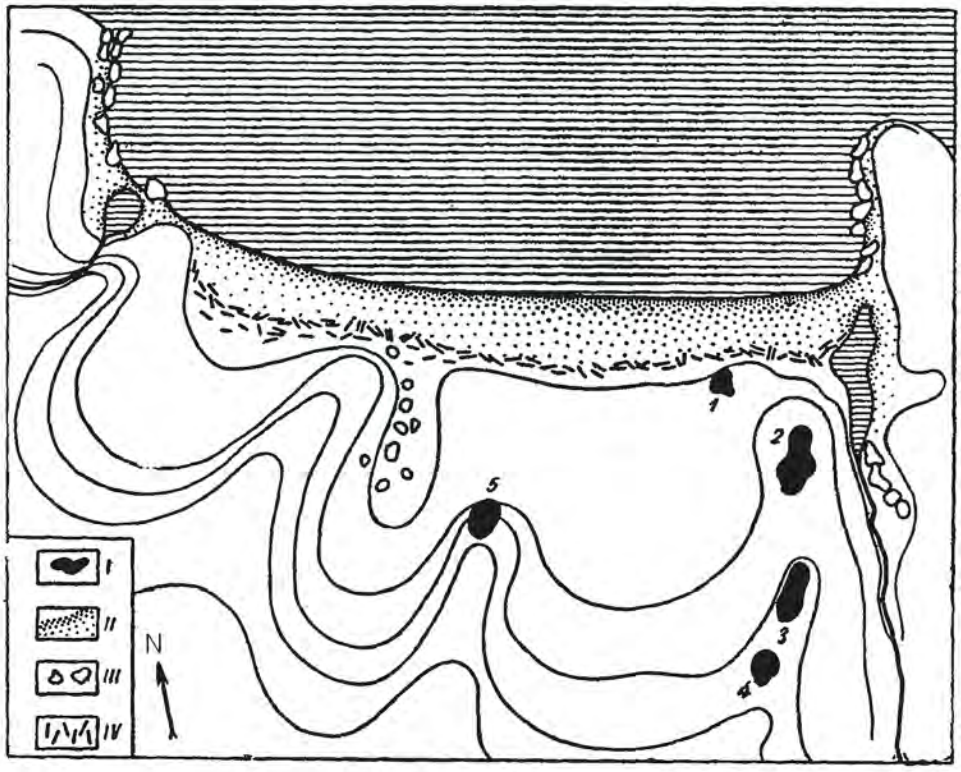

*Figure 4. Plan of Sarychev Bay (*Diary of the Kolyma Expedition, 1946*). I. val'kary; II. sand; III. rocks; IV. driftwood.*

Tal'vakhten led members of the expedition to the bay, located north of the high mesa that crowns Cape Baranov. In this bay, named Sarychev Bay by members of the expedition,

> between a small stream on the east side and a tiny stream on the west side, in a widely exposed clayey area sloping toward the sea, five earthen huts were indeed located. This area is on the west side of the stream valley that runs from far up in the mountains . . . This eastern side is steeply cut to the very bottom of the former stream, the channel of which was significantly deepened, the slopes covered by tundra, and, in denuded areas, large patches of decomposing stone . . . The western, lower side of the narrow valley, rises slightly in the same western direction (300 to 400 m from the stream channel) and forms a substantial elevation, running into the sea as the cape, thereby forming as it were a colossal horseshoe—a bay with the ends directed into the sea. The whole arc of this bay is filled with a large amount of old driftwood lying on coarse yellow sand 10 to 15 m wide. Farther along the coast, verging sharply with it, is the wet tundra, which rises smoothly, goes for a distance, then merges with the high mountain. The tundra is covered with high grass and glades of white and blue flowers—in the vicinity of five house mounds . . . (Fig. 4).
>
> On the left slope of the bank of Sel'ge Creek, on its highest part, *val'kary* were located from north to south in one row. The northernmost of them, measuring 11 x 13 m, of oblong form, is located on the very edge of the tundra at the sand. The next one upstream from it, the largest and highest, is approximately 10 x 15 m. The third, measuring 8 x 12 m, is very low (dug up by Sarychev). And the fourth, 4 x 5 m, is unobtrusive. The distance between them differs: the most northern, coastal one, is located 20 m from the second. The

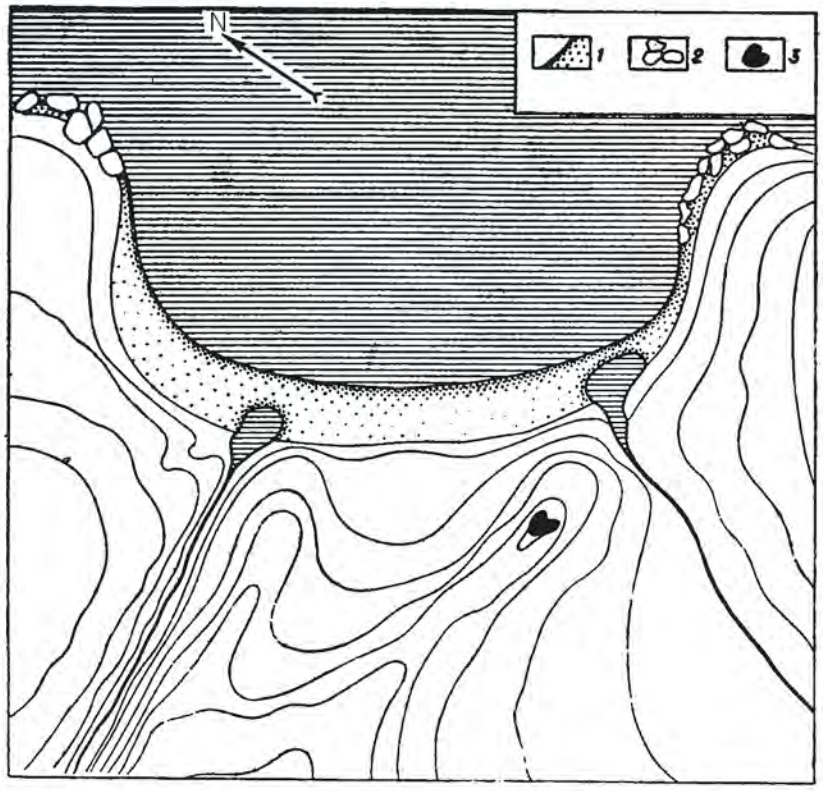

*Figure 5. Plan of Vtoraya Bay (*Diary of the Kolyma Expedition, 1946*). 1. sand; 2. rocks; 3. a val'kar.*

distance between the second and third is 12 m. The last is located 5 m (from the third). Almost in the interval between the second and third *val'kary*, at a distance of 70 m west and 100 m from the sea, is the fifth *val'kar*, located on a hill. It is situated almost in the middle of the bay, and the view from this height is very nice.

The amphitheater of the south elevation is sharply cut up on the horizon with a background of a snowy mountain and drains to the sea—from the east by the high bank of Sel'ge Creek and from the west by the smooth, low cape, in the middle of which the rock outliers are visible from afar. The most beautiful side is the northern: as it were, compared to the lifeless and hard shore, acquiring strength now by the high tide, now by the low tide—the restless Northern Sea. . .

The bay brought people to it by the abundance of feathered and marine animals. Here even now in summer there are many geese, ducks, and loons. The restless sandpipers bustle along the water (Okladnikov 1947e).

Vtoraya (Vostochnaya) [Second (Eastern)] Bay, also named such by members of the expedition, is located 2 km east of Sarychev Bay. It is only about half as large, but in the character of the landscape it has much in common with Sarychev Bay. On the highest place, near the boundary between the tundra and the belt of coastal sand, was a house mound, the surface of which, like the mounds in the neighboring bay, was leveled by the Chukchi for setting Arctic fox traps (Fig. 5).

The expedition excavated Houses 1 and 5 in Sarychev Bay and the House in Vtoraya Bay.

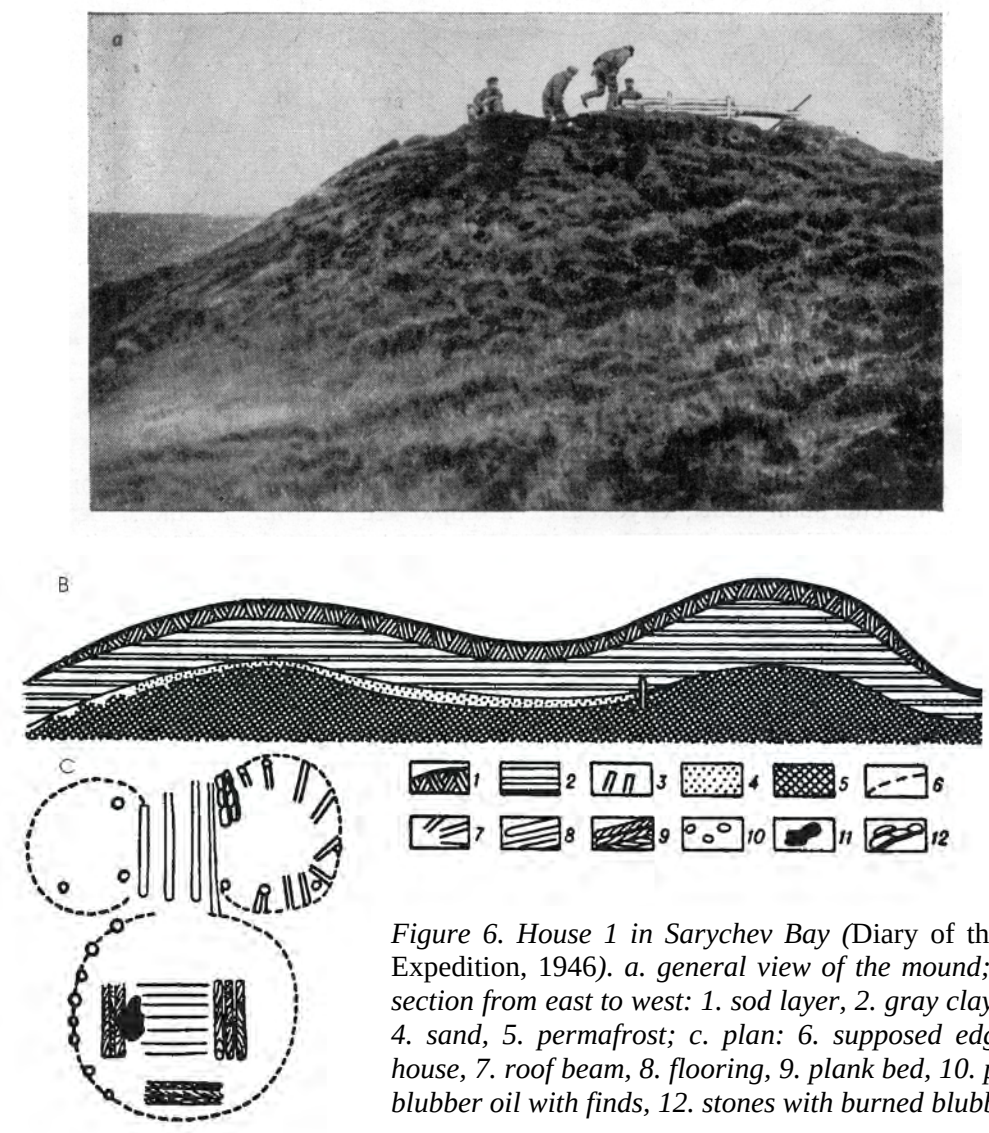

*Figure 6. House 1 in Sarychev Bay (*Diary of the Kolym Expedition, 1946*). a. general view of the mound; b. cross section from east to west: 1. sod layer, 2. gray clay, 3. post, 4. sand, 5. permafrost; c. plan: 6. supposed edge of the house, 7. roof beam, 8. flooring, 9. plank bed, 10. posts, 11. blubber oil with finds, 12. stones with burned blubber oil.*

Because of permafrost in the soil we succeeded in opening only the upper part of the deposits, which thaw in the summer months, to a depth of 0.5 to 0.6 m in the houses and took off, in part, the frozen portion of other deposits that thawed under the rays of the sun. Attempts to thaw the permafrost by fires kindled on iron plates did nothing. Excavations were conducted in the following manner. After leveling the surface of the mound being investigated, two cross-shaped intersecting trenches were laid out on it (north-south and east-west) 0.5 m wide. The depth of the trenches was determined by the thickness of the thawed layer. The loose thawed earth was then taken out by sector. The excavation was deepened as the thawing of the earth deepened. Therefore, the excavations were conducted in such manner that it was possible to begin work on one house, taking out the thawed layer, then move to another house. During this time another layer of earth thawed in the first house, and it was again taken down to frozen soil. The work went by turns in the different houses.

Mound 1 in Sarychev Bay, the first investigated, was located below the others on the slope at the zone of the ancient surf, where driftwood lay rotting (Fig. 6a). The general form of the mound was reminiscent of an oval, almost round (11 x 13 m) on the south and two small mounds on the north, broken by

a depression that, beginning from the center of the circle, exits toward the sea. The depression was probably the entrance to the house. Excavations in the south half of the circle indicated that it was formed by a half ring-like berm. This berm was evidently elevated at the walls and was partially formed from the earth covering the roof. This embankment was 0.6 m thick and composed of rather loose earth or sandy loam with thin peaty layers in it (the remains of sod). Above was a layer of contemporary sod 0.15 to 0.2 m thick. Directly under the embankment lay half-decayed wood, the remains of posts and driftwood in the form of snags. A thin layer of sea sand was found in places in the middle of the house. The foundation of the house was located in permafrost. In the middle of the house a layer of blackened loam no thicker than 0.3 to 0.2 m tapers out sharply (Fig. 6b). The finds (seal bones, large pieces of antler with cuts, and a hammer) were scattered here and there in the layer composed of the loam roof. The majority of them were found in the base of this layer, immediately under the timbers and around the posts. They were deposited most thickly in the center of the house. Here was a densely compressed stratum up to 0.1 m thick and impregnated and welded by oil, chips, wool, and small shavings, as well as animal bones and scraps of hide. Broken and whole artifacts of bone, as well as wood and stone, were scattered there without any order. There were relatively few ceramics. Pieces of slate spears, whole knives, and scrapers with ground edges were most often encountered. They lay in clusters of three or four together. In two such groups were harpoons. Thin heads of deer long-bone were especially notable. Several of them were found in an area about 1 m^2.

A second cluster at the west edge of the house is remarkable by the fact that in it was a moccasin of seal skin with an inner sole, as well as thread of sinew and strips of baleen. Not far away were a toy bow with bowstring and a paddle. In the center of the house were three adze-shaped axes and one blank. Such permeation of a layer is exceptional. The harpoon blanks are curious: they are large with an open socket; one has a closed socket. Split cobbles of greenish siliceous slate or jasper were found in the layer. Insets for harpoons were made of them, one of which turned out to be whole. These finds were in the eastern sector of the excavation. In addition, finds in the northern sector should be noted: a child's bow, a child's paddle, and a small cup; a large harpoon beside a wooden hook, four harpoons, two pulleys of bone; an unground axe, adzes of bone, slate knives, a sinker; small cords of sinew or baleen, awls; fragments of ceramics, a slate end-blade for a harpoon; pieces of seal skin; and two small wooden assemblies.

In the western sector were a small pestle, a bear's skull lying almost on the slope of the mound; a bear canine with a hole in it, a slate knife, a chisel, a large trimmed deer antler, a large slate knife (crescent-shaped), a handle without an inset; an arrowhead rhomboid in section; a bone handle, an arrowhead in the form of a spike [that is, long and narrow], a fragment of a harpoon with two barbs on one side, a small harpoon in the form of a triangle with a cut in the middle; a whole small harpoon; a harpoon with two slate insets, a stone scraper; and a large pestle.

In the south sector were a fragment of a small stone axe and a piece of an oval mammoth-tusk artifact with an oval protuberance.

House 5 (Fig. 7) was distinguished by an oval mound. Its dimensions were 15 m from north to south and 10 m from east to west. The height of the mound proper from south to north is 1.26 m and from the middle of the mound to the lowest part is 3.55 m. A line from the east to the middle of the mound measures 1.75 m and from the middle to its western base is 1.9 m. The surface of the mound was uneven, as if tussocky and covered with dark-green grass with large grains (all the other *val'kary* were covered with the same kind of grass). At the western end of the mound, on the surface, large stones had been piled. An Arctic fox trap had been set in it. There were traps at the other *val'kary* (Fig. 7a) as well. A trench placed from east to west gave the following profile: the upper part of the mound, 0.4 m, consisted of brownish-red sod, peat-like, loose, and dry. Down the slope of the mound the sod was broken and guttered down by clumps and tapered out, or rather, changed into a layer of darker sod. This layer also contained cultural remains. Under it, in the upper part of the mound, was a light sandy layer, under which, and partially in which, were the remains of wood, quite decayed, which comprised part of the house structure. All of this was on top of a frozen silty light-gray clay. In the trench were large scrapers made

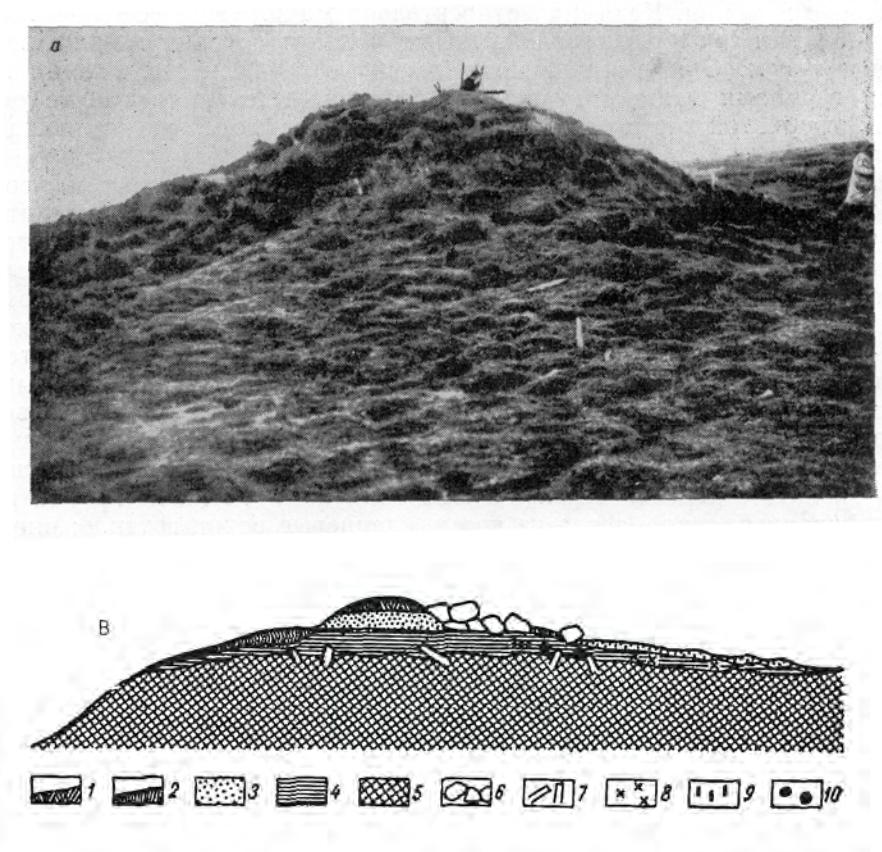

*Figure 7. House 5 in Sarychev Bay (*Diary of the Kolym Expedition, 1946*). a. general view of the mound; b. cross section from north to south: 1. sod layer, 2. peat, 3. light-gray sand layer, 4. loam, 5. permafrost, 6. rocks, 7. posts, 8. ceramics, 9. bones, 10. pieces of blubber.*

from cobbles, fragments of slate knives of various sizes, a bone arrow for hunting birds, an axe, and an antler rattle, as well as a bone handle, possibly for a knife; bone with cut marks, possibly of a sea mammal. A small number of ceramics fragments was found, about 1 cm thick, coarse and large, with a large amount of soot, as well as unbroken bones of animals and the point of an arrow or harpoon end blade for sea mammals.

In the northern sector were fragments of the walls of thick-walled (sometimes reaching 1.5 cm) black clay vessels. Two fragments were decorated with scallops and filled in with small arcs. There were also a few scrapers and animal bones. The northern-most part of the sector contained few finds. Four meters from the middle of the rock outlier, in a westerly direction in the northern sector, was an accumulation of burned train oil with a large number of clay fragments. In the eastern sector were eight scrapers, bone harpoons with an open socket, bones and jaws of animals, some fragments of vessels, and an elongated bar (a stone pestle). In the western sector were a large bar (15 x 15 x 40 cm) that is a grindstone, a large slate knife for cutting up a whale (12 x 20 cm), large slate knives, an amulet in the form of a young seal, an antler adze, a harpoon head of the Birnirk type, and fragments of bone points. In the southern sector were found an amulet in the form of a seal (smaller), a hammer of antler, four harpoons, two harpoon fragments, a pendant, a knife of walrus tusk, and a handle without a knife. The harpoons were concentrated in a 1 m^2 area (Fig. 7b).

Vtoraya Bay is half as large as Sarychev Bay, but the character of the place is almost identical. The middle part of the bay is a rolling area covered by tundra that runs to the distant southern mountains. On the west and on the east two streams descend along the sides of this area and form two small lakes in the coastal sand. The eastern bank of the western stream is two thirds as high as the western bank. In the highest place, almost at the very edge of the boundary between the tundra and the coastal sand, is a *val'kar*.

The house (12 x 13 m) is represented by a mound of the usual type, the surface of which was leveled by the Chukchi for construction of an Arctic-fox trap (Fig. 8a). The side toward the sea was steep. The mound was covered on top by 20 cm of plant layer. Under the upper sod layer was a thick layer of loam or loose light-gray sandy loam up to 0.7 m thick in the center. Pieces of bone, slate knives, scrapers, and other items were scattered in this mass. These artifacts were found most often directly under the vegetation layer, at its very base. Thus, in the southern sector, together with the bones of seal, bear, and other animals, were two round sticks 20 to 25 cm long and 2.5 cm in diameter lying parallel and a piece of antler with the end made into the form of a chisel. In the same place lay a small cup of walrus tusk, and several phalanges were found in anatomical order. On the whole, these were the extremities of a seal, with ribs here and there.

In the middle of the house, where the trap stood, was a cluster of stones, train oil, and finely broken up

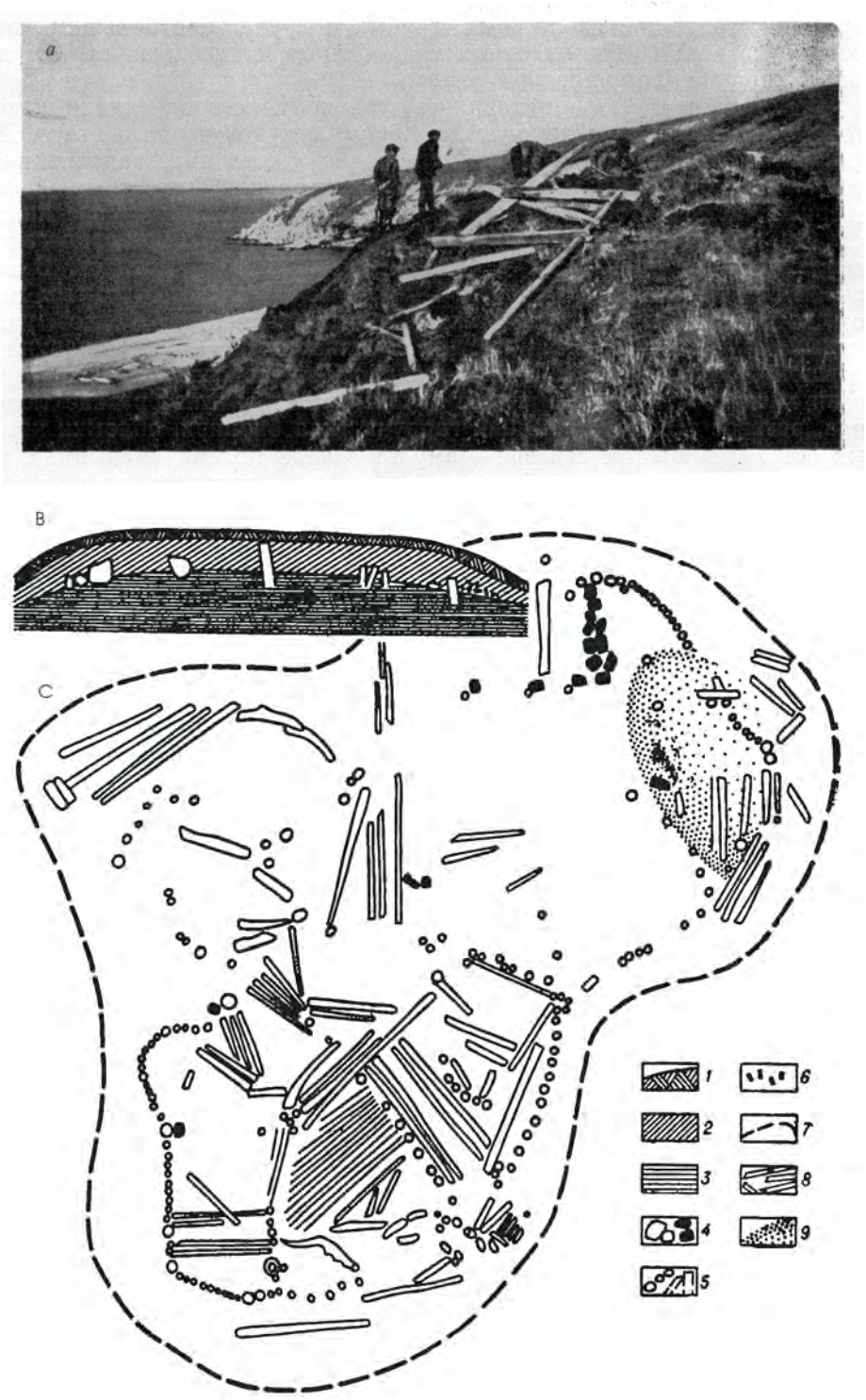

*Figure 8. House in Vtoraya Bay (*Diary of the Kolym Expedition, 1946*). a. general view of the mound; b. cross section: 1. sod, 2. loam, 3. permafrost, 4. rocks, 5. posts, 6. bones; c. plan: 7. supposed edge of the house, 8. remains of the roof, 9. burned area.*

pieces of bone at a depth of 0.5 m. The stones were arranged in the form of an irregular oval—a pile, and directly within them was train oil represented by the carbonaceous black mass, which was difficult to break and saturated with bone. It was a kind of conglomerate of broken up bones, grit, and loam, welded together by burned oily cement. Not all of the bones appeared burned. Under the layer of train oil was rather long hair that retained its yellow color, and evidently was not from a sea mammal or a deer. In the same place lay strips of baleen. A loose mass of broken up bone, together with charcoal, surrounded the stones of the cluster on all sides, especially on the south and east, where they also had evidently been thrown. The layer of train oil became thicker in the eastern direction, forming a compact accumulation to 0.2 m thick. This layer transforms into a burned layer of clay and sandy loam impregnated with train oil (Fig. 8b). In the immediate vicinity of this accumulation, in the frozen layer, was a small cup, the handle protruding upward, filled with ice, and nearby an arrow with a knob. In the same place were many fragments of slate knives and a tiny inset of siliceous slate. Beside a wooden cup, at a depth of 0.8 m from the surface in the permafrost, lay a perfectly preserved axe handle, with many chips that had been chopped off by a stone axe.

On the south side of the accumulation, at a depth of 0.5 m, lay a large (120 x 35 cm) chunk of driftwood, and under it a second one (60 x 20 cm). A third one was frozen into the ice. In the same place were small shavings for wiping the hands and dishes dry. A square mortar of stone (granite) with a deepened middle lay nearby. Many chips there had clearly been chopped off by a stone axe. Above the three blocks was a large hollowed wooden bowl or dish (40 x 30 cm). Nearby and above lay large fragments of vessels and a decaying plate of baleen. On the very top, over a large cup, lay a tiny cup (a child's toy) and baleen that in two instances were tied in knots.

Near the first cluster of stones in the house, at a distance of 2.5 to 3 m, was a second cluster. Under it could be traced a layer of entirely whole, but burned, animal bones and pieces of antler, sawed in two and with cut marks, evidently of deer. Also near this cluster of stones could be seen a stain of train oil that impregnated the sandy loam, which became compact due to this condition and was porous in the break.

At a depth of 0.2 m in the upper layer a large Punuk type harpoon was found. A second tiny harpoon was at the south end of the excavation, and in the same place were a small cup in the form of a shell and pieces of clay vessels.

In the western sector of the house, at a depth of 0.4 m from the surface of the coarse sea sand, were bones. A mattock of mammoth tusk was found in the same place. A harpoon and slate knives were found at a depth of 0.3 m in the loose plant layer. In the south end of the western sector, at a depth of 0.5 m from the surface between blocks of wood in a layer of clay, were many broken-up animal bones and artifacts of antler.

In the southern sector, a large number of animal bones could be seen. Among them were a wooden rattle decorated with deeply incised lines, a figure of a bear made of walrus tusk, a point blank of tusk, and a flat pendant in the form of a pear with small incised holes on the narrow end. Eight meters from this cluster were a small square cup of walrus tusk with rounded lower corners, a harpoon, a crudely flaked piece of deer antler with the remains of the rosette, a slate knife, an animal bone sawed lengthwise, a fragment of a bone chisel, an antler slab for a chisel, and an ulu handle.

In the northern sector were many animal bones, including broken ones.

In the eastern sector, a cluster of three large stones was found. Under one were an antler adze, knives of the men's type, the bottom of a round-bottomed vessel, and a fragment of a decorated needle case.

It should be especially noted that in this house were ten whole animal skulls: of bear, Arctic fox, seal, and dog, with the lower jaws. The bear skull was found beside a stone at the eastern edge of the

excavation. There were many other bones together with the skulls, in most cases, whole bones of the extremities.[3]

The house was six-sided in plan, which could be judged by the arrangement of the posts (Fig. 8c). The posts sometimes stood in pairs—a large and a small. They were all wedged down by stones for stability, just as the Paleolithic houses of Buret' on the Angara, and one of them even by two wooden wedges. The roof was covered by driftwood in small chunks. The roof was depressed in the middle—the beams had broken and the lower ends had fallen in. The entryway, in the form of a canopy, could be traced in the eastern part of the house. No hearth was found in the house. It is interesting that a spot of clay impregnated with train oil was found by one of the posts. A lamp evidently sat here.

As can be seen from the journal of the excavation and from the field sketches, the design of the houses can be reconstructed only with difficulty. The wood was poorly preserved and the permafrost in the remaining part of the houses did not permit going down to the floor itself and clearing it completely.

Continued excavations at Cape Bol'shoi Baranov in 1947 to complete investigations of the houses was not realized for various reasons. On the whole, based on the available data, the early houses, investigated in 1947, "represent the remains of wood and earth structures built on natural eminences in the tundra. Their roofs were covered by a thick layer of earth and the walls were constructed of thin sloping posts embedded in the clayey soil of the tundra and tightly joined to each other like a palisade. The lower ends of the posts had not been worked at all like posts of our times. The early builders left clear traces in them not of a sharp metal axe but of a blunt stone axe" (Okladnikov 1947e). The base of one such post was delivered whole to Leningrad by the expedition.[4]

Judging by the size of the mounded knolls, each containing only one dwelling, the dimensions of the houses at Cape Bol'shoi Baranov exceed 100 m^2 (House 1—11 x 13 m; House 5—10 x 15 m; and the House in Vtoraya Bay—12 x 13 m). The characteristic walls of vertically implanted posts, wedged by posts or wood, enclosed a six-sided room in one case (the House in Vtoraya Bay), in another, an oval room, almost round on the south (House 1). The design of House 5 is unclear. The first two houses have entry corridors made with timbers and planks. In House 1 the corridor is directed to the north toward the sea; in the House in Vtoraya Bay the corridor is directed to the east. In House 1, to the east and west of the entry corridor are timbered additions that are mounded with earth as separate complexes. The east addition, judging by the remains of a fire on the floor (burned bone), was evidently the kitchen, the second was the storeroom. The walls of the houses were covered by transverse poles—ceiling beams. On them was a layer of roof of wood chunks and timbers covered with sod. These chunks had fallen into the houses and lay on the floor, pressing down on each other (House 1), or were arranged by sectors, descending toward the center of the house (House in Vtoraya Bay). At the back of House 1 were the boards from plank bunks. Such plank bunks are also noted along the side walls of this house. At the back (south) wall, surrounded by an earthen berm, lay a wooden ladder, which could have served for an entry through a hole in the roof. However, these possibly were the remains of pole structures with cross-beams, which Eskimos at Point Barrow still set up in the nineteenth century by their houses for storing their kayaks and other belongings away from the dogs. Evidently, there were no hearths in the houses of Cape Baranov, with the exception of the addition to House 1 (the kitchen). In the House in Vtoraya Bay, a special spot of compact clay was found that was impregnated with train oil, where a lamp that heated the room probably stood.

The remains of houses of this kind are quite widespread in the Arctic. Such structures were seen in 1763 in the Medvezh'i Islands north of the mouth of the Kolyma River by a sergeant of the Anadyr' command, Stepan Andreev. According to his description, on the "Third Visible Island" there was "a yurt

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[3] A. P. Okladnikov. *Dnevnik Kolymskoi ekspeditsii 1946 g.*

[4] According to the determination of the Laboratory of Archaeological Technology IA AS USSR, the wood in the houses at Cape Bol'shoi Baranov was worked by an iron tool.

of driftwood, which had been set standing up, that had fallen down; by the side of this yurt [were] two cellars . . . in them plank walls were set into the ground, and on the top were logs. . . . For squaring, these were not chopped with an iron axe, but a stone one, or such of bone, as if gnawed on by teeth." In 1769 "Ensigns of Geodesy" Ivan Leont'ev, Ivan Lysov, and Aleksei Pushkarev, during a trip to the Medvezh'i Islands, found there "yurts of unknown people" and pointed out that the walls of their collapsed houses "were hewn by axes not of iron, and not possible [for them] to know about such" (Andreev 1823:67, 68, 70; Gel'mersen 1876). After many years (in 1925) such mound houses were seen by G. Sverdrup on the easternmost of the Medvezh'i Islands—Chetyrekhstolbovyi Island. Small excavations, conducted in 1949 and 1953 by people wintering over, opened on the north and on the west of the island two noncontemporary houses, one of which (the western) was assigned to the time of trade with the Russians (Raushenbakh 1969).

In both mound houses, walls of logs set within in the form of a palisade were preserved, but inclined slightly inward. The later house had an addition. The same kind of posts set vertically in a row were discovered in 1953 with the preliminary investigation of a large mounded knoll on Shalaurova Island, which is to the east of Cape Shelagskii (Beregovaya 1960). On Aion Island in Chaun Bay Sverdrup discovered in 1920 seven large burial mounds, 0.6 to 1 m high and 10 to 15 m in diameter, with a depression in the middle and an entry corridor 6 to 8 m long formed by two parallel earthen walls leading toward the sea. Along with these large mounds, as on Shalaurova Island, were also several small round mounds, probably the remains of smaller houses (Sverdrup 1930).

In 1957 A. A. Kalinin found in one of the pit houses two fragments of toggling harpoon heads. In 1959 N. N. Dikov unearthed thick pieces of clay vessels and split bones of walrus, bearded seal, seal, and deer in another collapsed pit house (Dikov 1961). This group of early structures on the Arctic coast of Siberia, to all appearances made of wood and covered with earth, is most similar to the houses on Cape Baranov and possibly belongs to the same ethnic group.

East of Cape Shelagskii, along the whole extent of the coast beginning at Shalaurova Island, in Wrangell's words (1841a:10), "not a small number of collapsed pit houses was seen." These pit houses, according to Wrangell (1841b:295, 333), were represented by "traces of huts of the people who once lived here and ate fish and sea mammals, predominantly whales, using their ribs as timbers in the construction of the huts." Such houses, built of whale bones, were found by A. Nordenskjöld in 1878, during the voyage of the *Vega*, at Cape Ryrkaipii (Shmidta) on a spit that joined the cape to the mainland. A harpoon head of the Thule type was encountered here (Nordenskjöld 1936:96-98). Houses in the form of mounds with a pit in the middle, constructed of whale bones, and with a trenched entry directed toward the sea or lagoon were encountered by the expedition of the Chukotsk Regional Museum both on Cape Shmidta itself, and between Capes Shmidta and Vankarem—on Dvukh Pilotov Spit and on the spit at Noot Lagoon (Dikov 1958b). Houses of the same kind were found at the beginning of the nineteenth century on the shore of Kolyuchin Bay, and at the end of that century on Cape Vankarem (Kiber 1824:123; Nelson 1899:265, 266, ill. 92). Recent investigations by the expedition from the Chukotsk Regional Museum made the plans of houses on Cape Vankarem more precise. And not only were houses of whale bone encountered there, but also ones of timber. Evidently, houses of different periods were represented at Cape Vankarem, which was also noted by E. Nelson on the basis of the topography of the early structures (Nelson 1899:266; Dikov 1958b, 1960).

Based on Sverdrup's (1930:237) observations, the remains of houses in the form of mounds with a pit in the middle and with timbers and whale bone laid within were known along the whole Chukchi Peninsula. Such a pit house of whale ribs with sleeping platforms of walrus scapulas and a stone hearth was excavated in 1956 by Dikov (1960) on the slope of Senlun Rock near the settlement of Uelen. In 1945, during a survey on the Chukchi Peninsula from Cape Dezhneva to Cape Bering, as well as on the southern part of Anadyr' Bay, S. I. Rudenko encountered collapsed semisubterranean houses similar to pit houses of Old Bering Sea and Punuk times on St. Lawrence Island. Whale bone (skulls, jaws, and ribs)

was widely used along with timbers in the construction of houses of Punuk times (Rudenko 1972:113–114) (see Table 1. The Chronology of Early Eskimo Cultures).

The closest parallels between early houses of the Arctic coast of Northeast Asia, and particularly the houses of Cape Baranov, are known on the Arctic coast of America north of Bering Strait. These are houses of the early Eskimo Birnirk culture, discovered in 1917 by Van Valin 18 km southwest of Point Barrow in the vicinity of Kugusugaruk. The mounded houses were represented by structures with dimensions of 4.6 x 3 m to 13.7 x 5.5 m, with almost no depression in the ground, and with walls of vertically set posts of driftwood. The roofs of the houses consisted of timbers running parallel from the top of the side walls to the ridge of the roof and had openings covered with walrus intestine for light, since there were no hearths in the houses. The whole structure was covered with sod and spread over on top with earth forming a mound. Stone and bone tools and ceramics found in the vicinity are very similar to the assemblage of the settlement at Cape Baranov, especially forms of toggling harpoon heads and the decoration of clay vessels—of concentric intersecting circles (Ford 1959:19, ill. 2, 3; Mason 1930:383).

Similar houses were excavated in 1931, 1932, 1936, and 1953 by J. Ford in the Birnirk site itself, where in 1912 V. Stefansson amassed a collection. The site is located between Point Barrow (about 8.5 km west of it, at the south end of a sandy cape) and the settlement of Utkiavik (Barrow). It consists of 16 dome-like mounds 0.7 to 3 m high, oval in plan, 15 to 36 m in diameter, and stretched in three parallel lines toward the shore of the ocean. In each of them were usually several houses and other structures (meat pits and so on) built one on top of the other, the depression and wooden parts of the earlier houses being used in later ones. They are all assigned to Birnirk times (Ford 1959:33-35, ill. 11-18).

In later sites in the region of Point Barrow, investigated by Ford (Nunagiak near Cape Belcher, 136.3 km southwest of Point Barrow, and Utkiavik, or the contemporary settlement of Barrow), similar mounds were excavated. They sometimes contained one, sometimes several houses, the most recent here being abandoned after the appearance of whalers (Ford 1959:56-76, ill. 19-25).

All these houses evidently belonged to the type of house described by Murdoch at the end of the nineteenth century, also in the vicinity of Point Barrow, and can be called the "Point Barrow type." These houses consisted of one living room of 3 x 4 m, with a subterranean entry corridor about 7.5 m long and about 1 m high and wide. The houses were made of driftwood and were covered with earth forming a mound. The gentle slope of the earthen mound over the house created the impression that the house was a pit house, but the floor of the house, if it was sunk into the ground, was only insignificantly so. On the right side of the house a small chamber entered onto the tunnel corridor. It was made of driftwood and was the kitchen. It had a hole in the roof for smoke, and also appeared as an earthen mound. On the other side of the corridor entered storerooms in the form of niches. The walls, floor, and roof of the house itself were made of thick planks. The plank walls stood vertically and had a height in front of 1 m and on the sides that supported the ridge of the roof of about 2 m. The timber of the roof ridge ran transverse to the house, and the roof had a slope on two sides, the front over the entry being the longest. Near the ridge beam a hole was made and covered with seal intestine. This served as a window. At the back wall of the house was a sleeping platform of planks. It was about 1.5 m wide and 0.76 m high (Murdoch 1892:72-75, ill. 12).

The ruins of early houses and the archaeological finds connected with them indicate that maritime tribes who lived on the Arctic coast of Northeast Asia east of the mouth of the Kolyma, like the early inhabitants around Point Barrow, the northernmost point on the Arctic coast of America, were tribes of sea mammal hunters who hunted seals, walruses, and whales. The occupants of Cape Baranov hunted chiefly seals, small animals, birds, and reindeer, as indicated by the large quantity of antlers and bones. They did not hunt whales, but used the carcasses of these animals cast up by the waves.

Chapter 2

The Assemblage from the Houses at Cape Baranov

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Tools and Artifacts of Bone, Reindeer Antler, Walrus Tusk, Mammoth Tusk, Wood, Hide, and Baleen

●

Tools for Sea Mammal Hunting

Toggling Harpoon Heads and Their Blanks, Parts of Harpoons, and Other Objects

The main dating element in the assemblage of the early sites of sea mammal hunters is harpoon heads (see Table 1), which are customarily divided into barbed and toggling. The first remain in the body of the animal with the aid of lateral barbs; the second are those that turn and become crosswise to the wound. Toggling harpoons, pointed toward the upper end, sometimes equipped with a stone end blade, always have a hole in the middle for a line that connects the head with the shaft. In the lower part a closed or open socket is made into which goes the pointed end of the shaft (more precisely—the intermediate foreshaft, which is inserted into the shaft); on the obliquely cut base of the head is a basal spur. Owing to the spur, a head that hits the body of an animal springs from the intermediate shaft as soon as the line is pulled tight, turns perpendicular to the hole, and remains in the wound.

Only one specimen of a barbed harpoon was encountered on Cape Baranov in Sarychev Bay. In both bays, 29 toggling harpoon heads were found, a large part of which (19 specimens) can be assigned to two basic types.

The first type (8 specimens) comprises heads without stone end blades; pointed above; with open, broad, trough-like socket, slightly narrowing upward, for inserting the shaft; two deep slots for lateral stone insets, always placed at right angle to the plane of the hole for the line; and a lateral spur on the base. A large part of the heads are lenticular in cross section. Their length is from 6.2 to 15.5 cm (Pl. I). This type of head is very similar to one of the basic types of harpoons of the Birnirk culture at Point Barrow (Tukuok) and differs from them only by the form of the basal spur (simple, sometimes only with an outlined bifurcation). This form apparently represents the development of the double or triple lateral spurs of the typical Birnirk heads (Collins 1933:Fig. 45e; Ford 1959:79, 80; Fig. 28a, b; Mason 1930:Pl. V; Murdoch 1892:220; Fig. 210; Wissler 1916:Fig. 3c).

Harpoon heads of the first type are in all three houses excavated in Sarychev Bay and in Vtoraya Bay: in House 1 were four specimens, in House 5 were three specimens, and in the House in Vtoraya Bay was one specimen. Based on the arrangement of the slot and grooves for binding the socket, heads of the first type can in turn be divided into two groups. In the first group, grooves for a binding were made on both sides of the open socket of the head, one of which, on the side with the basal spur, terminates in a cut

that opens on the back of the tool into an opposite slot extending to the back. In the second group, in the grooves along both sides of the socket, are cuts opening into a square groove on the back of the tool.

Harpoon heads of the second type (11 specimens) at Cape Baranov belong to the primary type in the Birnirk culture, which is known both in the region of Point Barrow and on Chetyrekhstolbovyi Island. These heads are without end blades, with an open trough-like socket narrowing upward, one lateral spur, and one lateral stone inset and a barb located opposite, both of which always lie at right angle to the plane of the hole for the line. Under the barb, along the edge of the head at the place of the slit for the lateral inset, is usually a longitudinal cut. The cross section of the head is lenticular. The length of whole specimens is 9.0 to 12.9 cm.

Heads of the second type, as well as the above-described heads of the first type, differ from the primary bulk of Birnirk harpoon heads only by the arrangement of the basal spur. Among our specimens one is plain with cuts on the inner and outer sides as if outlining its bifurcation. In all probability, this is a remnant form, pointing to a later time for the finds at Cape Baranov than for harpoons of the same type along the coasts of Bering Strait and in the region of Point Barrow.

In the House in Vtoraya Bay, no heads of the second type were found. In House 1 in Sarychev Bay were found eight and in House 5, three.

Based on the arrangement of the grooves and cuts for the binding of the socket among heads of the second type, three groups can be distinguished. The first two groups are the same as for harpoon heads of the first type. The third group is characterized by a round groove without cuts. This type of harpoon head from Cape Baranov is most similar to heads of the basic "Birnirk type" at Point Barrow. J. Ford states in his monograph the supposition that these heads could have come to Point Barrow from the Birnirk site (Collins 1933; Ford 1959:33–55, 77; Wissler 1916). Interestingly, as in the houses at Cape Baranov, at Point Barrow Birnirk type heads were found along with isolated specimens with decoration in the Old Bering Sea style (finds by Van Valin at Kugusugaruk and Stephansson at Birnirk) (Mason 1930:386; Wissler 1916:Fig. 6a, b), as well as Thule types (at Birnirk—Thule Type 2, excavations by J. Ford) (Ford 1959:Fig. 34). In Ford's opinion, the Birnirk culture was simultaneous with the end of Old Bering Sea and the early phase of the Punuk period, and provided the beginning of the Thule culture which spread into central Canada and Greenland (Ford 1959:242–243).

Harpoon heads at Cape Baranov, while later than Birnirk types of harpoons at Point Barrow, went through the same course of development: simplification of the complex asymmetrical basal spur, appearance of a lateral barb in the place of one of the lateral inset blades and a rudimentary slot for the missing second inset. Thule type harpoon heads with an open socket and two barbs (of the Thule 2 type according to Mathiassen) likely were developed from heads of the Birnirk type with open socket and one lateral barb, with an opposite inset or rudimentary slot for it (Beregovaya 1953). According to Ford (1959:233; Fig. 29), the basic Birnirk type of harpoon head with open socket, complex asymmetrical spur, lateral barb, and opposite inset changes into a type (Natchuk) with simple or slightly bifurcated lateral spur, opposite barb, and rudimentary slot for an inset, which in turn is a step toward the transition of harpoon heads of the Birnirk type to the Thule 2 type—with two lateral barbs.

Such a course of development of harpoon heads was seen in the region of Cape Hope where Helge Larsen and Froelich Rainey describe transitional forms of heads with barb and rudimentary slot for an inset along with typical heads of Thule 2 with two lateral barbs. The authors call the culture with the described points, found in some burials and in one large house they excavated 3.5 km from the Ipiutak settlement, Western Thule (Larsen and Rainey 1948:170–175; Pl. 88; Figs. 4, 5; Pl. 95; Fig. 2). The culture of the Western Thule type was found by Collins near Cape Prince of Wales at the settlement of Kurigitavik, where its remains lay over a stratum of late Birnirk times. Here harpoon heads with one barb and simple spur were found together with heads of the Birnirk type with complex bifurcated basal spur (Collins 1940:562; Pl. 16b; Larsen and Rainey 1948:173–174).

Like the Birnirk, Western Thule harpoon heads are also occasionally found in the south—in the Bering Sea region: on St. Lawrence Island in the Kukulik kitchen middens where they were found by Geist and Rainey in layers between Punuk and late "protohistoric" finds, but they are mostly known on the American and Asiatic Arctic coast. Finds at Cape Baranov and on Chetyrekhstolbovoi Island can possibly be assigned to the end of Western Thule. J. Giddings expressed the supposition in 1960 that Punuk and Thule-Punuk settlements existed on the Asiatic coast of Bering Strait about 1300 A.D. (Giddings 1960:124; Pl. 1).

The largest number of toggling harpoon heads from Cape Baranov—18 specimens in Houses 1 and 5 of Sarychev Bay and one head in the House in Vtoraya Bay—belong to the "Birnirk type" from Point Barrow (the second type from Cape Baranov) and to the Tukuok type from the same place (the first type from Cape Baranov). In addition, in House 1 is one head (No. 16)[5] that is closest to the type mentioned from Oopik at Point Barrow (close to Tukuok), two heads reminiscent of Thule 1 type (Nos. 28, 29), and two heads of Punuk type (Nos. 26, 27). In House 5 one head (No. 2) is only remotely reminiscent of the first type and has analogies only among isolated finds from the Near Ipiutak culture at Point Hope and one (No. 5) is broken or unfinished. The harpoon heads in the House in Vtoraya Bay have an older character than those in the houses in Sarychev Bay. Only one of them (No. 4) is assigned to the first type of heads from Cape Baranov, two (Nos. 1, 2) belong to the basic types of Old Bering Sea culture, and one small head (No. 3) is reminiscent of the Dorset type, as well as some miniature heads from the Ipiutak site and some Neolithic finds on Sakhalin Island (in the city of Nevel'sk). The head is broken in its lower part and cannot confidently be assigned to one or another type.

In addition, House 1 contained a large barbed harpoon head of deer antler (No. 13).

The decoration on two of the earliest harpoon heads found in Vtoraya Bay (Nos. 2, 3), made of mammoth tusk, consists of fine diverging lines that emphasize the form of the tool, the form of the spur, and the lateral barb. On Head No. 2 one can distinguish design elements in the form of short stairs and triangles. The general character of the design is reminiscent of the earliest, simple linear Old Bering Sea Style 1 (after Collins). By all appearances, the design of Head No. 1 from Vtoraya Bay is distinguished from other heads of this same house by its earlier character: two deeply incised curved lines that emphasize the form of the lateral projections and are reminiscent of the earliest Eskimo Uelen-Okvik style which, according to S. I. Rudenko, can be seen in the deeply incised uneven lines that are broader in the middle.

Of all the heads of the first and second types in the excavated houses of Cape Baranov, characteristic are those with deeply incised ornamental lines that emphasize the location of the slot for the missing inset (at the barb) on heads of the second type, and that mark the basal spur, on all specimens of the first and second types, with short incisions on the inner and outer sides as if bifurcating it. On almost all heads, narrow incised triangles were made above the line hole that have as a rule a long straight line running from the top and are reminiscent of the inverted decorative element Y, which is characteristic for the Thule culture. It is also encountered on Birnirk heads from Point Barrow (the Tukuok type and ones similar to it). In Rudenko's opinion, it also appears in the Uelen site (Ford 1959:Fig. 28a, b, m–p; Rudenko 1972:158–159; Pl. 1:4, 6, 7, 8, 11, 13). On some specimens from Houses 1 and 5 in Sarychev Bay, parallel strokes were made at the bottom of these ornamental triangular pits over the line hole. These strokes represent a continuation of the early Uelen tradition in Eskimo art. Only one head of bad preservation and one belonging to the Thule type have no ornamentation at all. Thus, the earliest harpoon heads of Cape Baranov are decorated in Uelen-Okvik and Old Bering Sea Style 1, while the decoration of the primary bulk of heads has features characteristic for the Thule culture.

[5] The number of harpoon heads, as of other objects from the houses at Cape Baranov, are given according to the assemblage list.

Table 1. Chronology of the Old Eskimo cultures in region of Bering Strait and the Bering Sea and in adjacent territories of the Asian and American Arctic (after Giddings 1952, 1960, 1961; Libby 1955; Rainey and Ralph 1959).[a]

Paleoeskimo			Continental		
Culture	**Sites**	**Dates by C^{14} and CO^2**	**Culture**	**Sites**	**Dendro-chronological dates**
			"Arctic Woodland"	Alaska: Kobuk R., Ambler I.	1750 A.D.
				Alaska: Middle Kotzebue	1550 A.D.
				Alaska: Old Kotzebue, Ekseavik	1400 A.D.
				Ateut	1250 A.D.
Ipiutak	Alaska: C. Hope, C. Kruzenstern in Kotzebue Sd., Seward Pen.	100–500 A.D. (300 A.D.)			
Norton	Alaska: C. Kruzenstern, Seward Pen.; C. Denbigh on Norton Sd. & S to Bristol Bay	500 B.C.–400 A.D. (300 B.C.)			
Choris	Alaska: Choris Pen. in Kotzebue Sd.	1500–500 B.C. (700 B.C.)			
Battle Rock	C. Kruzenstern	1000 B.C.			

[a] Dates after Giddings (1960-1961); in parentheses, Rainey and Ralph (1959).

Neoeskimo or "Arctic Whaling"		
Culture	**Sites**	**Dates by C^{14} and CO^{2}**
Protohistoric Eskimo	Chukchi Pen., St. Lawrence & Punuk I.; Alaska: Pt. Barrow (Nuvuk, Utkaavik), C. Denbigh (Nukleet III)	1400–1700 A.D.
Tigara (Thule culture type)	Cape Hope	1300–1770 A.D.
Thule-Punuk	C. Shmidta, Chukchi Pen., St. Lawrence & Punuk I. Coast E of Pt. Barrow	1100–1500 A.D.
Eastern Thule	N. Canada, Greenland	c. 1100–1200 A.D. reaches Greenland
W. Thule	Chetyrekhstolbovyi I. (N. house); Alaska: C. Hope, C. Prince of Wales, C. Denbigh (Nukleet II)	900–1300 A.D.
Birnirk	C. Baranov; C. Vankarem & Dezhneva; St. Lawrence (Kukulik) & Punuk (S'kelyuk); Alaska: C. Prince of Wales, C. Hope, Pt. Barrow (Birnirk, Kugusugaruk, Kugok)	500–900 A.D. (800 A.D.)
Punuk	C. Baranov; C. Vankarem; Chukchi Pen.; St. Lawrence & Punuk I.; Alaska: Pt. Barrow, C. Denbigh (Nukleet I)	600–1100 A. D.
Old Bering Sea	Chukchi Pen., St. Lawrence & Punuk I.; Little Diomede I.	300 B.C.–500 A.D. (300 A.D.)
	Isolated finds: C. Baranov (Vtoraya Bay); Shalaurova I., Pt. Barrow	
Uelen-Okvik	Chukchi Pen. (Uelen); Punuk I. (Okvik); St. Lawrence I. (Gambell)	300–100 B.C. (500 A.D.) 2258 ± 280 B.P. (Libby 1955)
Near Ipiutak	Alaska: C. Hope, Seward Pen.	c. 2000–2500 B.P.
Old Whaling	Alaska: C. Kruzenstern	1800 B.C.

The technique for making harpoon heads at Cape Baranov was highly developed. The precision of the contours and the regular narrow forms of the incising for the waist and insets are the result of metal tools already in use by the early masters. And in fact, in House 1 at Sarychev Bay two bone handles were found, in one of which (No. 49) a metal inset in the form of a knife blade was set on the side at the front end, and in the other (No. 62) a metal burin in the deep slot on the top. In a house excavated in 1948–1949 on Chetyrekhstolbovyi Island the same kind of bone handle was found with a lateral slot on the top. The slot contained the remains of metal (Beregovaya 1954:Pl. II:3). The Laboratory of Archaeological Technology at the Institute of Archaeology (Academy of Sciences, USSR) determined that the iron found in House 1 was not of meteoric origin.

For a long time it was supposed that iron appeared among the Eskimos only in Punuk times, when for the first time Eskimo decoration was encountered that had regular finely incised lines and mechanically executed circles made by all appearances with metal tools, and when engraving tools with iron points were also found. Rudenko published, for example, such a tool from the settlement of Sirenik on the Chukchi Peninsula, which is assigned to Punuk times (Rudenko 1972:Pl. 23:12). However, finds at Ipiutak show that iron was also known during this early stage of Eskimo culture (100–300 A.D.). Engraving tools were found in houses and burials at Ipiutak—fine rods of antler or walrus tusk with a point set in the end. In one case, this point was made of iron of nonmeteoric origin, as analysis showed (Larsen and Rainey 1948:82, 93; Pl. 8:24). In the Okvik culture, very fine slots in the handles of knives also point to the use of metal blades (Rainey 1941:Fig. 18:1–3). In 1959, D. A. Sergeev found an engraving instrument with an iron blade during excavations of the Uelen cemetery. It was in a burial with an assemblage of the Old Bering Sea culture (300 B.C.–500 A.D.). This find permitted assigning the penetration of iron into the Arctic at a time no later than the middle of the first millennium A.D. (Levin 1962; Levin and Sergeev 1960).

Iron, which became widespread during the second half of the first millennium B.C. throughout a large part of Siberia, gradually reached both Arctic land hunters and sea hunters, but in such small amount that for a long time it did not change the Neolithic appearance of their culture (Okladnikov 1949a).

In all three houses excavated at Cape Baranov were found harpoon heads with both bored and carved line holes. Two heads (Nos. 1, 2) with bored holes were found in the House in Vtoraya Bay. In Sarychev Bay they were found on seven heads in House 1 (Nos. 14, 17–19, 22, 23, 27) and five in House 5 (Nos. 1–4, 26). Interestingly, we find a line hole skillfully bored with an iron instrument and a closed socket both on one of the earliest harpoon heads of Cape Baranov (No. 2 from Vtoraya Bay) and on one of the late types (No. 27 from House 1). Carved holes were made on two heads (Nos. 3, 4) in the House in Vtoraya Bay, and in Sarychev Bay: in House 1, on ten heads (Nos. 15, 16, 20, 21, 24–26, 28, 29, 162) and in House 5, on three (Nos. 5, 27, 28).

On almost all heads from Cape Baranov, with the exception of two broken ones (No. 5 from House 5 and No. 3 from the House in Vtoraya Bay) and one miniature head (No. 162 from House 1), a semi-oval depression can be seen under the line hole, which was probably made to facilitate threading the line (in order to avoid fraying the cord) and then has become widened from rubbing when there was strain on the line. On the other side of the tool, a longitudinal groove that joins the hole with the open socket was made for the same purpose. In specimens with a closed socket, grooves that run from the hole to the lower end of the head were made on both surfaces.

The materials from which harpoon heads and harpoon head blanks were made in Sarychev Bay are: reindeer antler—16 specimens (Nos. 13, 14, 17, 20–23, 27–29 in House 1 and Nos. 1, 2, 5, 26–28 in House 5); bone—6 specimens (Nos. 15, 16, 19, 25, 26 in House 1 and No. 3 in House 5); walrus tusk or mammoth ivory—4 specimens (Nos. 18, 24, 162 in House 1 and No. 4 in House 5). In the House in Vtoraya Bay two harpoon heads (Nos. 2, 3) were made of mammoth tusk and two (Nos. 1, 4) of reindeer antler.

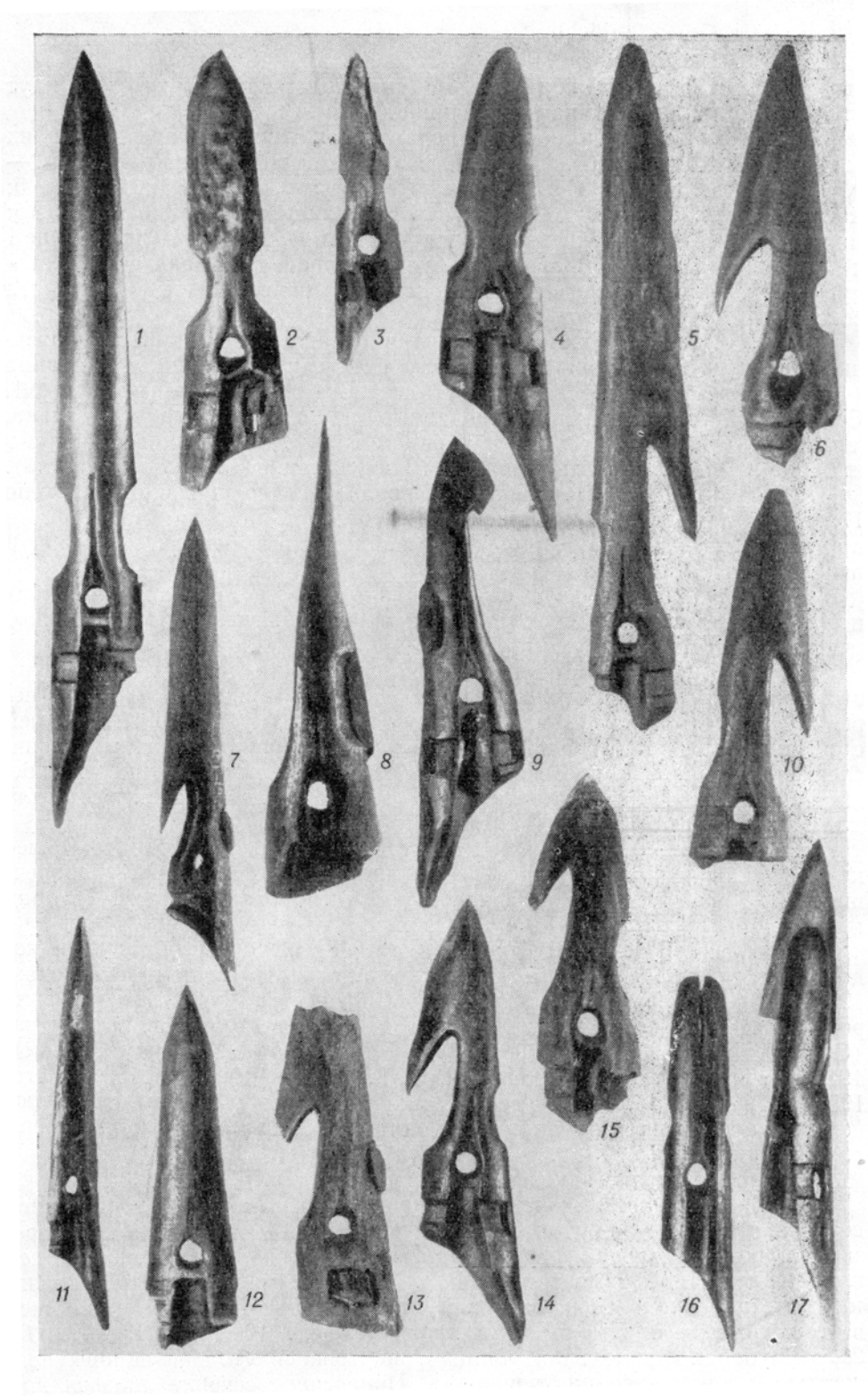

Figure 9. Toggling harpoon heads. House 1 in Sarychev Bay: 1–4, 8—heads of the first type (Nos. 15, 24, 162, 25, 16); 5–7, 9, 10, 13–15—heads of the second type (Nos. 14, 21, 19, 18, 22, 20, 17, 23); 11, 12—Heads of the Thule 1 type (Nos. 28, 29); 16, 17—heads of the Punuk type (Nos. 27, 26).

End blades, with which some harpoon heads on Cape Baranov were equipped, were made of argillaceous slate (4 specimens) and siliceous limestone (1 specimen). They were all found in House 1. Side blade insets, made of siliceous limestone, sometimes of argillaceous slate, and in one case of bone, were encountered in House 1 (6 specimens) and in House 5 (2 specimens) (see Stone Tools).

HOUSE 1. Seventeen specimens of toggling harpoon heads were found, including Birnirk (of the first and second types)—12, and other types—5. In addition, one barbed nontoggling harpoon head was found.

Heads of the first type (4 specimens—Nos. 15, 24, 25, 162) can initially be assigned to two groups based on the arrangement of the slots and grooves for the socket brace.

To the first group can be assigned No. 162, the small harpoon head of walrus tusk with damage on the end of the basal spur and on the front end of the tool. The line hole is round and carved. Above the hole on both surfaces were finely carved ornamental lines, slightly expanding toward the base. The cross section is lenticular. It is 6.2 cm long. In all probability this small tool served for hunting fish (Fig. 9:3; Pl. I:10).

At Cape Baranov the larger harpoon head No. 4 from the House in Vtoraya Bay is very similar to No. 162. Head No. 25 from House 1 differs by the arrangement of the slots (second group).

A similar harpoon head was discovered on Chetyrekhstolbovyi Island (finds of 1948–1949), but with a broken base (Beregovaya 1954:Pl. 1:1). Other analogies: at Sirenik on the Chukchi Peninsula (Rudenko 1972:Pl. 19:11), at Kukulik on St. Lawrence Island (Geist and Rainey 1936:Pl. 69:5, 8), and Birnirk at Point Barrow (Collins 1933:Fig. 45c; Ford 1959:Fig. 28 a, b; Mason 1930:Pl. V:9; Wissler 1916:Fig. 3c). They all have complex basal spurs, with the exception of the head from Sirenik and one from Birnirk, published by Collins in 1933.

Nos. 15, 24, and 25 are assigned to the second group of heads.

No. 15 is a bone harpoon head with very long pointed upper part and with sharp edges at the end. The line hole is carved and subtriangular in form. A decorative triangle above it approaches the form of an inverted Y. On the bottom of the carved triangle are longitudinal strokes that are of the Uelen tradition in this design element (Rudenko 1972:158–159; Pl. I:8–11, 13, 20). A deep longitudinal line on the inner side of the spur emphasizes its bifurcated quality. The cross section is lenticular. It's length is 15.5 cm (Fig. 9:1; Pl. I:7).

The regular contours of the head in all probability point to a later technique of preparation than other specimens of the same type. Harpoon head No. 28 from House 5 is very close in form to No. 15. It differs, however, by the arrangement of the slots (first group). The closest analogies: heads from Chetyrekhstolbovyi Island (Beregovaya 1954:Pl. I:1) (the lower part of the head is damaged and it differs by the method of the socket binding, but very close in form to No. 15); from the region of Cape Dezhneva on the Chukchi Peninsula (Rudenko 1972:Pls. 7, 9); and from Kukulik on St. Lawrence Island (Geist and Rainey 1936:Pl. 69:9).

Birnirk heads at Point Barrow (Kugusugaruk) as well as early heads found among the Eskimos of the nineteenth century at Point Barrow (Collins 1933:Fig. 45c; Ford 1959:Fig. 28a–c; Mason 1930:Pl. V:9; Murdoch 1892:Fig. 210; Wissler 1916:Fig. 3c), in distinction from our specimen, had complex basal spurs, with one exception published by Ford (1959:Fig. 28b). A head found in 1957 in an early house on Cape Vankarem had the same complex lateral spur with four barbs and the two lateral stone insets (Dikov 1960).

No. 25 is bone and has two lateral slots preserving the remains of stone insets that in all probability were flaked. The line hole is carved and of subtriangular form. Above it on both surfaces were small triangular cuts, which were an extension of the hole. On the lateral surface of the spur the same small cut

had been made. A deep long line on the inner side of the spur emphasizes its bifurcated quality. Its cross section is a flat oval. Its length is 9.9 cm (Fig. 9:4; Pl. I:6).

Heads No. 24 and 162 from House 1 and No. 4 from the House in Vtoraya Bay are close in form. Two of the latter are different in the arrangement of the socket binding slots (first group). Other analogies for No. 25 are the same as for No. 15.

No. 24 is of walrus tusk and has a broken tip and basal spur. The head is damaged on one surface. The line hole is triangular, is carved through, and has a decorative triangle made above it on both surfaces. Longitudinal cuts can be distinguished on the inside and on the lateral surface of the preserved part of the spur. The upper part of the head appears ground off along the edges and forms a cutting blade. The cross section is lenticular. The length is 8.5 cm (Fig. 9:2; Pl. I:8). For an analogy, see No. 15.

Heads of the second type—eight specimens (Nos. 14, 17–23)—can be separated into three groups based on the arrangement of the slots and grooves for the socket binding.

Heads No. 17 and 19 are assigned to the first group.

No. 17 is a harpoon head of reindeer antler with a round, bored line hole, above which an elongated decorative triangle (with longitudinal strokes on the bottom of the triangular groove) is carved on both surfaces. On the edge opposite the one where a small slot was made for a stone inset, there is a deep longitudinal cut under a barb. The same cut was made on the inner side of the basal spur, and on its outer lateral surface is another short cut. The cross section of the head is lenticular. It is 9 cm long (Fig. 9:14; Pl. II:8).

Similar heads Nos. 20, 21, 23 and broken No. 22 were also found in House 1 and No. 1 in House 5. But they differ by the type of socket binding (No. 20—second group, Nos. 21, 23—third group).

The closest analogies on Chetyrekhstolbovyi Island are the finds of G. Sverdrup in 1925 and a small unfinished head from excavations of 1948–1949 with one socket binding slot (Beregovaya 1954:Pl. I:2; Mathiassen 1927:II:Fig. 12:1); on the Chukchi Peninsula the only specimen is from Sirenik (Mason 1930:Pl. V:11, 12; Rudenko 1972:Pl. 19:13); and at Birnirk, where this type of head is the basic, widespread type of the Birnirk culture (Ford 1959:Fig. 26c, g, i, m).

All these heads, except the finds on Chetyrekhstolbovyi Island, have a complex basal spur. Closer to our head in the arrangement of the spur (simple) are harpoon heads from the early house and burials at Point Hope (near the modern Eskimo village of Tigara), which differ only by the presence of a rudimentary slot in the place of the lateral inset. Larsen and Rainey (1948:Pls. 95:2; 98:4) assign this type of head to the Western Thule culture.

No. 19 is bone, with regular contours, and has an elongated and pointed upper part and a round, bored line hole, above which is a small, stretched decorative triangle. An oval inset of argillaceous slate, ground along the edge, was preserved in the lateral slot. Under a lateral barb is a long cut (rudimentary slot). A longitudinal cut was made on the inner side of the basal spur, and on the outer lateral side was a short cut. The open socket has straight walls; the slit for the collar is wide and oval; the cross section is lenticular. The regular form and whole character of the work probably point to a later origin in comparison with other specimens of this type. The length is 9.5 cm (Fig. 9.7; Pl. II:2).

Similar heads with elongated blades are also found in House 1—No. 14, which differs in the arrangement of the slits (third group), and No. 26 in House 5. Other analogies are the same as for No. 17.

The second group of the second type is represented by two specimens.

No. 18 is of walrus tusk or mammoth ivory. The lateral barb, made at the upper end of the tool, is broken at the base. There is a long, deep cut under the barb—a rudimentary slot. On the opposite edge, substantially below the barb, a flaked lateral inset of siliceous slate of oval form has been preserved. A

decorative triangle was carved above the round, bored line hole on both surfaces. A longitudinal cut was made on the inner side of the spur, and the same kind of cut was on its outer lateral surface. A collar of baleen was preserved in broad slits on both sides of the socket. The cross section is lenticular. The length is 9 cm (Fig. 9:9; Pl. II:6). There are no heads like this on Cape Baranov except the broken head No. 23, which is similar in the arrangement of the barb. The closest analogies are on Chetyrekhstolbovyi Island (Mathiassen 1927:II:Fig. 12:2) and in the region of Point Barrow—heads of the Birnirk type with complex spur (Collins 1933:Fig. 45a; Ford 1959:Fig. 26a–c, f–k; Mason 1930:Pl. V:13; Wissler 1916:Fig. 4a, b). A large part of the heads, according to the author, have two lateral slits for a collar. The others have one slit. A third has only a groove for a collar, like the one at Cape Baranov. Western Thule heads with a simple spur differ from our specimen only by the presence of a rudimentary slot in the place of the lateral inset (Larsen and Rainey 1948:Pl. 88:5).

No. 20 is made of reindeer antler and has broken upper and lower ends and is broken on the end of the lateral barb. On one side, above the carved round line hole, a small decorative triangular cut had been made (the other surface is damaged). An oval inset of siliceous limestone, flaked along the edge, was preserved in the lateral slot. In the groove on the back, where the slots open, fibers of baleen—a collar—were preserved. The cross section is lenticular. The length is 6.5 cm (Fig. 9:13; Pl. II:5). For an analogy, see No. 18.

Heads Nos. 14, 21–23 are assigned to the third group.

No. 14 is made of deer antler. The upper part, with the damaged point and partially bared spongy surface, is greatly stretched and is sharpened along the sides. The basal spurs are broken off. The bored line hole is round. Above the hole, on both surfaces, is a decorative triangle. On one side it is in the form of an inverted Y. Opposite the deep slot for an inset—under the barb—a deep and long slit was made along the edge (a rudimentary slot). On the broken lower part, a circular groove for the collar of the open trough-like socket is almost completely preserved. The cross section is lenticular. The length is 13 cm. The length of the slot is 6 mm (Fig. 9:5; Pl. II:11).

Heads with such an elongated blade are in that same House 1 (No. 19) and in House 5 (No 26) (first group).

No close analogies to heads with a round groove are known on the Chukchi Peninsula and Chetyrekhstolbovyi Island. Similar points at Point Barrow, but with the complex spur, are occasionally encountered at Birnirk. According to Ford, only two such specimens were in his collection. One was published from Van Valin's collection (Ford 1959:75; Mason 1930:Pl. V:10). A Birnirk head with a triplicate spur and the preserved round collar of a socket in Rasmussen's collection from Point Barrow is assigned to this same group (Mathiassen 1930:32, 33; Pl. 7:2). There are no heads of the described group among finds of the Western Thule culture at Point Hope.

No. 23 is made of reindeer antler and has a broken point, spur, and end of the lateral barb. The back surface of the head is badly preserved. The line hole is round and bored with a small decorative triangle in the form of an inverted Y preserved on one surface. The slot for the lateral inset is damaged, and a long cut was made under the barb along the edge. The cross section is lenticular. The length is 7.1 cm (Fig. 9:15; Pl. II:4). In House 1 on Cape Baranov are found heads similar in form—Nos. 17, 18, 20–22—and in House 5—No. 1. With the exception of Nos. 21 and 22 (broken), they all differ in the method of binding the socket (Nos. 1, 7—first group, Nos. 18, 20—second group). Other analogies are the same as for No. 14.

No. 21 is made of reindeer antler and has a broken spur and groove, which on one side goes to the back of the tool, but was not completely preserved. (Based on the type of socket binding of the head it most probably belongs to the third group.) The line hole is carved, subtriangular, and with a stretched decorative triangle above that is reminiscent of an inverted Y.

At the bottom of this figure on one surface of the tool longitudinal strokes can be seen. Along the edge under a deeply carved barb a deep cut was made (a rudimentary slot). On the upper part of the head, at the point (on the back), several small longitudinal strokes can be distinguished, perhaps traces of working. The cross section is lenticular. The length is 8.5 cm (Fig. 9:6; Pl. II:7). For analogies, see No. 23.

No. 22 is made of reindeer antler and has a broken lower part and tip. Since only the upper part of the open socket was preserved, it is impossible to assign this head of the second type to any of the three groups based on the arrangement of the socket collar. A stretched decorative triangle reminiscent of an inverted Y was made above the round bored line hole on one side. Under the hole, along the edge opposite the slot, is a long cut. The cross section is lenticular. The length is 7.4 cm (Fig. 9:10; Pl. II:3). For analogies, see No. 17.

In addition to the two basic types of harpoon heads are five more specimens from House 1 that are assigned to other types of Eskimo harpoon heads that existed simultaneously or later.

No. 16, which is made of bone and has a broken lower part, is somewhat reminiscent in form of the first type and, based on the type of socket collar, can be assigned to the first group. The upper pointed part of the head, carved along one edge, has a triangular cross section. On one side was a lateral bone inset of oval form, sharpened along the cutting edge. On the other side, along the carved edge, is a long deep cut, as if marking a slot for a second lateral inset. The line hole is carved and triangular. The decorative figure of an inverted Y was made over it on both surfaces. Small longitudinal strokes can be distinguished at the bottom of this figure on one surface of the head. The cross section is lenticular. The length is 9.3 cm (Fig. 9:8; Pl. I:3).

There are no direct analogies on Cape Baranov or in other Eskimo sites to No. 16. The head is reminiscent of the Oopik type distinguished by Ford from the Birnirk site at Point Barrow. These heads also have a pointed sword-like blade. Lateral blades, distinction from our specimen, are set in the plane of the line hole. In one case, the blade was made of slate. The points have complex and simple spurs and are decorated with longitudinally dispersing lines. The cross section of the upper pointed part of the head is diamond-shaped. The Oopik type is closest to the first type of harpoon heads from the Ipiutak site and, in Ford's opinion, perhaps developed directly from it (Ford 1959:78, 79; Fig. 27d, e; Larsen and Rainey 1948:Pl. 3).

No. 29 is made of reindeer antler and is narrow and elongated in form with a pointed upper end and sharp cutting edges. The line hole is carved and triangular, the socket open and narrowing upward. The lateral basal spur is simple. Based on the type of cut for the socket collar it belongs to the first group. The cross section is flattened lenticular. There is no decoration. The length is 8.2 cm (Fig. 9:11; Pl. III:1).

The similar head No. 28 was in the same house.

Similar small heads of willow-leaf form on the Chukchi Peninsula are found chiefly in late Punuk sites (Rudenko 1972:118–119; Pls. 7:21 [Cape Dezhneva region], 13:3 [Cape Chaplina]. In Rasmussen's collection there is a similar head from Cape Dezhneva (eastern) (Mathiassen 1930:Pl. 18:2—small holes were made in this specimen in the place of a slit). A head was found on Chetyrekhstolbovyi Island in 1949 that is quite similar to No. 29 (Beregovaya 1954:Pl. I:3). Such heads are also encountered on St. Lawrence Island in Punuk and later layers. Collins describes them as Type V (Collins 1937:211; Pl. 71:12, 13; Geist and Rainey 1936:Pl. XVIII:5). A similar specimen from Van Valin's excavations at Point Barrow is described by J. Mason (1930:Pl. V:8). Ford describes similar heads as the special Tipiruk type, which was encountered both at Birnirk and at the later site of Nunagiak. These heads were made of deer antler, though sometimes of walrus tusk, and are 5 to 8.5 cm in length. They differ from our specimen by having two cuts for socket waist (Ford 1959:81, 82; Fig. 28:h, i). In Ford's opinion, the type of harpoon head found in sites of the Thule culture in Canada and Greenland—Thule 1—developed from this type. These latter, however, are wider and shorter than our specimen (Mathiassen 1927:I:24; Pl. I—Naujan).

No. 28 is a harpoon head of reindeer antler with a broken basal spur, pointed end, sharpened edges, and broad open socket. The line hole is carved and of subtriangular form. This head is broader than No. 29, and belongs to the third group based on the type of socket collar. Decorative subtriangular cuts on both surfaces above the hole give the impression of a continuation of it. The cross section is flat, lenticular. The length is 7.2 cm (Fig. 9:12; Pl. III:3).

Analogies exist, as for No. 29, among the late Punuk finds in the western site of Nunligran and in various places on the Chukchi Peninsula (Rudenko 1972:Pls. 31:3, 36:9), and on St. Lawrence Island (surface finds and in late Punuk and modern sites) (Collins 1937:211; Pl. 71:15, 16; Geist and Rainey 1936:Pl. XVIII:7). At Point Barrow some heads of the Tipiruk type are close to our specimen (Ford 1959:81, 82; Fig. 28k). Head No. 28 is most similar to heads of the Thule 1 type (Mathiassen 1927:I:24; Pl. I:1—Naujan).

No. 26 is a bone harpoon head with an open trough-shaped socket and long broad slot for the end blade (probably of stone) that is parallel with the plane of the triangular carved line hole. A waist was made in the middle of the tool, and here on both sides are small cuts situated at right angles to the hole—rudimentary grooves for lateral insets. The lateral basal spur is simple. Based on the type of the socket collar, it belongs to the second group. For decoration, small triangular grooves were made on both surfaces of the head, as if continuing the line hole, and deep longitudinal cuts on the inner and outer surfaces of the spur, marking its bifurcatedness. The cross section is lenticular. The length is 8 cm; the length of the cut is 2 cm (Fig. 9:17; Pl. III:7).

Closest in type is No. 27, the head with the closed socket from the same house.

For analogies, according to Rudenko a large part of the harpoon heads both of those found by him on the Chukchi Peninsula, and those excavated by Jenness at Cape Prince of Wales and by Geist and Collins on St. Lawrence Island, belong to this type. This type (type III, according to Collins's schema, type c according to Geist and Rainey, and Thule 3 according to Mathiassen) existed, starting in the Uelen-Okvik and Old Bering Sea periods of development of the Eskimo culture almost up to modern times (Collins 1937:312, 313; Mathiassen 1927:I:25; Pl. I:6–9—Naujan; Rudenko 1972:120–121). The material is bone or antler, more rarely walrus tusk. The decoration is predominantly Punuk or entirely lacking. In Birnirk at Point Barrow such a point, close in form to our specimen, is described by J. Mason. According to Ford, in the same place and in the later Nunagiak site were found such harpoons (the Tezik type) with a characteristic waist in the middle. In his opinion, the Thule 3 type in the Canadian Arctic develops from this type (Ford 1959:82–83; Fig. 28m, s; Mason 1930:Pl. V:4—Kugusugaruk).

Head No. 26 differs from most specimens of this type by the presence of decorative cuts—rudimentary slots—for lateral insets. Wissler notes that in Stefansson's collection from the vicinity of Point Barrow, some heads of the Birnirk type with two lateral insets have an end blade. In this case the lateral insets are small and sometimes remain only as decorative depressions in the form of small lateral cuts. The closest analogies to our specimen is a harpoon head from Point Hope in Stefansson's collection, with two rudimentary slots for lateral insets (Wissler 1916:415; Fig. 17a, b); a head from the region of Cape Dezhneva is especially close in form, also with a waist in the lower part of the tool and characteristic for the Punuk stage on St. Lawrence Island (Rudenko 1972:Pl. 7:17); and heads from the region of Point Barrow (Birnirk) (Collins 1933:Fig. 45e; Mason 1930:Pl. V:4).

Thus, to all appearances, harpoon head No. 26 represents a transitional form from types of the Birnirk culture to types of the Thule culture and corresponds in time to heads of the Punuk type on St. Lawrence Island.[6]

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[6] This synchroneity is corroborated by investigations in the south of St. Lawrence Island at Skeliyuk, where in 1959 mixing of the Birnirk and Punuk traditions was discovered at one site (Ackerman 1959; 1962).

No. 27 is made of reindeer antler, has a closed socket and slot for an end blade, a round bored line hole parallel to the latter, and with two lateral cuts—rudimentary slots for insets—made at right angle to the plane of the hole. On one surface of the tool a longitudinal groove runs down from the hole. Small stretched decorative triangular cuts were made on both surfaces above the hole. The lateral basal spur is simple, having a deep long cut on the inner side and a short decorative cut on the outside. The cross section is oval. The length is 7.4 cm (Fig. 9:16; Pl. III:8).

In Rudenko's opinion (Rudenko 1972:120–121; Pls. 1:14, 15 [Uelen]; 7:22 [Cape Dezhneva region]; 13:20 [Cape Chaplina]; 19:23 [Sirenik]; 33:11 [Enmylen]), harpoon heads with a closed socket appear in the early stages of development of Eskimo culture, but become dominant in sites from late Punuk times up to present. Heads with a closed socket repeat the forms of heads with an open socket: in this case, head No. 27 repeats the form of head No. 26. The earliest heads with a closed socket and with a slot for a blade in the plane of the line hole appear in the Okvik site (Rainey 1941:480–481; Fig. 6), at Uelen (Rudenko 1972:Pl. 1:14, 15), and in Old Bering Sea levels on St. Lawrence Island (Collins 1937:110–111; Pls. 23:13; 26:13, 14). The closest to our specimen on St. Lawrence Island are the Punuk heads (Type Vx) and contemporary ones (Collins 1937:206–207; Pl. 70:17–20; Geist and Rainey 1936:Pls. 15, 71). In the region of Point Barrow these are late types of harpoon heads, which are found in the Utkiavik site, and which were still in use in the 1880s when they were described by Murdoch (Ford 1959:92, 236, 237; Figs. 32k–n, 33a, b; Murdoch 1892:220; Figs. 215–221). In the Canadian Arctic such types of heads were encountered at Sadlermiut—a site of a tribe that died out at the beginning of the twentieth century on Southampton Island (Mathiassen 1927:I:235; Pl. 69:5). Ford suggests that heads of the Barrow types and the subsequent Nuvuk ones originated from similar heads with an open socket, which Mathiassen calls the Thule 3 type and Collins calls Type III(a)x (Collins 1937:Fig. 24; Ford 1959:92, 93; Figs. 32k–n, 33a–e; Mathiassen 1927:I:25). Harpoon heads in sites of the beginning of the fifteenth century on the Kobuk River are very close to the Barrow type at Point Barrow and to our head (Giddings 1952:54; Pls. XII:14 [Old Kotzebue], XXVII:18 [Ekseavik]). The same can be said about modern (beginning of the twentieth century) harpoons of the Coastal Chukchi (Bogoras 1904–1909:I:115; Fig. 30b). However, the majority of cited analogies do not have the characteristic waist and rudimentary slots for lateral insets, as on our specimen, and closest of all to No. 27 are the above-mentioned Punuk heads on the Chukchi Peninsula (Sirenik) and on St. Lawrence Island.

No. 13 is a barbed harpoon or dart head or tooth of a leister made of deer antler. It has a flattened and pointed upper end, one large barb located at a right angle to the plane of the oval line hole, and the lower end pointed for seating in a shaft. The cross section is oval on the bottom and lenticular on top. The length is 19.7 cm (Fig. 10; Pl. III:10).

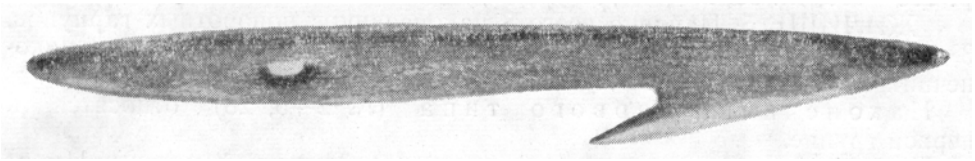

Figure 10. Barbed nontoggling harpoon head No. 13. House 1 in Sarychev Bay.

There are no similar points at Cape Baranov. The lateral point of leister No. 124 was found in House 1, but without a hole for attachment.

Analogies to these points can be found most often among the points of spears or leisters. In most cases they have several barbs. On the Chukchi Peninsula such tools can be found at Sirenik and other places. There they served as leister points (Rudenko 1972:Pl. 22; Figs. 39, 40). Wissler (1916:Fig. 286) published such spear points from the Arctic coast of America, from the region of Point Barrow. In

excavations at Kukulik on St. Lawrence Island points of spears or leisters were found in the lowest levels of shell middens (Geist and Rainey 1936:Pl. 74:6). Our specimen is reminiscent of such a spear or leister point with one barb, a hole, and a conical haft from Okvik, which Rainey ascribes to the Thule stage (Rainey 1941:Fig. 13:5). Indeed, there were similar tools among the Central Eskimos of the Thule culture—for example, two harpoon heads from Naujan: one with two barbs and another with one (Mathiassen 1927:I:Pl. 2:7, 8). One specimen of a similar tool with a narrowing haft, triangular line hole, and several lateral barbs on one side is known from the Ipiutak burials at Point Hope. Larsen and Rainey (1948:Pls. 42:10, 95:4) consider it a removable dart head. They describe the head of a harpoon or dart with two barbs from a Western Thule house at Point Hope. In thirteenth–sixteenth century Eskimo sites along the Kobuk River in central Alaska were heads with one or several barbs along one or both sides that served as points for harpoons (for catching salmon), darts, or leisters (Giddings 1952:Pls. XII:6; XVIII:8, 9; XXVIII:1–5; XXXVIII—1–3). Barbed harpoons and dart points were widespread among the Chugach Eskimos in Prince William Sound (De Laguna 1956:164–167; Pls. 32:19, 23; 33:18, 19; and others). The types of barbed points with the haft set in a shaft and a line hole are encountered in early layers of sites in southwestern Alaska and among modern Alaskan Indians and Eskimos. O. Mason (1902:Pls. VIII–XIII, XVI, XVII, XIX; Fig. 12) gives an illustration of a barbed harpoon of the Tierra del Fuegans, which, like the ones described above, represented the transition from spear to harpoon: the head was not fastened directly to the shaft, but was joined to it by a thong or set in a socket in the shaft.

Barbed harpoons are distributed in an unbroken chain from Japan to Kamchatka and from the Aleutian Islands to Vancouver Island. They are encountered, beginning in antiquity, up to the present time (Leroi-Gourhan 1946:412; Figs. 601, 608, 618, 664, 685, and others).

Barbed nontoggling harpoon heads have been encountered among the Koryak of Olyutora and Kamchatka and among the northern Kamchadal. Some are reminiscent in form of our specimen and were made of bone, though they were equipped on the ends with iron points (Bogoras 1904–1909:I:115–116; Fig. 32d–f [Kamchatka]).

HOUSE 5. Eight toggling harpoon heads were found, three of which are assigned to the first type and three to the second. One head is broken; another has only one lateral slot.

Heads of the first type (Nos. 2–5, 28) are assigned to the first group.

No. 3 is a harpoon head of reddish deer bone. It has two long (2 and 3 cm) and deep slots for lateral insets, sharp lateral edges, and a slightly damaged point. The line hole is bored and round. Decoration is an elongated triangle made in the form of a deep hollow on both surfaces of the tool. Cuts in the form of two triangles, the tops of which are pointed toward opposite sides, were also made on the lateral surface of the basal spur. In addition, there are longitudinal cuts on the inner and outer sides of the spur, as if marking its bifurcatedness.[7] The cross section is lenticular, the length 11.1 cm (Fig. 11:2; Pl. I:9).

There are no close analogies among heads of the first type in Houses 1 and 5.

The closest analogies include a head, from an early house found in 1957 on Cape Vankarem, with two lateral flaked-stone insets, one cut for the socket groove, and a complex asymmetrical spur (Dikov 1960); heads on the Chukchi Peninsula at Sirenik (Rudenko 1972:Pl. 19:11); on St. Lawrence Island at Kukulik (Geist and Rainey 1936:Pl. 69:5, 8); at Kugusugaruk and Birnirk at Point Barrow (Ford 1959:79, 80; Fig. 28a, b; Mason 1930:Pl. V:9; Wissler 1916:Fig. 3c); and among early harpoon heads of the nineteenth-century Eskimos at Point Barrow (Murdoch 1892:Fig. 210). All these heads, in distinction from our specimen, have complex basal spurs, except some heads of the Tukuok type from Birnirk described by Ford (1959:Fig. 28b).

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[7] The head was broken in antiquity. The fragment with part of the waist for the collar (without a slot) was later inserted into a specially carved deep slot on the side opposite the spur.

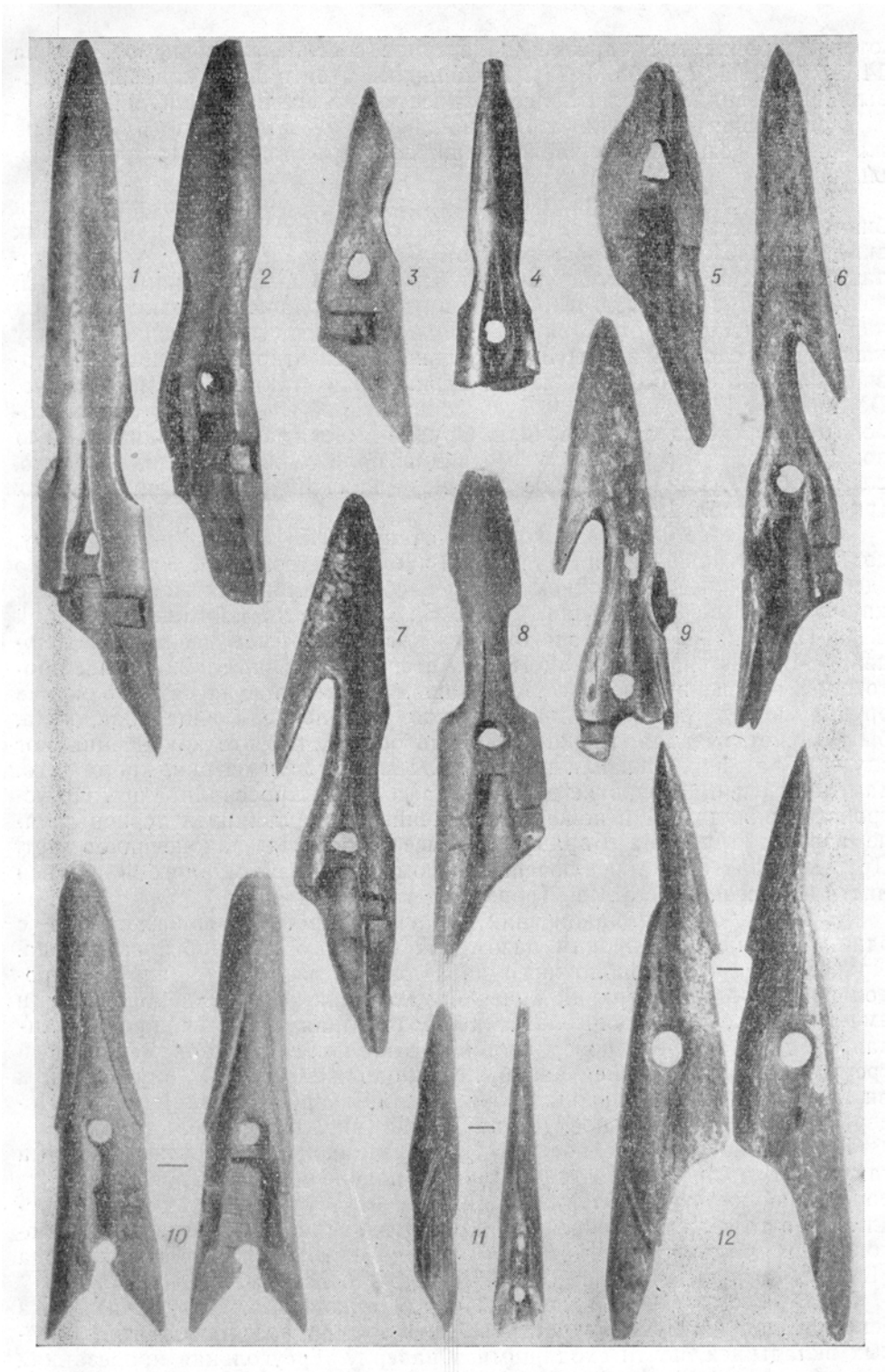

Figure 11. Toggling harpoon heads. House 5 in Sarychev Bay: 1, 2, 4—first type (Nos. 28, 3, 4); 6, 7, 9—second type (Nos. 26, 1, 17); 3—atypical (No. 2); 5—broken (No. 5). House in Vtoraya Bay: 8—first type (No. 4); 10—Old Bering Sea type with open socket (No. 1); 12—the same with a closed socket (No. 2); 11—miniature atypical (No. 3).

No. 28 is a harpoon head of regular elongated form with part of a flaked inset of siliceous slate preserved in one of the lateral slots and a triangular carved line hole. The upper part of the head is greatly extended, has sharp edges, and is pointed on the end. A decorative triangle above the line hole in the form of a deep upward-narrowing groove was made on both surfaces of the tool. On the inner and outer sides of the basal spur are two longitudinal cuts. The cross section is lenticular. The length is 14 cm (Fig. 11:1; Pl. I:11). The regular contours of the head probably indicate that it was made at a later time.

The closest analogy to this head is head No. 15 from House 1, which differs only by the arrangement of the waist for the socket collar.

No. 4 is a broken harpoon head of walrus tusk or mammoth ivory with two deep lateral slots for stone insets and a round bored line hole, above which an elongated triangular decorative groove with longitudinal strokes at the bottom was made on both surfaces. On one surface of the tool there are two fine transverse cuts above the triangle.[8] Below, the head is broken and only part of the open socket was preserved, but based on the kind of collar it belongs as well to the first group. The point is stretched, flat, and slightly rounded on the end. Small shoulders were made on both sides. The tool has a smooth polished surface. Longitudinal strokes, probably traces of working, can be seen on its upper part. The cross section is a flat oval. The length is 6.2 cm (Fig. 11:4; Pl. I:1).

The upper end of broken head No. 4 was to all appearances touched up and used for some other purpose, as was done, for example, on one of the Old Bering Sea specimens with two lateral insets from St. Lawrence Island (Collins 1937:Pl. 23:2) (Hillside) and on a head from the Rasmussen collection from Cape Dezhneva (Mathiassen 1930:Pl. 18:6; the author considers this head a prototype of Dorset heads). On the very tip of our specimen a tiny depression in the form of a slot can be distinguished, where perhaps some kind of point was set so that the head could serve as a punch or awl. In addition, on both sides of the point very small holes are traced, as if for piercing. Based on the arrangement of the insets and the waist, the head belongs to the first group of the first type. There are no such heads on Cape Baranov. There are no other analogies except the mentioned head from St. Lawrence Island that is broken in the lower part.

No. 2 is a small harpoon head of reindeer antler with one long and wide slot for a lateral stone inset. The slit for the opposite slot is marked only by a long longitudinal cut. The upper end of the tool is pointed in the form of a punch and has a small shoulder on the side of the slot. The line hole is bored and round. A small decorative triangle was made above it on both surfaces, appearing as if to continue the hole. Longitudinal cuts were made on the inner and outer sides of the basal spur. The cross section is oval. The length is 7.3 cm (Fig. 11:3; Pl. I:4).

There are no similar heads at Cape Baranov. There are also no other analogies, with the exception of small heads of deer antler from burials of the Near Ipiutak culture and from shell middens of presumably the same time at Point Hope. These heads have one lateral slot for an inset, an open socket, and the same type of collar of the socket (Larsen and Rainey 1948:166; Pls. 78:7; 84:9, 10).

No. 5 is a broken or unfinished harpoon head of reindeer antler (lower part) with two broad slots for lateral insets that almost meet above. The line hole is carved and triangular. A groove for the waist that approaches the back is traced on the side of the lateral spur by the open socket. The tool is poorly preserved. The cross section is oval. The length is 7.5 cm (Fig. 11:5; Pl. I:5).

Three harpoon heads of the second type in House 5 (Nos. 1, 26, 27), based on the kind of the socket collar, also belong to the first group.

No. 26, the largest head of the second type, was made from reindeer antler. The upper part is stretched and pointed, the line hole bored and round. The head has one lateral barb and a deep slot for a

[8] Perhaps they represent a sign of ownership.

stone inset on the opposite side. The basal spur, lying opposite the lateral barb, is slightly bifurcated on the end. Decoration consists of small triangular cuts above the line hole, made on both sides, and a deep groove in the form of a stretched triangle along the edge of the spur. (There are no cuts on the inner side of the lateral spur on this specimen.) The cross section is lenticular. The length is 12.8 cm (Fig. 11:6; Pl. II:9).

Close analogies to head No. 26 are heads No. 1 and 27 from this same house and Nos. 14 and 19 from House 1. (No. 14 belongs to the third group based on the kind of socket collar.) Other analogies include a harpoon head from Chetyrekhstolbovyi Island (unfinished) (Beregovaya 1954:Pl. I:2; Mathiassen 1927:II:Fig. 12l) and from the vicinity of Point Barrow (the sites of Kugusugaruk and Birnirk) (Collins 1933:Fig. 45a; Ford 1959:75, 76; Fig. f–k [Birnirk type]; Mason 1930:Pl. V:10–13; Wissler 1916:Figs. 3d, 4a–d), and some heads from a house and burials of the Western Thule culture at Point Hope (Larsen and Rainey 1948 Pls. 88:4, 95:2). All these heads, except the Western Thule specimens, differ from harpoon heads of Cape Baranov by their complex spurs.

No. 27 is a harpoon head of reindeer antler with a deep and long slot for a lateral inset, a massive barb, and a carved subtriangular line hole. Above the hole on both surfaces of the tool were made large decorative triangles. On the inner and outer surfaces of the spur are longitudinal cuts, as if emphasizing its bifurcatedness. The cross section is lenticular. The head is damaged on one side. The length is 11 cm (Fig. 11:7; Pl. II:10).

For analogies, see No. 26.

No. 1 is a harpoon head of deer antler with the lateral barb broken on the end and a broken lower part, where some of the socket and groove for the waist and the socket part of the opening on the opposite side are preserved. The back surface of the tool is poorly preserved, having a bared spongy layer. Longitudinal cuts were made along the barb and under it along the edge of the head. Above the round, bored line hole is decoration in the form of a carved triangle stretching upward. Fine decorative longitudinal lines were made along both sides of the hole. An inset of two fragments of flaked siliceous limestone was preserved in the deep slot on the side opposite the barb. The cross section of the tool is a flat oval. The length is 8.8 cm (Fig. 11:9; Pl. II:1).

For analogies, see No. 26.

The HOUSE in VTORAYA BAY. The general appearance of the assemblage from this early house is more archaic than that of the finds in Sarychev Bay. This is also corroborated by the forms of the toggling harpoon heads: only one of four specimens belongs to the Birnirk type, which predominate in Houses 1 and 5; the remainder belong to earlier types. The material of two heads from Vtoraya Bay—fossil mammoth ivory—also points to their antiquity. A total of four toggling harpoon heads (Nos. 1–4) were found in Vtoraya Bay.

No. 1 is a harpoon head of reindeer antler without an end blade and with a slightly broken tip and broad open socket expanding downward with straight walls. Two round, bored line holes, slots for lateral stone insets at right angle to the plane of the holes, and a complex symmetrical spur are the distinguishing features of this early type of toggling harpoon head. The middle tip of the tripointed spur is broken on our specimen. The holes (one above the open socket, the other below it) are joined on the back of the tool by a narrow longitudinal groove. Two rudimentary barbs in the form of projections were made along the sides of the head below the slots for the insets. Along both sides of the socket are symmetrical grooves with cuts for the girdle. These open into a narrow groove on the back. On both surfaces of the head, decoration was made in the form of two deeply incised lines that emphasize the form of the barbs (one of these lines is only marked). The cross section in the lower part of the tool is oval; at the upper end, lenticular. The length is 8.8 cm (Fig. 11:10; Pl. III:9).

No other such heads are encountered on Cape Baranov. A similar, miniature head (without lateral projections and decoration) was found on Shalaurova Island (Beregovaya 1960:188; Fig. 3:4). On the Asiatic coast of Bering Strait, such heads are also known from G. Sverdrup's collection (Sverdrup 1930:Pl. 25:4—lateral insets are located in the same plane as the holes); from old finds in the vicinity of Cape Dezhneva (Rudenko 1947:Fig. 4; 1972:42–44, 115–116; Pl. 7:6); and from burials at Uelen (excavations of 1957 and 1958) and Ekven (Levin 1958:Fig. 5a—Burial No. 10; 1960:Figs. 2 and 4:4—Burials No. 5 and 7; Arutiunov and Sergeev 1962:Fig. 3:1–3).

In the American Arctic, such Old Bering Sea heads (Type I, according to Collins's classification) are encountered in all areas of distribution of the Old Bering Sea culture: on St. Lawrence Island (Collins 1937:100–101; Fig. 24; Pls. 23:2—Hillside; 24:1, 2; 25:1–2—Miyowagh; Geist and Rainey 1936:229; Pl. 70:6–9, 11–13, 37–39—Kukulik); on Little Diomede Island (Jenness 1928a:Pl. XIIIa; 1928b:Fig. 3a); and in northern Alaska near Point Barrow (Mathiassen 1929:Fig. 13b; Wissler 1916:Fig. 9c—Cape Smythe). Judging by the dimensions, these are all heads of sealing harpoons. This type of head appears as an exceptional form among finds of the Ipiutak culture in the ruins of a house in the early Ipiutak site at Point Hope (Larsen and Rainey 1948:Pl. 5:16).

Outside the areas of distribution of the Old Bering Sea culture such type of harpoon head is found in burials in the Neolithic shell middens on Hokkaido Island. This is a toggling head with two line holes one above the other, an open rectangular socket, and a slot for an end blade parallel to the plane of the holes. The spur at the base is broken and traces of decoration were preserved (Ionemura 1935:47–56). Early Kurile harpoon heads with an open socket usually have a bifurcated spur at the base and two line holes (Torii 1919:8–11; Pl. 30).

Harpoon heads of the described type are usually decorated in Old Bering Sea style. The decoration of head No. 1 is reminiscent, however, of still earlier Uelen-Okvik style: deeply incised curved lines emphasize the form of the tool (Collins 1937:46; Pl. 24:15; Levin 1958:Fig. 3a, 5a; Rainey 1941:Fig.4:5; Rudenko 1972:98–100). Similar decoration, but of shallow curved lines, is also encountered in early Punuk (Collins 1937:93; Pl. 24:20, 21; Rainey 1941:Fig. 9:6).

No. 2, with a closed socket, is made of mammoth tusk covered with a dark patina, and has a threefold lateral basal spur—with one long broad point and two small lateral ones. On the side opposite the spur, on the upper part of the head, is a projection—a rudimentary barb. A round, bored line hole was made at right angle to the plane of the spur and barb. Under the hole on one side is a longitudinal groove. On the other side, on the back of the tool, a similar groove was made in the middle along the whole length of the head to the point tip. The point tip of the head, as if cut off from the same side as the spur, is polished on the end. (Originally there possibly was a slot on the end for a blade in the plan parallel to the hole; with the head then broken, the preserved part was ground into the form of a point, which is indicated also by the unsymmetrical decoration.)[9] The decoration consists of fine curved engraved lines that emphasize the form of the lateral barb and the lateral points on the spur. The central tooth of the spur is decorated on the outside and inside by fine dispersing lines. There is a decorative triangle on the edge of the head under the barb. Above the line hole on one side of the head is a short flight of stairs made of fine (scratched?) lines. On the other side, which has the line hole in the middle of a longitudinal groove, is a design in the form of several transverse teeth. The character of the decoration is closely reminiscent of Old Bering Sea Style I (according to Collins). The cross section is subrectangular. The length is 11.2 cm (Fig. 11:12; Pl. III:11).

No similar heads were found on Cape Baranov.

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[9] As, for example, on the head with an open socket from northern Alaska (Collins, 129; Pl. IIe), as well as on heads with a closed socket from St. Lawrence Island (Collins 1937:Pl. 28:20, 21, 23, 24—Miyowagh).

Harpoon heads with a closed socket appear in early stages of Eskimo culture, but they begin to predominate only in protohistoric times (preceding the appearance of Europeans). On the Chukchi Peninsula, they have been found in the earliest Uelen site and cemetery, the Ekven cemetery, and in Old Bering Sea sites (Arutiunov and Sergeev 1962:Fig. 3:3; Levin 1958:Fig. 4b, 5—Burials 5, 10, 11; 1960:Fig. 2:2, 3—Burial 5; Fig. 5:4, 5—Burials 14, 15; Rudenko 1972:120–122; Pls. 7:22, 23; 9:4, 5, 8—Cape Dezhneva region; Pl. I:14, 15—Uelen). W. G. Bogoras (1904–1909:I:116; Fig. 33) published an early harpoon head, probably made with a stone tool, from the region of Provideniya Bay. It has a closed socket and a round, bored line hole made at right angle to the plane of the spur. An early harpoon head, described by Collins (1929:Fig. 1), with a closed socket and end blade at right angle to the plane of the line hole, comes from the same place. Heads with closed socket, made from mammoth ivory or a young walrus tusk, always with round, bored line hole with a longitudinal groove running downward, a complex or simple spur, and usually with a slot for an end blade (most often at right angle to the plane of the hole) were found in Old Bering Sea sites on St. Lawrence Island (Collins 1937:108–115; Pls. 23:11–14—Hillside, 26:12–20—Miyowagh; Geist and Rainey 1936:209; Pls. 71:1, 5; 75:3—Kukulik), Punuk (Okvik) (Rainey 1941:Fig. 6); and in northern Alaska on Little Diomede Island (Collins 1937:Pl. 27:5, 6, 7) and at Point Barrow (Collins 1929:Pl. 1a, 1c; Mason 1930:Pl. V:1). According to Collins's classification these are the Types II and III with closed socket (Collins 1937).

In the Ipiutak site, harpoon heads of the second type have features in common with our specimen: broad, with a closed socket, with a double or triple spur, round line hole, and with a slot for a blade at right angle to the plane of the line hole. The decoration is curved lines and short lateral teeth on the compound spurs reminiscent of head No. 2 (Larsen and Rainey 1948:Pl. 4).

In Punuk sites on St. Lawrence Island, heads with a closed socket parallel types of Old Bering Sea: their dimensions are smaller and the decoration is Punuk (Collins 1937:122–124; Pl. 28:19–22, 25–28—Miyowagh). Similar heads also have been encountered on the Chukchi Peninsula (Rudenko 1972:120–122; Pl. 18:22, 23—Sirenik).

Some early types of harpoon heads in Europe and Asia of the Neolithic period and the Bronze Age are close to our specimen, for example, a head from Krasnyi Yar-na-Donu with a closed socket, round line hole, one basal spur with subrectangular cross section, and without an end blade (Beregovaya 1953:Fig. 3:1; Kruglov 1941:200, 201; Pl. XXIII:16). Interesting parallels are encountered in early kitchen middens in Japan: a toggling harpoon head from Hondo Island, published by Yagi (1899:Pl. 8), has a closed socket, triple basal spur, and line hole. The slot for the end blade is in the plane of the spur and hole, and along the sides are two pairs of small oppositely placed barbs. The same type of head is described by Kishinouye (1911:Pl. 22:35). Hasebe (1926:Pl. 6:3) gives a description of a harpoon head of deer antler that comes from a shell midden at Motovanishi on Hokkaido Island. It has a closed socket, triple basal spur, two rudimentary barbs on the side opposite the spur, and decoration of deeply carved lines emphasizing the form of the spur. The upper end of the tool is broken, but it can be supposed that the head was equipped with an end blade set at right angle to the plane of the line hole.

No. 3 is a small flat harpoon head of mammoth ivory covered with a dark patina, without an end blade, but with a long working edge. The deep and narrow open socket set in the same plane with the sharpened edges of the head is reminiscent of a closed bushing. Two round line holes are cut one above the other in the socket itself. The lower part of the head is broken. A decoration of fine engraved lines spreading from the rib that runs along the cutting edge was applied to both surfaces of the tool (Old Bering Sea Style I, according to Collins). The cross section is rectangular below and lenticular in the upper part of the head. The length is 5.7 cm (Fig. 11:11; Pl. III:2).

There are no similar heads on Cape Baranov.

This atypical head, however, looks very ancient. The location of the line holes within the socket and other details are reminiscent of the arrangement of harpoon heads of the Dorset culture: small, flat,

with rectangular open or closed socket, with two symmetrical spurs, and one or two line holes (Jenness 1928b:Fig. 2a, 2b—Coats Island, Hudson Bay).

Judging by the form of head No. 3, broken at the bottom, it appears similar to some miniature (perhaps toy) heads from Ipiutak houses (Larsen and Rainey 1948:Pl. 3:14, 17) and to Late Neolithic finds in Nevel'sk city on Sakhalin Island: the latter are small toggling harpoon heads of elongated form with a distinctive narrow open socket, in which two line holes were made, one above the other, and with two symmetrical or one lateral spur marked out below (Chubarova 1957:Fig. 2:2–4). They are different from our specimen by the lateral hollows that served for the binding of the very open (in comparison with No. 3) socket.

Rudenko expressed the notion that head No. 3 is a fragment of a larger one, which was intended for use on fish (salmon) (personal communication).

No. 4 is a harpoon head of reindeer antler that is assigned to the first group of the first type, which on Cape Baranov is without an end blade, with a broad trough-like socket narrowing upward, two deep slots for lateral insets, and a simple lateral spur at the base located at right angle to the irregularly carved subtriangular line hole. Not quite symmetrical grooves were made on both sides of the socket, one of which terminates in a slit that opens into a groove lying opposite on the back of the tool. Above the line hole, on both surfaces, a deeply engraved, stretched triangle was made that appears to continue the hole. There are cuts on the inside of the spur and on its lateral surface. A peculiarity of the head is the very deep slots, the bases of which almost come together. These are apparently for stone insets. The cross section is lenticular. The length is 9.5 cm (Fig. 11:8; Pl. I:2).

Very similar to our specimen is the small head No. 162 from House 1. Head No. 25 from the same house differs by the arrangement of the slits (second group).

A similar head was found at Sirenik on the Chukchi Peninsula (Rudenko 1972:Pl. 19:11). A head close to our specimen, but with a broken base, was encountered in 1949 on Chetyrekhstolbovyi Island (Beregovaya 1954:Pl. I:1). Similar heads have also been found on St. Lawrence Island and at Point Barrow in the vicinity of Birnirk (Ford 1959:Fig. 28—Tuquoq type; Mason 1930:Pl. V:9; Wissler 1916:Fig. 3a). However, except the head from Sirenik and one head from Birnirk, published by Ford, they all have complex basal spurs.

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Thus, the basic number of toggling harpoon heads (19 specimens of 29) in the houses in Sarychev Bay and one in the House in Vtoraya Bay have closest analogies to the two basic types of the Birnirk culture at Point Barrow: Tukuok (first type of Cape Baranov)—8 specimens—and Birnirk (second type of Cape Baranov)—11 specimens. In addition, in House 1 there are two heads that are reminiscent of the Thule 1 type and two of the Punuk type. In House 5 are two heads and in the House in Vtoraya Bay one miniature head that are impossible to assign to any definite type. Two harpoon heads in the House in Vtoraya Bay have analogies among Old Bering Sea heads. One nontoggling barbed harpoon head was found in House 1, the closest analogies to which are known on the North Pacific coast, beginning with the earliest sites and coming up to the present.

Blanks for harpoon heads were found at Cape Baranov—19 specimens. In House 1 in Sarychev Bay were found 17 (Nos. 4, 651–660, 670, 676, and 767) and in House 5 were found 2 (Nos. 6 and 9).

In both houses, blanks of harpoon heads of walrus tusk (5 specimens), deer antler and bone (8 specimens), and polar bear tooth (1 specimen) represent either the very beginning stages of work—the removal of the end of a walrus tusk (House 5, Nos. 6 and 9), or subsequent steps—the faceting of the surface of a blank using a pointed stone blade and the formation of a spur (House 1, Nos. 4, 651, 659, 670 of walrus tusk, Nos. 655, 657, 660 of bone, and Nos. 652–654, 676, 767 of deer antler) (Rudenko 1972:122–124). In two blanks from the same house (No. 658, of polar bear canine, and No. 656, of bone) an open socket was made and in blank No. 657, of bone, a slot for an end blade was marked out. Blanks Nos. 670 and 676 of walrus tusk or mammoth tusk and of deer antler could have been destined for harpoon foreshafts. The length of the harpoon head blanks in both houses are 5 to 15.5 cm, the blanks for foreshafts 8 to 11.5 cm (Pl. 3:4–6).

Parts of Harpoons and Other Objects Belonging to Sea Mammal Hunting

A total of 13 objects for sea mammal hunting were encountered in all three excavated houses at Cape Baranov (the head of a harpoon shaft, a foreshaft, a finger rest, wound pins, and meat hooks in House 1, harpoon ice picks in Houses 1 and 5, and float plugs in Houses 1 and Vtoraya Bay).

All foreshafts for the base of toggling harpoon heads made of walrus tusk, bone, or deer antler in the region of Bering Strait belong to the loose type, in distinction from the secured foreshafts of the Thule culture and those used by modern Central Eskimos.

HOUSE 1. One foreshaft for a large harpoon head was found, and in the same place, two foreshaft blanks, which could also have been blanks for harpoon heads.

No. 30 is a foreshaft of reindeer antler for a large toggling harpoon head. One side of it is damaged. The end that is inserted into the socket has a flattened form, narrowing upward. An oval line hole was drilled in the middle of the foreshaft. The cross section is oval. The length is 10 cm (Pl. IV:12).

Such foreshafts have been found at Uelen and Sirenik on the Chukchi Peninsula. The total number of foreshafts is very small in comparison with the number of harpoon heads (Rudenko 1972:124–127; Pls. 1:21; 20:14, 15). On St. Lawrence and the Punuk Islands our specimen is reminiscent of some foreshafts of walrus tusk at Okvik (Rainey 1941:Fig. 11:6) and a decorated foreshaft from the Old Bering Sea site at Hillside (Collins 1937:321; Fig. 5). At Point Barrow, at Birnirk, bone foreshafts are 14 to 17 cm long, oval in cross section, and similar in form to our specimen. Only one of them has a small hole (Ford 1959:97; Fig. 40:c-e). In Stefansson's collection from the vicinity of Point Barrow is a similar foreshaft with a small lateral hole (Wissler 1916:Fig. 44h).

Harpoon shaft heads, made primarily of walrus tusk, but also of deer antler and whale bone, are encountered in all stages of Eskimo culture. In comparison with the number of harpoon heads, the number of shaft heads found is small. However, a shaft head was found in House 1.

No. 719 is a harpoon shaft head (?) made of a drilled piece of reindeer antler with a broad round hole for a large shaft in the lower end and a smaller one on top for insertion of a foreshaft. The cross section is round. The length is 6 cm. The diameter of the lower hole is 2.5 cm and that of the upper hole 1.5 cm (Pl. IV:11).

Analogies: All harpoon shaft heads on the Chukchi Peninsula have beveled cuts below for fastening to the shaft. The bases of heads during Punuk times on St. Lawrence Island were formed the same way, though in the upper part they are reminiscent of our specimen (Collins 1937:218; Pl. 73:6, 7; Rudenko 1972:124–125; Pls. 5:7; 10:7). At Okvik on Punuk Island some shaft heads are quite similar to No. 719 in their upper part, but their lower part differs: some were cut into a kind of wedge, others have a socket, and so on (Rainey 1941:Fig. 10). The same can be said of shaft heads from the region of Point Barrow

that come from late sites (no shaft heads were found at the Birnirk site) (Ford 1959:99; Figs. 37:b, c; 38:c; Wissler 1916:Figs. 42, 43); of heads in K. Rasmussen's collection from the region of Point Barrow (Mathiassen 1930:8, 22, 35; Pls. 2:2; 5:8; 8:6); and of harpoon shaft heads of the Point Barrow Eskimos of the nineteenth century described by Murdoch (1892:229; Fig. 222). According to W. G. Bogoras (1904–1909:I:118; Fig. 34:b), harpoon shaft heads of bone or walrus tusk among the Chukchi at the beginning of the twentieth century also had a cylindrical form.

The closest analogies to our specimen is the second type of harpoon-shaft head among Eskimos of the Thule culture, which were tubes of antler with the spongy core drilled out for insertion of the end of the shaft (Mathiassen 1927:I:28, 29; Pl. 3:12, 13). Very similar to No. 719 also are shaft heads of the fifteenth-century Eskimos on the Kobuk River—heavy cylinders of deer antler, into which were inserted the ends of shafts: in one such cylinder a wooden rod was preserved, into which a socket for a foreshaft had been carved (Giddings 1952:54; Pl. XII:1—Old Kotzebue; XXXVIII:25—Intermediate Kotzebue; XLIV:19—Ekseavik).

Finger rests for a harpoon shaft exist in all stages of development of Eskimo culture, beginning with Old Bering Sea. One finger rest was found in House 1.

No. 167 is a finger rest for a harpoon shaft. It is made from reindeer antler and has a straight rectangular base, in which a large round hole was made for attachment, and an elongated upper part that is broken. The transverse section is rectangular. It is 2.2 cm long, 1 cm in diameter (Pl. IV:8).

The closest analogies are in late Punuk and protohistoric sites on the Chukchi Peninsula. For example, there is a finger rest of walrus tusk in the form of a column with a large oblong hole for attachment (Rudenko 1972:126–127; Pl. 31:6—Nunligran). A finger rest of walrus tusk from the late site of Utkiavik at Point Barrow, which has a small drilled hole, is also somewhat similar to No. 167 (Ford 1959:102; Fig. 37:l). Finger rests of walrus tusk among Eskimos of the Bering Strait of the end of the nineteenth century are the most similar to our specimen. These differ only by the subtriangular form of the upper and lower parts and the triangular form of the large hole for attachment (Nelson 1899:150–151; Pl. LVII:b:22, 30). Bogoras describes such a rest for a shaft among the Chukchi of the beginning of the twentieth century, which is also of subtriangular form and has a 2.2 cm-long rectangular hole for attachment (Bogoras 1904–1909:I:118; Fig. 25:b).

It is possible also that our specimen could serve as a buckle or an eye through which a thong might be threaded, similar to the object described by Bogoras that was used by the Chukchi (Bogoras 1904–1909:I:230; Figs. 46:a, b; 165:a).

Harpoon ice picks of walrus tusk, whale bone, and deer antler, which equipped the lower ends of harpoon shafts for breaking the ice, appear already in Okvik and Old Bering Sea sites and exist in all stages of development of Eskimo culture. In large part, they were made from the leading end of a young walrus's tusk. The hafts of such picks, which were set in the lower end of the shaft, were covered with transverse notches.

The hafts of picks (5 specimens) were encountered in House 1 (Nos. 79, 668, 669) and in House 5 (Nos. 7, 8). In House 1 there is additionally a special type of fishing pick (No. 105).

No. 8 is a harpoon ice pick of walrus tusk, broken on the working end. The sharp end (the haft of the ice pick) is covered with transverse notches and sharpened in the form of a cone. The cross section is oval. It is 10.5 cm long (Pl. IV:13).

The hafts of picks from Shalaurova Island are very similar to our specimen (Beregovaya 1960:Fig. 3:5–7). The closest analogies on the Chukchi Peninsula are the first type of pick, classified by Rudenko: short and made of the leading end of a young walrus's tusk. The haft of such a pick, which was set in the harpoon shaft, was conical and roughed by notching made with an adze. The lower end is sharpened or slightly thickened. This type is characteristic for the earliest nomad camps, such as Uelen, Kivak, the

western sector of the cultural layer at Sirenik, and the eastern site at Nunligran (Rudenko 1972:125–126; Pls. 1:22; 17:4; 20:9). Other analogies are in Old Bering Sea and Punuk sites on St. Lawrence Island (Collins 1937:Pls. 32:1, 2—Miyowagh; 73:4); among the Eskimos of the Thule culture (Mathiassen 1927:I:Pl. 4:2—Naujan); and at Point Barrow in the collections of Stefansson and Ford from Birnirk, Nuvuk, and Utkiavik (Wissler 1916:Fig. 40:b, c; Ford 1959:Fig. 40:i—Birnirk; Fig. 37:n, o, q—the pick hafts among Ford's finds are set off by shoulders).

Fragments of harpoon ice pick hafts (Nos. 7, 79, 668, 669) with conical ends, made of antler and reindeer bone, are entirely covered with transverse encircling notches for attachment to a shaft. The lengths are 3.5 to 8 cm (Pl. IV:6). For analogies, see No. 8.

Harpoon float stoppers of wood, bone, and walrus tusk existed among the Eskimos in Old Bering Sea times, as they do even now. They were inserted into the mouth of a float made from an inflatable bladder to be used with light harpoons or from whole seal skins with heavy harpoons. Wooden floats of low form were encountered in Old Bering Sea times. Wooden floats of high form are found in Punuk times and exist up to the present.

Two wooden stoppers were found: one in House 1 and one in the House in Vtoraya Bay.

No. 77 is a wooden stopper (?) for a harpoon float, in two pieces; it is almost round with a round hole in the middle, and has a carved (not completely around the stopper) broad encircling groove. The piece is 3 cm in diameter.

Such wooden stoppers, of high and low form, have been found on the Chukchi Peninsula at Sirenik (Rudenko 1972:126; Pl. 20:20, 21) and on St. Lawrence Island—among items in an Old Bering Sea site (Collins 1937:130; Pl. 32:13–15—Miyowagh). The high form of stopper appeared here in Punuk times (Collins 1937:220). Wooden stoppers that are especially close in form were found at the Birnirk site. They had a deep groove around the periphery and a small hole. They are 2.5 to 4.5 cm in diameter (Ford 1959:105; Fig. 39:a, c–e).

No. 15 is a wooden stopper (a blank) for a harpoon float, of low oval form with a round hole for a plug carved in the middle of a broad depression. Its dimensions are 3.5 x 5.5 cm (Pl. IV:10). For an analogy, see No. 77.

Wound pins in the form of small nails of bone, antler, and walrus tusk with a head were used by the Eskimos for pinning together the sides of a wound of a slain animal in order to stop the loss of blood. Such wound pins continue in existence among modern Central and Greenland Eskimos (Rudenko 1972:127–128; Pl. 8:7).

On Cape Baranov, such objects were found in House 1 (Nos. 45 and 46), as were three fragments of bird-bone pins.

No. 46 is a pin for a wound (or an awl?) of deer bone in the form of a pin with a head and of slightly bent form. The cross section is round. It is 10 cm long (Pl. IV:3).

Analogies: on the Chukchi Peninsula a pin of walrus tusk from the region of Cape Dezhneva (Rudenko 1972:127–128; Pl. 8:7), and the same from Point Hope—from a house of the Western Thule culture (Larsen and Rainey 1948:Pl. 95:8) and from the late site of Tigara (Larsen and Rainey 1948:Pl. 92:13, 14). Somewhat cruder and thicker wound pins of the Thule culture, made of deer antler and walrus tusk, are from Naujan (Mathiassen 1927:I:34; Pl. 5:12, 13). Later finds of the same objects made of caribou bone, representing the transition to the culture of the modern Central Eskimo, are more similar to No. 46 (Mathiassen 1927:217, 313; Pl. 65:23—Qilalukan; Pl. 82:4—Malerualik). In the region of Point Barrow, a close analogy is a pin for closing up wounds from the Birnirk site (Ford 1959:106; Fig. 41a). The same pins were also used in later sites at Point Barrow and vicinity. Especially close in form to our specimen is a slightly bent pin from a protohistoric site on Barter Island (the Rasmussen collection)

(Mathiassen 1930:22; Pl. 5:4) and from fifteenth century sites on the Kobuk River (Giddings 1952:56; Pl. XLIII:6—Erseavik).

No. 45 is a wound pin (or an awl-punch?) of bird bone retaining the epiphysis, slightly bent, and with a sharpened end. The cross section is rectangular. It is 10.5 cm long (Pl. IV:1).

Analogies are the same as for No. 46. In addition, among the Eskimos of Bering Strait at the end of the nineteenth century, along with awls set in handles with sculpted decorations, Nelson describes a specimen of bird bone very close in form to pin No. 45 (Nelson 1899:106, 107; Pl. XLVI:15). The closest analogies to our specimen are awls of bird bone in the lower layers of the Koniag Uyak site on Kodiak Island, excavated by A. Hrdli…ka (Heizer 1956:Pl. 72—Koniag—Pacific Eskimo).

Meat hooks (**boat hooks**) were used by the Eskimos up to modern times for grabbing meat or fat when butchering whales or walruses and to help pull these carcasses out onto the shore or onto the ice. These were hooks of walrus tusk for the most part, which consisted of a turned-backward point on the fore end of a wooden shaft that in turn was bent on the back end in the form of a hook. Such hooks appear in Old Bering Sea times. They also served as boat hooks for pulling umiaks ashore.

One hook was found in House 1.

No. 32 is a meat hook of reindeer antler, elongated, with the tip broken, a straight base, and long broad slot for attachment. It has a triangular cross section. The length of the hook is 6.2 cm; the length of the slot is 2.5 cm (Pl. IV:7).

On the Chukchi Peninsula, there are meat hooks at Sirenik. More than others, our specimen is reminiscent of a third type (according to S. I. Rudenko), of small size and with a longitudinal slot for attachment (Rudenko 1972:85; Pl. 27:29). On St. Lawrence Island, where meat hooks appeared in Old Bering Sea times, the closest analogies should be considered the very early hooks with a long slot for attachment (Collins 1937:138–140; Pl. 35:1–3—Miyowagh).

At Point Hope, a hook similar in form to No. 32 was found in a burial at the late site of Tigara (Larsen and Rainey 1948:Pl. 93:7). A similar hook was also encountered on the Kobuk River in an eighteenth century site (Giddings 1952:61; Pl. 3:8—Ambler Island). Both specimens had holes for attachment. Close analogies, also with holes for attachment, were encountered by Ford in late sites at Point Barrow (Ford 1959:184–186; Fig. 21p—Nunagiak; Fig. 89a, b—Nuvuk-Utkiavik), as well as described by Murdoch among the Eskimos of Point Barrow and by Nelson among Eskimos of Bering Strait at the end of the nineteenth century (Murdoch 1892:310; Figs. 311, 312; Nelson 1899:223; Pl. LXXX:1–5).

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Tools for Fishing

Parts of a Leister, a Fishing Ice Pick, Sinkers, and Tools for Weaving Nets

Tools for catching fish were encountered almost exclusively in House 1. One sinker (or pendant) was found in House 5.

Leisters of walrus tusk and deer antler, which served to catch large fish in lagoons and river mouths, are one of the very early Eskimo tools. Central prongs of leisters (sometimes very large) were used independently as spear points. There were also small leisters, as well as compound (salmon) leisters with attached barb.

According to Nelson (1899:194–195; Pls. LXVII:3–6, LXVIII:1), the Eskimos at the end of the nineteenth century at Bering Strait made holes in the ice in autumn, through which fish were taken with the leister (fish spear). These tools consisted of a wooden shaft with a point of deer antler on the end. The point was surrounded by several antler tines, also attached to the shaft, with triangular barbs on the ends. When they struck a fish with the central point, the lateral tines gripped the fish as they pulled it from the water. Fish spears were rare among the Eskimos of Point Barrow in the nineteenth century since nets were in general use. According to Murdoch (1892:286–287; Fig. 278), one central and two lateral tines of whale bone were set into a wooden shaft. A pointed barb was attached to the point of each of the lateral tines. Such a spear functioned like the one described by Nelson. W. G. Bogoras (1904–1909:I:149; Fig. 66) published lateral tines of leisters from early Eskimo houses on the Bering Sea coast of the Chukchi Peninsula. He notes that at the beginning of the twentieth century he encountered leisters only among the Kerek and among the Koryak of Kamchatka.

In House 1, two lateral tines of a leister of reindeer antler were encountered (Nos. 124 and 678). Their lengths are 32.5 and 21.5 cm (Pl. IV:17, 16).

The closest analogies: on the Chukchi Peninsula (from Old Bering Sea to late Punuk times) (Rudenko 1972:135–136; Pl.2:26—Uelen; Pl. 8:11—Cape Dezhneva; Pl. 12:18—Arakamchechen Island; Pl. 22:35, 39, 40—Sirenik); among Eskimos of the Birnirk culture (Ford 1959:147; Fig. 73e); among Eskimos of the Kobuk River (Giddings 1952:36; Pl. XXXVI:23—Intermediate Kotzebue); and among the Central Eskimos of the Thule culture (Mathiassen 1927:I:42; Pl. 10:7—Naujan).

Fishing ice picks of walrus tusk, whale bone, and deer antler were encountered among the Eskimos. The differ from harpoon ice picks in that they are sharper on the end and many of them were made from a bent antler shaft with one projecting and one flat side. The fishing ice pick was attached by the latter to a wooden shaft. For this, transverse notches were usually made on one end.

This type of pick was found only in House 1. (The other picks—from Houses 1 and 5—are harpoon ice picks.)

No. 105 is a fishing ice pick of slightly bent reindeer antler with a sharpened three-edged front end and covered with transverse notches for setting into a haft. The cross section is oval. The length is 18 cm (Pl. IV:15).

The closest analogies are late: In sites of the fifteenth to eighteenth century Eskimos of the Kobuk River (Giddings 1952:39, 40; Pl. XXX—Ekseavik; 10; Pls. I, II—Ambler Island) and among Eskimos of the end of the nineteenth century in Bering Strait, such picks were used for punching holes in the ice to catch fish (Nelson 1899:174; Fig. 47; Pl. LXVII:10—St. Michael).

Tools for weaving nets are marlin spikes and shuttles. Special spikes were used by the Eskimos to make nets, to tie and untie knots and separate the fibers of the net. They were made of walrus tusk and had a different size and form of handle. Sometimes such a spike was set into a wooden handle. Like the shuttle, they appear only in late Eskimo sites.

In House 1, two tools of deer antler are reminiscent in form of the described spikes. (In this same house is a fragment of a tool reminiscent of a shuttle.)

No. 37 is a tool for weaving nets (a marlin spike) of deer antler, slightly bent, pointed on one end, and a groove in the other, flattened end. The length is 17.5 cm (Pl. IV:14). It is reminiscent of the antler rod (No. 797) from House 1.

Close analogies to No. 37 are found among the spikes used by Eskimos of Bering Strait at the end of the nineteenth century for tying net fibers. Some of these spikes are reminiscent in form of our specimen and were also made of deer antler (Nelson 1899:193; Pl. LXXII:18, 21). Similar spikes for tying and untying knots of a net are described by Bogoras (1904–1909:I:210; Fig. 126a, b) among the Chukchi and Eskimos on the Bering Sea coast of the Chukchi Peninsula at the beginning of the twentieth century.

No. 891 is a fragment of a small wooden slab with a deep rectangular cut in the preserved end. The cross section is rectangular. It is reminiscent of shuttles for weaving nets, which were also sometimes made of wood. The length of the piece is 8 cm; the depth of the cut is 1.5 cm (Pl. IV:9).

Analogies: On the Chukchi Peninsula is found a shuttle for weaving nets, but made of bone, with the ends of the cut bent inward (Rudenko 1972:137; Pl. 13:24—Cape Chaplina). Similar shuttles of deer antler are known in sites of the sixteenth century on the Kobuk River (Giddings 1952:36; Pl. XXXVI:30—Intermediate Kotzebue). Among the Eskimos of Point Barrow, shuttles and other tools connected with weaving nets appear only in the latest site of Utkiavik, excavated by Ford (1959:109; Fig. 45n, p, q). Here, shuttles were very similar to the such artifacts of bone, walrus tusk, deer antler, and wood that were widespread among the Eskimos at the end of the nineteenth century at Point Barrow and on the coast of Bering Strait (Murdoch 1892:311–317; Fig. 314 and others; Nelson 1899:191–192; Pl. LXXIII:8, 10, 20–22—of wood—and others). Bogoras (1904–1909:I:146:61) describes shuttles of whale bone and wood for weaving nets among the Coastal Chukchi and the Eskimos of the Bering Sea coast at the beginning of the twentieth century. These are especially close in form to our specimen.

Sinkers for nets and fishing lines, the large part carved from walrus tusk and fossil ivory, as well as from deer antler and whale bone, are usually encountered in Eskimo camps of Punuk and later times. One sinker was found in House 5 (see Art Objects, No. 29) and two in House 1.

Nos. 7 and 8 are sinkers for a net (No. 8 is possible for a fishing line) of reindeer antler and mammoth tusk with two encircling grooves. No. 7 has a hole for suspension. The cross section is round. The lengths are 7.5 and 4.5 cm (Pl. IV:5, 4). The closest analogies: on the Chukchi Peninsula among Punuk finds (Rudenko 1972:137; Pls. 23:21—Sirenik; 36:34—isolated finds on the Chukchi Peninsula) and on St. Lawrence Island among Punuk and modern finds (Collins 1937:225; Pl. 75:13, 15). For other analogies, see No. 29.

●

Tools for Hunting

Bows and Arrowheads, Wrist Guards, Spear Points, Bird Darts, and Daggers

We can assign bows (6 specimens) to the hunting complex of Cape Baranov, including toy ones (House 1—5 specimens; House in Vtoraya Bay—1); arrowheads (9 specimens) of deer antler, bone, and tusk (House 1—7; House 5—1; House in Vtoraya Bay—1); wooden arrowheads, including toy ones and fragments of them (35 specimens), all from House 1; wrist guards—2 specimens (House 1); spear points (3 specimens) of bone and wood (House 1—1; House 5—1; House in Vtoraya Bay—1); bird darts—3 specimens (House 1); and bone daggers—3 specimens (House 1—2; House in Vtoraya Bay—1).

Bows. The presence of stone and bone arrowheads among finds on the Arctic coast of Siberia point to the long existence there of the bow, beginning with the early sites of tundra hunters of the end of the Neolithic and beginning of the Bronze Age at the mouths of the Khatanga, Lena, Indigirka, and Kolyma Rivers (Okladnikov 1947e, 1947f, 1955b:Ch. I, III; Okladnikov and Gurvich 1957) and ending with sites on the Chetyrekhstolbovyi Island (Beregovaya 1954:Pl. II:5–7), on Cape Baranov, and on Shalaurova Island (Beregovaya 1960:Fig. 3:1–3).

The HOUSE in VTORAYA BAY. No. 204 is a fragment of a wooden bow in the form of a rod thinned on the intact end, with a groove for attaching the bowstring. The rod is flattened on the outside and rounded on the inside. The cross section is rectangular on the end and almost round in the middle. The flattened upper side was possibly fortified with sinew. It is 33 cm long (Pl. V:20).

Similar wooden children's bows (toys) and pieces of them were encountered in House 1 (Nos. 100, 864, 943, 946, and 955; see Toys).

Analogies: on the Chukchi Peninsula wooden toy bows from Sirenik and a small wooden bow from a late house (*nynglu*) at Uelen (Rudenko 1972:129–131, 137–138, 139–140; Pls. 21:1, 3; 5:9). On St. Lawrence Island, toy bows of wood and baleen were found in an Old Bering Sea site (Collins 1937:134; Pls. 55:1, 2; 56:15; 59:26—Miyowagh). In Ipiutak at Point Hope, the largest of the toy wooden bows had a convex inner and flattened outer surface. It is thickened in the middle, and the ends in distinction from our specimen are bent forward (Larsen and Rainey 1948:67; Pl. 31:1; Murdoch 1885:Pl. 3:5). In the collection from Point Barrow (Kugusugaruk) are found similar wooden bows, thickened in the middle, with knobs for attaching the bowstring to the ends (Ford 1959:21; Fig. 4). In the site of Birnirk itself at Point Barrow, a wooden bow was found with projecting rectangular rods on the ends for attaching the bowstring, and flattened on the back for reinforcement with sinew (Ford 1959:120; Fig. 55a; Mason 1930:Pl. I). Among the Eskimos of the Thule culture, a wooden bow, similar to our specimen but with the same rectangular rod on the intact end, as at Birnirk, was found at Ponds Inlet (Mathiassen 1927:I:153; Pl. 42:1). Similar bows were encountered in fifteenth century sites on the Kobuk River (Giddings 1952:47; Pl. XXXV:7—Ekseavik). Among the Eskimos at Point Barrow at the end of the nineteenth century were wooden bows for boys, one of which, made of a single piece of driftwood, is flat on the back and convex on the inner surface, and almost elliptical in cross section, reminiscent of our specimen. It is pointed on the ends, where knobs were made for attaching the bowstring, and thickened at the grip. In addition, it was reinforced by a binding of sinew. Murdoch calls this type of bow the Arctic type (Murdoch 1892:195; Fig. 177—Utkiavik). The same bows existed at this time among the Eskimos of Bering Strait. Some in the unstrung state are almost straight (Nelson 1899:155; Pl. LX:1–5).

Arrowheads of walrus tusk and deer antler have been encountered in all Eskimo sites, beginning with the earliest and up to modern times, changing substantially in form during that time. Old Bering Sea arrowheads from St. Lawrence and the Punuk (at Okvik) Islands, as on the Chukchi Peninsula, are characterized by conical stems and barbs arranged at the bottom, almost at the stem. They are almost

acterized by conical stems and barbs arranged at the bottom, almost at the stem. They are almost round in cross section (Collins 1937:323–324; Pl. 34:1–11—Miyowagh; Rainey 1941:Fig. 14:1–9; Rudenko 1972:131–132; Pls. 17:1—Kivak, 32:19, 20—Nunligran, the eastern campsite, and others). Punuk points, by contrast, had in large part a triangular cross section, one or several prominent barbs, or even entirely without barbs. They all also had conical stems. Some points are characterized by a stem with shoulders (Collins 1937:324; Pl. 74:6–10, 14—Ievoghiyoq). A basic element for classification of arrowheads is the form of the stem, which was described for St. Lawrence Island by Collins and for Point Hope by Larsen and Rainey (Collins 1937; Larsen and Rainey 1948:169–179; Fig. 51).

Arrowheads of mammoth tusk, antler, and bone were comparatively few in number at Cape Baranov, but were in all the excavated houses: in House 1—7 specimens (Nos. 53–55, 57, 58, 852, and without number), in House 5—1 specimen (No. 15), and in the House in Vtoraya Bay—1 specimen (No. 14). These heads, like wooden arrows, can be reduced to three main types.

The first type (5 specimens) is simple arrowheads that are round or oval in cross section, have a conical stem (No. 852), and a pointed or obliquely cut base (Nos. 15, 54, 57). Their front ends are pointed (Nos. 15, 54, 57) or flattened, three-sided in cross section (Nos. 55, 852).

The second type (2 specimens)—from House 1 (No. 58)—a fork-producing cut in the base that is made in the same plane as the slot for the end blade, and wooden head No. 899.

The third type is blunt bird arrows. An arrow of mammoth tusk with such a head (No. 14) was encountered in the House in Vtoraya Bay. In House 1 were several blunt wooden heads of bird arrows, probably toys, with a conical thickening on the end (Nos. 63, 72, 901).

There were two specimens of the isolated finds (No. 53 and without number) on Cape Baranov, in House 1, that cannot be assigned to any definite type of arrowhead.

Wooden arrows and shafts. These are either straight rods slightly pointed on the ends with a cut in the base, or which expand toward the front end and are reminiscent of blunt bird arrows. The same three types can be distinguished among them as for antler points. The preserved arrow shafts of light wood (willow) are slightly flattened, almost round in cross section; at the base close to the cut for the bowstring they are expanded and flattened and sometimes have notches, perhaps for fletching (Rudenko 1972:131). In one case, a longitudinal cut was made on the base. In House 1 were 35 fragments of wooden arrows, a large part of them for children's toy bows, and 14 pieces of shafts for such arrows (Nos. 63–74, 110, 889, 899, 901, 902, 904–906, 909, 912, 914, 916–931, 933, 934, 939, 946, 949, 951–953, 958–960).

HOUSE 1. All three types of arrowheads are represented. To the first type belong both antler and wood tools, some of them toys.

No. 57 is an arrowhead of reindeer antler, of narrow, slightly bent form, round in cross section, with a pointed conical front end and the lower end obliquely cut at the base. The length is 15 cm (Pl. V:17).

Analogies: an arrowhead of deer antler in Uelen on the Chukchi Peninsula; simple arrowheads also of deer antler with pointed front ends, three-sided in cross section, all with obliquely cut bases, coming from a burial that belongs to the time of transition from the Thule culture to modern Eskimo culture (Mathiassen 1927:I:217; Pl. 65:17–19—Qilalukan); and some points of the Eskimos of the end of the nineteenth century on the coast of Bering Strait (Nelson 1899:157; Pl. LXI:a, 1, 7).

According to Bogoras (1904–1909:I:156), arrowheads among the Chukchi at the beginning of the twentieth century were sometimes beveled at the base for attachment to a shaft. Close analogies to the simple arrowheads of Cape Baranov are bone points from the lower Neolithic layer of the Veret'e site on Lacha Island (Foss 1941:Pl. III:1, 5).

No. 852 is an arrowhead of reindeer antler with a pointed flattened three-sided end and small conical stem at the base. The cross section in the middle is lenticular. It is 12.5 cm long.

Similar arrowheads (Nos. 54, 55) were also encountered in House 1 and No. 15 in House 5 (Pl. V:7, 15).

The closest analogies: on the Chukchi Peninsula in the Old Bering Sea site of Kivak (Rudenko 1972:14–15; Pl. 17:3); among the late finds in a house on Chetyrekhstolbovyi Island (Beregovaya 1954:Pl. II:6); in the early site of the Ipiutak culture at Point Hope (Larsen and Rainey 1948:63; Pl. I:17–19); and in Rasmussen's late collection from there (Mathiassen 1930:80; Pl. 14:3). On the Kobuk River in an Eskimo site of the eighteenth century were similar arrows of deer antler (Giddings 1952:46, 76; Pls. I:6–8—Ambler Island; XXVII:6, 21); in the territory of the Central Eskimo culture in a burial, transitional from the Thule culture to modern Eskimo culture, were arrowheads of deer antler, three-sided in cross section, all with obliquely cut bases (Mathiassen 1927:I:27; Pl. 65:17–18—Qilalukan). Among the Eskimos at Point Barrow in the late sites of Nuvuk and Utkiavik, Ford describes arrowheads of the same material, without barbs and with a conical stem (Ford 1959:124; Fig. 57). Among the points of Chukchi arrows of the beginning of the twentieth century was one specimen similar to No. 852 (Bogoras 1904–1909:I:155–157; Fig. 74:a–n).

Wooden arrows of the first type and fragments of them (Nos. 64, 66, 67, 69, 71, 73, 110, 889, 903–906, 918–951) are long narrow rods, thickened in the middle, often with a charred front end, with a notch in the base for the bowstring, sometimes with an obliquely cut base (No. 69), with round or oval cross section. The length is 12 to 17 cm. The length of the fragments is 5.5 to 14 cm (Pl. V:6, 12–14, 16).

The shafts of wooden arrows are narrow rods, round or oval in cross section, and preserved as fragments. The length is 6.3 to 17 cm.

The same forms of wooden arrows are encountered in House 1 among children's toys (see Toys).

The closest analogies: on the Chukchi Peninsula at Sirenik and in later sites (Rudenko 1972:77–78, 131; Pls. 5:19—Uelen, *nynglu*; 10:14—Naukan; 22:12—Sirenik; 32:28, 29—Nunligran) and on Shalaurova Island (Beregovaya 1960:Fig. 3:1). Similar wooden shafts are contained in late Eskimo collections—fifteenth century (Giddings 1952:46; Pl. XXXV:3, 12) on the Kobuk River, in late sites at Point Barrow (Mathiassen 1930:37; Fig. 5; Murdoch 1892:201; Fig. 186), and in the region of Bering Strait among Eskimos of the end of the nineteenth century (Nelson 1899:157; Pl. LXI:a, 1, 2—bone).

Two arrowheads in House 1 can be assigned to the second type.

No. 58 is an arrowhead of walrus tusk with a deep, broad cut in the front end for a stone end blade. The base of the point is split for setting onto a shaft and has the same deep cut made in the same plane as the upper one. The cross section is subtriangular, almost round. The greatest diameter, at the front end, is 0.9 cm. On two edges of the point deep decorative incisions were made along the whole length, which expand in the middle—the Uelen Okvik type. The length of the upper cut is 2.8 cm, the lower 3.5 cm. The length of the point is 10.5 cm (Pl. V:2).

The closest analogies: bone points at Uelen on the Chukchi Peninsula (second type based on S. I. Rudenko) and at Ekven cemetery (Rudenko 1972:28–31, 131–133; Pl. 2:6–8; Arutiunov and Sergeev 1962:Fig. 2:8). In addition, similar points of walrus tusk with the same longitudinal cuts were encountered in burials of the Near Ipiutak culture at Point Hope (Larsen and Rainey 1948:162, 164; Pls. 78:12–14; 82:9). Among the Chukchi at the beginning of the twentieth century were arrows with a slot for an end blade (Bogoras 1904–1909:I:155–157; Fig. 74a).

No. 899 is the point of a wooden arrow with the tip charred on one surface. The lower end is divided for attachment to a shaft. The cross section is a flat lens. The length is 12.2 cm (Pl. V:3).

On Cape Baranov, there are no similar wooden arrows. (Point No. 58 of walrus tusk from this same house has a cut in both ends: for both an end blade and a base.)

A similar wooden arrowhead with a deep split in the base for attachment to a shaft was found in a house on Chetyrekhstolbovyi Island (finds of 1949). The point of this arrow also was slightly burned and a stone end blade was evidently fastened in the cut at the tip (Beregovaya 1954:Pl. II:7). Bone points with cuts for end blades on the front end and for a base on the lower end were encountered at the early Uelen site on the Chukchi Peninsula (Rudenko 1972:131–133; Pl. 2:6–8). The same is assigned to finds in burials of the Near Ipiutak culture on Point Hope (Larsen and Rainey 1948:Pls. 78:12–14; 82:9). The closest analogies of such arrowheads were found in a burial of the early Bronze Age on the Bugachan River, a left tributary of the lower Lena (beginning of the first millennium B.C.) and in a burial near Evseevo village on the Angara (Okladnikov 1949b:131; Pl. XIX:1; 1955a:143; Fig. 46:1; 1955b:64; Fig. 19:6). Rudenko pointed out that such arrows are known among Neolithic finds in Kamchatka (Rudenko 1948:153–179; Pl. 7:24, 28).

Several wooden, probably toy, arrows from House 1 with conical thickening on the end can be assigned to the third type—blunt bird arrows.

No. 63 is a wooden blunted point of a bird arrow with a broken lower end and conical front end. The cross section is round. The length is 7.2 cm (Pl. V:11).

Similar wooden arrows Nos. 72 and 901 are probably toys (see Toys).

Analogies: a bone point of a bird arrow on Chetyrekhstolbovyi Island with a short conical stem (Beregovaya 1954:Pl. 2:5), a wooden four-lobed point of such an arrow from Shalaurova Island (Beregovaya 1960:Fig. 3:2, 3), and wooden arrows from a late house at Uelen, from Naukan, and from Sirenik on the Chukchi Peninsula (Rudenko 1972:131–133; Pls. 5:12; 10:14; 21:11, 13, 15). Similar forms of bird arrows of bone were encountered among the Eskimos of Bering Strait at the end at the nineteenth century (Nelson 1899:159; Pl. LXI:c, 1). Bird arrows of iron, bone, and sometimes of wood were used by the Chukchi at the beginning of the twentieth century (Bogoras 1904–1909:I:156; Fig. 74:h, n).

Uncommon forms of arrowheads have no analogies in House 1.

A fragment of an arrowhead (unnumbered) of deer antler has a long three-sided tip, one small lateral barb at the base of the pointed part, and a broken lower end. It is 10.5 cm long (Pl. V:5).

On the Chukchi Peninsula such points of bone and walrus tusk appear during Punuk times; later ones usually have a three-sided form of the tip, one small barb, and a conical stem. Analogies to our specimen are found at Sirenik and Enmylen (Rudenko 1972:132–133; Pls. 21:18, 21; 22:9; 33:22), and on the islands of St. Lawrence and Punuk (at Okvik) they appear in early Punuk and are known in late Punuk and protohistoric sites (Collins 1937:323–324; Pls. 34:7–9—Miyowagh; 74:6, 7—Ievoghiyoq; Geist and Rainey 1936:Pl. 54:6; Rainey 1941:Fig. 14:8). At Point Barrow they are known in sites of the Birnirk culture (Mason 1930:Pl. III; Ford 1959:132; Fig. 61—Birnirk) and later sites (Ford 1959:126; Fig. 58:a–c—Nuvuk-Utkiavik). Birnirk has pointed stems; later ones are conical. At Point Hope such arrowheads are encountered in Birnirk burials of the Western Thule culture and among finds in the modern Eskimo site of Tigara (Larsen and Rainey 1948:168–179; Pls. 87:8; 88:6; 95:7; 93:1). Arrowheads that are close in form, on which the working edge, expanding on one side, forms a barb, and are three-sided in cross section, are encountered in a site of the Eastern Thule culture (Mathiassen 1927:I:35; Pl. 8:5, 6—Naujan). The type of arrowhead with a three-sided cross section and one or two lateral barbs was predominant among the late Eskimos of Cape Atkinson, Barter Island, and Point Barrow (Rasmussen's collection) (Mathiassen 1930:9, 10; Pls. 1:13, 14, 18; 23; Fig. 5:7; p. 37; Pl. 9:1). All these points have conical stems, sometimes with lateral bumps. The same can be assigned to points of arrows (or spears?) from the Stefansson collection in the region of Point Barrow and east of there (Wissler 1916:Figs. 24:c—Birnirk, 29:f—Cape Smythe, 36:2—Baillie Island). Among the Eskimos of the thirteenth to eighteenth centuries

on the Kobuk River, arrowheads with one or several barbs on one side of the working edge and conical stems also predominated (Giddings 1952:43, 45, 46, 47, 49, 50; Pls. I:10—Ambler Island; XVI:11—Ahteut; XXVII:13, 14—Ekseavik; XXXVII:1–4, 10—Intermediate Kotzebue). According to Murdoch and Nelson, arrowheads among the Eskimos of Point Barrow and Bering Strait at the end of the nineteenth century were made of bone and walrus tusk and also had lateral barbs (Murdoch 1892:201, 205; Fig. 187; Nelson 1899:157; Pl. LXI:a, 2, 6, 8). There are no complete analogies to our specimen because its base is broken and the form of the stem unknown.

No. 53 is a head of an arrow or dart of reindeer antler with a transverse groove for a blade on the front end and a narrowing pointed base. The cross section is lenticular. The length is 15.3 cm. (The tool could have served as a handle for a small cutting blade or point.)

There are no close analogies. Protohistoric arrowheads on the Chukchi Peninsula are reminiscent—round in cross section, usually with adjacent barbs and a slot for an end blade. They were equipped with both flint and iron end blades and had a conical stem (Rudenko 1972:132–133; Pl. 13:11—Cape Chaplina). Such points are described by Ford in late Eskimo sites at Point Barrow. They also had lateral barbs and conical stems, and on top a lenticular slot for a stone point (Ford 1959:126; Fig. 58:o–s—Nuvuk-Utkiavik). Similar to them are the arrowheads of the Eskimos of the end of the nineteenth century at Point Barrow, described by Murdoch (1892:201–207; Fig. 186). According to Bogoras, among the Chukchi at the beginning of the twentieth century, arrowheads were made not only of iron but also of walrus tusk, bone, and wood. Among the points he published, one with a broad blunt end and evidently with a slot for an end blade is reminiscent of our specimen (Bogoras 1904–1909:I:156; Fig. 74).

No. 59 is a handle made of a hollow bird long-bone with a wooden rod inserted in it the whole length of the bone. The wooden rod is broken on top. The cross section is round. The length is 14.5 cm (Pl. V:1). Analogies are unknown on Cape Baranov and the Chukchi Peninsula. Hollow bird bones with pointed bone rods inserted in them have been found on St. Lawrence Island among finds of Punuk times (Collins 1937:240; Pl. 81:15, 16). Such tools are known among Eskimos of the Birnirk culture (Ford 1959:Fig. 104:m) and the Thule culture. According to Mathiassen, they consist of a pointed bird bone, which was set in a larger bird bone. They served for hunting birds (Mathiassen 1927:I:156, 176; Pls. 43:10; 52:10—Ponds Inlet) or as an awl-bodkin. Our specimen is different by the fact that a wooden rod is inserted in the bird bone.

HOUSE 5. Only one arrowhead, of the first type, was found.

No. 15 is an arrowhead of reindeer antler in the form of a narrow, slightly bent rod with a somewhat thickened tip and obliquely cut base. The cross section is round. The length is 18 cm.

Similar simple arrowheads were encountered in House 1: No. 57 and the wooden arrow No. 69.

For other analogies, see No. 57.

The HOUSE in VTORAYA BAY. One arrowhead of the third type was found.

No. 14 is a point of a blunt bird (?) arrow of mammoth tusk, damaged on the upper end, which has a conical thickening with a slot for inserting an end blade. A beveled cut for fastening to a shaft was made on the lower end. The cross section is round. The length is 11 cm (see Pl. V:4).

Several wooden arrowheads with a conical thickening on the end (Nos. 63, 72, 901), but without a slot for an end blade, were found in House 1.

In spite of the fact that the blunt arrowheads for hunting birds and small fur-bearing animals were widespread throughout all of northern Eurasia, only bone bird arrows from Sirenik on the Chukchi Peninsula (one of them has the same conical thickening on top, but without a slot) and a complete arrowhead of walrus tusk from Nunligran with a cone on the end separate from the shaft (Punuk and protohistoric times) are similar to point No. 14 (Rudenko 1972:132–133; Pls. 22:3; 31:17). Arrowheads

among the Eskimos of Bering Strait at the end of the nineteenth century are somewhat similar (Nelson 1899:159; Pl. LXI:c, 2). Also very similar to our specimen is the point of a bird arrow from the early Iron Age site of Këlʼmo (Finmarken, Norway) with the same conical end separated from the shaft (but without a slot) and an obliquely cut base (Larsen and Rainey 1948:Fig. 12:b; Klark 1953:Fig. 14).

However, among all the blunted arrows, which are widely known in Eskimo territory, with a conical front end or composed of several segments, there is no slot for an end blade since they were evidently intended for striking birds and small fur-bearing animals without inflicting wounds or damaging the skins. In view of this, the assignment of the arrow from the House in Vtoraya Bay is not entirely clear.

Wrist guards of bone, walrus tusk, deer antler, and baleen that were used when shooting the bow appear in Eskimo sites beginning with Punuk times. But there are none in sites of the Old Bering Sea and Thule cultures. They are very different in form, either completely undecorated or covered with Punuk design.

Wrist guards of mammoth tusk and of reindeer antler (Nos. 661, 662) were found in House 1. The also could have served as reinforcement for bows (?). Both specimens were of oval form and with a concave inner surface. Grooves were made along the edges of wrist guard No. 662. No. 661 was not finished. Their lengths are 8 and 11 cm (Pl. VI:2, 7).

There are close analogies to both specimens on the Chukchi Peninsula at Sirenik and Cape Chaplina (Rudenko 1972:129–131; Pls. 21:5; 13:16). The most reminiscent to Nos. 661 and 662 on St. Lawrence Island are an early Punuk wrist guard and a decorated specimen belonging to modern Eskimos (Collins 1937:223, 224; Pls. 22:10—Miyowagh; 74:24). Also closely similar are bow reinforcements among Eskimos of the Kobuk River in the fifteenth–sixteenth centuries (Giddings 1952:45, 47; Pls. XXXVII:11, 12, 15—Intermediate Kotzebue; LXIII:20—Ekseavik), and among the Eskimos at Point Barrow, and wrist guards of Eskimos at Bering Strait at the end of the nineteenth century (Murdoch 1892:209, 210; Figs. 193, 194; Nelson 1899:161–162; Pl. LXI:b, 4, 19). One of the wrist guards of the Asiatic Eskimos of the beginning of the twentieth century has a similar oval form (Bogoras 1904–1909:I:155; Fig. 73a).

Spear points. Most authors who describe Eskimo materials point to the difficulty encountered in differentiating stone points of spears, darts, arrows, and knives. The assignment of such tools is easier established if the shaft is preserved or bone points in which stone tips were inserted in the end as end blades or as lateral inset blades.

No stone points of spears or darts were found on Cape Baranov.

HOUSE 1. A wooden spear point was found. Some daggers of antler or walrus tusk could perhaps also have served as spear points.

No. 107 is a wooden spear (?) point with a deep slot in the upper end for inserting an end blade and with a split forking base, made in the same plane, for attachment to a shaft. The cross section is oval. The length is 21 cm (Pl. VI:3).

There are no other such spear points on Cape Baranov. A close analogy to our specimen is a wooden arrow head with a forked base and probably a slot for an end blade in the (damaged) front end that is in the same plane as the forked split made in the base. It is from Chetyrekhstolbovyi Island (excavations of 1949) (Beregovaya 1954:Pl. II:7). Close to No. 107 in form is a single specimen of a walrus-tusk spear point covered with Old Bering Sea design, found at Okvik on Punuk Island (Rainey 1941:Fig. 12:12).

HOUSE 5 and the HOUSE in VTORAYA BAY. Nos. 19 and 12 are points of spears (?). They are large rods of reindeer antler. No. 19 is pointed on both ends and No. 12 on one end (the other end is

broken). Both have a slightly bent form and are ground along the edges. They are oval in cross section. The length is 29 and 30 cm (Pl. VI:5, 4).

The closest analogies: bone spear points of late Punuk times from the Chukchi Peninsula (Rudenko 1972:59, 128; Pl. 14:16—Cape Chaplina); a tool of antler, conical at the base and pointed on the end, in the Rasmussen collection from Point Barrow. (According to Mathiassen [1930:36; Fig. 8:1], it is a spear point for hunting whales.) Nelson describes an early spear point from Cape Nome made of walrus tusk, which was used for hunting whales and walruses (Nelson 1899:148; Pl. LVII:b, 1).

Bird darts were one of the most widespread pieces of Eskimo hunting equipment both in the earliest and in late stages of development of Eskimo culture, up to the present. In the region of Bering Strait and the Bering Sea, bird darts and throwing boards (atlatls) appear by Old Bering Sea times (Rudenko 1972:129; Collins 1937:131, 132; Rainey 1941:Fig. 13). According to Murdoch, the Eskimos at Point Barrow at the end of the nineteenth century used the unique Eskimo tool for hunting large birds (geese and ducks), like other Eskimos from Siberia to Greenland: the dart with one or several points on the end, as well as three additional tines of walrus tusk along the middle of the shaft. These tines extended several inches away from the shaft and had barbs on the inside. Such spears were usually thrown from a boat with the aid of a throwing board (Murdoch 1892:211–214; Figs. 195, 199, 200). Nelson, in his work about the Eskimo of the end of the nineteenth century in Bering Strait, gives the same description of bird darts (Nelson 1899:151, 152; Fig. 42; Pl. LIX:1–11).

Three tines of bird darts were found at Cape Baranov in House 1.

Nos. 165 and 166 are central tines of bird darts. They are made of walrus tusk and have two lateral barbs and a flattened three-sided front end (the tip on No. 165 is broken) and a pointed obliquely cut base. The cross section in the middle of the tine is round. The lengths are 9 and 10.5 cm (Pl. V:9, 10).

No. 163 is a lateral tine of a bird dart of reindeer antler. It has two lateral barbs widely spaced from each other, a flattened base, and a broken tip. The cross section is rectangular. The length is 6.5 cm (Pl. V:8).

The closest analogies for all three specimens: on the Chukchi Peninsula at Uelen (Rudenko 1972:129; Pl. 2:11, 16, 17); on St. Lawrence Island in Old Bering Sea layers (Collins 1937:132; Pl. 33:9, 10, 15—Miyowagh); in the Ipiutak site at Point Hope (Larsen and Rainey 1948:77; Pl. 7:4, 5, 6); and at the Birnirk site and later—Nunagiak and Utkiavik at Point Barrow (Ford 1959:116–118; Figs. 48:d–f; 50:b, e–j).

Daggers, or bone knives (3 specimens), of walrus tusk or antler, which were evidently used not only in hunting but also in battle, appear among the Eskimos in Punuk sites.

HOUSE 1. Two tools were found.

No. 715 is a dagger of reindeer antler, slightly bent, with a pointed front end broken at the very tip, and with one sharper and one blunter edge. The handle was formed by a lateral groove. On the side with the groove, 6.5 cm from the handle, an oval hole had been drilled. The cross section is lenticular. The length is 24 cm (Pl. VI:8).

Analogies: pointed bone knives with an oval handle and a hole for suspension, among Birnirk finds in burials at Tigara on Point Hope (Larsen and Rainey 1948:169–170; Pl. 87:16). The most reminiscent of No. 715 among Eskimos of the Thule culture is a snow knife of whale bone, though these knives usually have shoulders (Mathiassen 1927:I:46; Pl. 15:1). The closest analogy is a crude bone knife of the Eskimos at Point Barrow at the end of the nineteenth century. It has a pointed end, one sharp and one blunt edge, and a crudely formed handle (Murdoch 1892:192; Fig. 175:b).

An unnumbered dagger (or spear point?) of walrus tusk or mammoth tusk is pointed toward the upper end, with partial retouch along the edges, and with the lower end narrowed and flattened by longitudinal

cuts, the tip of the lower end being broken. A central ridge runs along the whole length of the back of the tool. The cross section is subtriangular. The surface of the knife is dark yellow in color, is ground, and almost completely covered with small transverse strokes—traces of working. The length is 16 cm (Pl. VI:1).

On the Chukchi Peninsula where such knives have been found in late sites, the closest analogies are knife blades of walrus tusk and bone from Uelen (*nynglu*), Cape Chaplina, and Enmylen (Rudenko 1972:143–144; Pls. 5:25; 14:14, 15; 33:26); on St. Lawrence Island—a bone knife with a hole in the handle from Punuk layers (Collins 1937:235; Pl. 79:5—Miyowagh); and among Eskimos of the Thule culture—daggers of deer antler at Naujan (Mathaissen 1927:I:48; Pl. 13:15, 16). However, these last, just as the dagger of deer antler in the Rasmussen collection from Point Barrow (Mathiassen 1930:42; Pl. 8:8) and the crude bear-bone daggers of the Eskimos of the end of the nineteenth century from Point Barrow (Murdoch 1892:191, 192; Fig. 175), have a concave inner surface or groove, by which they differ from our specimen.

A dagger of deer antler from a fifteenth century site on the Kobuk River, pointed on the end and along the edges, differs from our specimen by having a long straight handle carved from the same piece of antler (Giddings 1952:91; Pl. XLIV:17—Ekseavik). According to Bogoras, among the Chukchi of the beginning of the twentieth century, especially among the Reindeer Chukchi, knives and spear points, which up to the arrival of the Russians were made of flint or bone, were very similar in form to the described knife from House 1. They served as a weapon in battle (Bogoras 1904–1909:I:159–161; Fig. 82).

The HOUSE in VTORAYA BAY. One artifact was found.

No. 197 is a knife (or a dagger?) of reindeer antler, elongated, pointed on the end by two beveling cuts. The cutting edge is polished on one side from use, on the other it is blunted. The lower end is slightly narrowed and broken. The cross section is subtriangular. The length is 25 cm (Pl. VI:6).

For analogies, see unnumbered artifact in House 1. There are no close analogies.

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Tools for Butchering Animals and Working Hides

Handles of Men's and Women's Knives, Bone Scrapers (Small Cup-Like Fat Scrapers, Scrapers with Two Handles), Paddles (Polishers), Awls, and Punches

At Cape Baranov this group of tools includes handles of men's knives, awls, and punches (these were encountered in all three houses), handles of women's knives and fat scrapers (in House in Vtoraya Bay), and paddles-polishers (in Houses 1 and 5), with a total of 59 items.

Handles of men's knives of wood, bone, deer antler, and walrus tusk (whole and compound with two halves, with a slot for a stone and sometimes metal blade that could be transverse or longitudinal) are widespread both in early and late camps throughout all of Eskimo territory. Such knives were used for skinning and cutting up carcasses, for working wood (planing), for cutting bone and walrus tusk, and so on. They are known from all excavated houses and are extremely more numerous than the one- and two-bladed slate knives that were preserved (9 specimens) (see Stone Tools). Thirty-one handles were found in House 1, in House 5 there were two, and in the House in Vtoraya Bay there were four, for a total of 37 specimens. Four of them (three from House 1 and one from the House in Vtoraya Bay) have metal blades and four (from House 1) have wooden handles. Handles with a transverse cut for the blade at the front end predominated (28 specimens, including blanks). Two handles with tiny slots probably served for insetting an engraving point.

The handles of men's knives from houses on Cape Baranov with a slot on the front end for inserting the butt of a stone blade served primarily for skinning and cutting up carcasses, like hunting knives.

House 1 contained 22 handles with a slot in the front end (counting wooden handles of two halves and seven blanks). There were two in House 5 and four in the House in Vtoraya Bay.

HOUSE 1. No. 686 is a handle of a man's knife of reindeer antler with a transverse slot for inserting the butt of a knife blade on one end and narrowing toward the other end. At the slot, the surface of the handle was thinned and smoothed. Along one edge of the slot was a small lateral slit. The cross section is oval. The length is 14 cm (Pl. VII:2).

The closest analogies: antler handles Nos. 39, 62, 679, 687–790[?], 690a, 692, 755, 758. These all have a transverse slot for inserting a knife blade in one or both ends. Near the slot is usually a lateral slit for extracting the blade. In one case (No. 39), a small oval hole was made in the side in place of a slit. Around the transverse slot an encircling groove can sometimes be seen (Nos. 689, 692). The cross section is oval. The length is from 11 to 12.5 cm (Pl. VII:4, 9, 10, 11, 12).

Other analogies: on the Chukchi Peninsula, chiefly in Punuk sites (Rudenko 1972:82, 143–144; Pls. 12:23—Arakamchechen Island; 25:17—Sirenik; 31:42—Nunligran; 34:31—Enmylen); on St. Lawrence and the Punuk (Okvik) Islands among Old Bering Sea and Punuk finds (Collins 1937:146, 231, 233; Pl. 38:8—Miyowagh; Rainey 1941:548; Fig. 18:5–8); and in houses of the Ipiutak site at Point Hope (Larsen and Rainey 1948:81; Pl. 8:2–4, 9). Similar handles, but without the lateral slit, were encountered in houses at Point Barrow, beginning with the Birnirk site and ending later: Nunagiak and Utkiavik (in late houses the cross section is oval, in Birnirk, round) (Ford 1959:166–171; Pls. 81:d, e—Nuvuk-Utkiavik; 82:c—Nunagiak; 83:6, b–d—Birnirk); among Eskimos of the Thule culture (Mathiassen 1927:I:49–52; Pls. 17:1, 11, 12; 18:9, 10—Naujan; p. 318; Pl. 83:8—Malerualik); among Eskimos of the Kobuk River of the eighteenth century (Giddings 1952:66, 68; Pls. IV:1, 2—Ambler Island; XXXIX:1—Intermediate Kotzebue); and among western Eskimos of recent times (Rasmussen collection; Mathaissen 1930:12–13;

Pl. 4:1, 2—Atkinson; p. 41; Pl. 10:1, 3——Barrow; p. 58; Pl. 15:1–4—Hope). The same kind of handles with a slot on the end are described by Murdoch and Nelson among Eskimos of Point Barrow and St. Lawrence Island at the end of the nineteenth century (Murdoch 1892:156; Fig. 111; Nelson 1899:85; Pl. XXXVIII:27, 29).

Among the Chukchi, Koryak, and Yukagir of the beginning of the twentieth century, single-bladed metal knives existed that were set in a socket on the end of a wooden handle and served chiefly for cutting meat (Bogoras 1904–1909:I:212, 213; Pls. 132:a; 133; 134).

No. 693 is a handle of a man's knife of reindeer antler with a wide rounded unfinished slot on one end and a deep slot on the other, broken end. On both surfaces of the unbroken end were deep longitudinal cuts and several fine parallel strokes. On the other end, by the broken slot, was a cut for removing a broken blade. The cross section at one end is oval and at the other, wider end, subtriangular. The length is 12 cm.

The closest analogies: an antler handle from the House in Vtoraya Bay (No. 8) and, based on the form of slot-handles Nos. 690b and 84, from House 1. Close to our specimen are antler handles of the Eskimos of the Thule culture, especially one of them—with two slots and longitudinal cuts on the surface (Mathiassen 1927:I:51; Pl. 18:10—Naujan). For other analogies, see No. 84.

No. 84 is the handle of a man's knife or other pointed tool (blank?) made from a wooden rod with a small round slot on one end. The cross section is round. The length is 8.5 cm.

Wooden handles with a transverse slot on one end for inserting a slate knife with a wide or narrow stem have been encountered on the Chukchi Peninsula in both early and late sites. Our specimen is reminiscent in form of some handles from Sirenik, though they have wide transverse slots on the end for blades with broad stems (Rudenko 1972:82, 143–144; Pl. 25:1, 27, 35). The same is true of wooden knife handles among Punuk finds on St. Lawrence and the Punuk Islands (Okvik) (Collins 1937:232; Pl. 78:6, 7—Ievoghiyok). Among the Eskimos of the Thule culture, an antler handle from Naujan, with two transverse slots on both ends, is close in form (Mathiassen 1927:I:51; Pl. 18:10—Naujan). Among Eskimos of the Kobuk River, a wooden handle from a sixteenth century site is somewhat similar to No. 84 (Giddings 1952:71; Pl. XXXIX:4—Intermediate Kotzebue). The closest analogies are encountered in the Birnirk site at Point Barrow, where handles of men's knives of deer antler are also round in cross section and have round slots for inserting a blade in the end (Ford 1959:167, 168; Fig. 83:b, d). The same is true of antler handles from the Rasmussen collection (Mathiassen 1930:12, 13, 25, 41, 42; Pls. 4:1; 5:15; 10:1) found at Point Barrow, Point Atkinson, and Barter Island. Murdoch and Nelson, in their description of Eskimos of Point Barrow and Bering Strait of the end of the nineteenth century, publish various types of handles of men's knives of bone, antler, and wood, including those with a slot for inserting a blade of ground slate or iron in the end. Some of them are similar to No. 84 (Murdoch 1892:150–152; Fig. 106; Nelson 1899:109; Pl. XLVII:3).

No. 81—a wooden handle of a man's knife—is one half of a compound handle. It is broken on the bottom end and has a transverse slot on the end in which a blade was set. The half is slightly concave on the inner side. The length of the fragment is 5.5 cm (Pl. VII:6).

A similar wooden handle, composed of two halves, was also found in House 1—No. 83 (Pl. VII:7).

A wooden handle of a knife found in 1949 on Chetyrekhstolbovyi Island is different in that it does not consist of connecting halves, but rather has a longitudinal cut on the front end, to which a large slate blade was evidently fastened. At the end of the opposite surface, as on No. 81, a transverse cut was made (Beregovaya 1954:Pl. II:1).

On the Chukchi Peninsula, thick slate blades with a broad stem were usually set into the end of a single wooden handle (Rudenko 1972:143–144; Pls. 4:1—Uelen; 11:5—Naukan; 25:1, 26–28, 35—Sirenik). However, small blades were also sometimes set in narrow wooden handles (Rudenko 1972:

Pl. 14:4—Cape Chaplina). These and the others have been encountered in both early and late sites. On St. Lawrence and the Punuk (Okvik) Islands, both in Old Bering Sea and Punuk layers, wooden handles are encountered with a wide slot for inserting slate knives with a stem (Collins 1937:146–231, 333; Pls. 38:1—Miyowagh; 78:8—Ievoghiyoq; Rainey 1941:Fig. 34:7, 8).

The closest analogies to our specimen are known among sixteenth-century Eskimos of the Kobuk River. Handles of wood and antler were composed there of two halves. A cut was made on the end of such a handle for connecting the halves. A slate blade with wide stem was set in the end of the handle (Giddings 1952:68; Pl. XXXIX:2—Intermediate Kotzebue).

Among the Eskimos of the Point Barrow region, at the end of the nineteenth century, stone knives for skinning and cutting up carcasses had handles of wood with a socket on the end or the handles were composed of two connected halves tied together (Murdoch 1892:152; Fig. 103; Nelson 1899:108, 109; Pl. XLVII:2, 3).

Among the Chukchi of the beginning of the twentieth century and among neighboring tribes, iron (as well as stone) knife blades were set in a slot at the end of a wooden handle. Delicate curved blades that were set in the end of a thin handle of wood or walrus tusk were used for working bone. They are reminiscent of the "planing" knives of the Eskimos, but the handles were not composed of two halves (Bogoras 1904–1909:I:212, 213; Figs. 132a, 133, 134).

Blanks of handles of men's knives (Nos. 679, 716, 752, 754, 757, 760) of deer antler have a transverse cut on the ends and an oval or round cross section. The length is 7.5 to 12.5 cm (Pl. VII:11).

HOUSE 5. No. 11 (Pl. VII:14) is a bone handle of a man's knife with a transverse slot for a blade on both ends. On one end a wide lateral cut was also made for extracting a broken blade. A regular round-bored hole was begun somewhat below it. On the opposite surface of this same end a transverse design was applied in the form of stairs. Short parallel transverse cuts cover the whole length of both surfaces of the handle. The cross section is oval. The length is 11 cm. Handles of this type are also encountered in House 5—No. 12 (Pl. VII:13); in House 1—No. 39 (Pl. VII:4); and in the House in Vtoraya Bay—No. 9.

On the Chukchi Peninsula, the type of handle with a slot in the front end and a lateral hole for extracting the knife blade is encountered chiefly in late Punuk sites (Rudenko 1972:143–144; Pls.12:23—Arakamchechen Island; 14:18, 19—Cape Chaplina; 31:40–42—Nunligran; 34:31, 32—Enmylen). Handles of deer antler, more massive and cruder than our specimen but also with a lateral hole for extracting the blade and with a hole in the lower end for suspension, are encountered in the site of the Thule culture (Mathiassen 1927:I:50; Pl. 17:2, 5, 6—Naujan).

The HOUSE in VTORAYA BAY. No. 8 is a handle of a man's knife of reindeer antler with a deep socket for the stem of a slate blade in one end as well as a lateral cut (incomplete) for extracting a lateral blade. The opposite end is rounded and flattened. A narrow carved hole was made on the right for suspension. On the upper end, by the slot, were made two parallel cuts. The cross section is oval. The length is 13 cm (Pl. VII:15).

Handles of this type are somewhat similar to No. 693 from House 1 (with slots on both ends).

On the Chukchi Peninsula this type of handle (with a longitudinal cut for extracting the blade) is usually encountered in late (Punuk) sites (Rudenko 1972:143–144; Pls. 12:23—Arakamchechen Island; 14:18—Cape Chaplina; 31:41, 42—Nunligran; 34:31—Enmylen). On St. Lawrence and the Punuk (Okvik) Islands such handles are known from Old Bering Sea times (Collins 1937:333; Pl. 38:8, 9—Miyowagh; Rainey 1941:Fig. 18:5). They are also encountered in the early Ipiutak site at Point Hope (Larsen and Rainey 1948:81, 82; Pl. 8:3, 9); among the Central Eskimos of the Thule culture (Mathiassen 1927:I:49, 50; Pl. 17:1, 2, 5—Naujan); in sites on the Kobuk River among Eskimos of the sixteenth and seventeenth centuries (Giddings 1952:66; Pl. IV:2—Ambler Island; p. 68; Pl. XXXIX:1—Intermediate Kotzebue); and among late finds at Point Hope (the Rasmussen collection; Mathiassen 1930:58; Pl. 15:2).

No. 7 is a handle of a man's knife of reindeer antler with an obliquely cut transverse slot on one end and a deep cut (slit) in the other. The cross section is roundish. The length is 9.5 cm.

There are also such handles in the House in Vtoraya Bay (No. 13) with a small rounded slot, probably for an iron blade. The length is 12 cm.

No. 9 is the handle of a small man's knife or pointed tool of reindeer antler with a narrow transverse slot on one end, probably for a metal blade, and an oval hole for suspension on the opposite, narrow end. On the upper end of the handle, by the slot, was an oval hole (not cut through to the end) for extraction of a broken blade. Several longitudinal grooves were made on this same surface. The cross section is flat rectangular. The length is 10.5 cm (Pl. VII:3).

Handles of this type, but for a large blade, were found in House 1 (No. 39) and in House 5 (No. 11).

For analogies, see No. 11.

Handles of women's knives (ulus, see Stone Tools) of wood, bone, deer antler, and walrus tusk are widespread beginning with Old Bering Sea and up to modern times throughout the whole territory of the Eskimos. Three of them were found at Cape Baranov.

Two specimens were found in House 1 (No. 87 and the fragment No. 717) and one in the House in Vtoraya Bay (No. 11).

HOUSE 1. No. 87 is the handle of a woman's knife (?) of reindeer antler. It is 2 cm wide, has a straight back and deep slot, one end pointed, and the other blunt. The cross section is subrectangular. The length is 4.5 cm (Pl. VII:1).

No other handles like this were found at Cape Baranov.

On the Chukchi Peninsula, our specimen is reminiscent of a small (about 3 cm) bone handle of an ulu of subrectangular form from Sirenik (Rudenko 1972:143–144; Pl. 25:22). On St. Lawrence Island, where, as on the Chukchi Peninsula, handles of ulus are known as early as Old Bering Sea times, in Punuk a new type appears: pointed on one end and subrectangular on the other, which makes it closest in form to our specimen (Collins 1937:232; Pls. 78:11; 82:30). Handles of this type are encountered among Punuk finds at Okvik (Rainey 1941:Fig. 19:4). There also are miniature handles of women's knives of whale bone and antler that are close in form among the Central Eskimos of the Thule culture (Mathiassen 1927:I:58, 59; Pls. 23:9; 24:10—Naujan).

Miniature wooden handles from Birnirk and later sites at Point Barrow, excavated by Ford, are close to our specimen. One such handle with an iron blade was used when sewing (Ford 1959:186–189; Figs. 92:e, f; 90:d). One small handle of a woman's knife, made of walrus tusk and having a segmented form, in the Knut Rasmussen collection from Point Barrow, is also similar to our specimen (Mathiassen 1930:45; Pl. 10:8). Along with the handles from Point Barrow, Mathiassen also mentions tools for shaping baleen (baleen shaves), which Murdoch also describes among the Eskimos at Point Barrow of the end of the nineteenth century. Long strips of baleen, which were used to connect the wooden parts of boats and for many other purposes, were removed with the aid of a small tool consisting of a handle (antler or walrus tusk) and a metal or stone blade. One such tool is very close in form to handle No. 87 from House 1 (Murdoch 1892:173, 174; Fig. 146).

The HOUSE in VTORAYA BAY. Only one tool was found. No. 11 is the handle of a woman's knife of reindeer antler in a form reminiscent of a trapezoid. It is damaged on one side. On the broad side, a slot for a slate blade was made along the whole length. The cross section is subrectangular. The length is 8.5 cm (Pl. VII:5).

No similar handles were found at Cape Baranov.

Close analogies: on the Chukchi Peninsula is a wooden handle from Sirenik (Rudenko 1972:Pls. 25:34; 26:1–5) and a bone handle from Nunligran (Rudenko 1972:Pl. 32:31). On St. Lawrence Island are handles from Punuk sites, made of wood and walrus tusk (Collins 1937:Pl. 78:9, 10). At the Okvik site in the Punuk Islands was a wooden handle type that can be dated from Old Bering Sea up to the present (Rainey 1941:Fig. 19:9). Among the Thule Eskimos is a trapezoidal handle of whale bone (Mathiassen 1927:I:Pl. 23:6—Naujan). In Rasmussen's collection from Cape Dezhneva is one wooden handle of walrus tusk of segmented form, similar to our handle (Mathiassen 1930:Pl. 18:17). And among the Eskimos of the Kobuk River, in sites of the fifteenth to eighteenth century, our specimen is reminiscent of simple segmented handles of wood and antler from sites of the fifteenth century (Giddings 1952:71; Pl. XXXII:1, 2—Ekseavik).

Our specimen is most similar in form to wooden handles from the Birnirk and Nunagiak sites at Point Barrow, but there only a stem was set in the slot and not a whole slate blade (Ford 1959:186, 189; Figs. 91:a; 92:a). Of the early handles encountered among the Eskimos at Point Barrow at the end of the nineteenth century, the most similar to our specimen is a handle of whale bone with straight back and rounded ends, in the slot of which a long slate blade had evidently been set (Murdoch 1892:163; Fig. 124). Among the handles of Eskimo women's knives of Bering Strait from the same time, most reminiscent of the handle from Vtoraya Bay are two wooden handles of slate women's knives from the lower Yukon, one with a straight back, the other with a rounded back (Nelson 1899:109; Pl. XLVII:5, 7). According to Bogoras (1904–1909:I:216; Fig. 140:a), among the Chukchi of the beginning of the twentieth century and among the Eskimos of the Bering Sea coast of the Chukchi Peninsula, iron women's knives set in bone handles were similar to those of the early Eskimos.

Bone scrapers. Cup-shaped fat scrapers for removing or squeezing fat from intestines or for cleaning hides are a typical Eskimo woman's tool. They are subrectangular or oval in form with a large number being made of walrus tusk. The edges are sharpened, sometimes not very much, but they always have traces of polish. Sometimes only one edge is modified. They appear in Old Bering Sea times and exist up to recently.

A typical fat scraper (No. 38) was found in the House in Vtoraya Bay and a similar one of bone (No. 664; see Toys) in House 1.

The HOUSE in VTORAYA BAY. No. 38 is a fat scraper of mammoth tusk with a shallow subrectangular form. The edges are blunted and show traces of heavy polishing. It served for removing fat from hides. Its dimensions are 5.5 x 5.8 cm (Fig. 12).

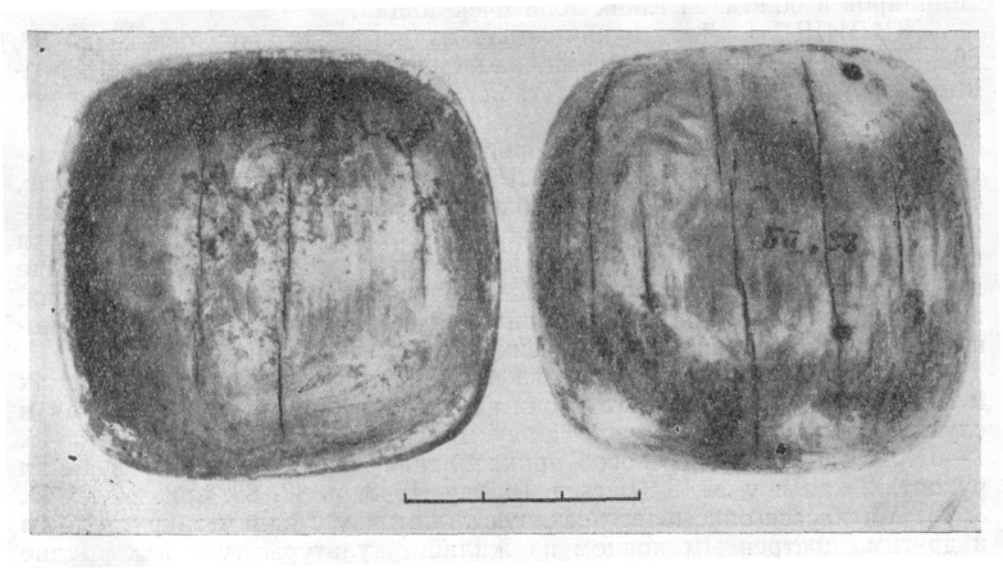

Figure 12. A fat scraper (No. 38) of mammoth tusk. House in Vtoraya Bay.

A closer analogy is a cup of walrus tusk found on Shalaurova Island (Beregovaya 1960:Fig. 3:9). Rudenko (1972:144; Pls. 4:13, 19; 35:23) considers such cups of walrus tusk, which he found at the early site of Uelen and at Enmylen, as scrapers for the removal of fat from guts. Among Old Bering Sea finds from St. Lawrence and the Punuk (Okvik) Islands are scrapers of walrus tusk for the removal of fat, having, however, a more elongated (than our specimen) rectangular or oval form (Collins 1937:164–166; Pl. 51:9, 11—Miyowagh; Rainey 1941:Fig. 21:1, 4, 5). In the burials at Tigara at Point Hope, a rectangular cup that served the same purpose was found (Larsen and Rainey 1948:177; Pl. 89:23). Among finds of the Thule culture, we note an elongated rectangular fat scraper of walrus tusk with an oval base and thinned edges, one of which is severely worn (Mathiassen 1927:I:175; Pl. 53:1—Ponds Inlet). Among the Eskimos of Point Barrow at the end of the nineteenth century, fat scrapers of walrus tusk, rectangular or oval, with one sharp edge, were used for cleaning hides of fat (Murdoch 1892:299; Fig. 300:a). Such scrapers were among the Eskimos of Bering Strait at the same time. One of them with somewhat blunted edges is especially reminiscent of our specimen (Nelson 1899:111–116; Pl. L:11).

Bogoras describes similar fat scrapers of walrus tusk for cleaning animal guts among the Chukchi and Eskimos of the Bering Sea coast of the Chukchi Peninsula, as well as among the Koryak, of the beginning of the twentieth century. Our specimen is most reminiscent of a fat scraper of the coastal Koryak from northern Kamchatka (Bogoras 1904–1909:I:218, 219; Fig. 147:a–c).

Two-handed scrapers that served for working hides (chiefly for removing hair) and were initially viewed as atypical for the Eskimos are now found in all the Eskimo territory, beginning with sites of Old Bering Sea times up to recently. They were made from metatarsals of deer, as well as from ulnas of bears, from tibias of seals, and other bones, which were cut longitudinally so that two cutting edges were obtained, while the epiphyses served as handles.

A fragment of such a scraper, without the epiphysis, was found in House 1.

No. 776 is a double bone scraper made from a longitudinally carved long-bone with broken epiphyses. The edges were unevenly carved. Numerous traces of work can be seen on one of the edges. The piece was probably also used as a pressure flaker. The length is 18 cm (Pl. VIII:12).

No other such scrapers were found at Cape Baranov. Analogies: in Old Bering Sea sites on St. Lawrence Island (Collins 1937:166; Pl. 30:12–14—Hillside); at Point Barrow in houses of the Birnirk culture (Ford 1959:194; Fig. 92:k, l; Mason 1930:Pl. III); in houses and burials at Ipiutak, in kitchen middens and burials of Tigara at Point Hope (Larsen and Rainey 1948:88, 89; Pls. 22:15; 44:6; 86:15; 89:25); among Eskimos of the Kobuk River in sites of the thirteenth to eighteenth centuries (Giddings 1952:66, 68, 70, 72, 74, 77; Pls. III:14, 15—Ambler Island; XIII:4–5—Old Kotzebue; XXIII:9, 10—Ahteut; XXXI—Ekseavik; XL:8–10—Intermediate Kotzebue); and among Eskimos at Point Barrow of the end of the nineteenth century (Murdoch 1892:298; Fig. 299).

Paddles (polishers?) of bone, deer antler, and walrus tusk are tools of elongated concave form with a rounded end, sometimes with the other end pointed. They evidently served for cleaning and working hides, for forcing water from them, for extracting marrow from bones, and sometimes as paddles and snow scrapers. They have various forms depending on assignment and belong chiefly to late Eskimo sites, though similar tools are known among Old Bering Sea and Ipiutak finds. At Cape Baranov six specimens and fragments of such paddles-polishers were found.

HOUSE 1. Paddles-polishers of reindeer antler (Nos. 93, 665, 709–711) with rounded, pointed, and polished front ends. The lengths are 7 to 21 cm (Pl. VIII:6, 7, 9, 11, 13).

For analogies, see No. 18 below.

HOUSE 5. A paddle of reindeer antler is an elongated concave tool (No. 18; Pl. VIII:10), reminiscent in form of a polisher, with one rounded end, the other broken. On the broken end a rectangular depression was preserved that probably served as attachment to a handle. The whole end of the tool and the inside of one of the lateral edges have traces of heavy polishing. The outer, convex, surface is ground and several transverse notches were made in it (ownership marks?). The length is 19.5 cm.

The closest analogies of mammoth bone are known in houses and burials of Ipiutak, but there they had holes for attachment and served as paddles (Larsen and Rainey 1948:87, 88; Pls. 21:3, 4; 45:1–3). In one case the method of attachment was a cut for insertion of the handle, as on No. 18 (Larsen and Rainey 1948:87, 88; Pls. 21:4; 45:3, 4). Mathiassen describes a bone paddle with one rounded and one pointed end from a house of the Thule culture as a tool for extracting bone marrow (Mathiassen 1927:I:318; Pl. 84:1—Malerualik) and a similar object in the Rasmussen collection from Point Barrow as an ice scraper (Mathiassen 1930:42; Pl. 8:9).

Awls and punches are the most widespread finds in all the Eskimo sites, beginning from earliest times and ending nowadays. They were made of bone, antler, walrus tusk, and occasionally of stone, sometimes of spalls. In some cases they were specially made, had a head, or were set in a handle. They were sharpened on special whetstones with narrow grooves. At Cape Baranov, 18 such tools were found (see also Stone Tools).

HOUSE 1. Fifteen specimens were found.

No. 777 is an awl-punch on the end of a longitudinally split long-bone with blunted point, round in cross section. The length is 20 cm.

There are awls similar in character to spikes in House 1 (No. 41) and House 5 (No. 10). However, in form and size, No. 777 is unique.

Other analogies: On the Chukchi Peninsula awls of bone and walrus tusk have been encountered in sites from Uelen times to late Punuk (Rudenko 1972:144–145; Pls. 3:5—Uelen; 11:7—Naukan; 16:2, 3—Cape Chaplina; 27:20, 21—Sirenik; 34:33—Enmylen); on St. Lawrence and the Punuk (Okvik) Islands beginning in Old Bering Sea times (Collins 1937:164, 233; Pl. 48:13, 14—Miyowagh; Rainey 1941:Fig. 20:2, 3); in early Ipiutak houses (Larsen and Rainey 1948:91; Pl. 24:9); among the Eskimos of the Thule culture (Mathiassen 1927:I:63; Pl. 16:16—Naujan); among the Eskimos of the

thirteenth to fifteenth centuries on the Kobuk River (Giddings 1952:80, 82; Pls. XVI:16—Ahteut; XLIII—Ekseavik); and among the Eskimos of Bering Strait of the end of the nineteenth century (awls of pointed bone) (Nelson 1899:106–107; Pl. XLVI:15, 16).

Nos. 47, 51, and 56 are awls of reindeer bone with long polished points. The lengths are 10 and 14 cm (Pl. VIII:4, 5).

Analogies: an awl-punch of bone with epiphysis at Sirenik and awls of bone fragments from Cape Chaplina on the Chukchi Peninsula (Rudenko 1972:144–145; Pls. 27:20; 16:2, 3). Especially close to our specimen are awls of bone with an epiphysis on St. Lawrence Island (Old Bering Sea times) and the Punuk Islands (Okvik) in all stages (Collins 1937:164, 233; Pls. 30:16—Hillside; 48:8, 15–17—Miyowagh; Rainey 1941:Fig. 20:2), as well as awls among Eskimos of the Thule culture (Mathiassen 1927:I:63; Pl. 16:15—Naujan). Among the Eskimos at Point Barrow, in both early and late sites investigated by Ford, awls of deer metatarsals with one pointed end were in use (Ford 1959:211, 212; Fig. 103:a, b). Awls of pointed bone are encountered among the Eskimos of the fifteenth and eighteenth centuries on the Kobuk River (Giddings 1952:80, 81; Pls. 4:24—Ambler Island; XLIII:17—Ekseavik) and Bering Strait at the end of the nineteenth century. Among the latter they were encountered along with awls set in a handle and decorated with carving (Nelson 1899:106–107; Pl. XLVI:15, 16).

Nos. 671–675 are awls of bone of small animals, with epiphyses. No. 671 is from a large deer bone. It was used as an awl-punch. The lengths are 6.5 to 11.5 cm (Pl. VIII:1).

Similar tools were found in HOUSE 1: an awl-punch of bone with an epiphysis (No. 51) and two of pointed fragments of bones (Nos. 47, 56).

Nos. 41 and 676 are awl-punches of pointed fragments of deer antler with multifaceted cross section. The length is 8.5 to 10.5 cm (Pl. VIII:2, 3). A similar awl (No. 10) was found in House 5.

Other analogies: awls of walrus tusk and bone in late Punuk sites—Naukan and Cape Chaplina (Rudenko 1972:144–145; Pls. 11:7; 14:20; 16:2, 3); on St. Lawrence Island—awls of walrus tusk and bone in Old Bering Sea sites (Collins 1937:Pls. 30:15—Hillside; 48:14, 23—Miyowagh); at Point Hope, such awls predominantly of antler, but also of bone and walrus tusk, were encountered in houses of the Ipiutak culture (Larsen and Rainey 1948:91; Pl. 24:7–9 [for the most similar to our specimen see Plate VIII:8]; 43:5, 6). Among the Eskimos of the Thule culture, the most similar to our specimen are awls of walrus tusk and seal bone found at Naujan and especially an awl-punch of walrus tusk from Ponds Inlet (Mathiassen 1927:I:63; Pl. 16:17, 18; p. 175; Pl. 52:11); and among the Eskimos of the Kobuk River—awls of bone, antler, and walrus tusk found in sites of the thirteenth to fifteenth centuries (Giddings 1952:Pls. XVI:13—Ahteut; XXXIII:7, 8—Ekseavik).

Nos. 60, 677, and 680 are pieces of awls made of a pointed bone rod, a reindeer rib, and a plate of walrus tusk with a triangular, ground front end. The lengths are 5.5, 6.0, and 11.2 cm. Similar awls were found in the House in Vtoraya Bay (Nos. 213, 215).

Analogies: awls with a three-sided point from Ipiutak (Larsen and Rainey 1948:Pl. 24:9) and from a thirteenth-century site on the Kobuk River (Giddings 1952:Pl. XVI:16—Ahteut).

Nos. 58, 164, and 732 are awl-punches made from small hollow bones with pointed ends. The lengths are 6, 10, and 12 cm.

The closest analogies: wound pins Nos. 45 and 46 from House 1.

HOUSE 5. Only one such tool was found. No. 10 is an awl-punch from a pointed piece of deer antler with a conical thickened base. The cross section is oval. The length is 10.5 cm.

A similar awl of antler was encountered in House 1—No. 41.

The HOUSE in VTORAYA BAY. Two awl-punches were found.

No. 215 is an awl made from a pointed bone spall. The cross section is irregular, subrectangular. The length is 9 cm. Another awl of this kind was found in the House in Vtoraya Bay (No. 213), as well as in House 1 (No. 60, 667, 680).

On the Chukchi Peninsula, where they are encountered in all sites, the closest analogies are awls of bone and walrus tusk at Sirenik and a bone awl from Cape Chaplina (Rudenko 1972:144–145; Pl. 27:16, 21). On St. Lawrence Island such awls appear as early as the Old Bering Sea levels (Collins 1937:Pls. 30:17—Hillside; 48:21, 22—Miyowagh). Analogous awls of antler, bone, and walrus tusk are known in Ipiutak houses and burials (Larsen and Rainey 1948:91; Pl. 43:5, 6). They are encountered among the Central Eskimos of the Thule culture (Mathiassen 1927:I:63; Pl. 16:15–17—Naujan). Awls of bone, antler, and walrus tusk closely reminiscent of our specimen are found among the Eskimos of the Kobuk River in sites of the fifteenth to eighteenth century (Giddings 1952:80, 81; Pls. IV:24—Ambler Island; XXXIII:8—Ekseavik). Among the Eskimos of Bering Strait of the nineteenth century, one specimen without a handle, made of bird bone, is very close to ours (Nelson 1899:106–107; XLVI:15).

●

Tools for Working Wood and Bone, Drilling, and Making Fire

The Handles of Men's Knives ("Planing" and "Crooked" Knives), Handles of Miniature Points or Drills, Wedges, Hammers, Adzes (Bushings and Handles), Antler Adzes and Axes, Drilling and Making Fire, Drill Shafts

In the houses at Cape Baranov were 44 specimens of tools for working wood and bone, drilling, and making fire (see Stone Tools).

Men's knives served for working (planing) wood and bone among the Eskimos (see Tools for Butchering Animal Carcasses). Chiefly, these were so-called "planing" knives, which were composed of two halves with a slot in one end for a narrow and thin blade, as well as "crooked" knives with the handle rounded on the end and a small narrow blade set in a slot near the front end.

According to Murdoch, like all Eskimos of North America, the Eskimos of Point Barrow in the nineteenth century used crooked knives with blades set in the side at the end of the bent handle for cutting and planing wood. The Eskimos operated them toward themselves, removing long and even shavings. The blades of such knives were usually made of iron: Murdoch publishes two specimens of such knives with flint and slate blades, which he, however, considers contemporary items (Murdoch 1892:157–161; Figs. 113–118; Nelson 1899:85; Pl. XXXVIII:19, 22–26, 28, 31). Murdoch indicated also, on the basis of evidence from Khuper and Lisyanskii, that small curved knives were in use among the Siberian Eskimos and Chukchi in Plaver [Plover?] Bay, as well as the Eskimos of Kodiak Island and in Greenland (Murdoch 1892:159–160). Such knives served for working bone.

Murdoch also describes the handles of "planing" knives of two connected halves, with a narrow metal blade in the form of a burin set in the end, which he calls an antler chisel and which was used for working deer antler (Murdoch 1892:172, 173; Figs. 143, 144). In the opinions of Collins, De Laguna, Meldgaard, and Ford, these tools come from Mesolithic burins (Collins 1940:25; De Laguna 1947:193–194; Ford 1959:165; Fig. 53:b; Meldgaard 1952:25).

According to Bogoras, for working wood and bone the Chukchi at the beginning of the twentieth century used knives similar to the Eskimo "crooked" knife (or, more precisely, with the "planing" knife—N. B.) with a narrow and thin pointed blade set in the end of a thin handle of wood or walrus tusk. Such knives were in use among the Koryak, Yukagir, and Eskimos (Bogoras 1904–1909:I:212, 213; Figs. 132:a–d; 133; 134).

At Cape Baranov both these types of knife handles were encountered in House 1—5 "planing" and 2 "crooked" knives. The "planing" knives are different from the typical Eskimo antler chisels (Murdoch 1892:173; Fig. 143) or whittling knives (Mathiassen 1927:I:52) by the fact that they do not consist of two connected halves, but have a narrow rectangular slot on the end possibly for a metal blade. Such a blade (its stem was preserved) is encountered in one of the handles found in House 1.

HOUSE 1. No. 62 is the handle of a man's knife of reindeer antler with a deep transverse slot in the thick, lightly trimmed (for fastening the binding) end, in which a narrow broken iron blade was set, probably the remains of the stem. Around the slot was a ridge for fastening the binding, and on both sides of the slot were lateral splits. The opposite end of the handle is flattened and narrower, with a groove in the base. On one surface of the handle, at the groove itself, a small triangular cut was made, and on one of the edges were three parallel cuts. The cross section is oval. The length is 10 cm (Pl. IX:3).

There are no analogies on Cape Baranov. There are also no close analogies on the Chukchi Peninsula (Rudenko 1972:143–144; Pls. 4:5, 6—Uelen; 25:21—Sirenik; 32:30—Nunligran; and others).

No. 62 is reminiscent of an engraving instrument equipped on the end with an iron blade. It was found in 1959 by D. A. Sergeev in an Old Bering Sea burial in the Uelen cemetery (Levin and Sergeev 1960). Evidently, the handle from House 1 stands closest of all to the type of compound "planing" knives for carving bone or walrus tusk, but our specimen is an antler rod split only on top. There are no such handles in Old Bering Sea and Punuk layers on St. Lawrence Island, where "planing" knives are composed of two halves (Collins 1937:145–146; Pl. 38:5–7—Miyowagh; p. 231; Pl. 78:4, 5) but are known at the Okvik site in the Punuk Islands: here were found whole handles of knives of walrus tusk with a narrow slot for a metal blade—a slate blade was preserved in one (Rainey 1941:548; Fig. 18:5–7). Such handles, only partially split on top at the slot so the blade was set firmly in them, are encountered at the Ipiutak site at Point Hope more often than typical compound handles of two connecting halves. On some at the top had been made a narrow rim in order to retain the binding, like the specimen in House 1. The blades of such knives were metal (Larsen and Rainey 1948:82; Pl. 8:9–12). There are compound "planing" knives of antler and wood, sometimes of walrus tusk, a large part with metal blades, in form reminiscent of the handle of the man's knife No. 62, among the Eskimos of the Birnirk culture and later at Point Barrow (Ford 1959:161–166; Pls. 81:d—Utkiavik; 82:f, q—Nunagiak; 83:e—Birnirk; Mason 1930:386), among the Central Eskimos of the Thule culture (Mathiassen 1927:I:49–52; Pl. 22:1–4), and among the Eskimos of the fifteenth to eighteenth centuries on the Kobuk River (Giddings 1952:68, 71; Pls. IV:7—Ambler Island; XXXII:3, 4—Ekseavik; XXXIX:7, 12—Intermediate Kotzebue). Especially closely reminiscent of our specimen is a handle from a fifteenth-century site on the Kobuk River (Giddings 1952:Pl. XXXII:4—Ekseavik).

No handles of a whole rod, split only on top, were found.

Among the late Eskimos of Point Barrow, described by Mathiassen (1930:42; Pl. 10:4—the Rasmussen collection), the same type of compound "planing" knife is encountered with a metal blade, composed of two halves, and reminiscent in general appearance of No. 62.

No. 684 is the handle of a man's knife of deer antler with a rectangular transverse slot for a blade on an obliquely cut end. On the side perpendicular to the slot was a short groove. The other end of the handle was also cut transversely, but without a slot. The cross section is round. The length is 9.5 cm (Pl. IX:8).

The closest analogies: Nos. 683, 685, and 691 from House 1. The cross section is oval. The length is 11.9 and 13.0 cm. The dimensions of the slots: 0.1 x 0.8 cm; 0.1 x 1.0 cm; 0.3 x 1.0 cm (Pl. IX:1, 5).

These handles are most reminiscent by the character of the slot to small Eskimo "planing" knives or chisels for cutting and planing bone and walrus tusk. Such a handle with narrow rectangular slot was found on the Chukchi Peninsula, namely, at Sirenik, along with handles consisting of two halves (Rudenko 1972:80–81; Pl. 25:20). Close analogies to our specimen on St. Lawrence Island are handles of bone and walrus tusk that Collins describes as Type III—with a deep rectangular slot in the end, in which a blade is held with the aid of a sleeve (Collins 1937:146; Pl. 38:9, 10—Miyowagh, Old Bering Sea and Punuk finds).

In our specimens (Nos. 684 and 685), a short slit perpendicular to the slot probably served to seat such a sleeve. Other analogies: among the Eskimos of the Thule culture, antler handles, subrectangular in cross section, with a small slot on the end without a hole for fastening (Mathiassen 1927:I:51; Pl. 18:9, 10—Naujan); at the Birnirk site at Point Barrow, antler handles of hunting knives, round in cross section, with a slot for a blade on the end (Ford 1959:168; Fig. 81:d); among the late Eskimos at Point Hope, the same kind of antler handles were found (Mathiassen 1930:58; Pl. 15:4—the Rasmussen collection).

Thus, a large part of the analogies do not belong to the type of "planing" knives. Probably only the handle mentioned above from Sirenik and the handle of ivory described by Mathiassen found among the Thule Eskimos can be assigned to it: with a small slot on the end, without a hole for suspension, flat, and 10.3 cm long. The size of the slot is 1.7 x 3 cm. The blade was probably copper, since a blue stain was preserved at the slot (Mathiassen 1927:I:167; Type d—Ponds Inlet).

No. 38 is a handle of a man's knife of reindeer antler with a flattened and pointed upper end. A long slot perhaps for a metal blade was made on the side of it. The lower end of the handle was thickened and rounded. One surface was rounded, the other, on the side of the slot, was ground to the spongy layer. The cross section is oval. The length of the slot is 2.5 cm, the handle 16 cm (Pl. IX:7).

The closest analogies: House 1—handle No. 49 with a groove for a lateral inset, and on Chetyrekh-stolbovyi Island (excavations of 1949)—a handle with a lateral slot. Both preserved in them the remains of iron blades and parallel cuts on the surface (perhaps maker's marks) (Beregovaya 1954:Pl. II:3). There are no analogies on the Chukchi Peninsula. On St. Lawrence Island slightly curved bone handles of men's knives with a narrow blade set on the side at the front end (the prototype of later "crooked" knives) appear in Punuk times (Collins 1937:231, 333; Pl. 78:1–3). Widespread at the Ipiutak site were handles of men's knives made of wood and antler and found almost exclusively in houses. They had lateral blades set close to the front end. Some had a very narrow slot (1.5 to 2 mm), evidently for a metal inset. This was probably a prototype of modern "crooked" knives at Point Hope (Larsen and Rainey 1948:81; Pl. 8:5, 7; Fig. 16). Among the Eskimos of the Thule culture, such knife handles of antler and whale bone are known at Naujan, Malerualik, and at other sites (Mathiassen 1927:I:51; Pl. 18:1–6; p. 316; Pl. 83:10). There were no typical "crooked" knives with handles of deer antler in the Birnirk site at Point Barrow (Ford 1959:160, 161; Fig. 83:a). Only one wooden handle was found, evidently for a lateral slate blade. "Crooked" knives from later sites (Nunagiak, Utkiavik, Nuvuk) with short handles were probably equipped with lateral iron blades (Ford 1959:160, 161; Fig. 82:a–b). All the handles were made of deer antler. Most of them are oval in cross section (Ford 1959:160, 161; Fig. 81:a–c). At the bottom of some are holes for suspension. Among the Eskimos of the thirteenth to eighteenth centuries on the Kobuk River existed handles of antler, wood, and walrus tusk, bent on top, that had a lateral blade on the end, a large part of which were metal (Giddings 1952:66, 68, 71; Pls. IV:8—Ambler Island; XXXII:12—Ekseavik; XXXIX:13, 14—Intermediate Kotzebue). In late collections of western Eskimos, assembled by Rasmussen, there were "crooked" knives similar to our specimen, especially by the fact that the earlier ones were straight and had only a lateral blade on the front end (Mathiassen 1930:25, 41; Pls. 5:10—Barter Island; 10:7—Point Barrow; 15:5—Point Hope). Such handles of wood, antler, and bone with iron blades continued to exist among the Eskimos of Bering Strait to the end of the nineteenth century (Nelson 1899:85; Pl. XXXVIII:19, 22, 24–26, 28, 31). "Crooked" knives of the Eskimos at Point Barrow of this same time were large (for working wood) or small (for working bone and walrus tusk). They usually had a small metal blade on the side at the upper end of a slightly bent handle of deer antler, whale bone, or, rarely, walrus tusk. Some handles were almost straight, like our specimen (Murdoch 1892:157–160; Figs. 113–118, especially 115:a).

No. 49 is a handle of a man's knife of reindeer antler with a lateral oval metal blade at the front, slightly rounded end. The lower end, also slightly rounded, has a socket for an end blade (?). On the surface of the handle a longitudinal cut was made, and over it several transverse parallel cuts, perhaps owner's marks, like cuts on spear points in the Stefansson collection acquired in the vicinity of Point Barrow (Wissler 1916:Figs. 32, 35). The other surface of the handle is damaged and the spongy layer bared here. The cross section is a flat oval. The length is 14 cm; the length of the iron blade is 2.5 cm (Pl. IX:6). For analogies, see No. 38.

Handles of miniature pointed tools or drills. No. 683a is the handle of an engraving point or drill (?) of a cut longitudinally narrow plate of deer antler with a miniature slot in the front end for inserting a metal tip or blade of a miniature knife. A small notch was made at the lower end. The cross section of the tool is rectangular. The length is 14 cm; the diameter of the slot is 3 mm (Pl. IX:4).

An analogous handle was found in the House in Vtoraya Bay—No. 9—which is also intended to hold a miniature iron tip, probably of a type of "planing" knife. In House 1 were fragments of two small wooden handles 4.5 and 8.5 cm in length with miniature slots on the front end—Nos. 936 and 684 (Pl. IX:2, 9).

On the Chukchi Peninsula at Sirenik a miniature drill with an iron bit was found, which was used for making pits during the engraving of bone (Rudenko 1972:142; Pl. 23:12). But handle No. 683a is more reminiscent of the engraving tools with iron tips that appear on St. Lawrence Island in Punuk times (Collins 1937:303, 304; Pls. 60:10, 11; 81:17–20; especially reminiscent of our specimen is handle No. 20 of walrus tusk). In Ipiutak houses and burials, such handles of deer antler and walrus tusk had tips of a pointed ground squirrel incisor. The remains of an iron tip were preserved in one of them (Larsen and Rainey 1948:82–84; Fig. 18; Pl. 8:15–24; especially reminiscent of our specimen is handle No. 24 with an iron tip). All these tools served for applying decoration to objects of antler and walrus tusk. In the Birnirk site at Point Barrow, handles of engraving tools made of walrus tusk or wood, from 5.5 to 7 cm long, are distinct from our specimen by the fact that the tip was not inserted but rather was tied to a tiny groove made on the upper edge of the handle. The lower end of the handle is blunt. In later sites at Point Barrow—Nunagiak and Nuvuk—similar handles of engraving tools were encountered (Ford 1959:171; Fig. 105:a–d; Pl. 3). Among the Eskimos of the Kobuk River of the fifteenth century, narrow pointed rods of rectangular cross section served as such handles. A beaver's tooth served as an engraving tip (Giddings 1952:72; Pls. XLIII:24; XLIV:8, 21—Ekseavik). A similar handle was encountered at Cape Smythe among finds of late times, and these tools continued to exist among other Eskimos of northwestern America almost up to modern times (Larsen and Rainey 1948:84). However, Murdoch and Nelson do not describe special engraving tools, which evidently were not yet in use by the Eskimos of Point Barrow and Bering Strait at the end of the nineteenth century. According to Bogoras (1904–1909:I:212, Fig. 132:d; p. 216, Fig. 138:b), the Chukchi, Eskimos, Yukagir, and Koryak at the beginning of the twentieth century used handles with inset narrow and pointed blades ("crooked" knives) in their front end for engraving on bone, as well as for other carving work on wood and bone. Very fine metal drills set in wooden handles, which were rotated with the aid of a bow, were used for making the eyes of needles.

Wedges, which served for working wood as well as sometimes bone, are encountered everywhere in Eskimo sites in the region of the Chukchi Peninsula, and from Alaska to Greenland, beginning from earliest times up to the present. They were made of whale bone, deer antler, walrus tusk, and wood, and depending on the assignment, had various forms and sizes. Most often they were made from the front end of a walrus tusk and were rough-hewn into suitable form. Traces of dents from hammer blows can usually be seen on the upper end of the wedge.

Wedges are few on Cape Baranov. A total of five were encountered: in House 1—two specimens; in House 5—one; in the House in Vtoraya Bay—one wedge and one wedge or mattock with a broken end and without traces of blows on the upper end. The lengths of the wedges are from 8.5 to 12 cm.

HOUSE 1. No. 708 is a wedge-shaped tool of deer antler with a straight damaged working end. On the opposite end are traces of work by an adze. On one side at the top the surface is flattened (as if for attachment of a handle). The cross section is oval. The length is 8.5 cm (Pl. IX:10).

A similar small tool of walrus tusk was found at Enmylen on the Chukchi Peninsula (Rudenko 1972:100; Pl. 34:29), and the same in an Old Bering Sea site on St. Lawrence Island (Collins 1937:161; Pl. 47:9—Miyowagh) and in the Punuk Islands (Okvik) (Rainey 1941:Fig. 22:6, 7). Close to our specimen is a wedge of deer antler of the Eskimos of the Thule culture at Naujan (Mathiassen 1927:I:55; Pl. 16:7, 9, 10), and the same kind of wedge from an Ipiutak burial at Point Hope (Larsen and Rainey 1948:87; Pl. 44:7). A similar but larger wedge of whale rib was found at Birnirk at Point Barrow (Ford 1959:184:Fig. 88:c). Wedges of deer antler that are close in form were found in an eighteenth-century site on the Kobuk River (Giddings 1952:66; Pl. III:12, 13—Ambler Island).

HOUSE 5. No. 9 is a wedge of walrus tusk, broken longitudinally and pointed on the working end. On the opposite end and side of the tool are traces of blows. The cross section is oval. The length is 9 cm.

For analogies, see No. 708.

The HOUSE in VTORAYA BAY. No. 190 is a wedge (or mattock) of reindeer antler, broken on the working end and pointed by longitudinal flaking. Fine round transverse cuts were made on the opposite straight-cut end. On the upper surface of the tool can be seen a long, almost smoothed longitudinal cut and several short transverse ones that run to the edge. The cross section is oval. The length is 13.5 cm (Pl. IX:12).

The analogies closest in form to the preserved part are mattocks in the same House in Vtoraya Bay—No. 6; in House 1—Nos. 3, 696, 707; and in House 5—No. 20.

Our specimen is most similar to wedges found on the Chukchi Peninsula—at Cape Chaplina and Cape Chukotskii from Sirenik, from Enmylen, and others (Rudenko 1972:113–114, 140–141; Pls. 15:5; 17:29; 28:11, 12; 34:26). However, they all, according to Rudenko's evidence, were dented on the upper end by blows from a hammer. Such blows were not preserved on our specimen. The same relates to wedges from St. Lawrence and the Punuk (Okvik) Islands (Collins 1937:160, 161; Pl. 29:16; 49—Hillside; Rainey 1941:Fig. 22:6, 7); from Ipiutak on Point Hope (Larsen and Rainey 1948:87; Pl. 22:7, 8); from Birnirk on Point Barrow (Ford 1959:184; Fig. 88:b, c); and from a thirteenth-century Eskimo site on the Kobuk River (Giddings 1952:74; Pl. XVI:15—Ahteut). Closest in form is No. 190, which is reminiscent of a deer-antler wedge of Eskimos of the Thule culture (Mathiassen 1927:I:55; Pl. 16:9—Naujan), as well as a bone wedge of the Eskimos at the end of the nineteenth century on St. Lawrence Island (Nelson 1899:88; Pl. XXXIX:7).

No. 16 is a wooden wedge-shaped tool with a broken broad end and with a rectangular hole carved on the side. The cross section is oval. The length is 12 cm.

There are no other such wooden tools at Cape Baranov. Similar wedges of walrus tusk were found in House 1 (No. 703) and in House 5 (No. 9).

Wooden wedges that are different in form from our specimen have been found only among Eskimos of the end of the nineteenth century on the American coast of Bering Strait (Nelson 1899:88; Pl. XXXIX:7). The Chukchi of the beginning of the twentieth century used wooden wedges for splitting wood. They adopted this method from the Yukagir (Bogoras 1904–1909:I:215).

Hammers (see Stone Tools) of natural pieces of antler, whale bone, and wood (sometimes compound—consisting of a wooden or bone handle and a stone head) served among the Eskimos both in antiquity and up to the present for driving wedges, breaking up large bones and fat, for chopping through ice, and so on.

At Cape Baranov, one hammer made from a natural piece of deer antler was found in each House 5 and the House in Vtoraya Bay.

HOUSE 5. No. 22 is a hammer of a natural piece of reindeer antler pointed on the front end of the thick part. The spongy surface of the antler is exposed in large part. There are small cuts (owner's marks?) where the surface of the antler was preserved. The length is 22 cm (Pl. IX:13).

An analogous specimen of a hammer of antler was found in the House in Vtoraya Bay—No. 189.

The closest analogy is a hammer of deer antler found at Sirenik on the Chukchi Peninsula (Rudenko 1972:80, 141; Pl. 28:4). There are also analogies in the Ipiutak houses at Point Hope (Larsen and Rainey 1948:Pl. 11:6, 7) and among the Central Eskimos of the Thule culture (Mathiassen 1927:I:69; Pl. 28:6—Naujan). Our specimen is reminiscent in form of a stone axe of the Thule Eskimos with a whale-bone handle, which had a crudely triangular form in front and served, Mathiassen assumed,

in producing train oil (Mathiassen 1927:I:181; Pl. 48:1—Ponds Inlet). Hammers of wood, deer antler, and whale bone, similar to our specimen, have existed up to the present among the Eskimos of Point Barrow and Bering Strait (Ford 1959:207; Murdoch 1892:93–99; Fig. 32; Nelson 1899:79; Fig. 23:a).

Adzes. Blades (see Stone Tools) of slate, basalt, siliceous and argillaceous schist, jadeite and nephrite, and of deer antler and walrus tusk have been encountered in all Eskimo sites beginning from the earliest times and ending close to the present. They served for working wood, bone, and walrus tusk. Up to most recent times all slabs that went into the construction of Eskimo houses were hewn by adze.

Eskimo adzes consist of a stone, more rarely a bone blade, a socket piece of bone or antler, into which the blade was set, and a wooden or antler handle with a flat surface on the front end, to which the stone blade was attached either directly or was set in the socket piece.

According to Murdoch, among the Eskimos of the end of the nineteenth century in the vicinity of Point Barrow and in the American Arctic generally as far as Hudson Bay, metal axes, obtained from Europeans, were fastened to the handles by the same method as stone and bone adzes, which were still encountered at this time among the Eskimos.

Adzes of such kind served chiefly for planing and were used by the Eskimos of Point Barrow for working large pieces of wood—for boats, boards, rafters, and so on, which then were worked by so-called crooked knives (Murdoch 1892:165–166; Figs. 128, 129, and others).

According to Bogoras, iron adzes, which served for planing and hewing, were made among the Chukchi of the beginning of the twentieth century, as in ancient times, with stone blades. Iron blades were set with the aid of a bushing in the back end in a wooden handle bent in the form of the letter L (Bogoras 1904–1909:I:210, Fig. 127:a). The Koryak used such adzes as well (Jochelson 1905–1908:II:Fig. 140:b).

Adze socket pieces. No typical bone or antler socket pieces were found in the houses at Cape Baranov. Three specimens of reindeer antler—one socket piece and a blank of the same kind from House 1 and a socket piece from the House in Vtoraya Bay—probably served for insetting some other blades, since in the first socket piece the slot is too narrow for the adze blades available at Cape Baranov, and in the second, the round socket seems too small. Nevertheless, both socket pieces are similar in form to the basic types of Eskimo socket pieces.

HOUSE 1. No. 694 is an adze socket piece of reindeer antler with a slot in the broad end for insetting a blade and a long part with a broad longitudinal cut for attaching a handle. The socket piece was trimmed on top and longitudinal cuts made along the edges. The cross section is oval. The length is 11 cm (Pl. X:3).

There are no analogies on Cape Baranov, other than the blank from this same House 1—No. 809.

Socket piece No. 694 is reminiscent of the third type of antler or bone socket piece for an adze described by Rudenko on the Chukchi Peninsula: with a cut in the broad end and an elongated part that is connected to a handle. They were encountered there in late sites (Rudenko 1972:141; Pls. 6:1—Uelen, *nynglu*; 37:2—individual finds on the Chukchi Peninsula). On St. Lawrence Island such socket pieces are also encountered only in Punuk sites (Collins 1937:334; Pl. 78:19). Somewhat similar to our specimen are a socket piece of whale bone, also narrowed upward, from a site of the Eskimo Thule culture with a cut on the bottom for a blade and a flattened surface for attachment (Mathiassen 1927:I:54; Pl. 20:10—Naujan); socket pieces of deer antler, found by Ford in late Eskimo sites on Point Barrow (Ford 1959:178; Fig. 84:k, n—Utkiavik, Nuvuk); and the same kind of socket piece from an eighteenth-century house on the Kobuk River (Giddings 1952:66; Pl. III:1, 2—Ambler Island). Most similar to No. 694 is a bone adze socket piece of Punuk times from the vicinity of Nome on the Seward Peninsula (Leroi-Gourhan 1946:220; Fig. 212).

The HOUSE in VTORAYA BAY. No. 10 is a socket piece (?) of reindeer antler for a stone adze. It is short, of cylindrical form with broad oval hole, incised in the middle, and with a deep oval slot in one end, the other end being pointed by flaking. The cross section is round. The length is 8 cm; the length of the hole is 2 cm (Pl. X:2). The object also could have served as a unit for attaching thongs.

No other such socket pieces or handles were found on Cape Baranov.

Analogies: similar socket pieces were encountered on the Chukchi Peninsula at Uelen and in the early eastern site of Nunligran. They also have a socket for the adze blade on the broad end and holes through the middle for seating a handle. According to Rudenko (1972:140–141; Pls. 3:8, 9; 32:33), this is the earliest type of socket piece. Such a bone socket piece with a hole for seating a handle was found in an Old Bering Sea site on St. Lawrence Island, and at another site a wooden handle that could have served for seating a socket piece was encountered (Collins 1937:159–160, Pls. 46:6—Miyowagh; 29:17—Hillside). In Ipiutak houses and burials and in kitchen middens of the Near Ipiutak culture at Point Hope antler socket pieces for adzes of the same type were found: with a slot in the base for a blade and with one or two holes cut through the middle for attachment of a handle (Larsen and Rainey 1948:84; Pls. 9:12, 13; 44:3, 4; 86:7). Among the Eskimos of the Thule culture a specimen close to ours is a socket piece of deer antler, ovally-cylindrical with a slot for a blade, but without a hole in the middle, though with notches for attachment to a handle (Mathiassen 1927:I:54; Pl. 20:2—Naujan). Such a handle was found at a site of the Birnirk culture near Point Barrow, as well as in the Birnirk site itself, excavated by Ford (1959:179; Figs. 85:i, j; 86; Mason1930:Pl. III—Kugusugaruk); in the Rasmussen collection from Point Barrow (Mathiassen 1930:42; Pl. 8:14); and in a fifteenth-century Eskimo site on the Kobuk River (Giddings 1952:70; Pl. XIII:7—Old Kotzebue). Such adze socket pieces are described by Murdoch among Eskimos contemporary to him at Point Barrow and Nelson among Eskimos of the end of the nineteenth century in Norton Sound and the lower Yukon (Murdoch 1892:165–172; Figs. 133, 140; Nelson 1899:92:Pl. XXXIX:10).

Adze handles. In a preliminary description of the Cape Baranov collection Okladnikov notes that "perhaps the most notable finds among all this multitude of things are wholly preserved heavy wooden handles for stone or bone axes or adzes" (Okladnikov 1947e:181; Fig. 5). Long **wooden handles** (37 and 46 cm) with large rounded front ends, in which broad oval or rectangular slots were carved for a stone or bone blade, could have served for attaching large stone or bone tools. These were most probably not blades of adzes for working wood, but rather picks or mattocks for digging the earth or for chopping through ice.

The handles of adzes and mattocks of walrus tusk, whale bone, deer antler, and, most often, wood are known in all Eskimo territories, beginning with the earliest sites and ending with Eskimo collections of the end of the nineteenth century in the region of Bering Strait and at Point Barrow.

The first type of handle is the most widespread form, thickened toward the front end, with a transverse flat surface for attachment of an adze or mattock, and with one or several holes in the thick end for a thong.

HOUSE 1. No. 856 is a wooden handle for an adze, axe, or mattock, with one large rounded end and the other long and narrow—for grasping in the hand. One side of the large end is flattened and a rectangular slot was carved in it for a stone or bone blade. The very end is also slightly flattened. The cross section is subrectangular on top and round at the base. The length is 45 cm. The size of the slot is 2 x 4 cm; the depth is 3 cm (Pl. X:8).

There are also such handles in House 1 (No. 857) and in the House in Vtoraya Bay (Nos. 36 and 188—the latter with a hole through it). There are no close analogies to the large handles of adzes or mattocks found in the Eskimo sites at Cape Baranov. The widely distributed form of Eskimo handles—thick on the front end, with holes through the upper part—always has a flat area on the end for attachment of an adze or mattock (Collins 1937:159, 160; Pl. 79:1–3—Ievoghiyoq and others; Murdoch 1892:165–172;

Fig. 132 and others; Nelson 1899:92; Pl. XXXIX:10; Rudenko 1972:105; Pl. 37:3—isolated finds on the Chukchi Peninsula and others).

Handles similar to finds at Cape Baranov have been encountered in Neolithic sites, for example, a handle with a hole through the thick part from the Vakernaya 2 site on the Main River (Okladnikov and Nekrasov 1960:207; Fig. 7:4), or a large wooden handle with a round hole for a flint axe from a Neolithic site in Denmark (Cole 1959:Fig. 23).

No. 857 is a badly damaged wooden handle of an adze or mattock (?), split lengthwise, with one thick rounded end, in the middle of which was preserved a wide and deep groove for attaching a large stone or bone blade. The other end, round in cross section, is long and narrow for grasping with the hand. The depth of the slot is 3.5 cm, its width 1.5 cm. The length of the handle is 34 cm.

The HOUSE in VTORAYA BAY. No. 188 is a wooden handle of an adze (?), axe, or mattock with a broken end. A wide rectangular hole is cut through the front, large, rounded end for a stone or bone blade. Above the slot, a ring-like cut was made with the aid of a chopping tool (perhaps to obtain a flat surface on top for attaching a blade?). The inside of the handle is deepened in the form of a groove (perhaps this is the natural surface of the piece of driftwood from which the handle was made). The cross section is round on top and rectangular toward the broken end. The length is 33 cm. The dimensions of the hole are 2 x 3 cm (Pl. X:6).

No. 36 is a wooden handle of an adze, axe, or mattock. On its large rounded front end a deep broad oval slot for a stone or bone blade was carved. Above the slot were a series of parallel notches made by a chopping tool, probably traces of working. One side of the rounded end is flattened and smoothed. The opposite end is narrow and slightly expanding toward the base. The cross section is oval. The length is 40 cm; the hole is 1.5 x 2.5 cm (Pl. X:7).

The second type of adze handle on Cape Baranov is represented by wooden handles bent in the form of the letter L.

HOUSE 1. No. 160 is an adze handle of wood bent in the form of the letter L on the front end, to the flattened surface of which the blade of an adze or a socket piece with a blade had been attached. For securing the binding on the inside of the bent part of the handle, at the very end, a transverse notch had been made. The lower part of the handle is broken. The cross section is oval. The length of the fragment is 18 cm; the bent part is 9 cm (Pl. X:1).

A similar handle is a fragment of a wooden rod bent in the form of the letter L, No. 860 from House 1 (Pl. X:4).

A complete analogy to our specimen is a wooden handle of the same form from a northern house on Chetyrekhstolbovyi Island, which is probably later and completely preserved (Beregovaya 1954:Pl. II:8). There are no such handles on the Chukchi Peninsula, nor in Old Bering Sea or Punuk sites on St. Lawrence or the Punuk (Okvik) Islands, nor in Ipiutak. The earliest find of a bent wooden adze handle of the same form is published by J. Mason from a site of the Birnirk culture near Point Barrow (Mason 1930:Pl. III—Kugusugaruk). Here also the adze blade was tied directly to the flat surface of the wooden handle bent in the form of the letter L, with a notch in the end. In the Birnirk site similar handles of wood and deer antler had a naturally bent form, forming an arc. A socket piece was attached to the upper, broad part of such an arc (Ford 1959:179; Pls. 7; Figs. 85:h, i, j; 86). In late Eskimo collections the only analogy to our specimen is a wooden handle from the vicinity of Norton Sound, bent similar to No. 160, with a socket piece of antler connected to it, in which an adze blade is set (Nelson 1899:92; Pl. XXXIX:14).

Among the finds are **antler adzes and axes.**

HOUSE 5. No. 21 is an adze (axe?) of reindeer antler with a ground, slightly rounded blade and a sleeve for the handle at a right angle to the blade. The upper surface of the tool is convex, the lower is

covered by longitudinal strokes—traces of working—and flat. The tool is broken on the right side. It is possible that a second symmetrical sleeve was made there, which served as an attachment for the heavy adze to the handle. In such case the tool would have been in the form of the letter T. The length is 17 cm (Pl. X:5).

In House 1 a fragment of such a tool of deer antler was found with a broken rounded blade and with a hole drilled at the base (No. 784). The length is 11 cm.

Adzes of walrus tusk are occasionally encountered on the Chukchi Peninsula. One was found at Sirenik, another at Enmylen. Both have butts covered with notches for attachment to a handle. The tools served for working wood. There are no direct analogies to our specimen (Rudenko 1972:140; Pls. 28:13; 34:30).

At the beginning of the nineteenth century G. I. Davydov and N. A. Khvostov wrote about the Eskimos of Alaska, that the axes, made of black or greenish stone, "they set in a short bent handle so that they look like our adzes. The natives are so accustomed to them that they even make iron axes by the same method" (Davydov and Khvostov 1810–1812:2:103). Murdoch notes the same among the Eskimos at Point Barrow at the end of the nineteenth century. Metal hatchets obtained from Europeans were attached to handles by the same method as were stone and bone adzes previously. Such practice existed among the Eskimos as far as Hudson Bay (Murdoch 1892:165; Figs. 128, 129). Murdoch published one adze with a blade of whale bone connected to a handle of whale rib, in the thickened part of which two holes had been made for thongs (Murdoch 1892:171; Fig. 142). Perhaps adze No. 21 was fastened to a large handle in the same way.

Bows for drilling and making fire existed among the Eskimos beginning in the earliest stages of their culture and into the present.

The Eskimos of the end of the nineteenth century near Point Barrow and along the shores of Bering Strait, according to Murdoch and Nelson, still used bow drills. Murdoch reports that these bow drills were widespread everywhere among the Eskimos and very similar to each other. The drill itself was a metal point (in the past bone or stone) set in a wooden rod with a rounded top. The upper end was set in a stone socket confined in a wooden base that they held in their teeth in such a manner that the point of the drill rested in the object being worked, while the hands were left free to operate the drill bow. In the past they rotated the drill rod by a thong with handles on the ends. Bows varied slightly in size, but they were no more than 25 cm in length and were made almost always of walrus tusk (Murdoch 1892:175–178, 289, 290; Fig. 282). The strings were made of sinew.

Among the Chukchi of the beginning of the twentieth century, the bow drill consisted of an iron point that was set in a wooden shaft with a small pin on the upper end. The latter was inserted in the head, which was supported by hand during rotation with the bow. The bow could be straight or curved and made of wood or antler. The string was wrapped around the drill shaft three or four times. The bow was operated by the right hand (Bogoras 1904–1909:I:211; Fig. 128).

By the time of Bogoras's expedition the bow drill for making fire had dropped from use among the Coastal Chukchi, but still existed among the Reindeer Chukchi, who used it in various ceremonies, and in the most remote camps and in everyday life. Such drill (among the Reindeer Chukchi and Reindeer Koryak) consisted of a board in the form of a crude human figure with several pits, a wooden rod (the drill), the head of a reindeer astragalus, and of a separate bow, the string of which was wrapped around the rod. During drilling for fire, they supported the board with their feet, supported the head with their left hand, and rotated the bow with their right hand (Bogoras 1904–1909:I:231, 232; Fig. 166).

On Cape Baranov, bows for drilling were encountered in House 1 (two specimens), and in the House in Vtoraya Bay (three specimens).

HOUSE 1. No. 109 is a wooden bow for drilling, burned on both broken ends. One end is slightly bent. The cross section in the middle of the bow is almost round. The length is 18 cm.

In House 1 a fragment of a similar drill bow was found (No. 874). It is a wooden rod with a notch (Pl. XI:13).

Analogies: on the Chukchi Peninsula most reminiscent of our specimen are a wooden drill bow from Sirenik, broken on one end, and an antler bow from Yandygai (Rudenko 1972:137–139; Pls. 12:10; 23:25, 26); and on St. Lawrence Island—a wooden, slightly bent bow with notch on the ends for the string, from an Old Bering Sea site (Collins 1937:162; Pl. 47:1—Miyowagh). At Point Barrow, among remains of the Birnirk culture, a drill bow of caribou bone was encountered, with holes for attaching the string (Ford 1959:174; Pl. 85:b; Mason 1930:386; Pl. III). Based on form, a bow of walrus tusk from the Thule culture of the Central Eskimos is close to ours (Mathiassen 1927:I:172; Pl. 49:1—Ponds Inlet). Among Eskimos of the eighteenth century on the Kobuk River, such bows were used both for drilling holes and for making fire. A wooden bow fragment of almost straight form has a narrow projection on the end for attaching the string (Giddings 1952:65; Pl. I:21—Ambler Island).

The HOUSE in VTORAYA BAY. No. 210 is a bow of reindeer antler for drilling. It is strongly bent, slightly recurved on the upper ends, and flattened in the middle for grasping with the hand. Elongated notches were made on the ends for the string. One end is thicker than the other. The cross section is oval. The length is 46 cm (Pl. XI:12).

There are also two fragments of such bows—Nos. 199 and 220 (Pl. XI:10, 11).

Most similar to our specimen is an early drill bow of the Eskimos at Point Barrow, described by Murdoch at the end of the nineteenth century. It was made of whale bone and strongly bent. But the string was tied to notches on the ends instead of holes (Murdoch 1892:176; Fig. 152). Other analogies: see No. 109.

No. 220 is a piece of a bow of reindeer antler for drilling (?). It is strongly bent, has a recurved upper thickened end with an oval hole drilled in it, and is flattened in the middle for grasping with the hand. The cross section is oval, but almost round on the end. The length is 23 cm (Pl. XI:11).

There are no complete analogies to the described object. They are most reminiscent of bucket handles and other objects on the Chukchi Peninsula and in other places, especially a handle of walrus tusk from Sirenik that is bent in the middle and on the ends (Rudenk 1947e:94; Pl. 26:13).

Wooden drill rods, which could be used either for drilling holes or making fire, existed in Eskimo sites from Old Bering Sea times up to the beginning of the twentieth century. The first were initially equipped with stone or bone tips and later with iron, and had a drill rest of a deer astragalus, walrus tusk, and stone on top. According to Murdoch, among the Eskimos of Point Barrow at the end of the nineteenth century drill rods were made of wood. In one end of the rod a metal point (in the past—bone or stone) was set, while the other, rounded, end was inserted into the rest (stone socket with a wooden base), which they held in the teeth, rotating the rod using the drill bow (Murdoch 1892:175–178). Murdoch published several such rods made of spruce, sometimes painted with red ocher, and having iron or bone tips (Murdoch 1892:Figs. 149–151, 157, 168). He also published a complete fire drill that consisted of a board with indentations, a wooden rod, and a rest of deer astragalus. The rod was brought into movement with a thong, both ends of which were held in the hands (Murdoch 1892:289; Fig. 282). In former times such a drill was rotated with a cord, the ends of which were set in handles of mammoth tusk representing figures of animals.

At Cape Baranov, wooden drill rods showing traces of fire were encountered in House 1 (13 specimens) and in the House in Vtoraya Bay (1 specimen). Whole specimens have a somewhat flattened or sharpened lower working end. No rests for them were found.

HOUSE 1. No. 116—a wooden rod—is evidently a drill for making fire. It is broken on one end and cracked in the middle. The front, working end is rounded and charred. The cross section is subrectangular. The length is 13 cm (Pl. XI:9).

Similar wooden rods were found in Eskimo sites: on the Chukchi Peninsula (Rudenko 1972:137–139; Pls. 5:17—Uelen, *nynglu*; 11:6—Naukan; 23:23, 24—Sirenik); on St. Lawrence and the Punuk (Okvik) Islands (Collins 1937:162, 163, 262; Pls. 30:1—Hillside; 57:2, 3—Miyowagh; Rainey 1941:Fig. 34:10); at Birnirk and later sites at Point Barrow (Ford 1959:174, 175, 178; Figs. 84:a, b, c, e; 85:a, f, g); among Eskimos of the Thule culture (Mathiassen 1927:I:Pl. 22:9—Naujan; II:109); and in an eighteenth-century site on the Kobuk River (Giddings 1952:65; Pl. IV:10—Ambler Island). (Here the rods were charred on the working ends, which usually expanded downward and were flattened and blunt.)

Murdoch, Nelson, and Bogoras (Bogoras 1904–1909:I:231; Fig. 166; Murdoch 1892:289; Fig. 282; Nelson 1899:75, 76; Pl. XXXIV:3–5, 7–9) give descriptions of the fire drill that existed among the Eskimos of Point Barrow and Bering Strait at the end of the nineteenth century and among the Chukchi of the beginning of the twentieth century. This fire drill consisted of a wooden rod, a deer astragalus rest, and a wooden board with pits. They rotated it using a bow, thongs, or directly between the palms.

Nos. 868, 875, 892, 893, 896–898, 900, 938, 942, 977 are wooden rods for making fire, with flattened and rounded working ends and with traces of fire. The preserved upper ends were sharpened to the form of a cone for inserting into a rest. The cross section is round, oval, or sometimes subrectangular. The length is 7.5 to 27 cm (Pl. XI:1–8).

For analogies, see No. 116.

The HOUSE in VTORAYA BAY. No. 214 is a wooden rod evidently for making fire. It is broken on one end. The other, damaged, end is rounded and slightly burned. The cross section is round. The length is 30 cm. Most similar to the rod from the House in Vtoraya Bay are Nos. 898 and 938 from House 1.

For analogies, see No. 116.

●

Tools for Excavating Earth and Constructing Houses

Mattocks, Picks

Among the tools that served for excavating earth and constructing houses, cutting up sod, making holes in the ice, and digging edible roots at Cape Baranov are 19 mattocks (14 in House 1, 1 in House 5, and 4 in the House in Vtoraya Bay) and 2 picks (one each in House 1 and the House in Vtoraya Bay).

Mattocks of walrus tusk, deer antler, and whale bone were used by the Eskimos both on the Asian side of Bering Strait and on the American side—from Alaska to Greenland—from the earliest stages of their culture up to the present time—for digging house foundations and pits, for cutting up sod, and for making holes in the ice. The lower end of the mattock was usually trimmed on two sides. There were several methods of attachment to a handle. Most often the inner side of the end of the mattock that adjoins the handle was slightly trimmed, and for stability was covered with transverse notches. Several transverse grooves on the same end served for attachment. In other cases, a broad slot was made on the upper part instead of several transverse grooves. At Cape Baranov mattocks were most probably fastened in slots in long wooden handles with large rounded front ends, in which broad oval or rectangular holes were carved—in some case, all the way through. This is corroborated by the fact that most of the mattocks at Cape Baranov do not have grooves for attachment or trimming on the inside. The dimensions of the mattocks from Cape Baranov are from 8.5 to 40 cm.

HOUSE 1. Nos. 2, 3, 696–698, 701, 702, and 704–707 are mattocks of reindeer antler with rounded, and in large part ground, working ends and round transverse cuts on the opposite ends. The cross section is in large part oval, sometimes round. The length is 8.5 to 16.5 cm (Pl. XII:1, 2, 4, 7, 9, 10).

Similar mattocks were found in House 5 (No. 20) and the House in Vtoraya Bay (No. 6).

For analogies, see below, No. 6.

Nos. 699 and 700 are mattocks of reindeer antler with a straight working end and the other end cut straight, without round notches. The cross section is oval. The lengths are 11 to 12.5 cm (Pl. XII:3, 8).

No. 742 is a large blank of a mattock (?) of mammoth tusk cut longitudinally and with transverse, obliquely directed cuts on both ends, made by a stone adze or knife. Several transverse notches were made on the outer surface. The length is 38 cm.

HOUSE 5. No. 20 is a mattock of reindeer antler with a rounded and ground working end and round transverse cuts in the opposite straight-cut end. Long longitudinal spalls were removed from the inner surface of the tool. The cross section is oval. The length is 12.5 cm (Pl. XII:6).

For analogies, see No. 6.

The HOUSE in VTORAYA BAY. No. 6 is a mattock of reindeer antler with a rounded and ground working end and round transverse cuts in the opposite thick straight-cut end. The cross section is oval. In order to make the working end sharp, the lower surface was transversely trimmed. The working edge is heavily ground. The length is 14.5 cm (Pl. XII:5).

The closest analogies are in the same House in Vtoraya Bay (No. 191—a fragment), in House 5 (No. 20), and in House 1 (Nos. 3, 696, 697, 706).

On the Chukchi Peninsula, most reminiscent to No. 6 are mattocks from Uelen, Arakamchechen Island, Cape Chaplina, and Sirenik (Rudenko 1972:114; Pls. 2:30; 12:22; 15:6; 28:10). But all these tools had a broad groove or flute for attachment in the handle instead of a notch. The same is true for

mattocks from Old Bering Sea and late sites on St. Lawrence and the Punuk (Okvik) Islands (Collins 1937:160; Pl. 49—Hillside; Rainey 1941:Fig. 22:1–5); from Ipiutak and Near Ipiutak houses and burials at Point Hope (Larsen and Rainey 1948:87; Pls. 22:1–3; 44:10; 79:5; 83:20, 21). Only one mattock of walrus tusk from a burial of the Near Ipiutak culture did not have a groove for attachment (Larsen and Rainey 1948:Pl. 79:4).

Mattocks of similar types have been encountered among the Eskimos of the thirteenth century on the Kobuk River (Giddings 1952:74; Pl. XXIII:13—Ahteut). Based on the character of the rounded blade, our specimen is similar to some mattocks of whale bone among the Eskimos of the Thule culture (Mathiassen 1927:I:171; Pls. 21:1—Naujan; 45:11, 12—Ponds Inlet), as well as in the Birnirk site at Point Barrow (Ford 1959:181; Fig. 80:e). Mattocks of the Eskimos of the end of the nineteenth century from the vicinity of Point Barrow and Bering Strait are no different from those described above (Murdoch 1892:302–304; Fig. 303; Nelson 1899:75, 85; Pls. XXXIII:1; XXXIX:5, 7). Thus, none are a complete analogy to our specimen.

No. 187 is a large mattock of mammoth tusk. On one end a handle was formed by two parallel cuts in the form of broad grooves along the edges with several transverse cuts on one surface. The working end is heavily ground and has a deep groove on the inner surface (natural exfoliation of the tusk). The outer surface of the tool retained the cortex. The tusk is heavily exfoliated. The cross section is oval in the middle. The length is 40 cm (Pl. XIII:3).

There are no close analogies to our specimen in houses at Cape Baranov. A blank of a large mattock of walrus tusk was found in House 1 (No. 742).

On the Chukchi Peninsula such heavy mattocks made from a whole walrus tusk or whale rib were used for digging house foundations or for making holes in the ice. Based on the method of attachment to the handle, mattock No. 187 differs from the majority of these tools on Cape Baranov. However, on the Chukchi Peninsula mattocks that have a broad hollow for attachment instead of transverse grooves belong to this same type. These are from Old Bering Sea and late Punuk sites at Uelen, Sirenik, Cape Chaplina, Yandygai, and Arakamchechen Island (Rudenko 1972:114; Pls. 2:28, 29; 28:7; 15:4; 12:6).

There are also analogies from Old Bering Sea sites on St. Lawrence Island (Collins 1937:160; Pl. 49:1, 3—Hillside) and in late layers at Okvik in the Punuk Islands (Geist and Rainey 1936:Pl. 22:8—protohistoric and modern; Rainey 1941:Fig. 22:5); in houses and burials of the Ipiutak site and Near Ipiutak culture at Point Hope (Larsen and Rainey 1948:87; Pls. 22:1; 44:8; 79:6; 82:1; 83:19, 20); among the Central Eskimos of the Thule culture and among the remains of the Sadlermiut tribe, which became extinct at the beginning of the twentieth century (Mathiassen 1927:I:171; Pl. 45:12—Ponds Inlet; Fig. 101—Thule Corner's Midden; p. 265; Pl. 75:8—Southampton Island); and among Eskimos of the thirteenth and fifteenth centuries on the Kobuk River (Giddings 1952:76; Pl. XIII:3—Old Kotzebue).

Similar mattocks of whale ribs with the usual two or more grooves at the handle for attachment existed in Birnirk and later sites (Nunagiak, Nuvuk, and Utkiavik) at Point Barrow. At Birnirk, deep indentations run from the edge across the whole back of the mattock (Ford 1959:181–184; Fig. 88:d, e; Pl. 8). In late sites, two indentations for attachment were made in the edges of the mattock, which, however, do not go to the back of the tool (Ford 1959:Fig. 87:c–f; the last is especially reminiscent of our specimen). The mattocks of whale bone for digging pits and chopping ice among the Eskimos at Point Barrow of the end of the nineteenth century are very similar to specimens from Utkiavik and Nuvuk (Murdoch 1892:302, 303; Fig. 303).

Among the Eskimos of Bering Strait of the end of the nineteenth century, a mattock (wedge?) of walrus tusk with one broad indentation for attachment from the Diomede Islands is analogous to our specimen (Nelson 1899:88; Pl. XXIX:5).

Pick-mattocks, which served chiefly for digging up edible roots, are encountered in Eskimo sites from Old Bering Sea to modern times, but in America they are territorially limited to the region of Bering Strait, Alaska, and the Aleutian Islands (Jochelson 1925:Pl. 26:44). They were made of bone, deer antler, whale rib, and more rarely of walrus tusk and stone, and differ from mattocks by the pointed end and substantial length. They differ from each other in form and method of attachment to a wooden handle.

HOUSE 1. One pick-mattock was found.

No. 734 is a pick of deer antler. One end is pointed, the other is thick, formed by deeply incised grooves (two on each side) as the hilt. The inner side of the tool at the hilt is flattened for attachment to the wooden handle. The cross section is oval. The length is 30 cm (Pl. XIII:2).

Analogies: such objects are encountered on the Chukchi Peninsula among Punuk and late Punuk finds—a pick of walrus tusk from Sirenik and a bone pick at Cape Chaplina (Rudenko 1972:114; Pls. 15:3; 28:8); a similar pick of walrus bone was found in an Ipiutak house (Larsen and Rainey 1948:87; Pl. 22:4); and a bone pick was found in a house of the Western Thule culture at Point Hope (Larsen and Rainey 1948:Pl. 95:15). Picks of whale ribs in late Eskimo houses at Point Barrow—Utkiavik and Nuvuk—are close to our specimen (Ford 1959:181–184; Pl. 8; Fig. 87:d), as well as picks of bone, antler, and walrus tusk, described by Murdoch, among the Eskimos of Point Barrow at the end of the nineteenth century (Murdoch 1892:304; Fig. 304:a, c).

The HOUSE in VTORAYA BAY. One tool was found.

No. 194 is a pick (?) of mammoth tusk, pointed to a working end by longitudinal spall removal. The other end was carved transversely, and in its middle a narrow plate, broken on the end, was left by trimming, which probably served as the shaft for inserting into a handle. The tool is unfinished. The cross section is subrectangular. The length is 28.5 cm (Pl. XIII:1).

Analogies: Picks from the Chukchi Peninsula have some similarity in form with our specimen: among the Punuk finds at Sirenik, where one pick of walrus tusk had a three-sided pointed end; among late Punuk and protohistoric items at Naukan—a bone pick, six-sided in cross section; and at Cape Chaplina, among the remains in a house of the last century, was a bone pick-mattock triangular in cross section (Rudenko 1972:49, 59, 80, 114; Pls. 10:16; 15:3; 28:8). All these differ from pick No. 194 by the method of attachment of the handle. The same is true of all other picks of Bering Strait and Point Barrow.

Among the Chukchi, at the beginning of the twentieth century picks for digging up edible roots consisted of a pointed iron rod inserted at an angle to the wooden digging stick (Bogoras 1904–1909:I:198; Fig. 117:a, b).

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Implements of Domestic Use

Vessels of Wood and Baleen, Handles for Carrying Vessels, Spoons, Small Tubes of Bird Bone for Drinking, Antler Hooks, Plugs (see Ceramics, also see Toys)

Thirty-three household objects were found in the houses at Cape Baranov: ten specimens of wooden vessels; spoons of antler, mammoth tusk, and wood (a total of four specimens were encountered in the three houses); two vessels of baleen and birch bark; eleven drinking tubes; two plugs; two antler hooks (House 1); and two handles for carrying vessels (?) (House in Vtoraya Bay).

Vessels with walls of baleen or birch bark and wooden bottoms existed among the Eskimos from Old Bering Sea times up to the present both on the Chukchi Peninsula and among all American Eskimos to Greenland inclusive. The bottoms of such vessels were oval and sometimes slightly deepened. The walls were made of small strips of baleen with the edges placed one on the other and sewn with baleen (some deep vessels were made with two strips).

Wooden vessels are shallow and oblong in form. Dishes or trays appear in Old Bering Sea times. Small round vessels are evidently of a later form: on the Chukchi Peninsula they are found in houses that just precede the appearance of the Russians.

HOUSE 1. No. 123 is a wooden tray or dish for meat of irregular oval form, with parallel edges, slightly concave. The edges of the dish are smooth. The remains of fat were preserved on one end. The length is 28 cm; the width on one end is 13.5 cm, on the other 10 cm (Pl. XIV:10).

Similar dishes or trays Nos. 854 and 855 (fragment) were encountered in House 1. There are normal specimens and small sizes, probably toys (Nos. 88, 111, 164). In House 5 was a fragment of a dish, No. 19 (see Toys).

Analogies: on the Chukchi Peninsula, rounded vessels carved from wood were encountered only in protohistoric late houses; shallow oblong dishes to 2 cm deep were made of whale bone (Rudenko 1972:102, 149). A very close analogy to our specimen is a dish from a Punuk site on St. Lawrence Island (Collins 1937:239; Pl. 80:1). Its length is 44 cm; its width on the ends is 6.4 and 13 cm. Pieces of large flat vessels hollowed out of wood are encountered among Eskimos of the Thule culture. They are as much as 3 cm thick (Mathiassen 1927:I:68; Pl. 28:3—Naujan; p. 181—Ponds Inlet). A close analogy to our dish among the Eskimos on the Kobuk River is an oval wooden dish for meat (41 cm long by 18 to 21 cm wide and 3 to 4 cm deep) from a fifteenth-century site and an oval toy dish (Giddings 1952:Pls. XXXI:8; XLV:8—Ekseavik).

Oval oblong dishes for meat still existed among the Eskimos at Point Barrow at the end of the nineteenth century and later (at the time of Ford's excavations in 1932). These were sometimes crudely carved from wood. One dish tray, found in an early house (E), is closely reminiscent to our specimen (Murdoch 1892:86–89; Fig. 19, 100; Fig. 35; Ford 1959:45, 46, 198; Fig. 15). Among the Eskimos of Bering Strait at this same time, dishes were in use that were carved from driftwood, but they are more refined, had a deep form, and were decorated with designs and sculpted handles (Nelson 1899:70–72; Pls. XXXI, XXXII).

Among the Chukchi at the beginning of the twentieth century, large wooden trays and meat dishes were in use. Small models of these vessels served as children's toys (Bogoras 1904–1909:I:188, 276; Fig. 106).

No. 854 is a large wooden dish or tray, wide on one end and narrow on the other, with broken edges, but which evidently had an irregular oval form. Traces of blows by a pointed tool can be seen on

the surface of the wall of the broad end of the dish. Traces of hollowing were preserved on both surfaces of the dish, especially on the narrow end. The dish is 41 cm long, 23 cm wide (on the preserved part of the broad end), 3 cm thick, and 6 cm deep.

For analogies, see No. 123.

No. 122 is the wooden bottom of a vessel of baleen or birch bark of regular oval form. One surface (the outer) is smoothed; both surfaces bear traces of working in the form of regular rounded cuts: The edges are smoothed to a luster. The dimensions are 10 x 12 cm, the thickness 2 cm. Traces of food (?) were preserved on the inner surface (Pl. XIV:5).

No other baleen vessel bottoms were found on Cape Baranov. However, there were many strips of baleen in all the houses, and strips of birch bark were found in House 1, probably for the walls of vessels and small buckets. This same house contained a toy vessel of birch bark, but without a bottom (No. 1032) (see Toys).

Analogies: on the Chukchi Peninsula, where vessels of baleen frequently have been encountered in sites of various ages, similar wooden bottoms were found at Cape Chaplina and at Sirenik (Rudenko 1972:95–96, 148–149; Pls. 15:8; 26:11). On St. Lawrence and the Punuk Islands they appear in Old Bering Sea times and exist up to the present (Collins 1937:169, 350; Pls. 53:1; 54:1–3—Hillside; Rainey 1941:Fig. 34:1, 2). They are also known among the Central Eskimos of the Thule culture (Mathiassen 1927:I:67, 179; Pls. 28:2, 4, 5—Naujan; 53:3, 4—Ponds Inlet). Among the fifteenth-century Eskimos of the Kobuk River an oval wooden vessel bottom was found that measured 10.5 x 13.5 cm as well as a fragment of such a bottom (Giddings 1952:85). Among the Eskimos of Point Barrow similar bottoms are encountered both in the very early Birnirk site and in later ones: Nuvuk and Utkiavik. Vessel bottoms from Birnirk are closest to our specimen: flat, oval, measuring from 4.5 x 7 cm to 12 x 20 cm (Ford 1959:205; Fig. 95:d). Dishes and pails of wood and of baleen with wooden bottoms of round or oval shape were still in use among Eskimos of Point Barrow at the end of the nineteenth century (Murdoch 1892:88, 101; Figs. 16, 37).

Among the Coastal Chukchi and the Eskimos of the Bering Sea coast of the Chukchi Peninsula at the beginning of the twentieth century, vessels of pine bark with round wooden bottoms were encountered. They were obtained from the Bering Sea coast of Alaska or from St. Lawrence Island (Bogoras 1904–1909:I:188; Fig. 107:a).

HOUSE 5. No. 125 is a piece of a broad wooden plate that narrows toward one end. It is part of a broken wooden tray. It might also have served as a spade (?). The length is 17.5 cm.

Analogies: Murdoch published an early meat dish among items of the Eskimos of Point Barrow of the end of the nineteenth century. It is very shallow, oblong, subrectangular in form, but substantially larger than the fragment from House 5 (Murdoch 1892:100; Fig. 35). According to Bogoras, among the Chukchi at the beginning of the twentieth century, spades of wood and walrus bone existed that served to cut up sod when building houses. These are reminiscent in form of our specimen (Bogoras 1904–1909:I:178; Fig. 90:b, d).

The HOUSE in VTORAYA BAY. No. 24 is a small wooden cup (of coconut?), oval, with a rounded bottom, reminiscent in form of an egg sliced longitudinally. It probably served as a scoop, though no traces of a handle were preserved. The dimensions are 4 x 8 x 10 cm (Pl. XIV:1).

In this same house a similar toy cup of irregular oval form was encountered (No. 27).

On the Chukchi Peninsula, rounded wooden vessels have been encountered only in the latest protohistoric houses (Rudenko 1972:148–149). Our specimen is reminiscent in form of cup scrapers and deep oblong vessels of walrus tusk found in early sites (Rudenko 1972:Pl. 4:13, 19—Uelen). Wooden vessels of Old Bering Sea and later sites on St. Lawrence and the Punuk (Okvik) Islands have an elongated form,

which makes them reminiscent of a dish or tray (Collins 1937:170; Pls. 54:4, 5—Hillside; 80:1—Punuk; Rainey 1941:Fig. 34:3). The same is true of wooden vessels of the Eskimos of the Thule culture (Mathiassen 1927:I:68, 179; Pls. 28:3—Naujan; 53:5—Ponds Inlet). Here some vessels of soapstone are more reminiscent of a cup from Vtoraya Bay (Mathiassen 1927:I:64; Pl. 27—Naujan).

Our specimen is most similar in form to clay vessels from thirteenth- and eighteenth-century sites on the Kobuk River (Giddings 1952:94, 95; Pl. XXVI:a, b—Ahteut and Black River). Wooden vessels—oval-oblong dishes for meat—were found among the Eskimos of the Kobuk River of the fifteenth century (Giddings 1952:85, 86; Pls. XXXI:8; XLV:8—Ekseavik).

Among the Eskimos at Point Barrow at the late Nuvuk site, investigated by Ford, was found an oval wooden vessel close in form to our specimen (Ford 1959:198; Fig. 93:c). According to Murdoch, oval and rounded vessels carved from driftwood were in use among the Eskimos at Point Barrow at the end of the nineteenth century (Murdoch 1892:99; Figs. 19, 33). The Eskimos of Bering Strait at the same time used wooden rounded and oval scoops, dishes, and trays. Some of them are deep and almost round in form.

Spoons are encountered among the Eskimos in all stages of culture from Old Bering Sea times up to the present. They were made of deer antler, walrus tusk, whale bone, and wood, and had various shapes.

On Cape Baranov, two spoons were found in House 1, one of them a toy; one toy spoon (or tiny spade?) in House 5; and one spoon in the House in Vtoraya Bay (see Art Objects—No. 40 and Toys—Nos. 91, 119).

HOUSE 1. No. 663 is a subtriangular spoon (?) of reindeer antler, slightly concave, with a smoothed and pointed working edge. The length is 6.5 cm (Pl. XIV:3).

Analogies: on the Chukchi Peninsula, flat bone spoons with a small handle from Sirenik and from a late house at Uelen (Rudenko 1972:149; Pls. 6:13; 26:8); on St. Lawrence Island, a flat spoon of deer antler, with an elongated base forming the handle—from an Old Bering Sea site (Collins 1937:166; Pl. 51:15—Miyowagh); and a spoon from a house of the Birnirk culture at Point Barrow with almost the same form but several holes for attachment (Mason 1930:Pl. III). Spoons of deer antler in Eskimo sites on the Kobuk River (fifteenth and sixteenth centuries) were small and some of them close in form to our specimen, but with long handles (Giddings 1952:87; Pls. XLI:37—Intermediate Kotzebue; XLIII:19—Ekseavik).

Among the Eskimos of Bering Strait of the end of the nineteenth century, Nelson describes several crude shallow oval spoons, almost without handles, as well as spoons decorated with designs and with long handles (Nelson 1899:69; Pl. XXX:5, 6). According to Bogoras, the Chukchi and Eskimos of the beginning of the twentieth century had similar spoons made of bone, wood, and walrus tusk.

Handles for carrying **vessels** of baleen and other objects existed among the Eskimos from Old Bering Sea times. They were made of walrus tusk, bone, deer antler, and wood, and had a variety of forms.

In the House in Vtoraya Bay were pieces of such handles (Nos. 199 and 220?), which, however, could also have been parts of bows for drilling (see Bows for Drilling).

On the Chukchi Peninsula such handles appear in Old Bering Sea and early Punuk times. Some of them are made of bone and antler and are bent in the form of a bow with holes in the ends (as on the specimens from Cape Baranov) (Rudenko 1972:148–149; Pls. 26:12, 13—Sirenik; 35:22—Enmylen); others (wooden) are straight and have notches on the ends (Rudenko 1972:Pl. 26:15—Sirenik). On St. Lawrence Island, handles for vessels are also known from Old Bering Sea times (Collins 1937:170; Pl. 47:2–7—Miyowagh). At Birnirk handles for buckets were straight, wooden, and with notches in the ends (Ford 1959:205). In later sites at Point Barrow, such handles were made of deer antler, had a slightly

curved form, and holes or pairs of holes in the ends (Ford 1959:Pl. 93:d, e). At the end of the nineteenth century among the Eskimos at Point Barrow, handles for implement bags, buckets, and so on had holes in the ends. Among the Eskimos of Bering Strait of this same time, handles for carrying vessels were made of mammoth tusk or bone. Like the specimens from the House in Vtoraya Bay, they were slightly bent, oval in cross section, had holes for attachment at the ends, but in distinction from ours were ornamented or decorated with sculpted images (Murdoch 1892:189; Figs. 166, 167, 170; Nelson 1899:93, 100; Pls. XVIII, XLI).

Tubes for drinking were made from hollow bird bones cut off transversely on both ends. They might have served as needle cases.

At Cape Baranov eleven tubes were found in House 1 alone.

No. 724 is a hollow long-bone of a bird with a broken epiphysis, a circular transverse cut on the other end and a round groove at the epiphysis—an incomplete transverse cut. It could have served as a drinking tube, needle case, or handle for inserting a bone rod (which served among the Thule Eskimos as a punch). The length is 10 cm (Pl. XIV:4).

Analogies: hollow bone tubes with transverse cuts on the ends (needle cases?), on Chetyrekhstolbovyi Island (Beregovaya 1954:Pl. I:6); the same such needle case made from a hollow long-bone without decoration, on the Chukchi Peninsula (Rudenko 1972:145; Pl. 23:11—Sirenik); hollow bird bones in early Ipiutak houses, which could have served both as needle cases and as drinking tubes (Larsen and Rainey 1948:90; Pl. 23:6). Hollow bird bone tubes (for example, from geese), cut off on both ends, had the same assignment among the Eskimos of the Thule culture (Mathiassen 1927:I:70; Pl. 28:16—Naujan). A bone tube from a Punuk site on St. Lawrence Island (Collins 1937:240; Pl. 91:1—Ievoghiyoq) and bird bone tubes with decoration in the form of an encircling cut in fifteenth- and eighteenth-century sites on the Kobuk River served as needle cases (Giddings 1952:80, 81; Pls. IV:22—Ambler Island; XXXIII:3—Ekseavik). A hollow bird bone from Ford's finds at Nunagiak—one of the late sites at Point Barrow—also had such an assignment (Ford 1959:212; Fig. 102:c).

According to Murdoch, among the Eskimos at Point Barrow at the end of the nineteenth century, hollow bone tubes were an older type of needle case than specially made cylinders of walrus tusk. He publishes several simple types of needle cases, one of which was made from a hollow bird bone (Murdoch 1892:320–321; Fig. 325). Among the Chukchi of the beginning of the twentieth century, drinking tubes made from foot bones of swans were used by shamans as a means of preventing illness (Bogoras 1904–1909:I:190; Fig. 109).

Nos. 720–723 and 725–730 are hollow long-bones of birds with transverse cuts, with traces of grinding at the cuts, and in two cases (Nos. 721 and 725) with short transverse grooves on one end. The lengths are from 11.5 to 22 cm (Pl. XIV:7).

Antler hooks for suspending vessels and clothing were encountered in Eskimo sites from early times to the protohistoric.

At Cape Baranov, two hooks of deer antler of different forms were encountered in House 1. Both probably served for suspending various objects.

No. 712 is a hook of antler pointed on the bent end and split on the blunt, thick end. Near it an oval hole was cut through. The cross section is round. The length is 32 cm (Pl. XIV:9).

No other hooks close in form were found on Cape Baranov.

In a Punuk site on the Chukchi Peninsula, a hook of deer antler, reminiscent of our specimen, was found that served, in Rudenko's opinion, for hanging clothing (Rudenko 1972:68, 150; Pl. 18:24—Avan'). A similar hook of whale bone among the Central Eskimos of the Thule culture is similar in form to No. 712 (Mathiassen 1927:I:179; Pl. 52:5—Ponds Inlet). Such hooks, sometimes of bone and some-

times of antler, served among the Chukchi at the beginning of the twentieth century for hanging kettles over the fire (Bogoras 1904–1909:I:174; Fig. 97:a).

No. 766 is a hook of a segment of a deer antler with the sides branching below at a sharp angle, one of which was cut lengthwise, with the initial drilling of a hole for suspension. The lengths of the sides are 11 and 11.5 cm (Pl. XIV:2).

No similar items were found at Cape Baranov.

Analogies: Similar hooks have been encountered on the Chukchi Peninsula both in early and in protohistoric sites. They were used to suspend kettles with lugs over a fire or as hangers for clothing. Most often they were made from tines of a deer antler (Rudenko 1972:150; Pls. 17:20—Cape Chukotskii; 28:16, 17—Sirenik). Hooks of antler and walrus tusk in Ipiutak houses (Larsen and Rainey 1948:110; Pl. 27:2) and of deer antler and whale bone among Eskimos of the Thule culture, which were used for the same purpose, are close in form to our specimen (Mathiassen 1927:I:69, 179; Pl. 28:11—Naujan). Among the Eskimos of Point Atkinson, (Rasmussen collection) one hook for suspension of pots, formed of two tines of antler, with a hole for suspension on one of the tines, is also similar to No. 766 (Mathiassen 1930:17, 46).

Wooden plugs. In House 1 two rounded wooden objects were found (Nos. 78 and 82) that are pointed downward and reminiscent in form of a stopper. They could have served as plugs. The lengths are 2.2 and 3.5 cm.

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Objects of Attire

Buttons, Headbands, Amulets, Needle Cases, Footwear, Instruments for Sewing Boots, Plate Armor (see Art)

At Cape Baranov, 16 objects of dress were found. They were located chiefly in House 1, except one button and one armor plate in House 5.

Buttons and toggles existed in the territory occupied by the Eskimos from Old Bering Sea times up to the present and were made primarily of walrus tusk. Their forms varied. Sometimes they were decorated or were made in the shape of animal figures.

At Cape Baranov, two buttons (Nos. 13 and 34) were found in House 1; one of them was a blank. In House 5 there was a blank of mammoth tusk with an eyelet (a button or bola?).

HOUSE 1. No. 159 is a subrectangular button of reindeer antler (a blank). On the lower, flat surface a longitudinal cut had been made. On the upper, convex surface can be seen traces of working and the drilling of a round hole was started in the middle of the object. The cross section is rectangular. The length is 4 cm (Pl. XV:5).

On St. Lawrence Island in an Old Bering Sea site, a button of walrus tusk similar in form was found (Collins 1937:177; Pl. 58:4). In an Ipiutak house at Point Hope, there was one rounded button of walrus tusk with one flat and one convex side, with two holes drilled in the middle (Larsen and Rainey 1948:112; Pl. 24:26). Among the Eskimos of Bering Strait at the end of the nineteenth century, a similar form of button or toggle originated from the lower Yukon, according to Nelson. This was a square toggle of walrus tusk, drilled with a round hole for threading a thong. In distinction from our specimen, it is covered with engraving (Nelson 1899:61; Pl. XXVII:19).

Headbands, or bands for the hair, are narrow strips of walrus tusk with small holes in the ends. They appear among the Eskimos in Old Bering Sea times and exist up to the present.

HOUSE 1. No. 162 is a piece of a headband (band for the hair) of bone, convex on one surface and flat on the other, with a round hole at the narrow, rounded end. The length of the fragment is 5 cm, the width 1 cm (Pl. XV:8).

No other similar objects were found at Cape Baranov.

Analogies: on St. Lawrence Island in an Old Bering Sea site (Collins 1937:177; Pl. 58:8—Miyowagh); in an Ipiutak house at Point Hope (Larsen and Rainey 1948:113–114; Pl. 24:15 and others); among the Eskimos of the Thule culture (Mathiassen 1927:I:73; Pl. 33:2—Naujan); and among the Eskimos at Point Hope (Rasmussen collection; Mathiassen 1930:55; 16:11).

Eskimo amulets: tusks of young walruses; canines of bears, dogs, wolves; claws of seals, walruses, and owls, etc., are connected with hunting sea and land animals. Some of these amulets help track down game; others force it to come to the hunter. Some propitiate the slain animal, others play the role of guardian. The tusks and teeth were drilled or used with a special band. Individual bones of animals, whale vertebrae, and even images of whales, seals, bears, other animals, and man could also be amulets (Rudenko 1972:154).

HOUSE 1. Two amulets were encountered: No. 35 (Pl. XV:13) and No. 49, an amulet made of a drilled polar bear canine. The length is 8.5 cm. The length of the subrectangular hole, drilled in the base, is 0.5 cm (Pl. XV:11).

On the Chukchi Peninsula, amulets in the form of drilled bear canines were found at Cape Chaplina and Sirenik (Rudenko 1972:Pls. 16:17; 30:11). On St. Lawrence Island, drilled bear teeth were encountered in Punuk sites (Collins 1937:240; Pl. 81:12). At Point Hope they were in sites of the Western Thule culture (Larsen and Rainey 1948:Pl. 95:10). Among Eskimos of the Eastern Thule culture bear teeth were drilled or sewn into small bags of seal skin and worn as amulets on clothing (Mathiassen 1927:I:185–186; Pl. 57:2, 3—Ponds Inlet). Eskimos at Point Barrow in the Birnirk site and later ones wore drilled teeth of polar bears as amulets (sometimes holes were replaced by circular grooves; Ford 1959:218; Figs. 101:p; 102:j; 103:g–i). Among the Eskimos of a fifteenth-century site on the Kobuk River, a pendant of a bear tooth was found decorated by engraving in the form of rings (Giddings 1952:88, 90; Pl. XV:12—Old Kotzebue). Eskimos at Point Barrow at the end of the nineteenth century wore bunches of claws of bears and other animals as amulets (Murdoch 1892:437). A seal claw, not drilled, encountered in a house on Chetyrekhstolbovyi Island is one such amulet (1949 excavations; Beregovaya 1954:Pl. I:5). According to Murdoch, the Eskimos at Point Barrow at the end of the nineteenth century wore bunches of claws of bears, wolverines, and so on as amulets (Murdoch 1892:436). Among the Eskimos of Labrador at the beginning of the twentieth century, owl claws were a very widespread amulet (Hawkes 1916:Pl. XXXIV:a).

Needle cases, widespread through all of Eskimo territory—beginning with the earliest stages of development of Eskimo culture and ending in modern times—went through a long course of development: from hollow bird-bone tubes to elegant needle cases covered with carving and with flanged and winged sculpted figures. Needle cases of hollow bones in Northeast Asia go back to Neolithic times. In Bronze Age burials of Pribaikal'e (Glazkov times), these are simple cylindrical tubes with decoration in the form of bands or rings (Okladnikov 1955a:134; Fig. 54:2). This simplest type of needle case was widespread in the circumpolar zone of Eurasia where it is encountered among the Lopari, Tungus, Gilyak, Ainu, and Chukchi (Thalbitzer 1924:285). Metal needle cases among the Chukchi of the beginning of the twentieth century were made by the Eskimo method and were hollow tubes in which iron needles stuck in a piece of seal skin were kept (Bogoras 1904–1909:I:225; Fig. 155). According to Murdoch, among the Eskimos of Point Barrow at the end of the nineteenth century, needles were kept in tubes of bone or walrus tusk through which a small thong with a small ball on the end was threaded. Needles were stuck in the thong. To the other end of the thong was attached a hook of walrus tusk, which they fastened to their belt. The author suggests that tubes of bone represented an older type of needle case than the specially allotted cylinders of walrus tusk, and that a hook for attachment of the needle case to the belt appeared along with needle cases of walrus tusk (Murdoch 1892:320–322; Figs. 327; 328:a, b).

HOUSE 1. Two needle cases were encountered.

No. 92 is a needle case in the form of a small hollow tube of bird bone with a longitudinal break in half the tube and with three transverse circular cuts at both ends. The cross section is oval. The length is 5.4 cm (Pl. XV:1).

Needle cases in the form of hollow tubes of bone and walrus tusk have been found on the Chukchi Peninsula in Punuk and later sites. One of them is decorated in Punuk style (with longitudinal dashes) (Rudenko 1972:145; Pls. 23:116—Sirenik; 35:28—Enmylen; 38:13—isolated finds on the Chukchi Peninsula). There is the same kind of needle case in the form of a tube with similar design among Punuk finds on St. Lawrence Island (Collins 1937:351–354; Pl. 66:7). Old Bering Sea—richly decorated forms with sculpted projections—are different from our specimen, but some of them have the form of a round and slightly flattened tube of walrus tusk. On one needle case are four circular parallel grooves on each end and in the middle, as on our specimen (Collins 1937:Pl. 17:6, 7). At Ipiutak, hollow tubes of bird bones also served as needle cases. One of them is decorated (Larsen and Rainey 1948:90; Pls. 23:6; 48:4—decorated in the form of stairs). The same kind of needle cases were encountered at sites later than Birnirk at Point Barrow (Ford 1959:211–214; Figs. 100:h, i; 102:e—Nunagiak, Nuvuk, Utkiavik). Most reminiscent of all to our specimen are needle cases of hollow bird bones among Eskimos on the Kobuk River that are decorated with bands of parallel circular grooves on the ends (in a fifteenth-century site) (Giddings 1952:81; Pl. XXXIII:3—Ekseavik) or on the ends and in the middle (in an eighteenth-century

site) (Giddings 1952:80; Pl. IV:22—Ambler Island). In the Rasmussen collection, acquired from the late Eskimos at Point Atkinson and on Barter Island, are needle cases in the form of hollow bones, in which thongs of seal skin for sticking needles were preserved (Mathiassen 1930:16, 28). The same kind of needle cases are described by Murdoch and Nelson among the Eskimos at Point Barrow and Bering Strait at the end of the nineteenth century (Murdoch 1892:320–322; Figs. 327; 328:a, b; Nelson 1899:103–104; Pl. XLIV:33, 35, 36, 39, 48).

No. 743 is a needle case of a hollow bird bone that is broken longitudinally and on one end. Round transverse grooves were made on the other end that are arranged by groups from top to bottom. There are also three parallel grooves. The length of the piece is 5 cm (Pl. XV:6).

For analogies, see No. 92.

Boots of deer hide covered with hair and with soles of seal skin are encountered everywhere in Eskimo sites, beginning with Birnirk. The upper part of such a boot was sewn to the sole, which was cut, gathered in, and turned up around in the form of the foot. The boots were sewn with deer sinew. The pleats were smoothed out with special tools of bone and walrus tusk with narrow ends flattened in the form of a paddle (boot sole crimpers, creasers). Such boots were worn by the Eskimos at Point Barrow and Bering Strait at the end of the nineteenth century. In damp weather, special waterproof soles of oiled skin of walrus, polar bear, and various kinds of seals were used (Murdoch 1892:129–135; Figs. 75–81; Nelson 1899:40–42; Pl. XX).

The Chukchi of the beginning of the twentieth century wore winter boots of deer skin with the hair side out. Around the sole a straight band of hide was sewn, to which was also sewn a shank, which gave the sole a square form. Summer boots were made of oiled seal skin cleaned of hair and grease. The broad soles were gathered along the edge, as among the Eskimos (Bogoras 1904–1909:I:237–239, 248–249; Figs. 171:a, b; 178).

In House 1 at Cape Baranov, well preserved parts of leather boots were encountered: whole soles and fragments of them and pieces of the upper parts of boots (Nos. 1050, 1059, 1060), as well as scraps of hide, from which a part was cut in the form of a circle (Nos. 127, 128, 155, 1051–1055, 1061, 1062), and thongs of hide (Nos. 98, 99, 1056). In House 5 scraps of hide were found (No. 127) and in the House in Vtoraya Bay were scraps (Nos. 28, 253–255) and a leather thong (No. 225).

HOUSE 1. No. 1050 is a sole of a small boot of seal (?) skin sewn all around and at the heel with sinew. The stitches are very small. The length of the sole is 22 cm, the width 10 cm (Fig. 13:b).

No. 1059 is the upper part of a leather boot (?) or bag with the hair side out and a narrow band of leather sewn with fine stitches along the edge, to which were sewn narrow thongs for laces. The diameter is 10 cm (Fig. 13:a).

No. 1060 is a fragment of the lower part of a leather boot (?) with the hair side out and part of a leather sole sewn at the bottom with crude stitches.

The closest analogies, besides those mentioned above (among the Eskimos of the nineteenth century and the Chukchi of the beginning of the twentieth century), are encountered in sites of the Birnirk (Ford 1959:220; Fig. 106:c–e) and Thule cultures (Mathiassen 1927:I:183–184; Pl. 56:top—Ponds Inlet).

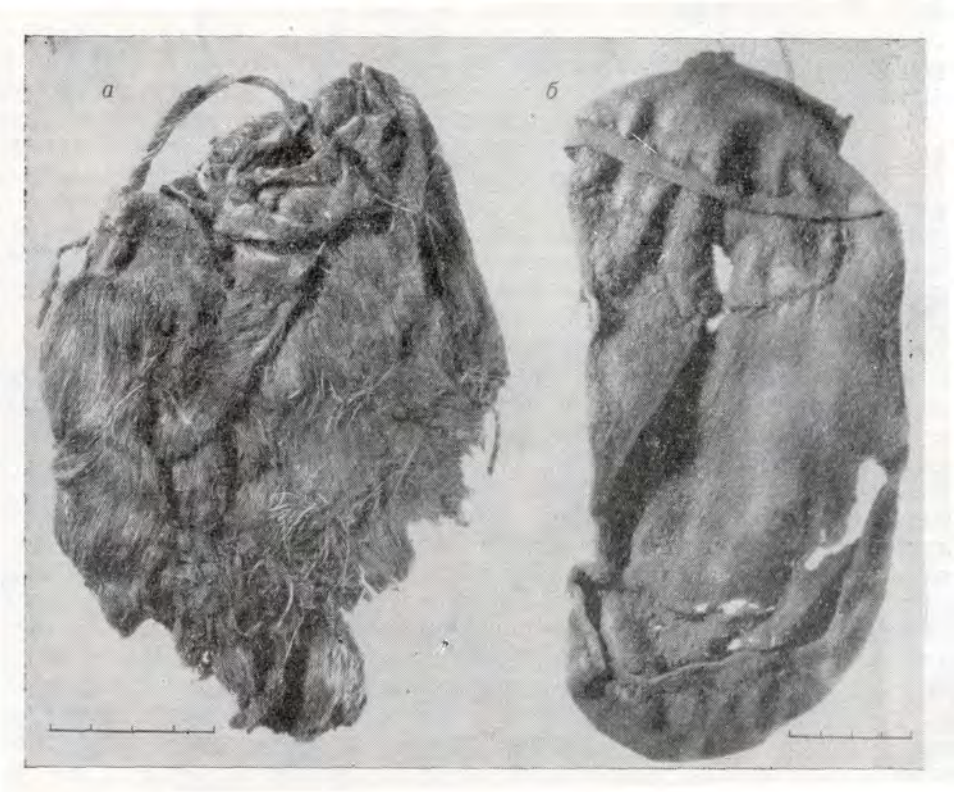

Figure 13. The remains of a hide artifact. House 1 in Sarychev Bay: a. bag or upper part of a boot (No. 1059); b. sole of a leather boot (No. 1050).

Instruments for sewing boots—gathering and smoothing out of pleats and folds around the toes and heel on the soles of seal-skin boots (before sewing the sole to the upper part of the boot)—called boot sole crimpers or creasers, are known among the Eskimos only in Alaska and Greenland and evidently appeared there in late times. They are unknown in the region of the Central Eskimos of the Thule culture. These instruments were chiefly made of bone and walrus tusk, but also of deer antler and wood, and are like flattened blunt awls with the ends narrowed in the form of a spade. According to De Laguna, in antiquity such tools took the place of small ground instruments of slate, silicified limestone, and nephrite (De Laguna 1947:192).

HOUSE 1. Three such tools were found.

No. 42 is an instrument for smoothing out the pleats on the soles of seal-skin boots, gathered around the toe and heel, in the form of a plate of broken reindeer antler. It has pointed and polished edges and a narrowed front end, flattened in the form of a spade, which is separated from the base by small shoulders. On one surface of the narrow end was a short broad longitudinal cut. The cross section is lenticular. The length is 7.5 cm (Pl. XV:15).

Closest analogies: tools of walrus tusk and deer antler from a fifteenth-century Eskimo site on the Kobuk River (Giddings 1952:81; Pls. XXIII:10, 11; XLIII:18—Ekseavik) and among Eskimos of Bering Strait of the nineteenth century (Nelson 1899:108; Pl. XLIV:47, 51).

No. 43 is a chisel-like tool from a fragment of reindeer antler with slightly pointed and polished edges and trimmed in the form of a chisel with a spade-like front end. The cross section is lenticular. The length is 7 cm (Pl. XV:9).

No. 888 is a wooden rod. One end is broken, the other is narrowed and flattened in the form of a spade that is separated from the base by sloping shoulders. A longitudinal cut was made on one surface. The cross section is subrectangular. The length is 10 cm. It is reminiscent in form of No. 42.

According De Laguna, the Tena Indians of the Yukon River valley used similar instruments for smoothing pleats on soles. These were not only of bone but also of wood (De Laguna 1947:194; Pl XVI:1).

Armor plates appear among the Eskimos of Bering Strait and the Bering Sea in Punuk times. They were brought to the American coast from Asia as part of battle equipment. They were usually made of bone or walrus tusk and had the form of long narrow strips with several pairs of holes so they could be sewed to a hide lining. This form of armor existed on St. Lawrence Island during the nineteenth century together with another form of baleen plate, which went around the body horizontally (Collins 1937:325–333; Ford 1959:221; Nelson 1899:330).

HOUSE 1. Two armor plates were encountered.

No. 10 is an armor plate of reindeer antler, broken on both ends with straight carved edges and two pairs of round holes arranged along the edge. Between them in the middle of the plate was one round hole and another that is probably at half the distance from a pair of holes that are not preserved. On the upper, slightly convex surface of the plate can be seen traces of transverse notches; the lower surface presents a bare spongy surface. The cross section is rectangular. The length of the fragment is 15 cm, the width 2.5 cm, the thickness 0.2 cm (Pl. XV:19).

Closest analogies: bone plates with holes, from a late Eskimo house at Uelen, differ by the fact that between the four pairs of holes there are several more small ones arranged along the edge of the plate (Rudenko 1972:152–153; Pl. 6:17); from a Punuk house on St. Lawrence Island (Collins 1937:225; Pl. 76:20–23); from the late Utkiavik site at Point Barrow (Ford 1959:221; Fig. 111); plates of deer antler from a sixteenth-century Eskimo site on the Kobuk River (Gidding 1952:91; Pl. XL:1–7—Intermediate Kotzebue, especially No. 4); and plates of walrus tusk among the Eskimos of Bering Strait at the end of the nineteenth century (Nelson 1899:327–330; Pl. XCII). Similar armor plates of walrus tusk, seal skin, and iron existed among the Chukchi, Eskimos, Koryak, and Gilyak at the beginning of the twentieth century (Bogoras 1904–1909:I:161–164; Fig. 86:a, b).

No. 11 is a piece of an armor plate of reindeer antler, rounded on one end, with two long cuts along one straight carved edge. The other edge is rounded. The spongy surface of the antler has been preserved on one surface; the other is polished. The dimensions of the piece are 0.5 x 1.5 x 9.5 cm. The length of the cut is 1.5 cm.

Our specimen is reminiscent of a bone plate from a late house at Uelen on the Chukchi Peninsula by the character of the cut. It differs, however, in form (rectangular) (Rudenko 1972:152–153; Pl. 6:18—*nynglu*). Plate No. 10 is closest in form to slightly rounded plates of walrus tusk that were sewn along the edge of the armor, and of the same rectangular plates among Eskimos of Bering Strait at the end of the nineteenth century (Nelson 1899:300; Pl. XCII).

HOUSE 5. No. 16 is a slightly concave plate of deer antler (of armor?) with broken ends, two parallel longitudinal grooves on the convex side, and three elongated holes made at equal distances from each other on one edge. The dimensions are 1.5 x 7.6 cm (Pl. XV:7).

Plate No. 16 is most reminiscent of an armor plate from Cape Chaplina on the Chukchi Peninsula, which is also slightly concave but has holes on both sides (Rudenko 1972:Pl. 18:22).

Other armor plates differ from No. 16 by not having grooves.

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Means of Transportation

Sled Runners, Model Kayaks, and Paddles

At Cape Baranov, fragments evidently of sled runners (two specimens) and model kayaks (five specimens) found in House 1 can be assigned to the means of transport.

Sled runners. Dog sleds, as Ford's excavations at Point Barrow in the 1930s indicated, were already known in the Birnirk culture, but they reached complete development among the Thule Eskimos. Dog traction evidently appeared at Point Barrow as a borrowing from Siberia. The Eskimos began to harness dogs to sleds earlier than they developed specialized elements of harness (Ford 1959:165). Such harness appears among the western Eskimos no earlier than 200 years ago.

No. 125 is a sled runner (?) of deer antler, broken, with rounded front end and two pairs of oval holes close to the front end. The inner side of the longitudinally cut antler retains the spongy surface. The cross section is semicircular. The dimensions of the piece are 2 x 2 x 29 cm. The length of the holes is 1 cm. There are no grooves for crosspieces (Pl. XVI:6).

In addition, in House 1 a fragment of a light runner of a small sled—No. 718 (?)—was found (Pl. XVI:4).

On the Chukchi Peninsula, reminiscent of our specimen are runners of walrus tusk from the Old Bering Sea site of Kivak and the western (earlier) sector of excavations at Sirenik (Rudenko 1972:151–152; Pls. 17:28; 28:19, 20, 22).

On St. Lawrence and the Punuk (Okvik) Islands there are runners of the same material from Old Bering Sea and Punuk layers (Collins 1937:338; Pls. 44:3–5—Hillside; 45:1, 2—Miyowagh; 77:6–8; Rainey 1941:Fig. 16:1). All these runners belonged to low, heavy sleds for transporting umiaks and the carcasses of animals by hand. The same sleds with runners of whale bone existed among Eskimos of the Thule culture (Mathiassen 1927:I:43; Pl. 13:1–4—Naujan), as well as in sites of the Birnirk culture at Point Barrow: at Kugusugaruk and Birnirk. For the latter, Ford describes a wooden toy sled with long runners and holes for a baleen tie (Ford 1959:154; Fig. 77:a; Mathiassen 1930:88). Close in form to our sample also are runners of whale bone and antler made by modern Eskimos at Point Hope (Tigara) (Larsen and Rainey 1948:178–179; Pls. 89:31; 93:12); runners of walrus tusk and whale bone among the Eskimos of an eighteenth-century site on the Kobuk River (Giddings 1952:53, 59; Pl. X:5—Ambler Island); and runners of small flat sleds (*unia*) of walrus tusk among the nineteenth-century Eskimos at Point Barrow and St. Lawrence Island (Murdoch 1892:355–356; Fig. 358; Nelson 1899:208; Pl. LXXVI:1). Small sleds with runners of walrus tusk existed among the Coastal Chukchi and Eskimos at the beginning of the twentieth century. Our specimen of sled is similar to the runners of such sleds from Mariinskii Post on Cape Chukotskii (Indian Point) (Bogoras 1904–1909:I:107:Fig. 22:a, b).

In House 1, four **model kayaks** and one toy **paddle** were found (Nos. 115, 876, 877, 890, and 911) (see Toys).

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Toys of Wood, Birch Bark, and Deer Antler

Bows, Arrows, Kayaks, Paddles, Dishes or Trays, Small Cups, Vessels of Birch Bark, Spoons, Fat Scrapers, Whipping Tops

Toys of wood, bone, walrus tusk, and baleen representing sleds, umiaks, dolls, bull roarers, and other objects are encountered among the Eskimos everywhere from Old Bering Sea times to present. At Cape Baranov, wooden toys predominate, which are encountered chiefly in House 1: 5 bows, an arrow, 22 fragments of arrows and shafts, 4 kayaks, a paddle, 3 dishes or trays, a box or bucket, a spoon, a whipping top, and 2 disks from a whipping top. In the House in Vtoraya Bay were a tray and a small cup. Also encountered were toys of deer antler: in House 1—a cup scraper and in House 5—a spoon or small paddle, for a total of 45 objects.

Toy bows (see Hunting Equipment).

HOUSE 1. No. 100 is a wooden bow, a toy made from a narrow wooden strip with preserved knob on one end and a string of fine thread, twisted of sinew, broken in the middle. The length is 11 cm (Pl. XVII:4).

The pieces of such toy wooden bows (Nos. 846, 943?, 946, 955?) were created from longitudinally cut wooden rods with a notch or knob on the end. The lengths are 6.3 to 11.8 cm.

Analogies: On the Chukchi Peninsula, small wooden and baleen bows were preserved at various sites, which Rudenko considers children's toys or sometimes as models of bows made for a ritual purpose—for the "whale" ceremony and the like. All of them are types of simple Eskimo bows (without reinforcement with bone plates or winding with baleen). The closest analogies to our specimen are a wooden toy bow and the same kind of bow made of baleen from Sirenik, and a small wooden bow from a late house at Uelen (Rudenko 1972:129–130; Pls. 5:9—Uelen, *nynglu*; 21:1, 2—Sirenik). On St. Lawrence Island, small models of bows of baleen and wood similar to our specimen appear in Old Bering Sea layers (Collins 1937:134; Pls. 55:1, 2; 56:15; 59:26, 27—Miyowagh). At Birnirk, toy bows are encountered even more often than the larger ones. Regarding the 19 children's bows, 4 were made of baleen, the remainder of wood. Whole children's bows, 26 to 50 cm long, have curved ends. In the later site of Nunagiak at Point Barrow, investigated by Ford, toy bows were made from one piece of wood and have square shoulders on the ends. Their length is up to 31 cm (Ford 1959:118–120, 227–229; Fig. 55:a, b). Among the Central Eskimos of the Thule culture, children's toy bows of baleen were encountered that usually had knobs on the ends for attaching the string (Mathiassen 1927:I:90, 302; Pls. 35:2—Naujan; 79:7, 8—Thule, Comer's Midden). Among the Eskimos at Point Barrow at the end of the nineteenth century, each boy had a toy bow with which he hunted birds. Murdoch describes one such boy's bow: it was made of spruce, is elliptical in cross section, and more convex on the inner side than on the back. The ends were pointed and knobs were carved on them for attaching the string. The bow was reinforced with sinew (Murdoch 1892:197; Fig. 177). Being reminiscent in form of model bow No. 100 from House 1, it differs from it by being reinforced and used for hunting. Among the Chukchi at the beginning of the twentieth century, simple bows made of one piece of wood and small children's bows of baleen were in use. Bow No. 100 is more reminiscent in form to wooden bows that rotated drills (Bogoras 1904–1909:I:155, 211, 231; Figs. 72, 128, 166).

Arrows for Toy Bows (see Hunting Equipment)

No. 902 is a wooden arrow (evidently for a toy bow), thin, slightly bent, with the base broken and split in the form of a groove for fastening the string. The cross section is round. The length is 22 cm (Pl. XVII:8).

In House 1, many such wooden toy arrows were revealed, the large part in pieces. Some of them (Nos. 65, 68, pieces of arrows and shafts Nos. 70, 74, 920, 922, 923, 924, 927, 928, 960, and others) closely resemble No. 902 in form. Also close in form to our specimen are bone arrow points No. 57 from House 1 and No. 15 from House 5. The Chukchi of the beginning of the twentieth century made arrows of iron, bone, walrus tusk, and wood. Small arrows for toy bows also existed (Bogoras 1904–1909:I:156, 273).

Nos. 72 and 901 are pieces of wooden toy arrows with blunt upper ends, reminiscent of bird arrows. The cross section is round. The lengths are 7 and 7.5 cm (Pl. XVII:7).

Analogies: a wooden arrow from Sirenik on the Chukchi Peninsula (Rudenko 19:131–133; Pl. 21:13) (also see Hunting Equipment, No. 63).

Nos. 65, 68, 70, and 74 are pieces of wooden arrows for a child's bow in the form of rods with a notch for the string on the lower end. The cross section is round or oval. The length is 8.5 to 19.5 cm (Pl. XVII:9, 10).

For analogies, see No. 902.

Nos. 909, 914, 916, 917, 920, 922, 924–926, 928–931, 933, 934, and 960 (16 specimens) are pieces of shafts of wooden toy arrows with round or rectangular cross sections. The length is 5.5 to 10.5 cm (Pl. XVII:11).

Kayak models and paddles. No. 115 is a wooden model kayak (?), a toy, with two pointed elongated ends and a depression in the middle. It is probably unfinished. The length is 19 cm (Pl. XVI:1).

In the same House 1 was a blank of a toy kayak (?), No. 890 (Pl. XVI:5).

Analogies: on the Chukchi Peninsula, models of kayaks of wood and walrus tusk with Old Bering Sea design (from isolated finds on the Chukchi Peninsula and from a late house at Uelen), as well as models of wooden umiaks and a small boat (from Sirenik) are, based on form, different from the toy at Cape Baranov (Rudenko 1972:149–151; Pls. 6:10; 27:9–11; 38:6). The same is also true of wooden model kayaks from Old Bering Sea and Punuk sites on St. Lawrence Island (Collins 1937:158–159; Pls. 59:1, 6—Miyowagh; 85:5). More similar to No.115 are cross pieces of a frame for a small umiak found at Sirenik (Rudenko 1972:85; Pl. 27:7, 8). On St. Lawrence Island similar wooden cross pieces for a toy umiak were found in the Old Bering Sea site of Miyowagh and in late Punuk layers at Kukulik (Collins 1937:Pl. 59:2; Geist and Rainey 1936:Pl. 65:11).

During Ford's excavations at the Birnirk site were encountered models or toys of bark, representing kayaks and umiaks. In distinction from modern kayaks at Point Barrow, they had flat decks and raised bows. The length of such models is 8 to 11 cm (Ford 1959:156–158; Fig. 78:a–d). In addition, two crudely worked cross pieces for an umiak were found as well as other parts for kayaks (Ford 1959:156–158; Fig. 79:a, f). Among the Central Eskimos of the Thule culture, toy wooden kayaks and paddles were found (Mathiassen 1927:I:162–163; Pl. 52:6–7—Ponds Inlet). Most reminiscent of all to the toy from Cape Baranov are wooden models of kayaks from burials in the territory of the Central Eskimos, but later than the Thule culture (Mathiassen 1927:I:326; Pl. 85:14, 15, 19—Malerualik). Among the Eskimos of Point Barrow and Bering Strait of the end of the nineteenth century are toys or models of kayaks and umiaks of wood or walrus tusk, sometimes with an image of a person sitting in them (Murdoch

1892:381–382; Figs. 338, 341, 345; Nelson 1899:347; Fig. 134). Bogoras published a model of the kayak that served, at the beginning of the twentieth century, the Chukchi for hunting deer at river crossings, along with a double-bladed paddle (Bogoras 1904–1909:I:135, 237; Fig. 47:a, b).

No. 911 is a wooden rod that expands at the ends and is reminiscent in form of a toy kayak paddle. One end is thicker, and is probably unfinished. The cross section on this end is round; on the other, lenticular. The length is 12.8 cm (Pl. XVI:2).

No other similar toy paddles were found at Cape Baranov.

Wooden paddles on Shalaurova Island (Beregovaya 1960:Fig. 3:2) and on St. Lawrence Island (Collins 1937:238; Pl. 84:2) found in Punuk and later sites differ from our specimen in the form of the blade. A paddle from Cape Chaplina (Chukchi Peninsula) has only one blade. Closer to our specimen is a toy (bone) paddle from Okvik (Punuk Islands), broken in the middle (Rainey 1941:Fig. 24:9). Also broken in the middle is a wooden paddle from St. Lawrence Island (Collins 1937:238). Greatest similarity can be seen between the toy object in the form of a paddle (No. 911) from Cape Baranov and wooden objects reminiscent of kayak paddles found in Ipiutak houses (Larsen and Rainey 1948:Pl. 31:5, 6), as well as with wooden kayak and umiak paddles of the Birnirk culture (Point Barrow) (Mason 1930:386; Pl. II). Pieces of a wooden paddle found at Birnirk by Ford were rounded on the end (Ford 1959:157, 158; Fig. 70:c). The Eskimos of Point Barrow at the end of the nineteenth century used double-bladed kayak paddles. Toy kayaks with the same kind of paddles were also encountered (Murdoch 1892:334, 381; Figs. 340, 341). The Eskimos of Bering Strait of the same time also used double-bladed paddles (Nelson 1899:223; Fig. 71). In early graves (later than sites of the Thule culture) in the territory of the Central Eskimos, small models of various tools and other objects were found, among them wooden models of kayaks and paddles. One of the paddles is quite similar to our specimen (Mathiassen 1927:I:326; Pl. 85:16, 19—Malerualik). Bogoras publishes a model of the kayak that served on the middle Anadyr' for hunting deer at stream crossings, and a double-bladed paddle. The blades, in distinction from our specimen, are round (Bogoras 1904–1909:I:135, 273; Fig. 47:a, b).

Wooden Dishes and Trays, Vessels of Birch Bark (see Household Objects)

No. 88 is a deep wooden dish or tray (toy) with parallel edges and oval ends. The length is 10.5 cm; the height of the walls is 1.5 cm (Pl. XVII:12).

In HOUSE 1 were wooden vessels of the same form but larger in size (Nos. 111 and 164)—5 x 12 cm and 6.5 x 13 cm (Pl. XIV:6). In the House in Vtoraya Bay was a similar oval tray (No. 19). The length is 9 cm.

The closest analogies: Two wooden vessels for meat, one of them a toy, were in a fifteenth-century site on the Kobuk River (Giddings 1952:85; Pls. XXXI:8; XLV:8—Ekseavik). In one of the early houses at Birnirk, an oval dish for meat was found (Ford 1959:198; Figs. 45; 46:15; Murdoch 1892:86–89, 99–100; Fig. 34). Nelson, describing similar vessels among the Eskimos of Bering Strait at the end of the nineteenth century, mentions small dishes for meat among children's toys (Nelson 1899:70–72, 331; Pl. XXXI). The Chukchi of the beginning of the twentieth century used wooden dishes and trays, and small models of them served as toys (Bogoras 1904–1909:I:188, 276; Fig. 106:e).

No. 1032 is the wall of a vessel or box (a toy) of birch bark, which probably had a wooden base. The ends of the birch bark strip go one on top of the other, and holes were made in them for sewing. The height of the object is 4 cm (Pl. XVII:1).

There were no other finds of birch bark vessels at Cape Baranov. There are strips of birch bark in House 1, intended perhaps for vessel walls (Nos. 1031, 1033, 1034).

On the Chukchi Peninsula, similar small vessels and boxes of baleen with wooden bottoms are encountered in sites of various time periods (Rudenko 1972:149; Pls. 15:8—Cape Chaplina; 28:15—Sirenik). In Ipiutak houses, strips of birch bark were found with series of holes, as in our specimen. In the opinion of Larsen and Rainey, this is a prototype of later Eskimo vessels of wood and baleen (Larsen and Rainey 1948:111; Pl. 23:7, 8). In one of the later sites at Point Barrow (Nunagiak), investigated by Ford, a vessel with a wooden bottom was found with the same kind of sewn walls. At the Utkiavik site, buckets were made from bent wooden strips with the ends sewn together (Ford 1959:198; Fig. 94:e). Among the Eskimos of the thirteenth to eighteenth centuries on the Kobuk River, both strips of baleen, from which were sewn vessels, and strips of birch bark were encountered (Giddings 1952:85; Pl. XXIII:11—Ahteut). The Eskimos of Point Barrow at the end of the nineteenth century used vessels of baleen and bark with wooden bottoms (Murdoch 1892:86–88, 101; Figs. 16–18, 37).

The Coastal Chukchi and Eskimos of the Bering Sea coast of the Chukchi Peninsula at the beginning of the twentieth century had vessels of pine bark with round wooden bottoms (Bogoras 1904–1909:I:188; Fig. 107:a, b).

Spoons. Two spoons of deer antler and one of mammoth tusk were found at Cape Baranov in Houses 1 and 5 and in the House in Vtoraya Bay (see Household Objects, No. 663, and Art, No. 40).

HOUSE 1. No. 91 is a wooden toy spoon (or paddle) of triangular form, slightly concave, with a broken narrow handle. The length is 6.5 cm (Pl. XVI:3).

Analogies to our specimen: on the Chukchi Peninsula, very shallow spoons of bone and wood with a short handle-stem in a *nynglu* (protohistoric house) at Uelen and at Sirenik (Rudenko 1972:149; Pls. 6:13; 26:7–9); in Old Bering Sea sites on St. Lawrence Island (Collins 1937:166; Pls. 47:16; 51:15—Miyowagh); in the Birnirk site at Point Barrow (Mason 1930:386; Pl. III); and spoons of antler in the Ipiutak site and burials at Point Hope (Larsen and Rainey 1948:112; Pls. 23:5; 75:18). Especially reminiscent of our specimen are a large wooden spoon from a fifteenth-century site (Giddings 1952:82; Pl. XLV:1—Ekseavik) and a spoon of deer antler from a sixteenth-century site on the Kobuk River (Giddings 1952:87; Pls. XLI:37—Intermediate Kotzebue; XLIII:19—Ekseavik). Similar forms were also encountered among the Eskimos of Bering Strait at the end of the nineteenth century (Nelson 1899:68; Pl. XXIX:11).

No. 664 is a subrectangular fat scraper (?) of deer antler with one straight steep edge and concave in the middle. It was probably a toy. The dimensions are 2.5 x 2.6 cm (Pl. XVII:3).

A fat scraper of walrus tusk, close in form, was found in the House in Vtoraya Bay.

Analogies: Especially reminiscent of our specimen is a subrectangular cup of walrus tusk found on Shalaurova Island (one wall lower than the other) (Beregovaya 1960:Fig. 3:9). On the Chukchi Peninsula a bone scraper plane from a late Punuk site at Cape Chaplina is close in form (Rudenko 1972:144; Pl. 14:8).

Other analogies: see Tools for Butchering Carcasses and Working Skins, No. 38.

Whipping tops. In House 1, disks Nos. 76 and 156 made from exfoliating wooden plates, as well as some wooden rods found here, probably served as toy tops (for example, Nos. 64 and 73; Pl. XVII:6).

No. 89 is a wooden top, a toy, composed of a rod, multifaceted in cross section, pointed on both ends, and set in a round hole in the middle of an oval wooden disk, one side of which is broken, the other burned along the edge. The length of the oval is 4.5 cm; the length of the rod is 7.8 cm (Pl. XVII:5).

Analogies: On St. Lawrence Island in Old Bering Sea and Punuk layers are disks from tops of walrus tusk (Collins 1937:178, 244; Pls. 59:12—Miyowagh; 83:15—Seklowaghyaget); and among the Central Eskimos of the Thule culture, tops were made from part of a whale vertebra placed on a wooden stick (Mathiassen 1927:I:75; Pl. 51:7—Ponds Inlet). The same kind of top was found in one of the late sites at

Point Barrow (Ford 1959:227; Fig. 111:g—Utkiavik). Among the late Eskimos of Point Hope (Rasmussen's collection), a decorated disk of a top was made of slate (Mathiassen 1930:67; Pl. 16:13); among the Eskimos of Point Barrow of the nineteenth century, a wooden decorated top with lines radiating out from the center is very close in form to our specimen; the Eskimos of Bering Strait of this same time, from the mouth of the Kuskokwim River to Cape Prince of Wales, made tops for the children—one of them of walrus tusk is very reminiscent of No. 89 (Murdoch 1892:376; Fig. 375; Nelson 1899:340–341; Fig. 122). Among the Chukchi of the beginning of the twentieth century, one of the most widespread children's toys was the wooden top, similar in form to those of the Eskimos. Some of them are closely reminiscent to our specimen (Bogoras 1904–1909:I:273; Fig. 197:b).

HOUSE 5. No. 119 is a subrectangular spoon or small paddle of deer antler, slightly concave, with a small stem for attaching a handle. The length is 4.5 cm.

Analogies: on the Chukchi Peninsula, small bone and wooden spoons with a short handle-stem in a protohistoric house at Uelen and Sirenik (Rudenko 1972:149; Pls. 6:13; 26:8).

The HOUSE in VTORAYA BAY. No. 27 is a wooden toy cup of irregular oval form, with round bottom (two fragments). The length is 4 cm (Pl. XVII:2).

At Cape Baranov, a similar small wooden cup (No. 29), but deeper and larger, was encountered also in the House in Vtoraya Bay.

For analogies, see Household Objects, No. 29.

●

Art

Images of Animals, Imitations of Everyday Objects, Ornaments, Indeterminate Lyre-Shaped Object

Objects of art in the houses at Cape Baranov are small in number and not homogeneous. Along with a realistic image of a polar bear of mammoth tusk are schematic images of animals, imitations of everyday objects, ornaments, and indeterminate objects of antler, walrus tusk, and mammoth tusk.

Decoration. The design on some everyday objects, for example, circumscribing grooves on needle cases, is similar to the design of Punuk times. Narrow triangular design—the dominant element of design on harpoon heads—in houses at Cape Baranov is closest to that of the Punuk and Thule cultures, and only three harpoon heads from Vtoraya Bay contain elements of Uelen-Okvik and Old Bering Sea design (see Objects of Dress and Harpoon Heads).

In the houses at Cape Baranov, a total of ten objects of art were encountered: in House 1—four, in House 5—four, and in House in Vtoraya Bay—two. Among them are images of animals (three specimens), models of various objects (three specimens), ornaments (three specimens), and one indeterminate (lyre-shaped) object.

HOUSE 1. No. 745 is a fish (?) of deer antler in the form of a plate with one narrow and slightly rounded end, with the other end cut transversely and made in the form of a tail. A longitudinal cut was made on one side of the figurine. The plate is slightly concave on one surface. The length is 13 cm (Pl. XV:16).

No other such objects were found at Cape Baranov.

On the Chukchi Peninsula, images of fish of baleen can serve as analogies to our specimen. Rudenko considers these as attributes of shamanic dress (Rudenko 1972:155–156; Pl. 30:16—Sirenik). The same kind of artifacts of baleen, evidently to be toys, are known on St. Lawrence Island during Old Bering Sea times (Collins 1937:179; Pl. 56:5–7—Miyowagh). Among the Eskimos of the Thule culture, the closest analogy to our specimen is a wooden fish figurine, probably a toy (Mathiassen 1927:I:187; Pl. 57:12—Ponds Inlet) and some images of baleen, the assignment of which is unclear (Mathiassen 1927:I:80, 184; Pls. 35:1—Naujan; 55:2—Ponds Inlet). Among the Eskimos of the fifteenth century on the Kobuk River, parts of fish hooks and fish lures made in the form of a fish are similar to our specimen (Giddings 1952:38; Pl. XXIX:4, 9, 22—Ekseavik).

No. 90 is a single-edged knife with a handle of mammoth tusk (an imitation of a metal knife), pointed on the end, with slightly rounded working edge and straight back. A large triangular hole had been made in the short handle for attachment. The cross section of the handle is subrectangular. The length is 12.5 cm (Pl. XV:12).

There are no similar knives at Cape Baranov. An imitation of a knife or lancet, made of deer antler, is somewhat similar (No. 12; House 1).

On the Chukchi Peninsula objects of baleen have been found that in some cases imitate the form of knife that Rudenko believes to be ceremonial, perhaps attributes of shamanic attire. Especially close to our specimen is a single-edged knife of baleen with straight back, found in Sirenik (Rudenko 1972:155–156; Pl. 30:21). Collins considers similar objects, found in Old Bering Sea layers on St. Lawrence Island, toys (Collins 1937:179; Pl. 56:4, 5—Miyowagh). They are also known among the Eskimos of the Thule culture: two double-bladed knives of baleen at Naujan and particularly the one from the Thule site itself

(Comer's Midden) have handles very reminiscent of the handle of a bone knife from House 1 (Mathiassen 1927:I:80, 300; Pls. 35:11; 79:3).

No. 90 is reminiscent in form of a knife with an iron blade, which was used by the Eskimos of Bering Strait at the end of the nineteenth century (Nelson 1899:85; Pl. XXVIII:27—St. Lawrence Island).

According to Bogoras, at the beginning of the twentieth century there were now no double-edged stone knives among the Chukchi. They had been replaced by single-edged metal knives set in a slot in the end of a wooden handle. Some of them are similar in form to our specimen (Bogoras 1904–1909:I:213; Fig. 134).

No. 12 is an indeterminate object of deer antler that is reminiscent in form of a pointed iron knife. It is set in a handle, pointed on the end, and broken longitudinally. A long cut was made in the right part of the handle, perhaps for a thong to pass through. Above it are two transverse decorative grooves. The object also is similar to a large harpoon head. The artifact is smooth on the inner side, slightly concave, and ground on one side of the working edge. The length is 15.5 cm (Pl. XV:18).

There are no analogs in old Eskimo sites. Among the Eskimos of the end of the nineteenth century on the shore of Bering Strait "lancets" of stone and iron were used for letting blood and other medical purposes. One of them is a short, double-edged, pointed blade of nephrite set in a short wooden handle—described by Nelson (1899:309, 310; Fig. 97). Based on the form, it is reminiscent of an object from House 1, which could be an imitation of such a tool used by a shaman.

No. 34 is a button of walrus tusk or mammoth tusk that is reminiscent in form of a "winged object" or a butterfly. On the inner surface is a transverse ridge, the base of which was drilled through in the middle so that it formed an eyelet. The button was apparently unfinished and not decorated. The length is 4.5 cm (Pl. XV:2). Based on the form of the buttonhole, object No. 34 is similar to button No. 13 from the House in Vtoraya Bay (see Objects of Dress).

There are no other close analogies. Based on the arrangement of the eyelet, our specimen is reminiscent of a bone button from an Old Bering Sea site on St. Lawrence Island, and based on form, reminiscent of a "winged object" from Okvik in the Punuk Islands (Collins 1937:177; Pl. 58:3—Miyowagh; Rainey 1941:Fig. 26:1). At Birnirk on Point Barrow a large antler button was found with the same kind of arrangement of the eyelet. At the same place a tiny "winged object' was found that was made of bark and reminiscent of No. 34 (Ford 1959:215, 218; Figs. 103:j; 104:e). Nelson describes among the Eskimos of Bering Strait at the end of the nineteenth century an oblong button or toggle for a belt. It is of walrus tusk with a narrow projection in the middle on the inner surface, which was also drilled through lengthwise. The object is decorated with a linear design (Nelson 1899:59; Pl. XXVII:4).

HOUSE 5. No. 24 is an image of a seal (or whale?) of walrus tusk that is broken on both ends. At the lower end a bifurcated "tail" is outlined. On the upper end a hole had been made, evidently for suspension. The length is 5.3 cm (Fig. 14:1; Pl. XV:3).

There is nothing else similar at Cape Baranov.

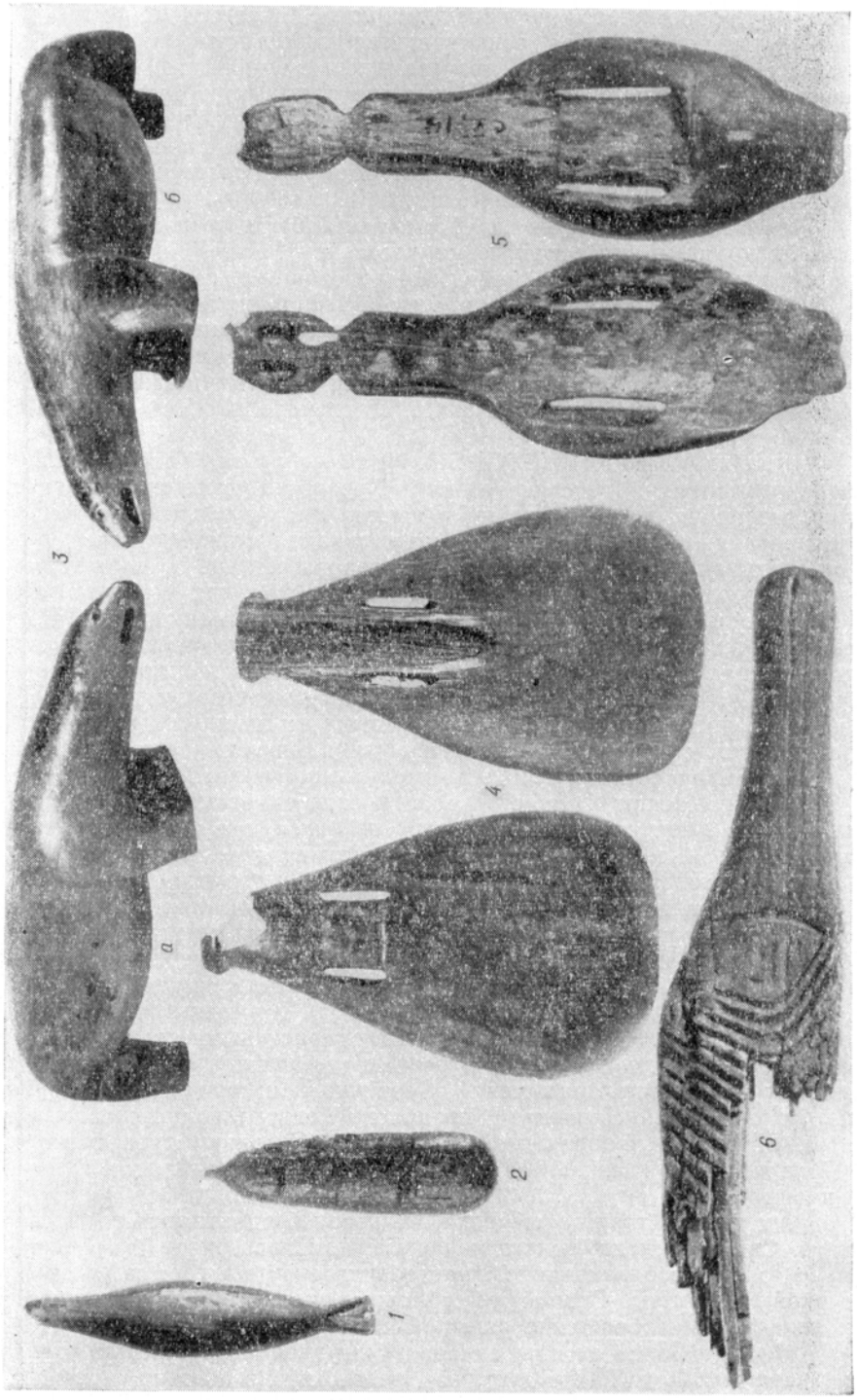

Figure 14. Art objects. 1. seal figurine of walrus tusk, House 5, Sarychev Bay (No. 24); 2. pendant (sinker?) of mammoth tusk, House 5, Sarychev Bay (No. 29); 3. polar bear figurine of mammoth tusk, House in Vtoraya Bay (No. 17)—a. view of right side; b. view of left side; 4. spoon of mammoth tusk, House in Vtoraya Bay (No. 40); 5. item of mammoth tusk in the form of a lyre, House 5, Sarychev Bay (No. 14); 6. wooden paddle stamp for applying design, House in Vtoraya Bay (No. 39).

Rudenko published several figurines of whales and seals made of walrus tusk found in the eastern (later) sector of the excavations at Sirenik on the Chukchi Peninsula (Rudenko 1972:154; Pl. 29:9, 10, 13, 16–18). One of these images (a seal) is reminiscent of the figurine from House 5 (Rudenko 1972:Pl. 29:16). The same kind of figurines of walrus tusk, representing whales, were found on St. Lawrence Island in Punuk and later layers (Collins 1937:244; Pl. 83:16–18). The figurine from House 5 is also very similar to a fishing-line weight of walrus tusk from Old Bering Sea and Punuk times on St. Lawrence Island, published by Collins and reminiscent in form of sea mammals (Collins 1937:140; Pl. 36:3–7, 17, 21, and others). Realistic images of seals of walrus tusk with holes in the upper end for suspension were also encountered in Ipiutak burials and houses at Point Hope (Larsen and Rainey 1948:134–146; Pls. 25:6–10; 52:6, 7). In Birnirk and later sites at Point Barrow such figurines of seals and other animals were used as toggles for belts and as toys. In the Birnirk site itself images of whales and seals were encountered (Ford 1959:229; Fig. 104:h–l—Birnirk). In later sites these are primarily toggles (Ford 1959:215–218; Fig. 101:e, i—Nuvuk, Utkiavik) and parts of shamanic attire (Ford 1959:218; Figs. 101:h—Nuvuk, Utkiavik; 104:f—Birnirk)—"lancets" of flaked stone. Among the Eskimos of the Thule culture are toy images of seals of wood and walrus tusk (Mathiassen 1927:I:186, 211; Pls. 57:13; 62:13—Ponds Inlet). Among the late Eskimos of Point Hope (Rasmussen's collection), amulets of whale bone in the form of whale figurines were encountered in umiaks (Mathiassen 1930:57; Pl. 13:5). Murdoch reports that the seal was a favorite object of artistic representation for the Eskimos of Point Barrow at the end of the nineteenth century. One of the figurines published by him was made of wood, another was made from a walrus jaw. They could have served as amulets for successful seal hunting (Murdoch 1892:401; Figs. 404:a; 413). The Eskimos of Bering Strait at the same time used seal figurines of walrus tusk for decoration of hunting headgear, and made small wooden boxes for keeping arrowheads in the form of seals (Nelson 1899:162, 169; Pl. LXII:2, 3, 6; Fig. 45:1). The Chukchi and Asiatic Eskimos at the beginning of the twentieth century ascribed to sculpted images of animals the magical significance of helpers in hunting. For example, whales and other sea mammals made of wood, connected with family "patrons," have been published by Bogoras (1904–1909:II:Ch. XIII, Fig. 256).

No. 29 is a weight-pendant of mammoth tusk of stretched oval form with an eyelet on the upper narrower end. Two transverse encircling grooves were made across the weight. The cross section is lenticular. The length is 5 cm (Fig. 14:2; Pl. XV:4).

Weights of antler and walrus tusk were encountered in House 1 (Nos. 7 and 8), but they are heavier and differ in form from the weight (or pendant?) from House 5 (see Fishing Equipment).

No. 29 is most reminiscent of weights for a fishing line from Eskimo sites, chiefly from Punuk and later times on the Chukchi Peninsula. The weights were made of walrus tusk and always had two holes: one in the upper end for the line and one in the lower end for a hook. Our specimen is similar to sinkers in the form of measuring weights from isolated finds on the Chukchi Peninsula (Rudenko 1972:136–137; Pl. 36:34). On St. Lawrence Island weights for a fishing line are encountered in Old Bering Sea, Punuk, and later layers (Collins 1937:140, 226; Pls. 36—Miyowagh; 75:12, 13—Ievoghiyoq). Nelson describes weights among the Eskimos of the end of the nineteenth century in Norton Sound (stone) and from St. Lawrence Island (bone) that are close in form to our specimen (Nelson 1899:Pl. LXIX:28, 32). Murdoch provides an image of a walrus-tusk weight of the same time period from the vicinity of Point Barrow that has traces of decoration. The object is similar to the specimen from House 5 but, as in all the cases described, with a hole, and not an ear, at the top (Murdoch 1892:282; Fig. 273).

There are pendants of mammoth tusk that served as ornaments among the Eskimos of the Thule culture, which are very similar to our specimen. Some have an eyelet at the top (Mathiassen 1927:I:72; Pl. 30:17—Naujan). The item from House 5 probably served as such a pendant.

No. 13 is an item of walrus tusk or mammoth tusk (a button?) that is oval in form. It has cut-off ends, one of which is narrower with one convex surface and the other flat. On the flat side are two deep

parallel transverse grooves. The cross section is oval. The length is 3 cm; the thickenss is 1 cm (Pl. XV:10) (see Objects of Dress).

No other objects like this were found at Cape Baranov.

According to Rudenko, similar forms of weights and bird bolas in Punuk sites on the Chukchi Peninsula and on St. Lawrence Island always have drilled holes at the top (Collins 1937:Pl. 76:1–19; Rudenko 1972:136–137; Pls. 22:19–21—Sirenik; 31:13–14—Nunligran; 36:26–27—isolated finds on the Chukchi Peninsula). Only one specimen from Nunligran has two grooves for suspension, as on our specimen. Item No. 13 is reminiscent also in form of bola weights from the collections of Rasmussen (Mathiassen 1930:Pl. 7:18) and Murdoch (1892:Figs. 247, 248), which they acquired in the region of Point Barrow, as well as a bola of the Eskimos of the Thule culture (Mathiassen 1927:I:Pl. 11:1–7).

No. 14 is an artifact made from a slab of mammoth tusk (a lyre-shaped object). It is broken on the front end, oval in form, and has a long handle that is terminated by a small oval, and two parallel holes carved on the inner side not quite through. The inner surface of the artifact is concave. In the broad middle part of the tool are two broad parallel cuts, probably for a thong to pass through. Small strokes (made by a burin?) are preserved along the edges of the object. Both edges were ground in the broad part. The length is 10.5 cm. The length of the cuts is 2 cm (Fig. 14:5).

No other similar artifacts were found on Cape Baranov. There are no analogies for No. 14 in other Eskimo sites. This possibly was a thimble holder, if the broken part of the object terminated in a hook, like, for example, some objects of this assignment among late Eskimos at Point Hope (Mathiassen 1930:63; Pl. 16:1, 2). Closest in form to No. 14 is an oval object, also indeterminate, with a hole in the middle. It is from early Punuk times, made of mammoth tusk, and found on St. Lawrence Island (Collins 1937:Pl. 22:9—Miyowagh).

The HOUSE in VTORAYA BAY. No. 17 is a figurine of a polar bear of mammoth tusk. The polar bear image is realistic, rendered without excess details, with finely modeled ears and eyes in the form of holes. The nostrils are denoted by a pit made on one side of the muzzle. An oblong rectangular hole was carved in the place of the mouth, as if for suspension of the sculpture. The tail is marked by two short grooves. The figurine is somewhat flattened and worn on one side, and differs from the other, convex side by its pale color. Near the front leg are several short parallel grooves and three shallow holes, to which two holes on the other side correspond. One of the back legs was broken in antiquity. The length of the figurine is 11 cm (Fig. 14:3).

No other similar sculptures were found at Cape Baranov.

In Old Bering Sea sites on the Chukchi Peninsula, two figurines of bears were encountered: one of them more realistic, decorated in Old Bering Sea Style I, was found by Rudenko at Uelen; the second was executed in a more tentative manner and also covered with Old Bering Sea style design. The treatment of the head of the Uelen sculpture is very similar to that of the head of the bear from the House in Vtoraya Bay and has the same cut in the place of the mouth (Rudenko 1972:158; Pls. 4:8—Uelen; 9:9—vicinity of Cape Dezhneva).

Punuk images of animals on the Chukchi Peninsula, according to Rudenko, as a rule are schematic, their surface smooth, and only in rare cases covered with a simple design of parallel lines. The sculpture of a polar bear of walrus tusk from Cape Chaplina is especially closely reminiscent of the figurine from Vtoraya Bay. An image of a bear from Sirenik is more schematic (Rudenko 1972:161–162; Pls. 16:12—Cape Chaplina; 29:15—Sirenik).

A polar bear figurine from an Old Bering Sea site on St. Lawrence Island, covered by developed Old Bering Sea style design, is closely reminiscent of the sculpture of a bear from Uelen. The treatment of the muzzle of the animal and the relief image of the ears brings it close to the figurine from Vtoraya Bay (Collins 1937:49; Fig. 7—Hillside; Pl. 13:3). More similar to our figurine are images of a polar bear

from Point Hope. Such finds are known both in houses and in graves of the Ipiutak culture. In the first case, these are heads of bears of walrus tusk (two of them are unfinished) (Larsen and Rainey 1948:135–146; Pl. 25:12–14). The second case consists of a head of mammoth tusk with inset eyes of agate and a whole figurine of walrus tusk with ribs illustrated along the sides and teeth represented by grooves (Larsen and Rainey 1948:52:9, 10).

Very similar to the sculpture from Vtoraya Bay is a polar bear figurine of walrus tusk, which comes from a burial of the Near Ipiutak culture at Point Hope. It has the mouth and nostrils illustrated by engraving (Larsen and Rainey 1948:Pl. 82:2).

No polar bear images have been encountered in sites of the Birnirk culture.

Among the Eskimos of the Thule culture, sculpted images of the polar bear are close in type to the figurine from Cape Baranov. Such, for example, is the sculpture of walrus tusk from Ponds Inlet with a very elongated head. The rear legs of the figurine are longer than the front, the eyes and ears are only slightly marked. On the back is a design in the form of a harness (Mathiassen 1927:I:186; Pl. 57:9). On Southampton Island in houses of the Sadlermiut tribe (the last representative of the Thule culture), a collection of objects was acquired apparently from different time periods (among the objects are iron ones). A figurine of a bear of walrus tusk is especially reminiscent of the bear from the House in Vtoraya Bay and is illustrated with great living accuracy. On both figurines are many similarities in treatment of the ears, eyes, and legs (Mathiassen 1927:I:267; Fig. 91).

Nelson published several toy figurines of bears among the western Eskimos of the end of the nineteenth century, for example, a wooden figurine of a polar bear from Diomede Island. The figurine had a harness similar to a dog harness, as on the above-mentioned sculpture from Ponds Inlet. Also from Diomede Island comes a figurine of a polar bear of walrus tusk similar to our specimen (Nelson 1899:346, 347; Figs. 131, 133). In a description of the Eskimos at Point Barrow at the end of the nineteenth century, Murdoch provides several images of a polar bear carved from soapstone, bone, and probably fossilized mammoth tusk. This last sculpture was worn as an amulet (Murdoch 1892:399, 400; Figs. 399; 401:a; 402:a).

According to Bogoras, the Chukchi and Asiatic Eskimos of the beginning of the twentieth century made sculpted images of animals—"helpers"—that brought success in hunting. Among such sculptures, a wooden image of the head of a polar bear, which served as an amulet, is found among the Reindeer Chukchi (Bogoras 1904–1909:II:Chap. XIII:362; Fig. 282). The sculpture is reminiscent of the head of the polar bear from the House in Vtoraya Bay.

No. 40 is a spoon of mammoth tusk. It is flat, oval in the wide part, and narrowing toward the handle, which was apparently set into a longitudinal groove that was cut on top and runs almost half way through the object. Two longitudinal slits were made on both sides of the groove for attaching the handle. The object is heavily polished. The length is 8 cm (Fig. 14:4).

In House 5 there is a toy spoon (or small paddle?) of deer antler with a small stem (No. 119). In House 1 was a wooden toy spoon (No. 91) and a spoon of deer antler without a stem (?) (No. 663) (see Toys and Household Objects).

On the Chukchi Peninsula, analogies to spoon No. 40 are spoons of the first type, according to Rudenko: bone or wood, very flat, egg-shaped in form, with short handle, or of walrus tusk, deeper, with a broad and short handle. All these spoons belong to Old Bering Sea times. The closest analogy is a spoon of walrus tusk from isolated finds on the Chukchi Peninsula (Rudenko 1972:107, 149; Pls. 6:13—Uelen, *nynglu*; 26:7–9—Sirenik; 38:18—finds on the Chukchi Peninsula). Spoons from Old Bering Sea sites on St. Lawrence Island belong to the same type (Collins 1937:166; Pl. 51:14, 15—Miyowagh). A spoon from Vtoraya Bay has very much in common with such an object of bone or walrus tusk from a site of the Birnirk culture near Point Barrow (Mason 1930:386; Pl. III—Kugusugaruk). Besides their common form,

the presence of two parallel slits on top makes them similar. In the Rasmussen collection of late Eskimo finds at Point Barrow is a deep oval spoon of bone with a short handle, also reminiscent of the spoon from the House in Vtoraya Bay (Mathiassen 1930:Fig. 11). Among the numerous spoons of Eskimos of Bering Strait of the end of the nineteenth century, most similar to our specimen is a broad flat spoon from St. Lawrence Island with a short handle, and some spoons with long handles, but close in form to the specimen from Vtoraya Bay (Nelson 1899:68, 69; Pls. XXIX:11; XXX:11, 13, 17, 25).

●

Objects of Indeterminate Assignment

HOUSE 1. No. 666 is an item of deer antler, subtriangular, slightly concave on one surface, and narrowed on one end. On the broad end are three deeply incised blunt teeth; the middle tooth is bifurcated. The image may be of a flying bird or a seal scraper. The length is 7 cm (Pl. XV:14).

Among the Eskimos of the Chukchi Peninsula, St. Lawrence Island, the Thule culture, and Bering Strait of the nineteenth century, images of birds from early times up to the present were illustrated realistically, a large number sculpted in the round (Collins 1937:50, 244; Mathiassen 1927:I:74; Nelson 1899:188; Rudenko 1972:170–171). Exceptions are images of birds sculpted in bas-relief from Ipiutak burials, but there are no direct analogies for item No. 666 (Larsen and Rainey 1948:132; Pls. 67:7; 69; and others).

The item is most reminiscent in form of seal scrapers, which the Asiatic and Alaskan Eskimos used to scratch on the ice when the hunter crept up on seals. Such scrapers are found, for example, in the eastern sector of Sirenik on the Chukchi Peninsula and in Punuk sites on St. Lawrence Island (Collins 1937:322; Pl. 75:17; Rudenko 1972:127; Pl. 20:16).

Seal scrapers of wood with many teeth and with seal claws fastened to them have been encountered in sites of the Birnirk culture and later at Point Barrow (Ford 1959:109; Fig. 45:h—Nunagiak; Mason 1930:Pl. I—Kugusugaruk); among the Eskimos of the Thule culture (Mathiassen 1927:I:152; Pl. 41:9, 10—Ponds Inlet); among the Eskimos of the nineteenth century at Point Barrow and Bering Strait, where they were also made of bone and walrus tusk (Murdoch 1892:253; Fig. 253:a–c; Nelson 1899:129–130; Pl. LII:7–11); and among the Chukchi of the beginning of the twentieth century (Bogoras 1904–1909:I:119; Fig. 38:c).

Nos. 736 and 831 are handles from large tines of deer antler with a broad and deep slot for a large stone blade (the length is 16 cm, the depth of the slot 2.5 cm) and of walrus tusk, which probably served to hold a scraper. The dimensions: 6 x 7 cm (Pl. XVIII:8).

Handles similar to No. 831 were found in a protohistoric site on the Chukchi Peninsula (Rudenko 1972:50; Pl. 10:20—Naukan) and in fifteenth- and sixteenth-century sites on the Kobuk River (Giddings 1952:70; Pl. XXXII:10, 11—Ekseavik and Intermediate Kotzebue).

Nos. 768 and 794 are items of deer antler reminiscent in form of the handles of men's knives. On the surface of No. 768, a series of short transverse cuts was made close to the narrow end. The lengths are 18 and 22 cm (Pl. XVIII:14).

No. 713 is an antler rod split longitudinally and pointed on both ends, slightly curved in the form of a bow or sled runner. A rectangular groove was cut in the middle along the edge and a long rectangular hole cut through farther along close to the same edge. The ends are blunt and thick. The length is 33 cm (Pl. XVIII:15).

No. 714 is an antler plate, broken on the ends and narrowed toward one end in the form of a stem. The other end is ground on both surfaces and has the form of a spade. On both edges of the broad part are two oval holes cut at an angle. The edges of the plate are sharpened and ground in the upper part. The cross section is a flat lens. The length is 24 cm (Pl. XVIII:11).

No. — (an unnumbered item) is a naturally branching reindeer antler with a deep hole drilled in the base of the antler, which is cut straight across the stalk. The length is 10 cm (Pl. XVIII:3).

In a collection of the late Eskimos from Cape Barter, an artifact of whale bone was published that is closely reminiscent of our specimen, which Mathiassen describes as an oarlock for an umiak paddle (Mathiassen 1930:24; Pl. 6:6).

Nos. 667 and 681 are items of deer antler in the form of small board with a handle and a plate with drilled oval hole (Pl. XVIII:6, 7).

No. 859 is a wooden rod of indeterminate assignment that expands on one end, on which a deep and broad semicircular groove was made. Below the groove, on one edge, a perforating hole was drilled that has sinew passing through it and tied. The other end of the rod is flattened, and a transverse cut is prominent here. The cross section in the lower part is oval, on the top semicircular. The rod could have served as part of a structure (a sled?) or a handle. The length is 24 cm (Pl. XVIII:10).

Nos. 863, 869, 873, 910, and 977 are indeterminate items of wooden rods (Pl. XVIII:2, 4, 5, 12, 13).

No. — is the end of a driftwood post, pointed probably with a stone axe (part of a house structure?). The diameter is 10 cm.

No. 112 is a triangular wooden hook (?) made on the end of a bent flat rod with a deep groove on the opposite broken end. It was made on the same side of the tool as a hook. On the other surface of the rod, by the groove, is a deep transverse notch for attachment. The hook itself is curved. Its convex side is pointed. The concave side, which transforms into a groove, is thick. At the point of the hook, two series of very small short cuts can be distinguished. The object is burned and charred. The cross section of the rod is oval. The length is 21.5 cm.

At Cape Baranov, similar hooks were also found in House 5 (whole specimen No. 23) and in House 1—two hooks without shafts (Nos. 103 and 870) and two pieces of hook handles with grooves (Nos. 85 and 858). All these objects are burned on the end, which suggests that they were used for taking objects from the fire.

There are no analogies to such hooks in other Eskimo sites.

They could have served as boat hooks or hooks for meat and fat like bone and walrus tusk hooks reminiscent of them: No. 32 from House 1 (it must have been connected to a shaft) is like those from the Chukchi Peninsula, Cape Dezhneva, and Sirenik (Rudenko 1972:150; Pls. 8:8; 27:29–31), as well as similar artifacts of the nineteenth-century Eskimos at Point Barrow and Bering Strait (Murdoch 1892:310; Figs. 311, 312; Nelson 1899:222–223; Pl. LXXX:1–5).

No. 23 is a wooden hook (?) of the same form as No. 112 but without traces of fire. The cross section is oval. The length is 30 cm (Pl. XIV:8).

For analogies, see No. 112.

No. 118 is an item of deer antler in the form of a rod with a broken pointed end and a small stem on the other end. The length is 6.5 cm.

A similar item of pointed antler is among the indeterminate items from a fifteenth-century house on the Kobuk River (Giddings 1952:125; Pl. XXX:14—Ekseavik).

The HOUSE in VTORAYA BAY. No. 200 is an elongated hollow object of reindeer antler in the form of a longitudinally split piece of a tube with regular longitudinal and transverse cuts that appear made by a metal tool. The cross section is semicircular. The length is 4.5 cm (Pl. XVIII:9).

On the Chukchi Peninsula, reminiscent of No. 200 is a scraper plane for removing fat from gut. It was made from a piece of a long-bone of concave form with sharp edges (Rudenko 1972:55; Pls. 12, 19—Arakamchechen). In Old Bering Sea and Punuk layers on St. Lawrence Island, a scraper for removing fat was found that was made of walrus tusk in the form of a longitudinally split cylindrical rod, but of

flatter form (Collins 1937:Pls. 30:5–7—Hillside; 51:8—Miyowagh; 78:14). At Ipiutak at Point Hope, similar objects of cylindrical form, also split longitudinally, served as handles for bone retouchers. They were encountered both in houses and in graves (Larsen and Rainey 1948:Pl. 43:16; and others). Our specimen is reminiscent of the handles of small chisels used for working antler among the Eskimos of Point Barrow of the nineteenth century. Such handles consisted of two halves of semi-cylindrical form fastened together. Within it was set a metal blade (Murdoch 1892:172; Figs. 143, 144).

Worked Deer Antler

An especially large quantity of worked reindeer antler was encountered in House 1. Almost all the pieces of antler have traces of chopping and cutting tools: adzes, knives, drills, and burins. Many tools and objects of daily use were made from the antler here: harpoon heads (Nos. 13, 14, 17, 20–23, 27–29, 162) and their blanks (Nos. 4, 652–654, 676, 767), foreshaft for a harpoon (No. 30), finger rest (No. 167), harpoon shaft head (No. 719), harpoon ice picks (Nos. 79–105, 668, 669), boat hook (No. 32), leister tines (Nos. 124, 678), tools for weaving nets (Nos. 37, 797), weight (No. 8), bows (Nos. 770, 771), arrowheads (Nos. 53–57, 852, — [unnumbered]), wrist guard (No. 662), lateral tine of a bird dart (No. 163), dagger (No. 715), handles of men's knives and blanks (Nos. 38, 49, 62, 679, 683–690, 690a, 690b, 691–693, 716, 752, 754, 755, 757, 758, 760), drill handle (No. 683a), handles of women's knives (Nos. 87, 717), paddles-polishers (Nos. 93, 665, 709–711), awls (Nos. 41, 676), wedge (No. 708), adze sockets (Nos. 694, 809), axe (No. 784), mattocks (Nos. 2,3, 696, 707, 742), pick (No. 734), sled runners (Nos. 125, 718), armor plates (Nos. 10, 11), button (No. 159), tools for sewing boots (Nos. 42, 43), hooks (Nos. 712, 766), spoon (No. 663), cup (toy) (No. 664), fish figurine (No. 745), imitation knife (No. 12), and indeterminate objects (Nos. 666, 667, 681, 713, 736, 768, 794, —, and others).

Items encountered in House 5 are almost all of antler: harpoon heads (Nos. 1, 2, 5, 26–28), harpoon ice pick (No. 7), spear head (No. 19), arrowhead (No. 15), handles of men's knives (Nos. 11, 12), paddle (No. 18), awl (No. 10), hammer (No. 22), axe (No. 21), mattock (No. 20), armor plate (No. 16), spoon (No. 119), and indeterminate objects (Nos. 117 [a blank], 118).

In the House in Vtoraya Bay, approximately the same number of tools and other artifacts of deer antler were found: harpoon heads (Nos. 1, 4), spear head (No. 12), dagger (No. 197), handles of men's knives (Nos. 7–9, 13), handle of a woman's knife (No. 11), awl (No. 213), wedge (No. 190), drill bows (Nos. 210, 220), hammer (No. 189), adze socket (No. 10), and mattocks (Nos. 6, 191).

In addition, worked pieces of deer antler with traces of hacking by an adze, longitudinal cuts, and so on were encountered in all the houses.

Antler was apparently worked in green or steamed form. The thick part was chopped and worked not by a stone adze or axe, but undoubtedly by an iron tool (according to the determination of the Laboratory of Archaeological Technology, Leningrad Division, Institute of Archaeology, Academy of Sciences, USSR). The traces of the blows are always slanted and have a stepped character. They are encountered with chopped thick massive parts of the antler (17 pieces) and thinner rods (8 pieces), as well as with individual eyed tines (2 pieces) (Pl. XIX:9–13).

Longitudinal cutting of long antler rods, as well as transverse separation of both thin and thicker parts of the antler (according to the determination of the Laboratory of Archaeological Technology), also was done with iron tools: an axe or burin set in a handle, an example of which No. 62 was found in House 1. (In the same place, a knife, No. 49, with an iron blade was found.) Sometimes deep incisions are encountered on antler that mark the presumed place for cutting. In other cases, the cut is marked by a thin groove. Antler was cut or chopped half way through, then broken off. Examples of pieces of antler transversely cut with using an iron burin is a broad and thick branching tine of an antler that was cut

transversely on both surfaces and then broken: No. 813 and four other pieces. The brow tines of antlers (4 specimens), other tines (6 specimens), and pieces of antler (9 specimens) were separated by the same method (Pl. XIX:6–8).

Slabs of antler were separated with longitudinal cuts using an iron burin, and in this way the shaft was split in half lengthwise, as can be seen on 29 pieces of antler (Pl. XIX:1–3).

Deep grooves made by a burin and marking an incomplete cut are seen on antler tine (No. 819) and on antler shaft (No. 737), the latter apparently intended to have been cut lengthwise. On antler tine No. 740, a deep encircling groove was made in order to separate the end of the point. The same kind of deep groves, marking cuts, were made on pieces of antler (7 specimens) (Pl. XIX:4, 5).

There are fine decorative grooves on antler plate No. 780 that is separated by longitudinal and transverse cuts, on tine No. 738 (short transverse grooves), on antler plate No. 805, and on fragment No. 869.

The surface of large pieces of antler was worked by spall removal using a burin or iron knife (based on the determination of the Laboratory of Archaeological Technology), for example, No. 784.

Drilled holes were made on large branching antler tine No. 813 and on a small antler plate cut in the form of a trapezoid (No. 765). In both cases, the holes were drilled not through to the end, but only on one side, and probably with a stone drill. On a large tine, the hole has a diameter at the top of 2 cm and in the middle of 1 cm and was drilled by two drills of different diameter (according to the determination of the Laboratory of Archaeological Technology) (Pl. XIX:7).

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Baleen

Items of baleen (vessels, models of various objects—knives, bows, harpoon heads, images of fish), as well as strips and fibers of baleen connected with knots and loops, appear in Eskimo sites from Old Bering Sea times up to the present.

At Cape Baranov, only one bottom of a baleen vessel (No. 122) was preserved. It was found in House 1. In the same place were several strips of baleen up to 55 cm long and 12 cm wide (No. 1035). There were several with holes (Nos. 1035–1038), narrow strips connected by a knot—parts of snare (No. 1048), bundles of strips and fibers of baleen (Nos. 97, 1049), hanks of baleen (Nos. 94, 95), and so on (see Household Items).

On the Chukchi Peninsula, besides vessel walls of baleen, was a large number of items in the form of fish, "crooked" and straight single-edged knives, small spoons, and so on, which Rudenko believed were models of objects intended for ceremonial purposes and which served perhaps as attributes on shamans' attire (Rudenko 1972:94; Pls. 16:8—Cape Chaplina; 17:27—Cape Chukotskii; 30:12, 13, 22—Sirenik).

Such objects are known chiefly from Punuk sites. Also in Punuk sites are encountered loops, mats, and carved plates of baleen.

Collins believes objects of baleen on St. Lawrence and the Punuk Islands in the form of knives, bows, fish, and so on, to be children's toys (Collins 1937:170–172; Pls. 55:1–4, 7–9; 56:4–16—Miyowagh; Rainey 1941:536—Okvik).

Among the Eskimos of the Thule culture, artifacts of baleen occupied a significant place among the finds at sites. Such, for example, are harpoon end blades, bows, arrows, knives, and vessel walls, which were used as intended (Mathiassen 1927:I:80, 189, 191, 299–302; Pls. 1:10; 35—Naujan; 54; 55; 59; 60—Ponds Inlet; 79, 80—Thule, Comer's Midden; Fig. 14, 15, 103). Other forms in which baleen is encountered are strips, loops, and knots of baleen fiber, which were used as part of nets and in the construction of traps (Mathiassen 1927:I:Pl. 36; 55:1, 4; 59; 60; 81).

Among the Eskimos on the Kobuk River, baleen was also used for walls of vessels with wooden bottoms, for fishing lines, and so on (Gidding 1952:36, 85, 86).

Among the Eskimos at Birnirk and the later sites of Utkiavik and Nuvuk at Point Barrow, vessels and buckets with wooden bottoms and walls made of one or sometimes two strips of baleen sewn with sinew were used.

In addition, in the same place were hanks of baleen and knots tied from strips of baleen (some of them served as parts of traps for small birds and animals), crosses and images of whales made from strips of baleen, and so on (Ford 1959:198, 229, 230; Figs. 93:f; 111:a, b, i; 112:c, g, i). According to Murdoch, the Eskimos of Point Barrow at the end of the nineteenth century still used vessels with wooden bottoms and walls of baleen (Murdoch 1892:88; Fig. 18).

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Stone Tools

Whale Knives, Women's Knives, Men's Knives, Scraper Planes, Discoid Scrapers, Adze Blades, End Blades for Harpoon Heads, Lateral Blade-Insets, Perforators, Cobbles with Traces of Work (Pressure Flakers), Ground Slabs and Sharpening Stones, Slabs for Grinding Fibers and Pigments, Milling Stones, Pestles, Hammers, Cobbles Split Longitudinally, Flakes, and Slate Slabs with Traces of Working

In the three houses excavated at Cape Baranov, 434 stone artifacts were encountered: in Sarychev Bay in House 1—187, in House 5—72, and in the House in Vtoraya Bay—155 and, in addition, 20 artifacts without provenience but apparently also originating in the House in Vtoraya Bay.

Almost all the stone tools were made of dark-gray siliceous slate, sometimes of a brownish color, except for ground slabs of sandstone and quartzite, some hammer stones, milling stones, and similar objects. Tools were sometimes made from slate slabs (especially, large knives, discoid tools, and adze blades, all worked by crude flaking and retouch), but in large part were of oval and round cobbles split in half, cobble flakes (scraper planes, women's knives, and others), and whole cobbles of naturally elongated form, on which can be seen traces of blows and wear (hammers, milling stones, pestles, and the like). There are both flaked and ground tools. Tools were most often flaked and ground only on the working edge.

Types of stone tools: Knives predominate—from massive crudely flaked knives for cutting up whales to small, completely ground women's and men's knives. In addition, there are substantially more women's knives (ulus) than men's (in all three houses there were 12 whale knives; 125 women's knives; 9 men's knives; 50 scraper planes; 27 adze blades; 25 discoid scrapers; 13 end blades and lateral insets for harpoon heads; 1 perforator; 24 other artifacts of stone—cobbles with traces of work that served as anvil stones or pressure flakers; 19 grinding slabs and whetstones; 3 slabs for grinding fibers and ocher; 2 milling stones; 4 pestles; and 6 hammers (batons). The collection contains a large quantity (113) of cobbles split in half, cobble flakes, and slate slabs that in large part show traces of working and apparently are blanks for tools.

Large knives for cutting up whales, made from large subrectangular or trapezoidal slate slabs, sometimes triangular, usually preserving one natural edge, are worked by heavy flaking and retouch on the working edge. One surface of the slab is most often flaked, the other ground. The length is 10 to 31 cm (Pl. XX:1–6).

Such knives and knife fragments were encountered at Cape Baranov: four in House 1, three in House 5, and five in the House in Vtoraya Bay.

According to Rudenko, in the old Eskimo sites of the Chukchi Peninsula, "more infrequent than others are relatively large knives of laurel-leaf, triangular or asymmetric backed form, made of chalcedony, flint, or silicified tuff, and originally held directly in the hand, without a special handle" (Rudenko 1972:142; Pls. 14:2; 37:23). Such, for example, are a knife of silicified tuff from Cape Chaplina and a slate whale knife from isolated finds on the Chukchi Peninsula (Rudenko 1972:142; Pls. 14:2; 37:23). There are similar knives in collections of the western Eskimos of the sixteenth or seventeenth centuries collected by Rasmussen on Barter Island (between the mouth of the Mackenzie River and Point Barrow) (Mathiassen 1930:Pl. 6:3), but in distinction from the Cape Baranov specimens, they, like the knife from the Chukchi Peninsula, have a stem for holding in the hand. Most reminiscent of all to the whale knives of Cape Baranov is an early crudely flaked slate knife of the Eskimos of the

end of the nineteenth century at Point Barrow, which was used without a handle and served for cutting up fat (Murdoch 1892:163; Fig. 126).

Thus, the closest analogies point to a later time of existence for whale knives, no earlier than late Punuk times on the Chukchi Peninsula.

Women's knives (ulus), which are mentioned by Sarychev (1802:I:95, 96), were made in large part of thin plates of slate or cobble flakes, ground completely or along the working edge. On some larger specimens the working edge was formed by retouch, and the lower surface was flaked. Their form is usually semilunar with a rounded working edge, but sometimes approaching triangular or trapezoidal with a straight edge. They are all set in a bone, antler, wood, or walrus tusk handle. The length is 3.5 to 18 cm (Pl. XXI:1–14).

Women's knives and pieces of them were encountered at Cape Baranov: 64 in House 1, 25 in House 5, and 32 in the House in Vtoraya Bay (and 4 without a classification number).

The same kind of knives are found in all sites on the Chukchi Peninsula, especially in later times. According to Rudenko, their length fluctuates between 5.6 and 18 cm (Rudenko 1972:143; Pls. 25:15, 23, 25, 30–33—Sirenik; 34:23–25—Enmylen). On St. Lawrence Island and at Okvik in the Punuk Islands they are encountered in all stages of Eskimo culture represented there (Collins 1937:Pls. 39:23–25; 78:10; Rainey 1941:Fig. 31:8, 9). In the region of Point Barrow they are known at Birnirk, where ulu blades, made of dark-gray slate, were rounded and ground on both sides. Notches were made on both ends of the blade, making a stem for setting it into a wooden handle. At later sites—Nuvuk and Utkiavik—the blades of women's knives, which were set in handles of deer antler, were sometimes drilled along the ends for attachment (Ford 1959:186; Pls. 90:a–f, h, i; 92:d–i; Mason 1930:386). In the Rasmussen collection from late sites at Cape Atkinson, Point Barrow, and Point Hope (Mathiassen 1930:Fig. 9; Pls. 3:23; 13:10, 11) and at the Tigara site at Point Hope (Larsen and Rainey 1948:Pls. 90:26–29; 95:17, 18) the same kind of ulu blades were encountered. They are known among the Eskimos of the Eastern Thule culture (Mathiassen 1927:I:Pls. 19:12–17; 23; 24—Naujan; 51:8–14—Ponds Inlet; 84:1–3—Malerualik; Fig. 99—Belcher Island) and the Eskimos of the Kobuk River in central Alaska (thirteenth to eighteenth centuries) (Giddings 1952:Pls. XIX:1–4—Ahteut; XXXII:1, 2, 28, 29—Ekseavik). Finally, they are described by Nelson and Murdoch among Eskimos of Bering Strait and Point Barrow at the end of the nineteenth century (Murdoch 1892:161; Fig. 119–126; and Nelson 1899:108, 109; Pl. XLVII).

Thus, women's slate knives were one of the constant elements of Eskimo culture (with the exception of Uelen and Ipiutak) from earliest times to modern day. Women's knives with handles and two holes for an attachment were also known among the Coastal Chukchi, where at the beginning of the twentieth century they were encountered only in early houses and graves, and in the territory of the Koryak (Bogoras 1904–1909:I:209; Fig. 140:a). Women's knives with curved or straight blades and two holes have also been encountered in excavations in Manchuria, eastern Mongolia, Korea, and Japan (Jochelson 1905–1908:II:Fig. 137:a, c; Torii 1913–1914:42; Fig. 29; 1913–1915:22; Fig. 6). Neolithic knives reminiscent of ulus were made in Yan-Shao of slate and sandstone (Anderson 1923:Pl. I; De Laguna 1947:185–186).

Men's hunting knives of thin slate plates ground along the working edge or ground completely, are not numerous at Cape Baranov. Both single-edged and double-edged specimens are encountered. Some preserved a stem. They all had been set in the end of a bone, antler, wood, or walrus tusk handle. Some specimens could have served as spear heads. Their length is 2.5 to 13.5 cm (Pl. XXII:6, 7, 10–12).

Four such knives were in House 1, two in House 5, and three in the House in Vtoraya Bay.

One of the closest analogies to the single-edged ground knives at Cape Baranov is a single-edged, completely ground slate knife with a convex working edge and broken stem, from Chetyrekhstolbovyi Island (Beregovaya 1954:Pl. III:4). An analogy for double-edged men's knives is a ground slate knife

with a stem, broken on top, from Shalaurova Island (Beregovaya 1960:Fig. 3:10). On the Chukchi Peninsula, according to Rudenko, stemmed knives fastened in the end of a long handle, which served in particular for skinning animals, should be considered the most typical early Eskimo men's knives. They are single-edged and double-edged and are characteristic of later stages of Eskimo culture (Rudenko 1972:142, 143; Pls. 8:17—the region of Cape Dezhneva 11:2—Naukan; 25:1–7, 10, 11, 13—Sirenik; 34:17, 18, 20—Enmylen; 37:12, 16, 22, 23—isolated finds on the Chukchi Peninsula). On St. Lawrence and the Punuk (Okvik) Islands, single-edged and double-edged ground slate knives are encountered, beginning with the Old Bering Sea stage (Collins 1937:333; Fig. 39:13–22; Rainey 1941:Fig. 31:1–7). Ground slate men's knives, set in a slot at the end of a bone handle, are also known among the Central Eskimos of the Thule culture (Mathiassen 1927:I:Pls. 19:5–9—Naujan; 47:1–3, 7, 9—Ponds Inlet). At Point Hope, analogies to the knives at Cape Baranov are encountered among finds in houses of the Western Thule culture (Larsen and Rainey 1948:Pl. 95:17) and in burials of the late Old Tigara site (Larsen and Rainey 1948:Pl. 30:19–24). In the Birnirk site near Point Barrow, men's knives are short slate blades pointed on both ends and with a stem (Ford 1959:168; Fig. 83:h, i; Mason 1930:386). Men's knives of such type are known from late Eskimo sites at Point Barrow, Point Hope, Point Atkinson, and Barter Island (Rasmussen collection) (Mathiassen 1930:Pls. 3:10, 11, 14–16; 6:3–5; 10a:1; 15:1). Among the Eskimos of central Alaska on the Kobuk River (thirteenth to eighteenth centuries), slate men's knives have working edges of different forms in the earliest sites and these forms are little changed up to the most recent sites (Giddings 1952:70, 71, 74; Pls. XIV:1, 2—Old Kotzebue; XVII:1, 14–17—Ahteut; XXXIV:1, 10, 15—Ekseavik). Stone hunting knives of the Eskimos at the end of the nineteenth century at Point Barrow were both double-edged and single-edged and were used for skinning, cutting up meat, and working wood. They were all set in the end of a handle of wood, antler, or bone, or were fastened to the end of it with a thin thong. Single-edged knives had a convex working edge and a handle usually shorter than the blade (Murdoch 1892:150–154; Figs. 99–107). Nelson as well describes slate knives of the western Eskimo at the end of the nineteenth century (Nelson 1899:108–109; Pl. XLVII:9, 10).

Thus, slate men's knives are one of the constant elements of Eskimo culture, with the exception of the Uelen stage, when they are very few in number, and the Ipiutak when flaked stone tools were used. In America they were encountered from Alaska to Greenland, with the exception of the Alaska Peninsula (De Laguna 1947:179).

Among the Chukchi at the beginning of the twentieth century, men's knives of the Eskimo type existed, but with iron blades. Straight single-edged knives served chiefly for cutting up meat, and each child in a Chukchi family had a knife intended for this purpose. Double-edged slate knives of typical Eskimo form no longer existed at the time of Bogoras's sojourn and were encountered only in early Eskimo houses (Bogoras 1904–1909:I:212–215; Figs. 132–135).

Scraper planes of longitudinally-split cobbles or cobble flakes preserve the natural surface of the cobble on one side. Only the working edge was ground, sometimes rounded, sometimes straight. These tools are close in form to oval and subtriangular women's knives, from which they differ by their large size. They were set in a special handle and served to work hides. The length is 5 to 10 cm (Pl. XXIII:1–10, 13).

Twenty-one were found in House 1, 12 in House 5, and 12 in the House in Vtoraya Bay (and 5 specimens without a classification number).

The scraper planes from the houses at Cape Baranov are very similar to the same kind of tools from Chetyrekhstolbovyi Island (excavations of 1949) (Beregovaya 1954:Pl. II:1–3). On the Chukchi Peninsula, according to Rudenko, such tools are characteristic for late sites. They were made of siliceous-argillaceous slate and ground completely or only along the working edge (Rudenko 1972:144; Pls. 34:22—Enmylen; 37:7—isolated finds on the Chukchi Peninsula). Speaking of adze-shaped stone tools that have a very steeply sharpened working edge, Rudenko supposes that they were used for working on dense material such as walrus tusk (Rudenko 1972:141). Exactly such blades are found on some scraper

planes from the House in Vtoraya Bay (No. 177) and House 5 (Nos. 52, 69). Some scraper planes with a straight working edge are similar to "adze-like scrapers" from Old Bering Sea finds on St. Lawrence Island, which also were used for working hides and wood, but are more closely reminiscent of adze blades (Collins 1937:152, Fig. 16—Miyowagh; Pl. 42:12–14—Hillside). Scrapers of slate and other materials are found in the collections of the Eskimos of the Thule culture for smoothing out hides, which are also reminiscent of scraper planes (Mathiassen 1927:I:62, 174; Pls. 25:6–8—Naujan; 51:1—Ponds Inlet). Among the Eskimos at Point Barrow, both at sites of the Birnirk culture and among the nineteenth-century Eskimos, stone scrapers and scraper planes set in the end of a handle of wood or whale bone were used for dressing hides. According to Murdoch, the stone blade of such scrapers was usually flaked (with the exception of one ground blade of sandstone) (Mason 1930:Pl. III; Murdoch 1892:294–298; Fig. 295). Closer analogies to scraper planes from the houses at Cape Baranov can be found among the western Eskimos of the end of the nineteenth century. Among the tools Nelson published were several large slate scrapers with a straight or curved working edge for dressing skins, which were set in a slot at the end of a long wooden handle (Nelson 1899:112–114; Pl.XLIX:10–13, 15–18).

Discoid tools (scrapers) are made from slate and sandstone cobbles split longitudinally, sometimes from round cobble flakes. In large part they preserve the natural surface. The lower surface is usually flaked. The edges are worked by retouch or partially ground. They were evidently set in a special handle and served for working hides. The lengths are 5 to 11 cm (Pl. XXIII:11, 12, 14–16).

Sixteen discoid tools were found in House 1, four in House 5, and two in the House in Vtoraya Bay (and three such tools are without a classification number).

Rudenko assigns these tools chiefly to the late period of Eskimo culture on the Chukchi Peninsula. He describes such a tool (but with a stem) made of argillaceous slate and set in the end of a wooden handle (Rudenko 1972:50, 144; Pls. 10, 20—Naukan). A flat oval scraper made from a flake and formed along the edges by small steep retouch with "pinches," found in 1953 on the shore of the Kanchalan Estuary in a site of early hunters and fishers, also should be mentioned (Okladnikov and Naryshkin 1955:Fig. 3). The discoid scrapers at Cape Baranov are especially reminiscent of such tools from late Eskimo sites (thirteenth to eighteenth centuries) on the Kobuk River in central Alaska. The latter ones are oval tools of arenaceous slate, are smoothed out or flaked on both surfaces with retouch along the edges, and have diameters of 7 to 10 cm (Giddings 1952:80–82; Pls. VII:1–3—Ambler Island; XIV:8—Old Kotzebue; XXI:8–10; XXII:12—Ahteut; XLVI:26—Onion Portage). Tools from sites on the Kobuk River are in turn similar to *tci-tho* scrapers, which were used by the Athapaskans for working hides of the American moose. Giddings supposes that the Athapaskans obtained them from Paleo-Eskimo tribes and that tci-tho scrapers have great antiquity in central Alaska. They were preceded by flaked discoid scrapers in Ipiutak houses, where they were sometimes used in wooden handles and served in some cases for carving (Giddings 1952:82; Larsen and Rainey 1948:103, 104; Fig. 23; Pls. 15:13–20; 22:16). Discoid scrapers have also been encountered in sites in Cook Inlet (De Laguna 1934:68; Fig. 144:a; Pl. 30) and among the Aleuts (Jochelson 1925:Fig. 35). Slate scrapers are a later form.

Bogoras describes flint scrapers with a percussion-flaked working edge, which were used by the Chukchi, Kamchadal, and Yukagir at the beginning of the twentieth century. The scraper blade was attached in the middle of a curved wooden handle, which was held by both hands. This kind of tool also served for working hides (Bogoras 1904–1909:I:216–218; Fig. 144:a). Such a scraper is known in the Bronze Age of Pribaikal'e (Okladnikov 1955a:Fig. 33:2—Iset' No. 1).

Thus, the discoid slate tools and scraper planes can be assigned chiefly to the late stages of Eskimo culture, but the disks also have early analogies in Alaska.

Adze blades of large slate slabs or of slate cobbles split in half and cobble flakes are in almost all cases worked by large percussion flaking, then partially ground on the surface, but primarily along the working edge. Part of the surface on the lower end of large adzes was sometimes smoothed for attachment to a handle (for example, adze fragments No. 67 from Vtoraya Bay and Nos. 114 and 131

tachment to a handle (for example, adze fragments No. 67 from Vtoraya Bay and Nos. 114 and 131 from House 1). (Blades of the smallest sizes were probably set in bone or antler sockets, for example, Nos. 188 and 258a from Vtoraya Bay.) The form of stone adze blades is elongated and rectangular. The working edge, slightly rounded or straight and beveled on both surfaces, forms an asymmetrical pointed blade. In some cases it is blunted to almost a right angle to the longitudinal axis of the tool (for example, Nos. 88 and 177 from Vtoraya Bay) (Pl. XXIII:6). However, the latter tool should probably be assigned to the scraper plane group. The length is 5 to 16.5 cm (Pl. XXIV:1–13).

Fifteen adze blades were encountered in House 1, one in House 5, and ten in the House in Vtoraya Bay (and one blade without a classification number).

Adzes were used to work wood, bone, and walrus tusk. American researchers (De Laguna 1934; Drucker 1934; Heizer 1956; and others) separate adze blades into planing adzes and splitting adzes. The latter are very large with a hollowed-out transverse groove for attaching the adze directly to a handle. The adze blades from Cape Baranov should all be assigned to the planing adze type, with the exception perhaps of a crudely flaked massive adze from House 1 (No. 252) that does not have a groove for attachment. Planing adzes are widespread in almost all phases of Eskimo culture (except modern Central Eskimos and Cariboo Eskimos). On the American coast of the Pacific they are encountered to southern California (De Laguna 1947:157). In Asia they are known among the Eskimos, as well as among the Yukagir (Jochelson 1910; 1926:Fig. 104), the Chukchi (Bogoras 1904–1909:I:210; Fig. 127:a), and the Koryak (Jochelson 1905–1908:II:Fig. 140:b), who, according to Bogoras and Jochelson, made iron adzes based on the patterns of those of stone. Such adzes also existed in early Mongolia (Torii 1913–1914:36, 39; Pl. III:A, f, h; Figs. 23, 28, 41). In China they go back to the Neolithic Yan-Shao culture (Anderson 1923:Pls. IV:1, 14, 15; VI:17).

On the Chukchi Peninsula, adzes are found in all Eskimo sites, in even larger numbers in the early stages than in the later ones. According to Rudenko, the form of adze blades was rectangular, with the length usually being two times greater than the width. After preliminary percussion flaking, the blade was ground so that the working edges came together at an angle, the interior edge formed a greater angle with the longitudinal axis of the adze than the outer one (Rudenko 1972:138–140; Pls. 10:17—Naukan; 17:17, 18—Cape Chukotskii; 17:21—Kivak; 18:12—Avan'; 24:1–3—Sirenik; 36:36, 37; 37:1, 5—isolated finds on the Chukchi Peninsula).

On St. Lawrence and the Punuk (Okvik) Islands in Old Bering Sea and Punuk sites adze blades of slate and basalt were found that were percussion flaked and usually ground only on the working edge. The forms of the blades are from triangular to rectangular. The working edge is slightly rounded or straight and beveled so that it forms an angle of up to 45° with the flat lower surface of the adze (Collins 1937:152, 154; Fig. 16—Miyowagh; Pls. 42:12, 13, 21—Hillside; Rainey 1941:Fig. 33:1–4). In the early Ipiutak site at Point Hope adze blades, found both in houses and burials, were made of dense kinds of stone like siliceous slate and had a ground working edge. Some blades were preliminarily flaked. Some were steeply beveled along the working edge and were found only in houses, and always in special adze sockets (Larsen and Rainey 1948:Pl. 10:1). Blades of other types, the more massive, were attached directly to wooden handles (Larsen and Rainey 1948:Pls. 10:4–6; 47:17–19). The form of a blade is rectangular, sometimes square (in small specimens) or very elongated (in large specimens). At Point Barrow adze blades of jadeite and slate were found that belonged to the Birnirk culture (Mason 1930:386; Pl. III—Kugusugaruk). In the Birnirk site itself adze blades were made chiefly of hornfels. Some were only percussion flaked, others were ground along the working edge. A large part of the blades are triangular. They were evidently set in a socket, though some large rectangular specimens were attached directly to a handle (Ford 1959:179; Figs. 85:k–m; 86; Pl. 7).

Among the Central Eskimos of the Thule culture, the number of adze blades found was not great. At Naujan on the Melville Peninsula, small blades of slate and basalt were encountered (Mathiassen 1927:I:54, 55; Pl. 20:13, 14).

In thirteenth- to eighteenth-century Eskimo sites on the Kobuk River, where in the forest zone woodworking was widespread, adze blades of jadeite, siliceous slate, and quartzite are encountered very frequently. Large specimens are percussion flaked and have a ground working edge. Small blades are sometimes ground all over (Giddings 1952:66, 70, 72, 74; Pls. VII:4–6—Ambler Island; XIII:1—Old Kotzebue; XX:1–5, 7; XXXI:1–6—Ekseavik). Murdoch, describing the modern (to him) Eskimos of Point Barrow, reports that stone adze blades, in large part of jadeite, were in general use for a long time before the introduction of iron. The earliest blades had an oblong form with a ground working edge. The primary assignment of adzes was working wood, but small stone adze blades were used chiefly for cutting bone (Murdoch 1892:165–172; Figs. 130, 131, 139, and others). Nelson gives the same description for adzes among the Eskimos of Bering Strait at the end of the nineteenth century (Nelson 1899:92; Pl. XXXIX:3, 8, 9, 12). Both of these authors also report that the stone adzes that were preserved in daily use among the nineteenth-century Eskimos, and then the iron adze blades, were set in a socket of antler or whale bone, which in turn was attached to a curved handle of the same material. Holes were usually drilled in the head for attachment (Murdoch 1892:Figs. 135, 138; Nelson 1899:Pl. XXXIX:10, 14—Norton Sound).

In all of both the earliest and latest Eskimo sites large stone adze blades were attached directly to wooden handles, while small ones were set in bone or antler sockets, which were attached to a handle.

End blades for harpoon heads of argillaceous slate at Cape Baranov have the usual triangular form with a straight base: they were ground and sharpened along the edges and on the end. A point of silicified limestone (No. 150, from House 1) has an almond-shaped form, straight base, and was worked by pressure retouch on both surfaces and fine retouch along the edges. Ground end blades predominate. The length is 3.2 to 4.5 cm (Pl. XXII:1–5, 8).

End blades (6 specimens) of slate and silicified limestone were encountered only in House 1. Rudenko published several specimens similar to the end blade from Cape Baranov. These are percussion-flaked end blades that he described from his collections at Sirenik and Cape Beringa (Rudenko 1972:122–124; Pls. 24:32; 34:14) and from the collection from the Bering Sea coast of the Chukchi Peninsula, now located at the State Ethnographic Museum (Leningrad). A similar end blade from the Uelen cemetery was also published by M. G. Levin (Levin 1958:Fig. 2:c—Burial 1; Rudenko 1972:Fig. 29:a, b—the collection of N. P. Borisov and D. B. Bettak). Slate end blades from Sirenik and the Bering Sea coast of the Chukchi Peninsula were in the mentioned collection of the State Ethnographic Museum (Levin 1958:Fig. 2:b—Burial 1; Rudenko 1972:Fig. 30:b; Pl. 20:1–3, 10–12). On St. Lawrence and the Punuk (Okvik) Islands percussion flaked end blades of quartzite and jasper harpoon heads were encountered in Old Bering Sea layers (Collins 1937:Pl. 40:15–16—Hillside; Rainey 1941:Fig. 32:7). At Ipiutak, percussion-flaked flint blades both for lateral insets and end blades for heads of harpoons and arrows were numerous. In addition, at Point Hope percussion-flaked flint end blades are known among finds of the Birnirk culture (Larsen and Rainey 1948:97; Fig. 20; Pls. 2:13–14, 34–39; 35:42, 43; 87:3, 4). Among the Eskimos of the Thule culture, such end blades are known at Naujan and in late sites on Southampton Island (Boas 1907:Fig. 284:a, c; Mathiassen 1927:I:33, 159, 214, 263; Pls. 7:14; 44:16–19; 63:3; 74:1, 6–8). Percussion-flaked end blades were among the western Eskimos and Eskimos of Point Barrow at the end of the nineteenth century (Mason 1902:266; Fig. 61; Murdoch 1892:221; Fig. 212) and among the Aleuts (Jochelson 1930). Slate end blades of harpoon heads appear on St. Lawrence and the Punuk (Okvik) Islands by Old Bering Sea times and since then exist in all stages of Eskimo culture (Collins 1937:Pl. 39:1–5; Rainey 1941:Fig. 31:4). At Point Hope they appear among Birnirk finds (Larsen and Rainey 1948:Pl. 87:5) and are known in the Birnirk site itself at Point Barrow. The slate end blades preserved there in small quantity are small, triangular, with a thinned base (Ford 1959:96, 97; Fig. 36:d; Mason 1930:Pl. V:1). Slate end blades of harpoons predominate among the Eskimos of the Thule culture (Mathiassen 1927:I:Pl. 7:6–11—Naujan). The same can be seen in the Rasmussen collection among finds of harpoons of the late Eskimos (Mathiassen 1930:Pls. 1:3; 3:1, 2, 4—Cape Atkinson; 8:3—Point Barrow; 13:8—Point Hope), among thirteenth-century Eskimos on the Kobuk River (Giddings

1952:56; Pl. 22:12, 13—Ahteut), and among the western Eskimos and the Eskimos at Point Barrow at the end of the nineteenth century (Mason 1902:Figs. 65–68—Point Barrow; 83, 85—Kuskokwim River; and others; Murdoch 1892:221; Fig. 213). Among the Chukchi of the beginning of the twentieth century, iron end blades of harpoon heads were already in use that were reminiscent in form of early stone ones (Bogoras 1904–1909:I:115, 116; Figs. 30, 31).

The earliest finds of inset stone end blades in the slot at the end of harpoon heads belong to the Denbigh Flint Complex, discovered by Giddings in 1948 at Cape Denbigh on Norton Sound (Alaska) in the very lowest "microlith" horizon of the Iyatayet site, which was separated by a sterile lens from the remains of the Norton Paleo-Eskimo culture and from later Neo-Eskimo layers. In this low horizon, along with small cores and microblades, were burins, scrapers, heads of spears, and inset blades, worked by fine bifacial retouch, and small triangular end blades with straight or slightly concave base. Such end blades were also found in the Norton culture horizon (Giddings 1951:194–195). The Denbigh Flint Complex is dated by radiocarbon to about 4500–5000 years ago (Giddings 1960:Pl. I; Rainey and Ralph 1959). The period of the Norton culture is between 500 B.C. and 400 A.D. (Giddings 1960:Pl. I).

Thus, end blades for harpoon heads are one of the earliest forms of Eskimo stone technology, which continues up to the present.

Lateral inset blades of silicified limestone and argillaceous slate were encountered in House 1 (6 specimens) and in House 5 (2 specimens). They almost all were preserved in lateral slots of harpoon heads: of the first type (No. 25 in House 1 and No. 28 in House 5) and of the second type (Nos. 18–20 in House 1 and No. 1 in House 5). Both these types belong to the basic types of Birnirk heads at Point Barrow, a characteristic feature of which were two deep slots for lateral stone insets or one slot and an opposite lateral barb (Pls. I:6, 11; II:1, 2, 5, 6). Lateral insets from Cape Baranov are oval in form. They were made from silicified limestone and percussion flaked on both surfaces. A slate inset was also percussion flaked along the edges. In one case—in head No. 16, from House 1—an oval inset was made of bone and sharpened along the edge (Pl. I:3). Judging by the presence of slots, the lateral insets in the houses at Cape Baranov could also have been used for equipping arrowheads, knives with lateral insets, and so on. But such tools were not preserved. One lateral inset of silicified limestone (No. 151, from House 1) was separately preserved. It has an irregular oval form, with percussion flaking on both sides, and retouch along the edges. Its length is 2.5 cm (Pl. XXIII:9). The dimensions of lateral insets for harpoon heads is 0.5 to 1.5 cm.

Lateral blades-insets for harpoons and other tools are known from the Denbigh Flint Complex, as well as in the middle layer of the Iyatayet site (Giddings 1949; 1951—Norton culture) and in houses and burials of the Ipiutak culture at Point Hope (Larsen and Rainey 1948:98–99; Pls. 3:1, 2, 7; 5:1, 16; 36:40).

In the Uelen Okvik and Old Bering Sea cultures, lateral blades-insets were also widely employed for equipping toggling harpoon heads. According to Rudenko, on the Chukchi Peninsula harpoon heads equipped with percussion-flaked stone insets are characteristic for the early stages of Eskimo culture. They are also encountered in the early Punuk complex. Such insets were usually made of flint, hornfels, or more rarely silicified tuff or shell. These were small almond-shaped tools worked over the whole surface by pressure retouch, or spalls of flint with only the part of the surface that projects from the slot being worked. Rudenko suggests that such insets were placed in the slots of heads made from fresh bone or walrus tusk soaked in warm water. After the bone dried, the insets were held in the slots so tightly that in the cases of breakage half of the blade usually remained in the socket. In antler harpoon heads, stone insets were not held as well (Rudenko 1972:122–123; Pls. 7:3, 4, 6, 7, 9, 13, 20—region of Cape Dezhneva; 19:10; 24:33, 34—Sirenik). In the Old Bering Sea layer on St. Lawrence and the Punuk (Okvik) Islands, percussion-flaked lateral insets for harpoon heads of jasper, quartz, and other materials were encountered (Collins 1937:148; Pls. 24:5, 6—Miyowagh; 27:1–3—Little Diomede Island; Rainey 1941:Fig. 9:1–4). Percussion-flaked lateral stone insets are a characteristic feature of the primary types of harpoon heads in sites of the Birnirk culture at Point Barrow (Birnirk and Tukuok) (Ford 1959:75–80; Figs. 26:a, f, h, i, k,

m, o; 28:a–e; Mason 1930:Pl. V:8–10, 12, 13). In developed Punuk and in sites of the Thule culture they were discontinued from used (in contrast to end blades).

Perforator No. 117 is a thick three-sided plate of siliceous slate, broken on the broad end. The only specimen found was in the House in Vtoraya Bay. The long point was formed by trimming and retouch along the edges and partially on the lower surface. The length is 11 cm (Pl. XXV:2).

According to Rudenko (1972:81, 142; Pl. 24:17–20), hand perforators and drills with stone but more often bone tips, were used on the Chukchi Peninsula for drilling holes during the working of wood and bone. In the western, earliest part of the site at Sirenik a whole series of stone tools (all of silicified tuff) was found that could have been used as perforators, but also could have been used as knives. Such tools of silicified limestone and slate were encountered in Old Bering Sea layers on St. Lawrence (Collins 1937:Pl. 41:5–7—Hillside) and the Punuk (Okvik) Islands (Rainey 1941:Fig. 32:10). No drills with tips were found at the Ipiutak site on Point Hope, but only a small number of flint perforators, part of which were worked on both surfaces, part on only one (Larsen and Rainey 1948:105; Pl. 20:9–12, 26).

Among the Eskimos of the Birnirk culture and among the Central Eskimos of the Thule culture, only drills with tips primarily of slate, sometimes of flint or jadeite, were employed for perforating holes (Ford 1959:174; Pls. 84:f–h—Utkiavik, Nuvuk; 85:g; Mathiassen 1927:I:58, 173; Pls. 22, 49). Among the early Eskimos of Cape Atkinson, Point Barrow, and Point Hope (the Rasmussen collection), hand perforators of siliceous slate were sometimes used as drill tips (Mathiassen 1930:14, 43, 60; Pls. 3:22; 9:17; 15:15). Eskimos of the thirteenth to eighteenth centuries on the Kobuk River used both drills with tips of flint, siliceous slate, and jadeite, and hand perforators that differ from our specimen by the fact that they have a broad base and small point (Giddings 1952:65, 70, 73; Pls. V:7—Ambler Island; XXXIV:13, 14—Ekseavik). Eskimos at Point Barrow at the end of the nineteenth century employed bow drills and perforators (more precisely, reamers) of flint set in the end of a straight handle for perforating holes (Murdoch 1892:181; Figs. 159, 160). Among the Eskimos of Bering Strait of this same time, drills with stone or metal tips and bow drills were used for drilling holes in bone, antler, and wood. Our specimen from Vtoraya Bay is reminiscent of percussion-flaked flint points set in the ends of wooden shafts of large drills (Nelson 1899:81; Pl. XXXVII:7, 8). According to Bogoras (1904–1909:I:211; Figs. 128, 130), at the beginning of the twentieth century the Eskimos of Cape Chaplina employed the drill, which was rotated between the palms and was intended only for drilling holes in wood.

Cobbles of oval and oblong form, which preserved traces of wear or blows on the surface, and traces of blows and transverse strokes on the edges (probably from sharpening spikes), could have served as both pressure flakers and anvils or grinding stones (?). All these objects retain their natural form. Their length is from 8 to 14 cm (Pl. XXV:5, 7, 9, 11, 14).

Such cobble pressure flakers or anvils were encountered in House 1 (8 specimens) and the House in Vtoraya Bay (16 specimens).

According to Rudenko (1972:138–139; Pl. 24:31—Sirenik), nowhere in Eskimo sites are stone retouchers found. Instead of them, slightly curved bone rods were used. These are oval in cross section and sometimes in a handle of deer antler. Pressure flakers (sometimes with stone working edges) were encountered among Eskimos at Point Barrow of the end of the nineteenth century (Murdoch 1892:183–185; Figs. 162, 163). Thus, cobbles with traces of wear on the ridges evidently served as anvils, as well as for grinding bone points and stone working edges, smoothing out hides, and so on. Such cobbles have been encountered on St. Lawrence Island as early as the Old Bering Sea layers (Collins 1937:154; Pl. 43:5, 6—Hillside; Rainey 1941:Fig. 33:5—Okvik) and were spread throughout all Eskimo sites, including early ones (Birnirk and late sites at Point Barrow up to modern times) (Ford 1959:172; Fig. 9:n—Kugoq).

Ground slabs and whetstones of slate and sandstone, usually with a concave surface, on which were primarily ground slate tools, as well as bone and antler, served additionally for grinding bone needles and other points, as indicated by the narrow grooves on such slabs (for example, No. 314 in House 1,

No. 86 in House 5, and No. 112 in the House in Vtoraya Bay). Their dimensions vary from small pieces to large slabs, 4 to 14 cm (Pl. XXV:1, 4, 8).

In House 1, seven grinding slabs were encountered: five in House 5 and five in the House in Vtoraya Bay. Two whetstones were found in the House in Vtoraya Bay.

On Chetyrekhstolbovyi Island in 1949, two grinding stones of sandstone with concave surface were found in a house (Beregovaya 1954:306, 307; Pl. III:5). On the Chukchi Peninsula, grinding stones appear by the early stages of Eskimo culture, when only the working edges of percussion-flaked stone tools were ground. They were widespread in late sites (Rudenko 1972:139; Pls. 14:11—Cape Chaplina; 35:13—Enmylen). They are known on St. Lawrence and the Punuk (Okvik) Islands in all stages of Eskimo culture, beginning with Old Bering Sea (Collins 1937:154; Pl. 43:7–10—Hillside; Rainey 1941:Fig. 33:5, 8). Such slabs have been found in houses and burials of the Ipiutak culture at Point Hope (Larsen and Rainey 1948:86; Pls. 10:7–11; 47:1–3). In sites of the Birnirk culture, both slabs of sandstone with a concave surface and whetstones in the form of bars were encountered. These same types are preserved in late sites at Point Barrow (Ford 1959:172; Figs. 9—Kugoq; 81:q—Nuvuk, Utkiavik; 82:p—Nunagiak; 83:o—Birnirk). In sites of the Thule culture, they were spread throughout the whole territory of the Central Eskimos (Mathiassen 1927:I: 53, 169; Pls. 16:11–14—Naujan; 47:10–13—Ponds Inlet) and were used in Eskimo sites of the thirteenth to eighteenth centuries on the Kobuk River (Giddings 1952:67, 70, 72, 74; Pls. VI:1–7—Ambler Island; XIV:18—Old Kotzebue; XXII:4–6, 8, 9, 11; XXIII:4—Ahteut; XXXIV:2–4—Ekseavik).

Among the Eskimos of Point Barrow of the end of the nineteenth century, stones in the form of bars of jadeite and sometimes of slate were still in use. They were all drilled for threading a cord of sinew or thong. They were also encountered among the Eskimos of Bering Strait of the same time and were spread to the northern shore of Norton Sound (Murdoch 1892:183–184; Figs. 162, 163). The Chukchi of the beginning of the twentieth century used iron tools, but the old slate tools, which disappeared about 50 years before this time and were encountered only in “houses of mandibles” or burials, were in former times ground using another stone, that is, a whetstone (Bogoras 1904–1909:I:209).

Pulverizing slabs for plant fibers and ocher, made of sandstone and slate, are more rarely encountered in the houses at Cape Baranov than other grinding stones (one specimen in House 1 and two specimens in the House in Vtoraya Bay). Their surface is concave, sometimes with traces of pigment. The dimensions differ depending on the natural size of the slab: from 5 to 10 cm (Pl. XXV:14).

In the House in Vtoraya Bay, sandstone slab No. 114 could also be a whetstone (with concave and ground surface). On its lower surface, which has traces of pigment, is an oval pit for pulverizing. In House 1, a slate slab that is triangular in cross section has traces of ocher on both surfaces and in the break. It is reminiscent of pulverizing slabs from Old Bering Sea sites on St. Lawrence Island that had several facets, which also served as whetstones (Collins 1937:154; Pl. 43; Figs. 1–3—Hillside). Pulverizing slabs are known from the early site of Ipiutak, where they were made primarily of sandstone and had depressions in the middle. Traces of pigment indicate that they were used for pulverizing ocher. Some of them also had several facets and could have been used as whetstones (Larsen and Rainey 1948:86, 87; Figs. 22:14; 86:16). Analogies to the slabs from the houses at Cape Baranov are encountered in late Eskimo sites on the Kobuk River. Such, for example, are a large pulverizing slab of sandstone with a depression in the middle, and a slate disk-palette that come from thirteenth-century sites, and a large slab of sandstone with a broad depression in the middle from an eighteenth-century site (Giddings 1952:66, 74, 75; Pls. XIII—Ambler Island; XXII:7; XXIII:4—Ahteut). (In the author’s opinion, the tool from Ambler Island served for grinding artifacts of jadeite in a rotary motion.)

Milling stones of siliceous slate, coarse sandstone, and other materials harder than grinding slabs are represented in large part by roundish cobbles with one ground surface and traces of blows, which

indicate that they could also have served as hammer stones. The dimensions depend on the size of the cobbles: 7 to 8 cm in diameter (Pl. XXV:19).

Milling stones found: one in House 1, one in the House in Vtoraya Bay.

Among the Old Bering Sea finds on St. Lawrence Island, these tools are reminiscent of oval basalt stones with the surface of the lower end obliterated through pulverizing or polishing (Collins 1937:Pl. 43:13—Hillside).

Pestles of elongate slate cobbles, oval and subtriangular in cross section, with a rounded obliterated end for pulverizing seeds, pigment, and so on, were encountered on Cape Baranov: three in House 1 and one in the House in Vtoraya Bay. The length is 5 to 21 cm (Pl. XXV:11, 12).

Such pestles existed in Eskimo sites from Old Bering Sea times to present. On St. Lawrence Island, such a basalt cobble tool with a thick obliterated lower end was encountered in an Old Bering Sea site (Collins 1937:155; Pl. 43:13—Hillside).

A conical pestle of quartzite 13 cm long, with a thick broken end and the other blunted from use, was found in a thirteenth-century site on the Kobuk River (Giddings 1952:75; Pl. XXI:5—Ahteut).

Hammers of elongate, oval, or rounded slate cobbles were evidently used without a handle since there were no special grooves for attachment on them. They could have served as hammers or pestles.

Their dimensions depend on the size of the cobble: 6 to 9 cm (Pl. XXV:6, 15, 18, 20).

Hammers encountered: one in House 1, one in House 5, and four in the House in Vtoraya Bay.

Tool No. 173, most reminiscent of a hammer, was found in the House in Vtoraya Bay. Hammers could also have served as batons for flaking cobbles (for example, Nos. 107–109, 178—from the House in Vtoraya Bay, No. 316—from House 1, and egg-like cobble No. 49 [hammer or pestle?]—from House 5).

Rudenko pointed out that in Eskimo sites on the Chukchi Peninsula any cobblestone could have served as a hammer for striking other stones (Rudenko 1972:138, 141; Pl. 15:7—Cape Chaplina). In some cases special hammers fitted to the hand were used here. However, nowhere in Eskimo sites have special batons been found. A hammer that is close in form to those from Cape Baranov is a diabase hammer from an Old Bering Sea site on St. Lawrence Island (Collins 1937:Pl. 43:14—Hillside). But the closest analogies are encountered in Eskimo houses of the eighteenth century on the upper course of the Kobuk River (Giddings 1952:67; Pl. VII:13—Ambler Island). These tools, made from cobbles with traces of wear on the ends and favorable for grasping in the hand, were used for the initial working of jadeite artifacts, which were then polished. R. Heizer gives the same assignment to hammers found in the "pre-Koniag" Eyak site on Kodiak Island, which, based on their form, are reminiscent of a tool (No. 49, a pestle?) from House 5 (Heizer 1956:Pl. 34:a, c). Murdoch describes stone hammers (or beaters) that existed among the Eskimos of Point Barrow at the end of the nineteenth century and served for splitting large bones for the marrow. They were made from oblong cobbles that were fastened in the middle to a wooden handle at a right angle (Murdoch 1892:93–95; Figs. 24–25). The Chukchi of the beginning of the twentieth century also used stone beaters—flat stones with a groove in the middle for fastening a wooden handle—for splitting bone (Bogoras 1904–1909:I:187; Fig. 105).

The collection from Cape Baranov also contained other tools.

Longitudinally split cobbles and cobble flakes of siliceous slate and sandstone were encountered in large quantity in all the excavated houses at Cape Baranov. The majority of them are blanks for tools: planing knives, women's knives, and others. The lower surface of the cobble is often flaked and the edge partially trimmed by retouch or slightly ground. On one of the flakes in the House in Vtoraya

Bay are traces of sawing with a stone file (No. 104). The length of the split cobbles is 4 to 11 cm (Pl. XXV:16, 17).

Such cobbles and flakes are encountered: 30 in House 1, 15 in House 5, and 100 in the House in Vtoraya Bay.

Pieces of slate slabs, which were also sometimes worked by removing large spalls (for example, in the House in Vtoraya Bay), were found in House 5 (2 specimens) and in the House in Vtoraya Bay (11 specimens).

●

Ceramics

Fragments of Vessels with Cord-Wrapped and Stamped (Hatched and Checkerboard) Design, with Curvilinear Stamped Design, with a Textile Design in the Form of Mesh, and without Design. Early Ceramics of the Asian and American Arctic. A Stamp-Paddle with Ribs for Applying Design

Based on information from travelers of the eighteenth and nineteenth centuries (Sarychev 1802:96; Sverdrup 1930:211, 212, 224), ceramics were widespread in early houses on the coast of the Arctic Ocean east of the mouth of the Kolyma River and on the Chukchi Peninsula. Besides pieces of clay pots, clay oil lamps were encountered, for example, on Chetyrekhstolbovyi Island (Beregovaya 1954:Fig. 3).

The remains of ceramics were found on Cape Baranov by G. Sarychev in 1787, and were encountered in large quantity (1,063 fragments) by Okladnikov in the three houses he excavated (Okladnikov 1947e:181; Sarychev 1802:95): 283 in House 1, 145 in House 5, and 635 in the House in Vtoraya Bay. Among the finds were 133 rims, and 34 bottoms (41 rims and 13 bottoms in House 1, 13 rims and 4 bottoms in House 5, and 79 rims and 17 bottoms in the House in Vtoraya Bay).

A large part of these were pieces of crude thick-walled pots, modeled by hand, and of poor open firing. The vessels were made of dark clay, flaky in the break, sometimes of light-brown, with a temper of sand and mica or plant fibers in the paste. In some cases, when broken, a black layer—the result of incomplete firing—or some kind of mineral temper can be seen in the middle. Sometimes thinner and better fired sherds are found. The charred remains of food and traces of baked-on oil are often encountered on the inner and outer walls of the vessels. Pieces of vessels are sometimes covered by a thick layer of soot—evidence of suspension above a fire, in which wood impregnated with train oil was burned. The thickness of the walls is from 0.3 to 1.5–2 cm, the thickness of the bottom 0.6 to 2. (In House 1 the thickness of the vessel walls is 0.5 to 2 cm, the bottom 0.8 to 2 cm; in House 5 they are 0.3 to 1.5 cm and 1 to 2 cm, respectively; and in the House in Vtoraya Bay they are 0.3 to 2 cm and 0.6 to 2 cm, respectively.) The bottom is rounded and massive with weak traces of design and the remains of baked-on oil on the inside. The rims are not separate from the slightly convex walls, in which regular round holes were sometimes drilled 3 to 4 cm below the rim for suspension or for tying together cracks in the walls. The forms of the vessel rims from the three houses are very similar: most often they are cut straight, their edges sometimes polished to a luster. Ninety-three such rims were encountered (33 in House 1, 9 in House 5, and 51 in the House in Vtoraya Bay). Twenty-two inward-beveled rims (4 each in House 1 and House 5, and 14 in the House in Vtoraya Bay) were also discovered. One rim was beveled outward (in the House in Vtoraya Bay). Sixteen rims are in the form of a rounded rib (4 in House 2 [sic] and 12 in the House in Vtoraya Bay), with one rim in the form of a sharp rib (in the House in Vtoraya Bay).

Five fragments (in Houses 1 and 5) have the rims separated from the walls by an imprint of a fine thread.

Table 2.

No. of ceramic fragments	Decoration	Diameter, cm		Vessel height, cm	Form	
		at the rim	wide part		Vessel	Rim
House 1, Sarychev Bay						
604	Hatched, with narrow ribs	11.0	12.5	12.0	Spherical	Cut straight
379	Textile with impressions of cells	23.0	36.0	30.0	Spherical	Beveled inward
381	Without decoration	21.0	27.0	30.0	Egg-shaped	Beveled inward
House 5, Sarychev Bay						
93	Hatched, with narrow ribs	30.0	ca. 31.0	23.0	Egg-shaped	Slightly beveled in
100	Hatched, with narrow ribs	24.0	ca. 25.0	25.0	Egg-shaped	Cut straight
103	Hatched, with broad ribs	31.0	ca. 34.0	32.0	Egg-shaped	Slightly beveled in
101	With concentric circles	16.0	28.0	21.8	Spherical	Beveled inward
102	With concentric circles	14.0	31.0	25.5	Spherical	Strongly beveled in
Vtoraya Bay						
278	Hatched, with broad ribs	30.0	32.0	30.5	Egg-shaped	Cut straight
280	Hatched, with narrow ribs	21.0	32.0	28.0	Spherical	Strongly beveled in
370	Hatched, with narrow ribs	30.0	30.0	21.0	Hemispherical, with marked bend	Strongly beveled in
495	Hatched, with narrow ribs, smoothed	25.0	24.0	14.7	Hemispherical	Cut straight
30	Hatched, with narrow ribs, smoothed	27.0	32.0	ca. 34.0	Egg-shaped	Beveled in

The forms of the vessels that can be determined based on the reconstruction of 13 specimens (three from House 1, five from House 5, and five from the House in Vtoraya Bay; see "List of Reconstruction of Vessels") in all three houses are identical: egg-shaped (6) or spherical (5) and hemispherical (2) with more or less rounded walls.[10] On two vessels—a small pot from House 1 (12 cm high) and a vessel from House 5 (23 cm high)—the walls are almost straight. On one vessel from the House in Vtoraya Bay (21 cm high), a fold can be seen in the middle of the wall. The forms of the vessels are not connected with the type of design. The diameter of the vessels at the rim fluctuates from 11 cm (House 1) to 31 cm (House 5). The diameter of the widest part is from 12.5 cm (House 1) to 34–36 cm (Houses 1 and 5), the height is from 12 cm (House 1) to 30–34 cm (House in Vtoraya Bay) (Pl. XXVI).

On the shores of the East Siberian and Chukchi Seas such ceramics are also known: on Chetyrekhstolbovyi Island (finds by G. Sverdrup in 1925 and those who wintered over in 1948–1949), which, with the exception of a crude oil lamp from the northern house, are not described (Beregovaya 1954:Fig. 3; Sverdrup 1930:212); on Aion Island, where in 1920 Sverdrup found ceramics on the surface, and in 1957 geologist A. A. Kalinin and in 1958 N. N. Dikov revealed ceramics in one of the early houses (Dikov 1961; Sverdrup 1930:211–238); on Shalaurova Island (finds by members of the Ministry of Martime and Rivers Fleet of the USSR in 1953) (Beregovaya 1960:Fig. 3:11); at Cape Shmidta (investigations of A. Nordenskjold in 1878 and Dikov in 1957 (Dikov 1960; Nordenskjold 1936:II:96–98); on Dvukh Pilotov Spit and at Cape Vankarem, where in 1957 Dikov excavated from an early house, along with a typical Birnirk harpoon head, one whole small spherical clay vessel 6 cm high and 7 cm in diameter (Dikov 1960).

The ceramics at Cape Baranov have very much in common with clay vessels of the Chukchi Peninsula. According to Rudenko, on the coast of Chukotka sherds of clay vessels are encountered in all Eskimo sites, especially the most recent ones. All sherds, independent of whether they are from early or late sites, are black in color both on the surface and in the breaks. They were so poorly fired that the organic inclusions in the clay were carbonized but not burned up. In the making of earlier ceramics, hair, baleen fibers, and grass stems, though primarily sand and small gravel, were used as the binding material in the clay, as a result of which many vessels were thick-walled. Vessel dimensions are predominantly large: 30 to 35 cm in diameter at the rim. They are hemispherical and were formed by modeling the clay by hand. A large part of the vessels from the Chukchi Peninsula are not decorated, but in earlier sites are preserved sherds with traces of parallel grooves applied by paddle stamp (Rudenko 1972:146–148). Beginning with the earliest stages of Eskimo culture, on St. Lawrence and the Punuk (Okvik) Islands, fragments of crude, poorly fired ceramics are encountered, sometimes covered with a hatched design. Evidently, these fragments also represented the remains of round or oval pots and lamps (Collins 1937:166–169; Pls. 52; 53:2; Rainey 1941:550). Round clay pots and oval lamps also existed in sites of the Birnirk culture. Pots were also encountered here with vertical walls, conical bases in the form of a bag, and with rims thicker than the walls. The ceramics were black, soft, with an uneven surface, and a temper of large gravel in the clay. The design was stamped, of concentric intersecting circles, and applied by paddle stamp (Ford 1959:202–204; 98:a–c, h; Pl. 15; Mason 1930:386).

Among the Central Eskimos of the Thule culture, ceramics were encountered in small quantity at the Naujan site (as a rule, vessels of soapstone were used). These evidently were the remains of a large vessel modeled from clay mixed with gravel, with small temper of organic matter. The thickness of the walls is 1 to 2 cm, with weak traces of firing. There was no decoration (Mathiassen 1927:I:66–68; Pl. 27:1–3).

[10] The reconstruction of ceramics was done by V. P. Levenok (LO IA AN SSSR).

Among the western Eskimos, who are later than the Eskimos of the Thule culture (Rasmussen collection), soapstone vessels also predominated, and only at Cape Atkinson (an approximately eighteenth-century site) were found several fragments of handmade round pots of clay mixed with gravel and small stones (Mathiassen 1930:16, 64; Pl. 2:9). Among the Eskimos of the thirteenth to eighteenth centuries on the Kobuk River, crude poorly fired ceramics were encountered closer to the shore, where there was the least forest. Here vessels with rounded bottoms predominated. By contrast, in sites farther up the river, in the forest zone, the ceramics were well fired, lighter colored, and differed by their large variety of form. Clay in all sites, beginning with the earliest, was mixed with sand and gravel, as well as with feathers and hair (possibly bear fur) as binding elements.

In later sites on the Kobuk River, textile imprints can be found inside vessels, perhaps the surface of the woven basket on which the clay was modeled. The bottoms of the vessels are conical—only in a late eighteenth-century site were the bottoms flat—and the vessels themselves are reminiscent in form of a bucket (Giddings 1952:94, 95, 102–104; Fig. 40:a–c; Pls. IX—Ambler Island; XIII:14—Old Kotzebue; XXIV; XXV; XXVI:a—Ahteut).

Among the Eskimos at Point Barrow of the end of the nineteenth century, pieces of clay pots were still preserved, which, in their words, were made "a long time ago, when there were still no iron teakettles." Clay, according to Murdoch, was mixed with feathers and blood, and was most likely fired. The form of the vessels was probably cylindrical, and the design was of transverse indentations made by thick cord (Murdoch 1892:91, 92; Fig. 22). The Eskimos of Bering Strait of this same time still practiced pot-making, which, according to Nelson, used clay mixed with grass and sand. A prepared vessel was set by the fire for drying and, finally, a fire was lighted inside and outside of the vessel for firing over the course of an hour or two (Nelson 1899:201, 202; Fig. 60—Hotham Inlet).

Among the Chukchi at the beginning of the twentieth century, clay lamps still existed, as did the memory of clay pots for preparing food. The latter were suspended above the lamp and had the same oval or subrectangular form—reminiscent of the soapstone vessels of the Thule Eskimos—that was present on St. Lawrence Island at the end of the Punuk period and which exists up to the present. These vessels were fired in former times, as were clay lamps among the Chukchi. The fragments of the vessels, found in "houses of mandibles," were thinner (Bogoras 1904–1909:I:184–186; Figs. 102:a; 104:a, b).

For the pieces of ceramics from Cape Baranov, three basic types of design can be distinguished independent of the quality of a vessel, the degree of firing, and the thickness of the sherds:

1. The first type of design, and the most widespread, which can be tentatively called *hatched*, is in the form of thin parallel strokes or thicker ribs, running straight or oblique directly from the rim, sometimes intersecting. The distance between the strokes fluctuates from 1–2 to 3–5 mm. This design is reminiscent of some old types of decorated ceramics on the islands in the Bering Sea and in Alaska (cord-marked—applied with a paddle, cord-wrapped, and St. Lawrence corrugated—applied by a stamp with ribs) (Oswalt 1955). However, at Cape Baranov the stroked design undoubtedly has a local character and connections with the Neolithic ceramics of northern Asia.

   In the three excavated houses at Cape Baranov a total of 621 fragments of ceramics were found with hatched design, that is, more than half of all the sherds collected here: 131 in House 1, 78 in House 5, and 412 in the House in Vtoraya Bay.

   On a large number of the specimens the design was probably applied with cord, string, or twisted thread wound on a wooden beater. In other, rarer cases (five specimens from House 1) it was applied by a ribbed paddle of wood (such a paddle with ribs cut crossing at an angle was found in the House in Vtoraya Bay—No. 39) or walrus tusk, similar to paddles found by Rudenko on the Chukchi Peninsula (Rudenko 1972:146–148; Pls. 4:25—Uelen; 9:7—Cape Dezhneva; 26:19—Sirenik). It is possible that cord was sometimes wrapped on the paddle between the ribs. The distance

between the ribs is 3 to 4 cm. Three rims were cut straight. Vessels with hatched design can in turn be separated into several groups, which were encountered in all three houses:

a) A group of sherds with wide ribs spaced 3 to 5 cm apart; a total of 255 fragments (70 in House 1, 42 in House 5, and 143 in the House in Vtoraya Bay;[11] Pls. XXVII:8, 10–13, 15; XXVIII:1, 5, 8, 12).

b) A group of sherds with narrow hatching or ribs. The distance between the strokes is 1 to 2 cm; a total of 129 fragments (36 in House 1, 26 in House 5, and 67 in the House in Vtoraya Bay).[12]

c) Sometimes narrow strokes on the surface of vessels suggest that they had been wrapped in a grass mat or intersecting strings. Fifty-seven fragments of the latter (with traces of strings) were found (20 in House 1, 10 in House 5, and 27 in the House in Vtoraya Bay;[13] Pl. XXVII:6).

d) In most cases—130 fragments (38 in House 1, 23 in House 5, and 69 in the House in Vtoraya Bay)—the surface of the unfired vessel with hatched cord design (with broad ribs) was also smoothed. This was done with a tuft of grass, which left traces in the form of sharp incisions, or perhaps by a special instrument for smoothing the surface, as was encountered among modern Eskimos on the Seward Peninsula in Alaska (of a piece of seal hide with hairs on a wooden backing and with a wooden handle; Pl. XXVI:6; Oswalt 1953:13; Fig. 2).

On the bottoms, traces are visible of the same design as on the walls. No textile imprints are found on the inside of the vessels, with the exception of two fragments from House 1 (Pl. XXVII:7).

A rare find is a piece of beveled-inward rim of a vessel from the House in Vtoraya Bay with the adjoining wall (No. 30). It has a hatched vertical design on the upper part and design of check-stamped net on the lower part (Norton check stamped, Nunivak check stamped; Oswalt 1955). Both designs were applied with a stamp. The check-stamped imprints run horizontally in several rows in the form of sunken squares bounded by ridges. The size of the sides of each square is about 5 mm.

A second such specimen (No. 541), found in the same house, has only unclear traces of the check-stamped design (Pl. XXVIII:9).

In Collins's opinion, the main center of spread of check-stamped ceramics was Southeast Asia. In China it was known beginning with the Yan Shao culture (Collins 1937:349; Griffin 1953:42). Such ceramics are encountered as well in Neolithic kitchen middens of Japan (Kishinouye 1911:Pl. 24:85) and at the end of the Neolithic on the Amur and in Yakutia, where such design existed from the end of the Neolithic to the beginning of the Iron Age (Okladnikov 1955b:Figs. 16:6; 27:18; 46:5; 68:5).

Finally, check-stamped ceramics are also known in the western Arctic in the Iron Age—on Olenii Island in Kol'skii Bay (Shmidt 1931:Pl. 6:4).

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[11] Forty three of them are rims (8 in House 1, 3 in House 5, and 32 in the House in Vtoraya Bay) and 12 are bottoms (they are 3, 2, and 7, respectively). The rims in House 1 were for the most part cut straight (16). One rim was rounded and one was beveled inward. In House 5, two rims were cut straight and one was beveled inward. In the House in Vtoraya Bay, 23 rims were cut straight, 3 were beveled, and 6 had the form of a rounded rib.

[12] Thirty two of them are rims (9 in House 1, 4 in House 5, and 19 in the House in Vtoraya Bay) and four are bottoms (1 in House 1 and 3 in the House in Vtoraya Bay). Of the rims in House 1, seven were straight cut and one was beveled inward, one rim had the form of a rounded rib. In House 5, three were straight cut and one was beveled inward. In the House in Vtoraya Bay, 18 were straight cut and one had the form of a rounded rib.

[13] Three of them are rims (one in House 5 and two in the House in Vtoraya Bay). All the rims are straight cut.

Hatched and check-stamped designs have very old traditions both in Northeast Asia and North America. In Siberia, in the sites of hunters and fishers in the tundra and forest-tundra of the end of the second and beginning of the first millennia B.C. (based on dating by A. P. Okladnikov), ceramics with a hatched design, applied by a stamp paddle, are known on the middle and lower Lena, for example, in the Neolithic sites of Malaya Munku, near Olekminsk; Kullaty, 35 km south of Yakutsk; Ymyyakhtaakh Lake, 50 km north of Yakutsk; and the Bronze Age site of Sikteekh, on the lower reaches of the Lena, where round-bottomed clay vessels were found with hatched and check-stamped imprints, with the fur of small fur-bearing animals as temper in the paste of clay vessels up to the Bronze Age (Okladnikov 1950; 1955b:88, 90, 95, 146; Figs. 16, 27, 46). On the lower course of the Khatanga River fragments of ceramics were found with hatched design along with knife-like blades, multifaceted burins, and arrowheads of the Lena type (Okladnikov 1947f). In two sites of the end of the Neolithic and early Bronze Age at the mouth of the Indigirka River, the remains of round-bottomed vessels were encountered with large (5 mm) rhomboid check stamps (Okladnikov and Gurvich 1957). In addition, Okladnikov assigns the sites of migrant hunters of the lower Kolyma that he investigated in 1946 to an earlier time. Here—together with small stemmed arrowheads, miniature points on blades, multifaceted burins-cores, and small obsidian blades—were found pieces of thin, well fired vessels with hatched and check-stamp design, applied with a stamp (Okladnikov 1955b:123, 124), as well as the design evidently being applied by a paddle wrapped with cord.

Very close to the ceramics at Cape Baranov are fragments of vessels with straight or slightly turned-out rims, found in 1961 by geologist P. I. Glushinskii on the lower course of the Olenek River, on the bank of its left tributary, the Buolkalaakh. The vessels were made from flaky clay mixed with gravel or with animal fur and covered with design in the form of check-stamped net. The thickness of the walls of these vessels is 0.5 to 1.0 cm. The ceramics were found with stone tools, among which were a large quantity of small blades, scrapers with trim on the ventral side, stemmed spear points, and three-sided arrowheads (Glushinskii and Khlobystin 1966).

In the American Arctic and Subarctic fragments of thin, hard, well-fired ceramics with a temper of sand in the paste, with hatched and check-stamped design applied with a stamp, or (in one case) by a paddle with cord wound on it, were found in the middle layer of the early Aiyateiet site at Cape Denbigh on Norton Sound (Alaska). This layer of the site included the remains of the Paleo-Eskimo Norton culture, which is characterized by percussion-flaked flint and crude slate tools, stone lamps, labrets, and ceramics, and is dated to between 500 B.C. and 400 A.D. (Giddings 1949; 1960:Pl. I). The type of ceramics with narrow hatched design (Norton linear impressed) (Oswalt 1955), which comprises 12% of the fragments of clay vessels at Aiyateiet, is widespread on the west coast of Alaska from Point Hope to Bristol Bay. The ceramics with a checkered net design (Norton check stamped) have square checked impressions smaller than those on Neo-Eskimo ceramics (the sides are 2 to 4 mm) with the same design (Oswalt 1955). These ceramics make up 60% of the total at Aiyateiet and have the same distribution and antiquity as ceramics with the hatched design (Chagvan Bay) (Ackerman 1964; Griffin 1953; Larsen 1950; 1961; Larsen and Rainey 1948:162–168; Pl. 82:12).

Paleo-Eskimo ceramics were also discovered in Kotzebue Sound on the Choris Peninsula. Here in 1956, Giddings found three large oval houses on a high early beach. He excavated one of the houses, which had walls of vertical posts and no hearth or entrance corridor. In the assemblage from this house, along with bone toggling harpoons, arrowheads with bifurcated bases, needles, slate women's knives, harpoon end blades, and percussion-flaked stone tools, were many fragments of well-fired ceramics, dark inside and lighter on the surface, with a temper of feathers in the clay, covered with hatched (in distinction from Norton ceramics) intersecting design made by paddle stamp. The distance between ribs here is about 3 mm. In reconstruction, the vessels have round or conical bottoms, simple rounded rims, and sometimes holes for suspension. The diameter of the

vessels at the rim is about 15 cm and in the middle 24 cm. The thickness of the walls is 9 to 12 cm[sic]. Above the old beaches at Cape Krusenstern in Kotzebue Sound, along with the remains of Neo-Eskimo and Paleo-Eskimo cultures, Giddings discovered to the north of the cape, on the hill Battle Rock, a site that belonged to caribou hunters. Here, in a double burial (dating to a time of about 2700 years ago), he found, together with the heads of arrows and spears of antler, several fragments of ceramics with linear and cord imprints and several flint arrowheads reminiscent of the type from the Ipiutak culture (Giddings 1957; 1961:169; Fig. 11; Harp 1961:580).

In the earliest stages of Neo-Eskimo or Arctic whaling culture of Bering Strait and the Bering Sea, the hatched design, applied with a ribbed paddle-stamp or a beater wrapped with cord, is encountered in the Okvik site beginning with the earliest layers (Rainey 1941:536, 550). There is the supposition that the type of ceramics with narrow parallel hatching came from Asia to the islands of the Bering Sea even before the development of the Okvik culture, that is, before 300 B.C. (Giddings 1960; Oswalt 1955). The site of Uelen on Cape Dezhneva, which Rudenko assigns to the same stage of Eskimo culture as Okvik, has no ceramics. However, a plate of walrus tusk entirely covered with diagonal ribs and which served as a stamp was encountered at Uelen (Rudenko 1972:147; Pl. 4:25). On St. Lawrence Island hatched ceramics, with the design applied with a paddle stamp, appear in Old Bering Sea layers (about 2000 years ago) (Collins 1937:346–350; Pls. 47:17—Miyowagh; 52:12, 14, 15—Hillside; Giddings 1960). Ceramics with hatched design have been encountered in Old Bering Sea sites on the Chukchi Peninsula—Kivak and Enmylen (Rudenko 1972:Pls. 9:7—Cape Dezhneva, stamp; 17:15, 19—Kivak; 26:19—Sirenik, stamp). Ceramics with a design of broad ribs were found on Shalaurova Island (Old Bering Sea times) (Beregovaya 1960:Fig. 3:11) and in an eighteenth-century site on the Kobuk River (Giddings 1952:Pl. IX:1–5—Ambler Island). The same kind of ceramics in the upper layers of the Kukulik site on St. Lawrence Island were decorated using a flat baton (Oswalt 1953:8; Figs. 1, 9, 10). Among Eskimos of the end of the nineteenth century at Point Barrow, according to Murdoch, the three clay sherds he found, which the Eskimos considered ancient, were covered with transverse ribs that appeared to be made by a thick cord wrapped around the vessel while it was still soft (Murdoch 1892:91, 92; Fig. 22).

Design with imprints of checked net applied by stamp appears in sites of the Okvik culture beginning with the earliest layers (Rainey 1941:536, 550). In an Old Bering Sea site on St. Lawrence Island, one fragment of ceramics with check-stamped design was found (Collins 1937:169; Fig. 17—Miyowagh). The same kind of ceramics were encountered on Nunivak Island (Nunivak check stamped), at Cape Nome, and in Kotzebue Sound (Collins 1928:254:1–4; 1937:349; Oswalt 1955:35). Only one specimen with such design is known at Point Hope, in a late burial at Tigara (Larsen and Rainey 1948:Pl. 91:11). In the Punuk site at Sirenik on the Chukchi Peninsula, vessels with check-stamped design were up to 40 cm in diameter, but were comparatively thin (the thickness of the walls is 0.8 to 0.9 cm). The checks in the design were square or rhomboid with sides from 0.5 to 1 cm. An antler stamp for this design was found at the same place (Rudenko 1972:146–147; Pl. 26:18, 22–24).

2. The second type of decoration of clay vessels from Cape Baranov (Barrow curvilinear paddled) (Oswalt 1955) is a *design of concentric intersecting circles and semicircles* applied by paddle stamp.

   The expedition, however, did not discover such a stamp in the houses at Cape Baranov.

   At Cape Baranov, this design is encountered more rarely than the hatched and is represented by only 12 fragments: one in House 1, four in House 5, and seven in the House in Vtoraya Bay. One of them (from House 5) has a straight cut rim (Pl. XXVIII:3, 10).

Such design is unknown on St. Lawrence and the Punuk Islands, although it is typical for the Birnirk culture in the region of Point Barrow, where clay pots (in the Van Valin collection) were round-bottomed, while clay lamps were flat or round bottomed (Mason 1930:386—Kugusugaruk). In the Birnirk site itself, pots were discovered with vertical walls and conical bases. A design in the form of intersecting concentric circles was often encountered. Paddle stamps were found for such design. The interior walls of lamps sometimes had textile impressions (Ford 1959:203, 204; Figs.; 98; 99:9, q—Kugoq). No such design or vessels with conical base were found in later sites at Point Barrow (Ford 1959:200–202; Figs. 96, 97—Utkiavik, Nuvuk). Ceramics with the same curvilinear stamp design were discovered in the Birnirk layer of the Kurigitavok site near Cape Prince of Wales. Here this layer lay under cultural remains of the Western Thule culture (Collins 1940:554). The same design is known on vessels in Western Thule sites at Point Hope, close in time to the Birnirk culture, and in burials at protohistoric Tigara site (Larsen and Rainey 1948:170–175, 178; Pls. 91:10; 95:20). Such decoration is not found on the Chukchi Peninsula, with the exception of ceramics described by De Laguna that have a Birnirk type design from Eskimo and Chukchi burials—near Cape Dezhneva in Puoten Bay. Such decoration was found there on vessels with conical and round bottoms. In De Laguna's opinion, these burials could have been simultaneous with the sites at Point Barrow and Cape Prince of Wales. They could also be peripheral remnants of the Birnirk tradition (De Laguna 1940:64; Pls. I:8; II:1, 2; 1947:234). A paddle stamp of whale rib with concentric circles and ceramics with design applied by this stamp were found on the lower course of the Kobuk River in Eskimo sites of the thirteenth and fifteenth centuries. In a thirteenth-century site (Ahteut), the ceramics were well fired, thin, and hard, in distinction from the crude vessels of later coastal sites (the Ahteut curvilinear paddled type). The vessels were covered with a curvilinear design of concentric circles and inside of them were preserved textile imprints (in Giddings's opinion, the vessels were formed on a plaited basket) (Giddings 1952:95; Pls. XIII:9, 14—Old Kotzebue; XXIV:1–3, 6; XXV:5—Ahteut; Oswalt 1955:36).

3. The third type of design of clay vessels at Cape Baranov was *thick sherds of light clay with faint traces of mesh*, evidently imprints of a mat or coarse fabric in which the vessels were wrapped before firing. A total of 27 fragments were encountered (five in House 1, two in House 5, and 20 in the House in Vtoraya Bay).[14]

   Analogies to this type of design are unknown (Pls. XXVII:19; XXVIII:2, 6, 11).

   According to Gordon, who visited Alaska at the beginning of the twentieth century, the elders at Cape Nome, on the north side of Norton Sound, related that the clay vessels of the western Eskimos were formerly made by hand with a flat wooden paddle, and the design was applied with a pointed baton. Sometimes the unfired vessel was wrapped with grass mat, which left its imprint on it, and then it was fired in an open fire. Perhaps the design on vessels of the third type at Cape Baranov had the same origin (Gordon 1906:83, 84). According to Murdoch and Nelson, the Eskimos at Point Barrow and the region of Bering Strait at the end of the nineteenth century attained great perfection in the plaiting of baskets, mats, and bags (Murdoch 1892:326, 327; Nelson 1899:202–205). At Point Barrow bags were made from willow branches stripped of bark (Murdoch 1892:335–337). They are especially widespread south of Bering Strait and almost absent east of Point Barrow. From Norton Sound to the mouth of the Kuskokwim River, Eskimo women were especially skilled in plaiting baskets, bags, and mats of grass. In this regard, some bags of conical form are very reminiscent of Birnirk clay pots (Nelson 1899:Pl. LXXIV:14). The plaiting of these bags is sometimes similar to the hatched design of the ceramics (Nelson 1899:Pl. LXXIV:11, 14, 15). Thus,

[14] Seven of them were rims (two in House 1 and five in the House in Vtoraya Bay): in House 1—one straight cut and one beveled inward; in the House in Vtoraya Bay—two were straight cut, two beveled inward, and one is represented by a sharp rib.

such mats possibly could have been employed by the Eskimos of Cape Baranov for wrapping soft clay vessels for the purpose of acquiring a design.

Fragments of ceramics without design (St. Lawrence plain) (Oswalt 1955) were encountered in all three excavated houses: 19 in House 1, 17 in House 5, and 33 in the House in Vtoraya Bay, for a total of 69 specimens (Pl. XXVII:3, 4).[15]

Sherds without a design are in large part dark in color and thick, but sometimes thin and with a lighter color. Such ceramics are also known on the Chukchi Peninsula. Decorated vessels with hatched and check-stamped design occurred there chiefly in earlier sites, but crude undecorated ceramics were found in the burials at Uelen. Such ceramics were made until the recent past by modern Eskimos as a special assemblage for burials: such sherds were found by the 1957 expedition in the modern cemetery at Uelen.[16] Ceramics were also undecorated for the most part in Old Bering Sea and later sites on St. Lawrence Island (Collins 1937:166; Pl. 52:1–7). At Point Barrow pots without decoration and with vertical walls were encountered in late sites such as Nunagiak (Ford 1959:202–204; Figs. 97:a; 98:b–d). As already pointed out, several crude pieces of ceramics without design were encountered among the Eskimos of the Thule culture (Mathiassen 1927:I:66, 67; Pl. 27:1–3) and among later western Eskimos (Rasmussen collection from Cape Atkinson, ca. eighteenth century), where there are several fragments of pots of clay mixed with gravel (Mathiassen 1930:16, 64; Pl. 2:9). In addition to the ceramics described were a large number of fragments with a damaged surface or very weak traces of design in the houses at Cape Baranov: a total of 277 pieces (127 in House 1, 44 in House 5, and 106 in the House in Vtoraya Bay).[17] In the House in Vtoraya Bay about 230 very small fragments of ceramics with and without traces of decoration were collected. At least 175 pieces of them have a hatched design.

On the location of Sarychev's old excavation (*Val'kar* III), Okladnikov collected several pieces of vessel walls, of clay of the same quality and same design as in the other houses. One thicker sherd of light clay was covered with intersecting imprints of narrow twisted cord. Another had imprints of check-stamp. A third, the thinnest, had vague imprints of curvilinear stamp reminiscent of Birnirk design.

Comparing the data on the ceramics in all three houses at Cape Baranov, similarity is noted in the forms of the vessels, in the quality of the clay mass, in the firing, and so on, as well as in the character of the design. In all houses hatched design prevails—621 fragments; in second place are vessels without decoration—69; then vessels with imprints in the form of mesh—27; with design of concentric intersecting circles—12; and with check-stamped design—2 (only in the House in Vtoraya Bay).

The closest analogies to the clay vessels at Cape Baranov are encountered in the ceramics of the Neo-Eskimo cultures of the Bering Sea and Bering Strait—Old Bering Sea, Punuk, Birnirk, and Western Thule—which approach the form of the vessels, the thickness of the walls, a temper of gravel, and the laminated character of the clay mass. Concerning decoration, hatched, which predominates in the houses at Cape Baranov, bears a local character and differs from similar designs on St. Lawrence Island and in Alaska by the method of applying the hatching or ribs, which as a rule are intersecting and made by a paddle wrapped with cord. The hatched and check-stamped designs on ceramics, widespread both in Asia and America, were known in the north of both continents in the end of the second or beginning of the first millennium B.C. (the cultures of Arctic hunters of Siberia and Paleo-Eskimo cultures of Alaska).

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[15] Seventeen were rims (six in House 1, three in House 5, and eight in the House in Vtoraya Bay) and seven were bottoms (two, two, and three, respectively). The rims in House 1 were cut straight, in House 5 one was cut straight and two beveled inward, and in the House in Vtoraya Bay six were cut straight, one beveled inward, and one beveled outward.

[16] R. V. Kozyreva's report.

[17] Twenty six of them are rims (thirteen in House 1, one in House 5, and twelve in the House in Vtoraya Bay) and eleven bottoms (seven in House 1 and four in the House in Vtoraya Bay). The rims: in House 1 ten are cut straight, one beveled inward, and two have the form of a rounded edge; the one in House 5 is cut straight; in the House in Vtoraya Bay seven are beveled inward and five have a rounded edge.

Neolithic and Paleo-Eskimo vessels with hatched and cord design are usually thin and better fired than Neo-Eskimo ceramic artifacts.

The hatched and check-stamped designs of ceramics both in Asia and the American Arctic have thus an early origin but continue to exist almost up to modern times (an eighteenth-century site on the Kobuk River, the later site of Tigara at Point Hope, and others).

Decoration of concentric intersecting circles and semicircles, encountered much more rarely in houses at Cape Baranov, appears later: in North America (at Cape Prince of Wales, Point Hope, and Point Barrow) no earlier than Birnirk times, that is, in the second half of the first millennium A.D., and also continues to exist up to the present (Tigara at Point Hope).

Ceramics with imprints of mesh at Cape Baranov, which have no analogies in Eskimo sites, are evidently connected with a developed technique of plaiting and consequently are also late.

Therefore, the ceramics from Cape Baranov must not be very early and most probably belong to the second millennium A.D., probably to the time just preceding the appearance of Russian explorers.

Early types of decoration could have been preserved here as in other late Eskimo sites, in the form of remnants.

No. 39 is a wooden paddle stamp for decorating ceramics. It is broken above, evidently originally oval in form, with a slightly concave interior and short thick handle, round in cross section. On the concave surface were made parallel triangular deeply incised grooves for applying the stamp. Under the grooves, in the middle of the handle, is a half round notch. The length of the paddle stamp is about 30 cm, the length of the handle 10 cm (Fig. 14:6).

The paddle served to apply a large hatched design, found on the ceramics at Cape Baranov only in House 1.

On the Chukchi Peninsula the hatched design was obtained during preparation of clay vessels with a special paddle or plate of walrus tusk with deep parallel beveled grooves (Rudenko 1972:147; Pls. 4:25—Uelen; 9:7—Cape Dezhneva; 26:19—Sirenik). A similar wooden paddle for the hatched design is known in an Old Bering Sea site on St. Lawrence Island (Collins 1937:27:17—Miyowagh). In Birnirk sites at Point Barrow—Birnirk and Kugoq—were paddle stamps of whale bone and walrus tusk of oval, slightly concave form, with round handles, which are terminated by a knob and concentric circles carved in the concave surface (Ford 1959:205; Figs. 9:q—Kugoq; 99—Birnirk). The same kind of paddle, of whale rib with three spiral circles carved in its broad part, was found in a fifteenth-century site on the Kobuk River. In both cases the stamp was used for applying a design of intersecting concentric circles and semicircles (Giddings 1952:95; Pl. XIII:9—Old Kotzebue). On Cape Baranov this type of design is encountered more rarely than the hatched design (a total of 12 fragments, chiefly in the House in Vtoraya Bay). No paddle stamp for application of this type of design was found in the houses at Cape Baranov.

Conclusion

The Place of Sites at Cape Bol'shoi Baranov among the Early Sites of the Bering and Chukchi Seas and the Question of the Origin of the "Shelagi"

Comparison of houses at Cape Baranov in Sarychev Bay and Vtoraya Bay with dwelling structures of early Eskimo culture reveals many common features in the wooden structures of both Neo-Eskimo sites in the region of the Bering Sea and Bering Strait (Old Bering Sea, Punuk, and Western Thule cultures, and especially Birnirk), and also some Paleo-Eskimo sites (Ipiutak). As already pointed out, the closest parallels to early houses of the Arctic coast of Northeast Asia, and in particular to the houses of Cape Baranov, are known on the Arctic coast of America, north of Bering Strait at Point Barrow in the Kugusugaruk and Birnirk sites. This type of house existed at Point Barrow up to the end of the nineteenth century when it was described by Murdoch.

Comparative descriptions of the assemblage of the three excavated houses at Cape Baranov lead to the following conclusions: the types of tools and artifacts in all the houses are homogeneous and evidently belong to the same time, except some types of harpoons, adze handles, and ceramics with check-stamped design in the House in Vtoraya Bay, which are earlier than those in the houses in Sarychev Bay. The closest analogies of the assemblage of Cape Baranov support this.

Analysis of only the closest analogies for the assemblage from the houses at Cape Baranov indicate that the leading form of tools—toggling harpoon heads—is similar chiefly to the same kind of heads in the Birnirk culture (20). The greatest number of close analogies with the Birnirk culture are found also in other elements of the harpoon complex (11). One should also note the close similarity of the ceramics at Cape Baranov that have the design of intersecting circles with the same design on clay vessels in sites of the Birnirk culture at Point Barrow. But the overwhelming majority of tools and artifacts of bone, antler, and wood in the houses at Cape Baranov have predominantly Punuk analogies (169). The number of similarities in sites of Old Bering Sea (113), Birnirk (109), and Thule (98) is also significant. Fewer analogies are found in Ipiutak (55) and Uelen (20).

A large number of close analogies for the assemblage from Cape Baranov is encountered in late Eskimo sites on the Chukchi Peninsula, Point Hope, Point Barrow, and among the Central Eskimos (102), among the Eskimos of the thirteenth to eighteenth centuries on the Kobuk River (84), and among Eskimos of the nineteenth century at Point Barrow (73) and Bering Strait (106). Among the Chukchi of the beginning of the twentieth century are found only a small number of similar objects (23).

A few analogies to the stone tools from Cape Baranov exist among the contemporary Koryak, Yukagir, and Aleuts.

Some objects similar to the assemblage from Cape Baranov are encountered in all stages of Eskimo culture, beginning with Uelen-Okvik and ending with late sites (leisters, arrowheads, bird darts, handles of "planing" knives, awls, fat scrapers, adze sockets of the first type, wedges, and mattocks). Other objects appear in the Old Bering Sea stage and continue to exist into the eighteenth and nineteenth centuries (meat or boat hooks, weights, simple bows, spear heads, handles of men's hunting knives and of ulus, drill bows and drill shafts, sled runners, wooden vessels, spoons, handles for carrying vessels, buttons, hair bands, amulets, needle cases, toys, and images of animals). Some objects of Eskimo assemblage, analogous to artifacts from Cape Baranov, appear in Punuk times (finger rests, spikes for weaving nets and untying knots, anvils, bone daggers, handles of "crooked" knives, sockets for adzes of the second type, antler hammers, picks, hooks for suspending objects, toys, and armor plates). Some instruments for sewing boots (smoothing pleats on leather soles) are found only from the fifteenth century, among Eskimos of the Kobuk River. Analogies to toys are encountered chiefly in Punuk and later sites (with no close analogies in Birnirk). The closest parallels to the figures of animals at Cape Baranov are encountered in sites of the Punuk and Thule Eskimos.

For the stone assemblage, a large number of close analogies can be found in sites of the Old Bering Sea culture, Punuk, Thule, and Birnirk, on the Kobuk River, and in late sites at Point Barrow and Point Hope. Analogies in the stone assemblage of Paleo-Eskimo cultures are found at Ipiutak and Norton. Among the Chukchi, Koryak, Aleuts, and Yukagir of the end of the nineteenth century and beginning of the twentieth century, only a few remnant forms that are analogous to the stone tools from Cape Baranov.

Close, though not numerous, analogies to hatched and check-stamped ceramics are found in Old Bering Sea and Punuk sites on the Chukchi Peninsula and St. Lawrence Island. For curvilinear stamped design, a small number of close analogies are found on the Kobuk River in sites of the thirteenth and fifteenth centuries.

Thus, the assemblage from the houses at Cape Baranov has on the whole the largest number of close analogies in sites of the Neo-Eskimo culture, beginning with the earliest and ending with its late stages (Punuk analogies predominating), as well as in late Eskimo sites of Bering Strait and Bering Sea that are close to modern. The leading form of tools (toggling harpoon heads) stands closest of all to the same types in the Birnirk culture. In some cases the similarity is with the assemblage of Paleo-Eskimo cultures: Ipiutak, Norton, and others.

The following objects in the houses at Cape Baranov do not have analogies: a bird arrow of special form with an end blade set in a blunt conical end (House in Vtoraya Bay), large wooden handles of adzes and mattocks (House 1 and House in Vtoraya Bay), and indeterminate objects of art: a lyre-shaped object (House 5) and a button or spherical bola (House in Vtoraya Bay), ceramics with decoration in the form of mesh or grains (in all three houses).

Investigation in recent years on St. Lawrence Island and on the Chukchi Peninsula once again brings up the question of the chronological sequence of early Eskimo cultures in the region of the Bering Sea and Bering Strait. Ever more often facts are encountered of the simultaneous occupation in one and the same site or burial of objects and tools, especially harpoon heads, that belong to different stages of development, sometimes distant in time, of Eskimo culture. Such is the observation of R. Ackerman in 1958 in the Skeliyuk site on the southern part of St. Lawrence Island, where he found Birnirk and Punuk harpoon heads together (Ackerman 1962). With the excavations of M. G. Levin and others at the Uelen cemetery in 1955–1958, heads of Okvik, Old Bering Sea, and Birnirk types were found in the same burials (Arutiunov and Sergeev 1962; Dikov 1958a; Levin 1958; 1960; Sergeev 1959). D. A. Sergeev, who investigated the Ekven site in 1961 (a typical Old Bering Sea cemetery 30 km south of Uelen), found a stamp for ceramics with concentric circles of the Birnirk type in this complex.[18] In 1957 N. N. Dikov

[18] Report by D. A. Sergeev to the LO IE AN SSSR 26/1 1962. Excavations at Ekven in 1961.

excavated at Cape Vankarem a house where objects of bone and walrus tusk were found that were decorated with Punuk design, and a Birnirk harpoon head with an asymmetrical spur, lateral insets, and ornamented with two incised lines on both sides (Dikov 1958b). In 1959, an Old Bering Sea whaling harpoon was found together with Birnirk ceramics near Cape Prince of Wales (Giddings 1961:168). In the houses at Cape Baranov, judging by the character of a large part of the assemblage, which was synchronous and evidently late, the following were found: harpoon heads of the Birnirk, Punuk, and Thule types together in Sarychev Bay, and heads of Old Bering Sea and Birnirk types in Vtoraya Bay.

The fact that diachronic types of early Eskimo tools existed together can be explained in some cases as the transition of types, in others as the use of old tools and artifacts, as well as houses by a later population, and finally, as trade connections of various ethnic groups—the bearers of various cultures—that possibly existed in different territories simultaneously during the course of many centuries.

On the basis of the general character of the assemblage and types of houses, the question of ethnic association of the site at Cape Baranov can tentatively be resolved in this way: The culture of the site was Neo-Eskimo (the transitional time from the Birnirk, simultaneous with the Punuk, to the Thule), which came from the region of Bering Strait and which developed on a local base probably in the first half of the second millennium A.D.[19]

The question remains: To whom, or to what tribes, do these sites belong, the westernmost of all known sites of such kind?

The first to attempt to answer this question was G. Sarychev. “Regarding the residents of these places, who without doubt must have been Chukchi,” wrote Sarychev (1802:96), “the Kolyma Cossacks said that they were called Shelagi; when the Russians settled near them, they moved to the east and built their house close to the cape that jutted out farther to the north than the rest, which at that time was called Shelagskii.”

Travelers of the nineteenth century, on the other hand, oppose making the Shelagi Chukchi. Thus, Kiber (1824:93), referring to information of the Chukchi, reports that this tribe (the Shelagi) settled in the vicinity of Shelagskii and Chaun Bays and spoke a “foreign language.” Subsequently they departed from Chaun Bay to the east, after which nothing is known of them.

M. Gedenshtrom (1822:150) confirms about the same time that the “Shelagi who live at Chaun and at Cape Shelagskii, being in a long altercation with the Chukchi, had to leave their houses. Some part of them perished at the hands of the Lena Tungus, and a large part of them moved to America.”

F. P. Wrangell (1841:II:67, 294, 332–334) reports that the Shelagi occupied the shores of the Kolyma in antiquity and migrated with herds of deer along the coastal tundra. From there they were expelled by the Chukchi. The name Cape Shelagskii came from them. In 1823, Wrangell encountered among the Chukchi an elder who identified himself as a descendant of the Shelagi “or as the Chukchi usually call the Chavany, who many years ago moved to the west along the sea coast and never returned. From the name of this people the river and bay acquired the name Chavan or Chaun.” He also related the local tradition that about 200 years before his trip the whole coast of the Arctic Ocean from Cape Shelagskii to Bering Strait was occupied by the Onkilon tribe (in Chukchi—“coastal residents”). The Chukchi forced the Onkilon to Shalaurova Island. From there they departed in baidars to an unknown land visible on a clear day from Cape Yakan, according to the Chukchi. That is, the Medvezh’i Islands north of the mouth of the Kolyma.

G. Maidel’, who in the 1860s traveled through northeastern Siberia, reports that the name “Shelagi” became known from the promyshlennik Ivan Vilegin, who visited the Medvezh’i Islands in 1720. He

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[19] In the radiocarbon laboratory LO Institute of Archaeology, Academy of Sciences, USSR, the date 1690 ± 165 BP (Rul 210) [Rul is now LE—*Trans.*] was obtained on a sample of driftwood.

learned from the Chukchi that "Shelagi" was not a Chukchi word. "It is possible that Eskimo-like Ankaly," writes Maidel', "who also up to this time are encountered in isolated groups among the Chukchi along the Bering Sea, formerly lived along the shore of the Arctic Ocean. What is more, along the whole coast from Cape Erri (Shelagskii) to Cape Peek (Dezhneva) are the remains of houses, which are different from the tents of the Settled Chukchi" (Maidel' 1894:274). Based on the testimony of Captain G. S. Shishmarev (1852:186), at the beginning of the nineteenth century bone labrets, that is, ornaments typical for the Eskimos, were still in use among the tribes who lived close to Cape Shelagskii and who had deer and baidars, as among "residents of the American coast."

This information about the Shelagi who still lived around Cape Shelagskii at the beginning of the nineteenth century, the ruins of their houses along the whole Arctic coast east of the mouth of the Kolyma, similar to the early houses of the Eskimos, and finally, the similarity of the assemblage with that of the Eskimos confirm the supposition that an Eskimo population existed here for a long time. This population arrived from the region of the Bering Sea and Bering Strait and spread in the first millennium A.D. along the Arctic shores of Asia and America.

The idea of the existence in the region of the mouth of the Kolyma of an early population not related to the inhabitants of the continental regions, a population that led a purely Eskimo form of life, is also supported by the folklore of the native population of this region. "Peoples of the north were from of old deeply convinced of the fact that to the north of the coast line of the Arctic Ocean there were vast islands occupied by people and even genuine green land with tall trees and a wealth of animals, including fur-bearers" (Okladnikov 1958:519, 520).

"People who live in this land beyond the sea are bearded giants." Hunter and deer herder N. K. Kurilov, member of the Olenevod kolkhoz at Olersk (formerly Khangaisk) located on the upper reaches of the Lena, related in 1943 that some man who hunted in winter for Arctic foxes found on the shore tracks of person. Stepping onto the track, he saw that it equaled several *kharysy* (one *kharys* equals 210 liters—*Trans*.).

> The tracks went into the sea. Deciding to follow this unknown person, the hunter began early in the morning and traveled along the tracks. After two days of travel he saw before him in the night a mountain that rose like an island through the frozen fog. Before the mountain the tracks became many: the snow was trampled down like a street. A woman came toward him. She was several fathoms tall and, taking him by the hand, led him into a house. In the house was a man. Both spoke to him. The man said to the hunter: "It is my fault that I revealed my tracks, otherwise you would not have come here and I would not have to kill you. Now go back to your land, but never tell anyone. I will help you return. Don't go out right now; the sled isn't ready yet. When it is, go immediately." After a while the man came into the house again and said: "All is finished, now go." Going, he saw that a dense fog was all around and he could see nothing. He wanted to see their house, but he couldn't see anything. The giant sat him on the sled and blindfolded him, saying: "When you arrive in your land, release the dogs." He now passed in one day, without stopping, those places that had earlier taken him two nights. On the way the hunter uncovered his eyes and saw that it was not dogs that transported him, but two wolves. His own dogs were not able to catch up and were dragged along on the ground. Arriving home, he released the wolves-dogs, and they immediately disappeared. His own dogsled was loaded to the top. When he uncovered the load, he saw a multitude of Arctic foxes. When he was in that yurt across the sea, the host had asked him: "Why do you wander alone along the sea shore?" The hunter had answered that this is how they make a living. Feeling sorry for him, the giant had given him these many furs. The house of the giant was of the usual, human kind. Into old age this hunter never spoke of this to anyone, and only told it upon his death.

In other variants of this legend a hunter, having hit upon the trail of a gigantic man, follows him in the open sea and comes upon a settlement of secret giant people. In some cases these people do not have fire and carry away burning coals from human hearths. They differ from ordinary people, inhabitants of the mainland, not only by their gigantic size, but also by the fact that they have long thick beards or are entirely covered with hair. These are the "bearded" people.

Many real ethnographic features appear in the descriptions of their houses, so many that it is strikingly reminiscent of the life of settled sea mammal hunters of the Arctic.

The houses of the "bearded ones" are located not in isolation, but in one village. The form of the houses, according to some legends, is round, that is, cupola-like, as among the semi-subterranean houses of the Eskimos and Settled Chukchi. The houses consist of two parts: entryway (corridor) and inner space (interior). Eskimo winter houses were constructed in this way, the interior of which was approached through a hall in the form of a corridor. Within the house were sleeping platforms. The houses were lighted not with hearths, but rather with a "luminous stone." In this source of light one can easily see the oil lamp, which heats the interior of Eskimo houses, as well as serves in the preparation of food. The "bearded ones" travel on dogs, though they are similar to large wolves (Ksenofontov 1937:550–556).

Thus, certain elements of ethnographic reality are found in the legend of the "bearded" people that attest to early connections of continental hunting tribes with inhabitants of maritime islands.

Analysis of archaeological materials from excavations at Cape Bol'shoi Baranov and the Medvezh'i Islands indicates that this folkloric information corresponds to historic reality: Between the mouth of the Kolyma and the Chukchi Peninsula and farther along the shores of Bering Strait lived a settled population for a long time, the basis of whose existence, besides hunting land animals and catching fish, was catching sea mammals. These people lived in villages with houses like those of the Alaska Eskimos. They had a similar or even identical material culture that went through principally the same stages of development.

It is logical to think that this population, which belonged to the same cultural-economic group as the Alaska Eskimos likely also had a basically common language, evidently Eskimoid. The part of the population that resided in the houses we investigated at Cape Bol'shoi Baranov was known among its neighbors, residents of interior continental regions, by the name Shelagi.

Thus, through archaeological materials, early legends, and written sources one more interesting page of the forgotten history of Northeast Asia comes to light.

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The Remains of Animals from Houses at Cape Baranov East of the Mouth of the Kolyma River

In the excavated remains of early houses at Cape Baranov, A. P. Okladnikov collected and delivered to the Zoological Institute of the Academy of Sciences, USSR, several hundred bone fragments. Inasmuch as saving all the bone remains was difficult, evidently "the most representative" fragments were selected, as well as all those bearing traces of "modification." It is natural that the results of the investigation of the bone remains and conclusions were severely hindered by the incompleteness of the materials.

A total of 435 pieces of bone were examined; 177 of them showed traces of modification or were used as finished, more or less complete tools. The remaining bone can be tentatively considered kitchen bone, that is, food waste or the remains of animal skins, meat, or fat, that was used by the early settlers.

The preservation of the bone fragments collected by Okladnikov, and of the bone matter, is characteristic for Holocene surface burials. Included are whole skulls of polar bears, sables, and dogs; fragments of seal skulls; and antlers, flat- and long-bones, and vertebras of deer. Many fragments, especially pieces of reindeer antler and walrus and mammoth tusks, have deep notches and incisions, without doubt made by metal planing adzes. The skull cases of a polar bear were pierced on both sides, apparently in order to reach the delicacy of the brains. Also, the brain cases of the skulls of a dog and an Arctic fox were broken up.

The bone matter of many fragments was half destroyed by rot, since they evidently lay in the humus layer near the surface. Sometimes even mummified ligaments, hide, and corneous formations were preserved: claws, hoofs, and bird beaks. Well preserved bones were coated on the surface by a brownish color to a depth to no more than 0.5 mm.

Clearly older—Pleistocene—fragments, for example pieces of mammoth tusks, were coated with salts of iron (?) and humic acid to a depth of 1 to 1.5 mm. There is practically no damage to the organic matter on these early fragments, and scraping them off by scalpel gives a small lustrous shaving and the smell of raw bone—collagen.

The composition and quantity of bone remains are condensed in Table 3.

Table 3. Species Composition and Minimum Number of Individuals per House at Cape Baranov.*

Specific composition of animals	Sarychev Bay				Vtoraya Bay	
	House 1		House 5			
	Bones	Individuals	Bones	Individuals	Bones	Individuals
Domestic Animals						
Dog	4	2	7	3	9	3
Horse (wild?)	2	1	1	1	—	—
Wild Animals						
Arctic fox	2	2	—	—	3	2
Fox	4	2	—	—	—	—
Wolf	4	1	—	—	—	—
Polar bear	12	2	2	1	2	1
Sable	2	2	—	—	—	—
Ermine	2	2	—	—	—	—
Seal	17	5	2	1	5	2
Walrus	6/1	2	—	—	—	—
Snowshoe hare	1	1	—	—	—	—
Mammoth	1/3	1	–/23	—	–/7	1
Reindeer	73/143	20	1	1	28	4
Bean goose	5	—	—	—	—	—
Whooper swan	3	—	—	—	—	—
Total	283	41	36	7	55	13

* Numerator—the number of individual bone artifacts of this animal; denominator—the number of worked pieces.

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Systematic Survey of Species

Animals

Arctic Fox (*Vulpes lagapus* L.)—The remains of Arctic fox turned out to be not as abundant as might have been expected: A few remains in each house are represented by a piece of an axial of a skull and lower jaws. The number of foxes in nature in the modern Arctic is subject to large fluctuations and is connected in some regions with the long-range migration of the animals. In other, late northern sites, for example, on Faddeya Island, bones of Arctic fox make up the primary bulk of the remains. They are common also in the layers of Upper Paleolithic sites of the Russian plains and Siberia, as far as Pribaikal'e. Procuring Arctic foxes for the early settlers was not difficult considering the great trust of these animals. They were probably caught predominantly with log dead-fall traps.

Fox (*Vulpes vulpes* L.)—(Fig. 1:2) the axial of a skull, two lower jaws, and a humerus of a fox were found only in House 1 in Sarychev Bay. At present the number of foxes in the tundra and forest-tundra of extreme northeastern Siberia is always significantly lower than Arctic foxes. Procuring this animal was always more difficult than procuring Arctic foxes since the nervous activity of the fox is more developed.

Wolf (*Canis lupus* L.)—One branch of a lower jaw of an adult wolf was preserved in House 1 in Sarychev Bay. Here the wolf now occupies third place in number among representatives of the Canidae in this region. The same correlations also existed throughout the Pleistocene. This was caused by the size of the animals and their food adaptations and interrelations. The structure of the branch of the lower jaw, its length (184.5 mm), and the front-back diameter of the large molar tooth (29.5 mm) distinguish the remains of this wild animal from those of the local dog (Plate I:3). Procuring wolves was always more difficult than procuring foxes or Arctic foxes, especially given the lack of good steel traps or strong poisons. Among the early settlers such procurement was probably rather occasional.

Dog (Canis familiaris L.)—(Plate I:4). The bones of dogs were found in all houses and are represented predominantly by pieces of jaws. A single axial of a skull has a deformed—sloping to the left—frontal part and crushed brain case. Based on the preservation of the bone matter, it looks somewhat younger than the other dog remains.

Judging by the dimensions of the skulls and teeth, the dogs of the early Kolymans were the size of the large modern huskies of Karelia. The dimensions of their lower jaws and canines were the following: the length of the lower jaw from the front edge of the alveoli of the canine to the articulation process—125.5; 128; 129; 128; 110; 133; 143.

The front-back diameter of the large molar tooth (M_1) is: 20.5; 21.3; 19.8; 18.5; 21.5; 22.7. Based on the structure of the lower jaw, these dogs were similar to large traction and hunting huskies of the Chukchi and Evenk of Chukotka and the Okhotsk coast, the jaws and teeth of which have corresponding dimensions: length of the lower jaw: 132; 136; 138; 148; 150; 153. The front-back diameter (M_1): 20; 21; 21; 21; 23; 23. However, the early dogs of the Arctic coast were somewhat smaller than modern ones. The collected jaws possibly belonged to predominantly females and young males, which would explain their small dimensions.

The dogs of the early settlers could have been used as traction, meat, and fur animals.

Among the lower jaws collected by Okladnikov, two specimens belonged to subadult individuals aged 10 to 12 months.

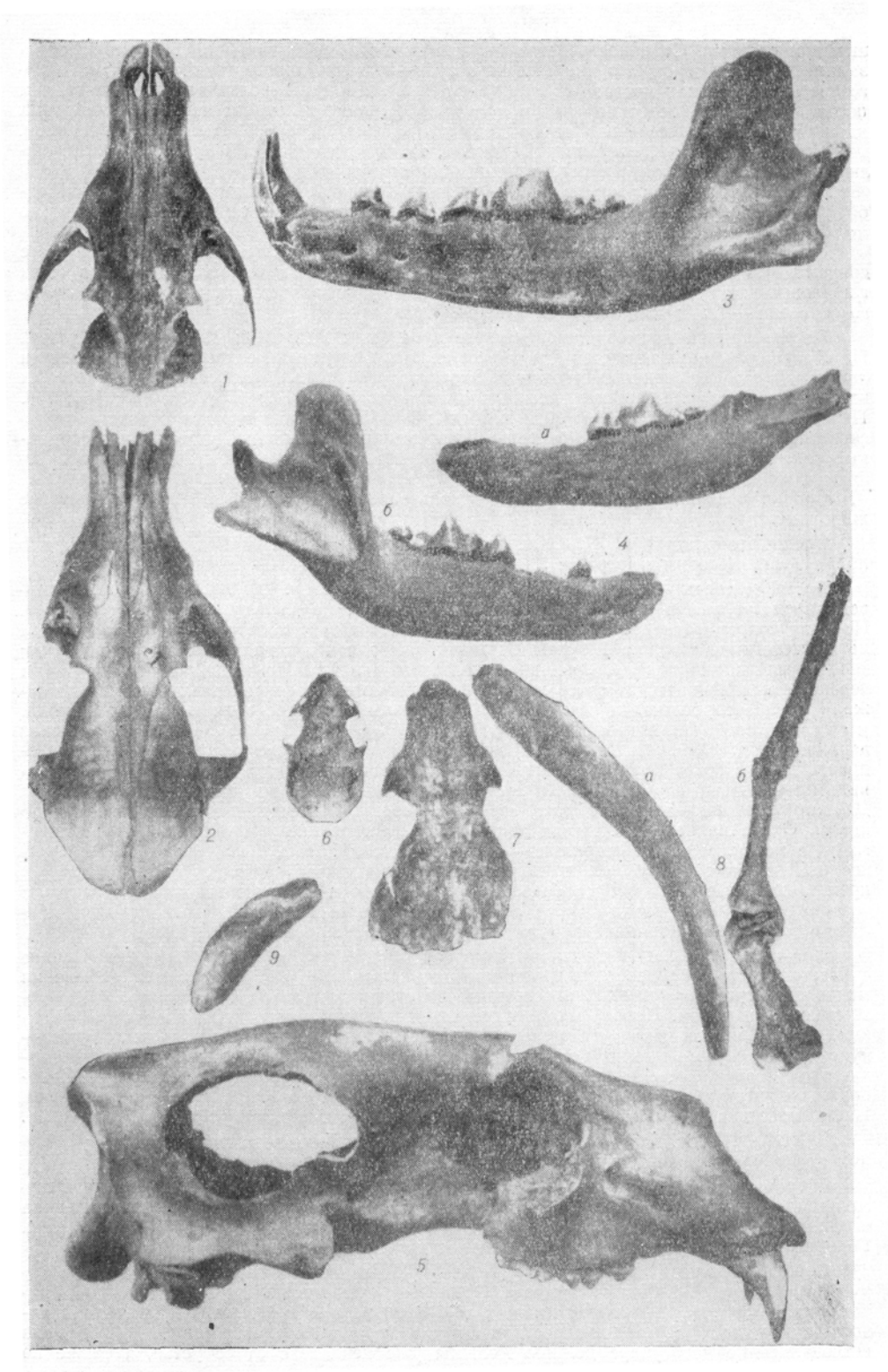


Plate I. Faunal remains: 1. piece of an Arctic fox skull; 2. (non-Arctic) fox skull; 3. lower jaw of a wolf; 4a and b. lower jaw of dogs; 5. polar bear skull; 6. ermine skull; 7. piece of a sable skull; 8. seal bones (a. baculum; b. digits of the rear flipper); 9. walrus tooth.

Polar bear (*Thalarctos maritimus* Phipps)—(Picture I:5). The remains of a polar bear are represented in strata of the three houses and occupy fourth place in number. Based on the preservation of the bone matter, they belong to the period of occupation of the houses. Two whole skulls from House 1 in Sarychev Bay have characteristically perforated sides of the brain case. Based on the size and proportions of the skulls of the polar bears from strata of the houses, they are no different from modern ones. They belonged to full adults—but not-large 4- to 5-year-old females—with a full tooth system and with fused sutures of the nose bones. On one of the skulls of an older individual, the left upper jaw bone and tooth row were at a higher level, and consequently the jaws were as if degeneratively distorted. This is evidently the first case of the find of polar bear bones in a semimineralized condition in the USSR. The early Kolymans probably often encountered this powerful predator. Hunting it was not easy, even assuming that the settlers had heavy bear spears with metal tips—so-called *pal'ma*. Procuring the animal with a light harpoon would have been even more difficult. A picture of a polar bear hunt can be imagined in the following way. Having come upon the wintering place of the animal or a group of animals, the dogs stopped them and surrounded them. Then the most courageous and cunning hunters shot the animal with bows, then pelted them with light spears or darts.

Despite the presence of strips and plates of baleen found in the excavations, it is uncertain that the early Kolymans used sharpened plates of baleen rolled up into a ring and covered with frozen seal fat for procuring bears. Swallowing such rings, an animal's intestines were punctured. No materials exist to corroborate the use of heavy log traps—*kulem*. However, polar bears were undoubtedly an object of great interest to the villagers. The polar bear is most frequently found in artistic images, executed in walrus tusk or in mammoth tusk (Okladnikov and Beregovaya, this volume, Fig. 14:3).

In the nineteenth and twentieth centuries the polar bear already existed in comparatively small numbers in this region.

Ermine (*Mustela erminea* L.)—(Plate I:6). There was a total of one ermine, an axial of a skull from the House in Vtoraya Bay, possibly belonging to an individual that crawled into the house layer and died there after abandonment of the settlement. At present, ermines are abundant everywhere along the Arctic coast.

Sable (*Martes zibellina* L.)—(Plate I:7). Two axials of sable skulls were found in House 1 in Sarychev Bay, attesting that sables lived no more than a one- or two-day trip from and back to the coast at that time. It is possible that they were encountered in the forest-tundra of the Kolyma valley not far from its mouth, as well as in the cedar thickets of the mountain tundra.

At the beginning of the past (nineteenth) century, at the time of Wrangell's journey (1841), the sable was already rare on the lower Kolyma and encountered only once in a while. Based on Jochelson's (1898) report, the sable died out on the Kolyma in a single year (at the beginning of the 1860) possibly from an epidemic.

Seal (*Phoca hispida* L.)—(Plate I:8). Only the humerus, two oosiks (baculums), and the mummified digits of the rear extremities of seals were found. Based on the dimensions of these remains, no difference exists between these bones and the same of the modern species. The early inhabitants of the coast at Cape Baranov undoubtedly valued very much and widely used the seal, which provided them with oil, meat, and durable hide.

At present, in the region of the mouth of the Kolyma the seal is the common species of pinniped, remaining here even in winter. The early Kolymans could hunt the seal, lying in wait for them at holes in winter, harpooning them from kayaks, and taking them at coastal haulouts, using clubs to kill them.

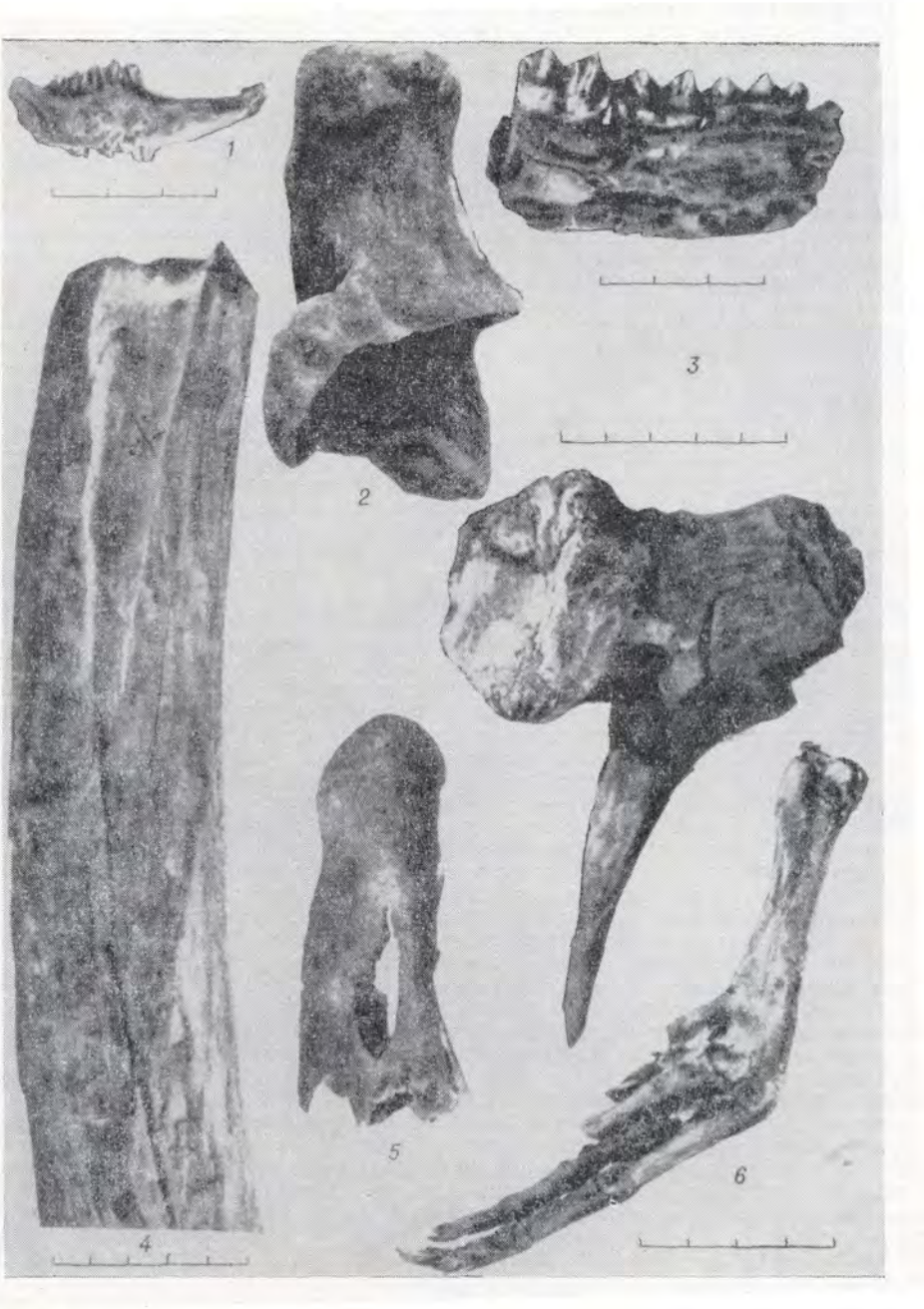


Plate II. Faunal remains: 1. piece of the lower jaw of an Arctic hare; 2. heel bone of a horse; 3. reindeer bones (upper: piece of the lower jaw; lower: piece of antler); 4. chopped-off piece of mammoth tusk; 5. whooper swan bill; 6. bean goose foot.

Walrus (*Odoboenus rosmarus* L.)—(Pl. I:9). Only fragments remain of five small tusks, one molar, and a piece of an upper jaw of walrus. The tusks were predominantly small, probably belonging to females, and evidently used for making harpoons and other tools. Whether the regular taking of walruses existed among the settlers, for example, at coastal haulouts, or whether they used tusks from carcasses and skeletons of walruses found in the intertidal zone is difficult to determine from the remains. Either could be the case. Only young and generally smaller animals likely were hunted with bone harpoon heads.

In addition to seals and walruses, between the mouths of the Kolyma and Anadyr' Rivers sea lions (*Eumetopias jubatus* Schreber), bearded seals (*Erignathus barbatus* Pall.), ribbon seals (*Histriophoca fasciata* Zimmerman), and spotted seals (*Phoca vitulina* Pallas) can be found at present (Portenko 1941). The absence of the remains of these four species in the examined layers of the sites points to the lack of developed sea mammal hunting among the early Kolymans.

Besides pinnipeds, belugas (*Delphinapterus leucas* Pall.) and orcas (*Orca orca* Fabricius) lived and live in the sea, as well as some small species of baleen whales (*Mystacoceti*). Of course, the early population could utilize only occasional carcasses of these animals cast up on the shore.

Hare (*Lepus timidus* L.)—(Pl. II:1). The collection contains one branch of a lower jaw of a hare. In present-day Yakutia the hare is a valuable meat and fur animal in years when its population increases. The favorite habitats of hares in the northeast are valleys of rivers and streams with willows. The local method of catching them, used still today, is a small deadfall. Hares also are caught with wire nets, traps, and snares (Portenko 1941). In years of rapid hare reproduction and invasions, these animals could be caught in mass by the early residents with traps and snares.

Horse, domestic (wild?) (*Equus caballus* [*subfossilis*?] L.). The remains of a horse are represented by a fragment of a pelvis with a joint pit and a calcaneus, found in the remains of House 1 in Sarychev Bay (Pl. II:2).

Based on the type of preservation, these bones are no different from the primary bulk of bones of the historic period and therefore are of exceptional interest in the discussion of the presence among the early Kolymans of the domesticated horse and of the existence of wild horses in the historic period in extreme northeastern Siberia.

The early Medieval (?) residents of the Arctic coast of Siberia could have brought domestic horses from the south as transportation animals along with dogs. Or a local wild horse, tamed and domesticated, was still present at this time. Finally, the residents could have hunted wild horses, not bothering to tame them. Modern domesticated Yakutian horses withstand a severe climatic and snow regime with year-round unrestricted pasture. Even with a snow cover of 60 to 70 cm they graze either on the sparse grasses in the open conifer taiga, or on the sedge cover bordering saucer-shaped swamps scattered throughout the Yakutian taiga. Confirmation or rejection of the numerous propositions regarding the existence of the horse near the mouth of the Kolyma River during the Medieval period could only occur with the discovery of whole subfossilized skulls both in the layers of sites and outside them, as well as bits, stirrups, and the remains of saddles and other pieces of harness.

Reindeer (*Rangifer tarandus* L.)—(Pl. II:3a, 3b). Bones, and especially antlers, of the reindeer are greatest numerically. Pieces and stumps of antlers of small or young individuals, females, predominate. Tools and items of reindeer antler are also most common among the artifacts. This is true especially of artistic harpoon heads, which have complex fastenings for the line that joined them to the float. Apparently the viscosity, durability, and ease of working deer antler surpassed all other organic materials, including mammoth and walrus tusks. Available data are unclear as to whether the early Kolymans dealt only with wild reindeer or if in addition they had semitamed or domesticated ones.

The tradition of making spear points of deer antler existed among the northern tribes as early as the Upper Paleolithic.

The reindeer (caribou in North America) was from ancient times the primary source of sustenance for the early tribes in extreme Northeast Asia and North America. For the Eskimos of interior Canada, it remained significant up to the 1950s (Mowat 1963), providing food with both sufficient vitamins and calories for the extreme north, as well as material for clothing and bedding. In the Kolyma region, on the Anadyr' and the two Anyui Rivers, reindeer was relatively numerous over the nineteenth century. Herds of hundreds and thousands passed across the rivers here. The primary method of hunting deer consisted of spearing them in the water from light boats during mass crossings. This method of pursuit was the chief reason for the reduction in the number of deer at the beginning of the twentieth century (Portenko 1941). The residents of Cape Baranov probably hunted deer mainly with stationary bows and thong snares on paths in stream bottoms.

Mammoth (*Mammuthus primigenius* Blum)—(Pl. II:4). The mammoth remains in the layers of the sites were only pieces of tusk and miscellaneous items made of it. Artifacts of mammoth tusk were not as many as might have been expected considering the wealth of mammoth bone in the ancient tundras. Apparently made of mammoth tusk were occasional harpoon heads, arrowheads, and possibly a polar bear figure, a fat scraper, and a spoon—all found in the House in Vtoraya Bay. In House 5 in Sarychev Bay were a figurine of a seal, a pendant, and an object in the form of a lyre. In House 1 were a button in the form of a "winged object" and a small model of a knife. Mammoth tusks found on the northern coasts were probably used even at that time in trade with tribes who lived to the south.

Birds

The remains of birds are relatively few in number. They are represented, as should be expected, by large hunted species.

Whooper swan (*Cygnus cygnus* L.). The upper beak of an adult bird was preserved, as well as pieces of humeri of subadult specimens. The dimensions and proportions of the front part of the upper beak and the arrangement of the nostrils confirm that it belongs to a whooper swan (Pl. II:5). The whooper swan is a common bird even at present in the taiga and forest-tundra of extreme northeastern Siberia.

The earliest residents of Cape Baranov could have hunted swans much farther south of their settlement.

Bean goose (*Melanonyx fabalis* Lath.). The remains of a bean goose are easily identified by the dimensions and form of the tarsometatarsus and digits (Fig. 2:6) and by pieces of long-bones. At present the bean goose is a large species of goose in the tundra and forest-tundra of Northeast Asia. The modern residents of the Northeast hunted and hunt them predominantly when they molt at the end of June-beginning of July, driving the birds into nets or pursuing them with clubs in boats. The hunting was done predominantly in shallow lakes and water courses.

●

Conclusions

The species composition and characteristics of preservation of the bone remains (see Plates I and II) in the layers of the ruins of the early dwellings at Cape Baranov (east of the mouth of the Kolyma River) permit drawing the following conclusions:

1. The early residents of Cape Baranov were typical subsistence hunters. They used a rather large percent of species of local land animals and substantially fewer of the sea mammals that lived close to the coast of extreme northeastern Siberia. Birds were used in a lesser degree, and fish even less. No remains of the last were found, which corroborates the observations of Canadian naturalists that in the extreme north fish did not represent a food of full value. The North American Eskimos avoided living on fish for precisely this reason.

2. The following were, in decreasing order, of greatest significance in hunting, daily life, and the food ration of the early residents at Cape Baranov: reindeer, seal, polar bear, and Arctic fox. In second order were: walrus, fox, hare, sable, and wolf. The domestic animals were the dog and, possibly, the horse. In summer, birds were widely used: the bean goose and whooper swan.

3. The methods of obtaining the enumerated animals were probably not much different from those practiced by the Asiatic Chukchi, Evenk, and American Eskimos up until the time of the huge delivery of European and American firearms and steel traps to extreme northeastern Siberia and to the tundra of Canada and Alaska. Hunting was evidently dominated by the harpoon, bow, and a small set of more or less developed self-operating types of traps and thong snares.

4. The most perfected and favorite tool of the residents was undoubtedly the harpoon with a complex detaching and toggling head (Okladnikov and Beregovaya, this volume, Figure 9:11). These harpoon heads were made predominantly of reindeer antler.

5. The species composition of the faunal remains found in the excavated sites attests to the fact that the mammal fauna already had a fully modern appearance. No remains of typical Pleistocene animals of the mammoth fauna—the mammoth itself, woolly rhinoceros, primitive aurochs, muskox, or saiga—were found there. Even associating horse bones with their wild form is in doubt. The large land animals that lived there, as at present, were the wolf, polar bear, and reindeer. In addition, the wolverine, brown bear, marmot, squirrel, ground squirrel, moose, and snow sheep lived close by or somewhat to the south.

Plates

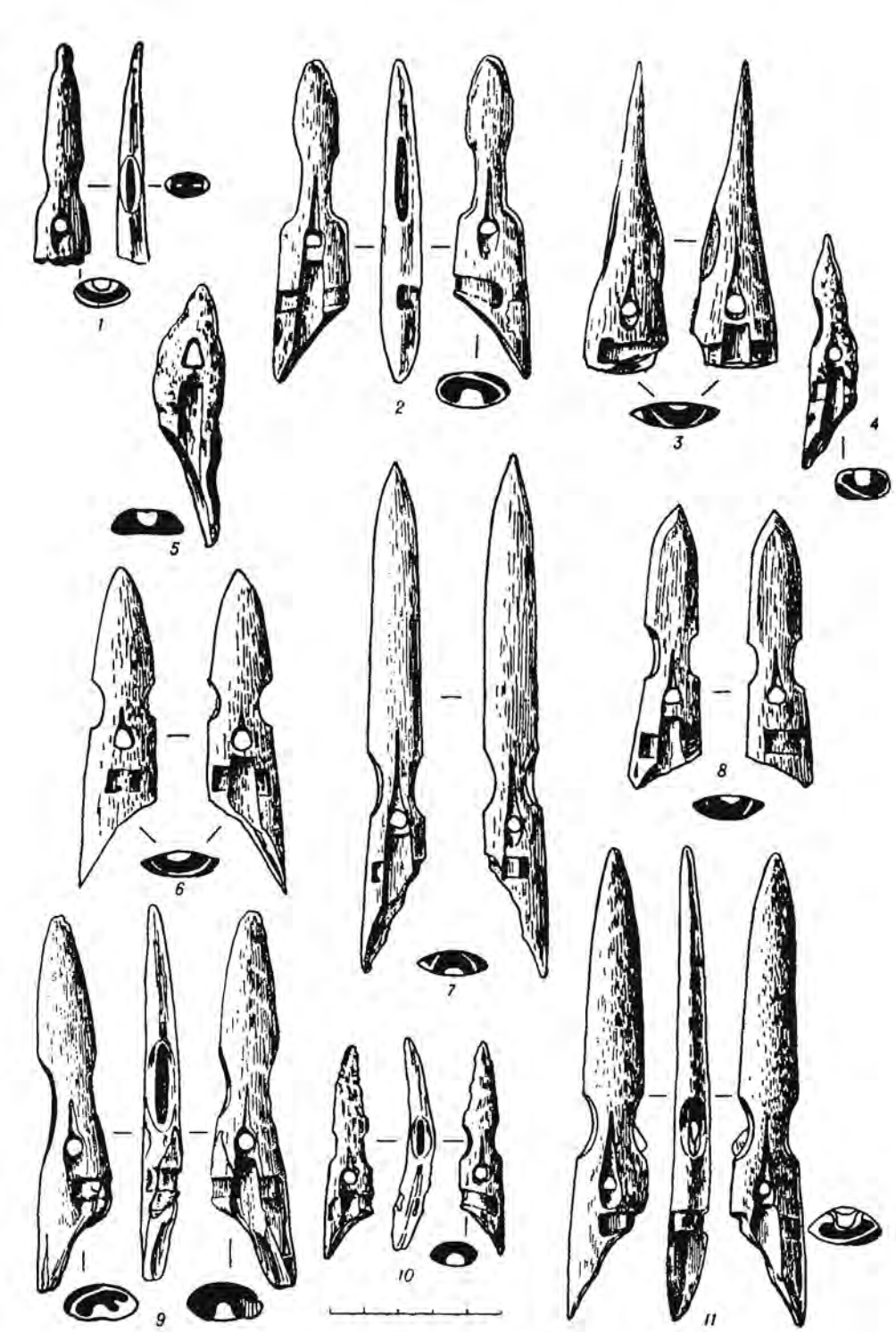


Plate 1. Birnirk type harpoon heads. First type from Cape Baranov: 3, 6–8, 10—Sarychev Bay, House 1 (Nos. 16, 25, 15, 24, 162); 1, 4, 5, 9, 11—House 5 (Nos. 4, 2, 5, 3, 28); 2—House in Vtoraya Bay (No. 4). Close to the first type: 3 (No. 16—House 1) and 4, 5 (Nos. 2, 5—House 5).

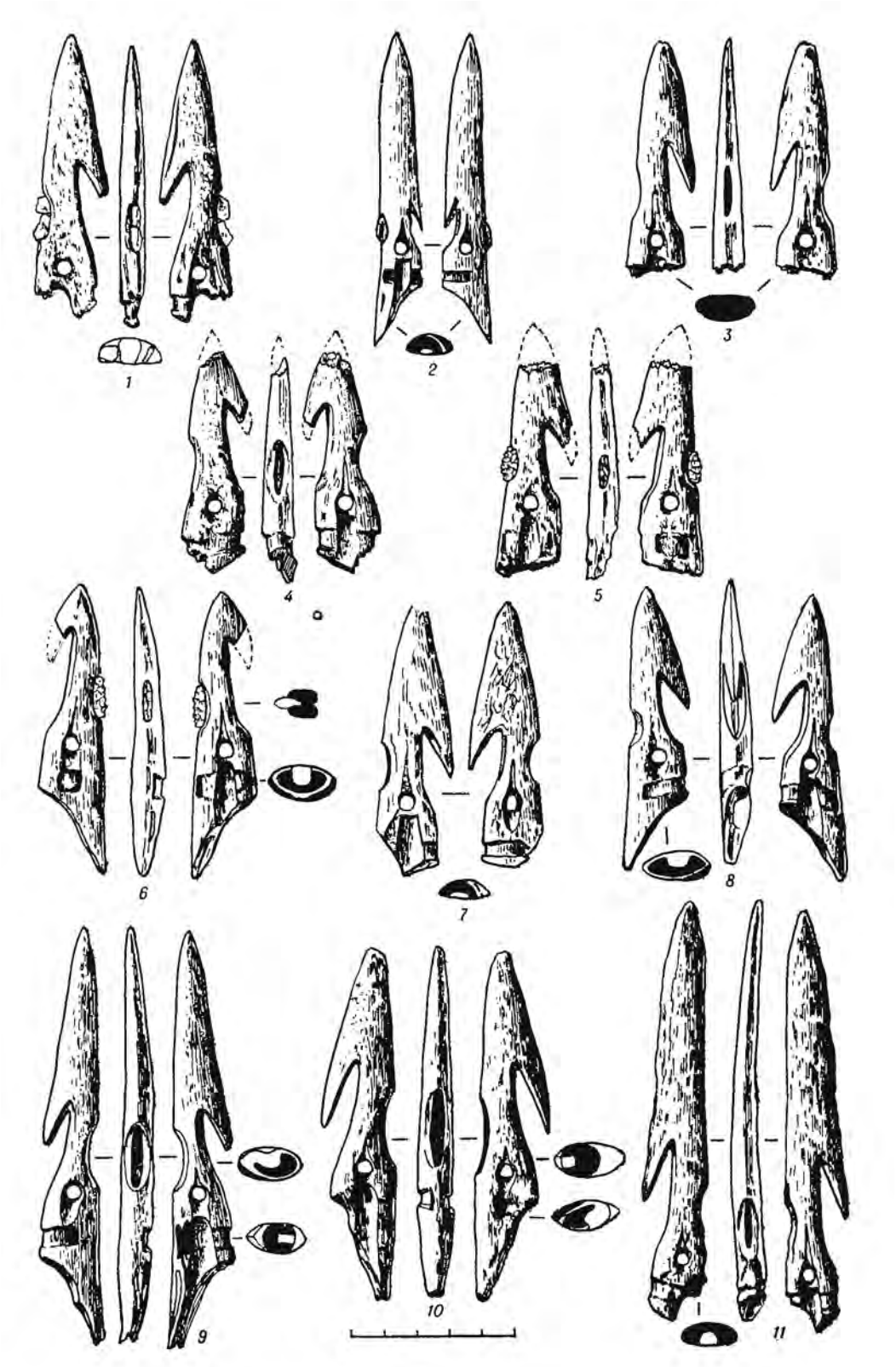


Plate 2. Birnirk type harpoon heads. Second type from Cape Baranov: 2–8, 11—Sarychev Bay, House 1 (Nos. 19, 22, 23, 20, 18, 21, 17, 14); 1, 9, 10—House 5 (Nos. 1, 26, 27).

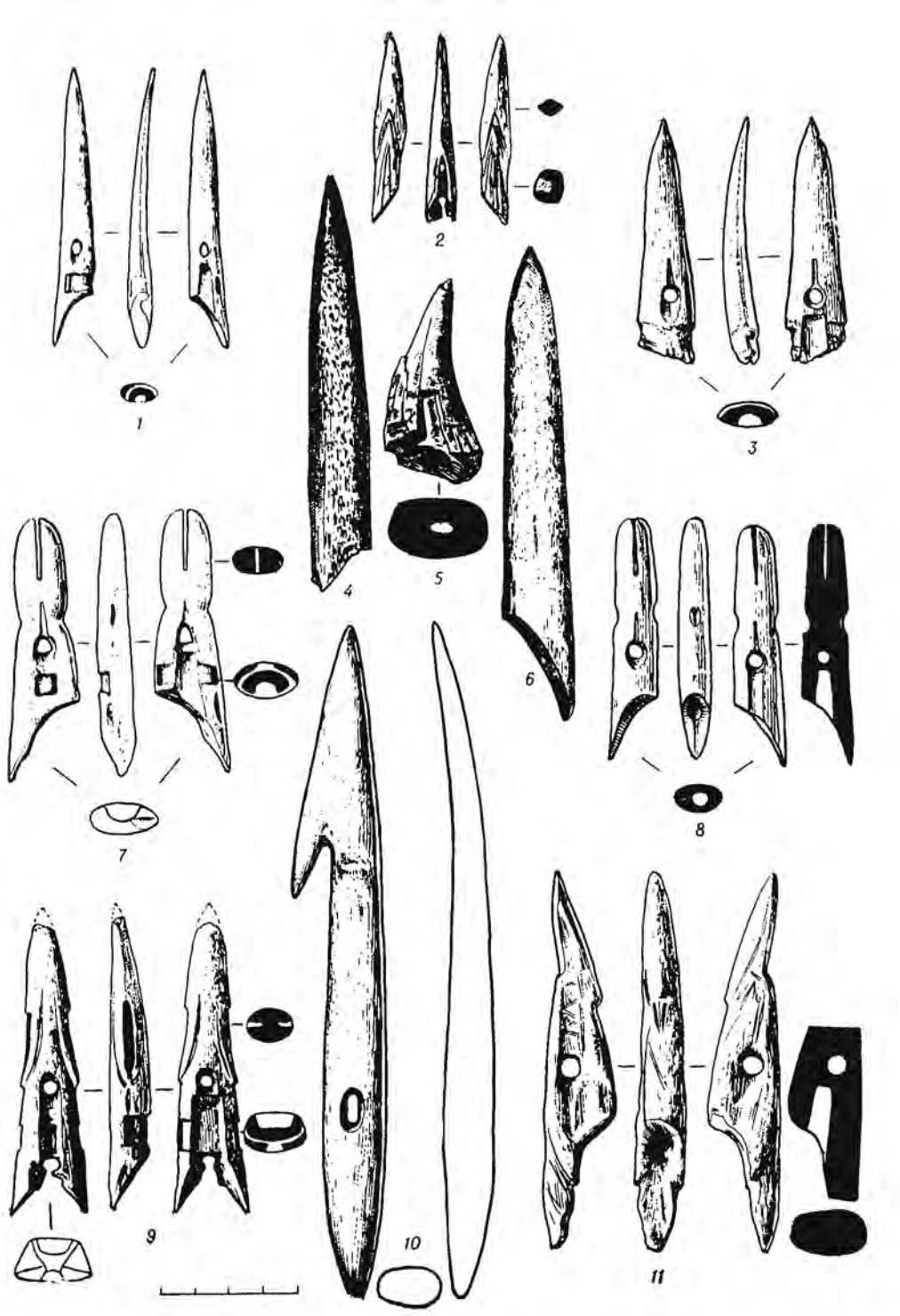


Plate 3. Harpoon heads: 9, 11—Old Bering Sea type, House in Vtoraya Bay (Nos. 1, 2); 7, 8—Punuk type, Sarychev Bay, House 1 (Nos. 26, 27); 1, 3—Thule type, Sarychev Bay, House 1 (Nos. 29, 28); 2—atypical, House in Vtoraya Bay (No. 3); 10—barbed, House 1 (No. 13); 4–6—harpoon head blanks, House 1 (Nos. 4, 658, 652).

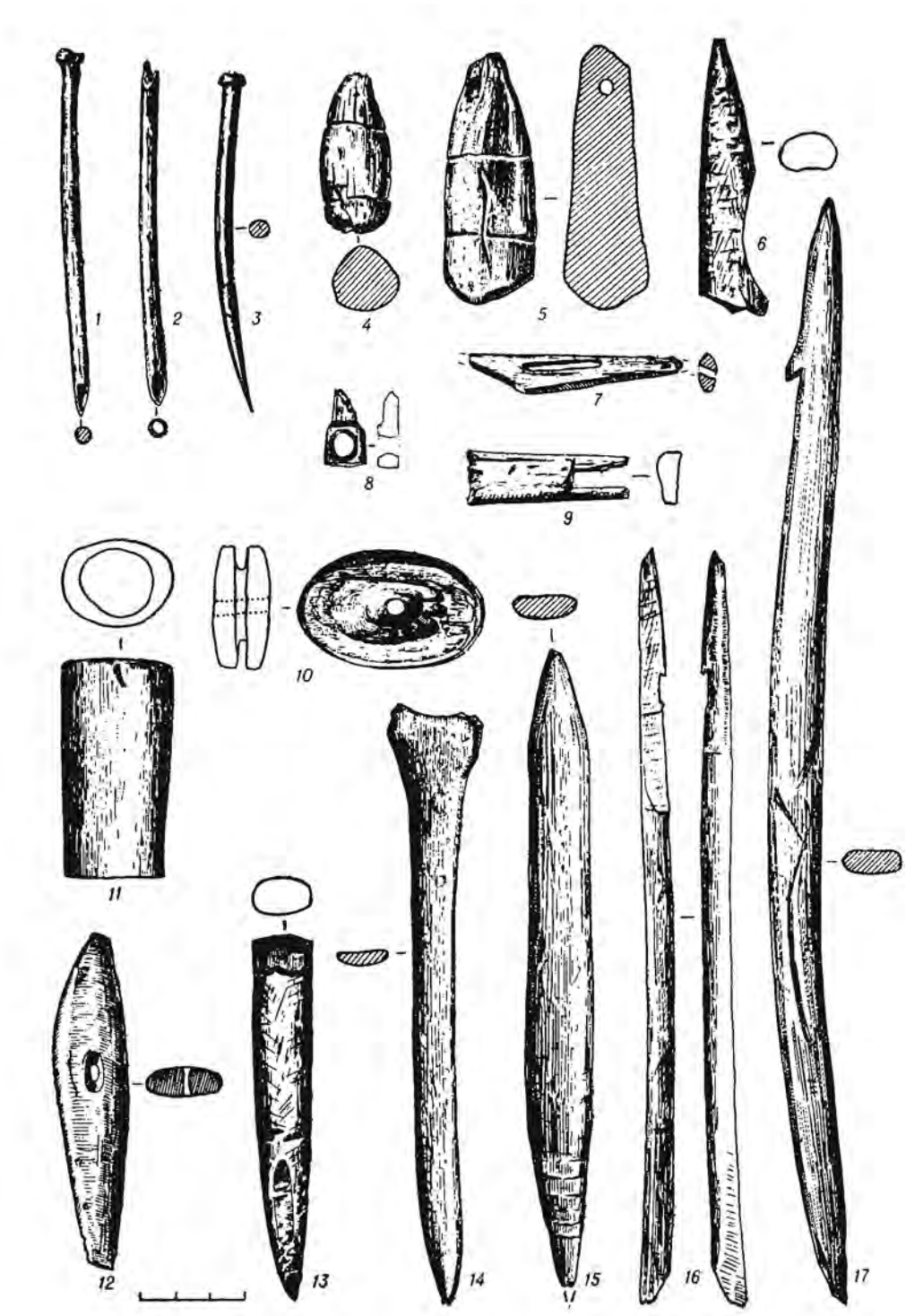


Plate 4. Parts of harpoons, objects of walrus hunting, and fishing equipment: 1–3—wound pins; 6—piece of a harpoon ice pick; 7—meat hook, or boat hook; 8—finger rest; 11—head of a harpoon shaft; 12—foreshaft, Sarychev Bay, House 1 (Nos. 45, 46, 164, 668, 32,167, 719, 30); 13—piece of harpoon ice pick, House 5 (No. 8); 10—mouthpiece for harpoon float, House in Vtoraya Bay (No. 15); 4, 5—sinkers; 9—shuttle; 14—spike for weaving nets; 15—fishing ice pick; 16, 17—lateral barbs of a leister, Sarychev Bay, House 1 (Nos. 7, 8, 891, 37, 105, 678, 124).

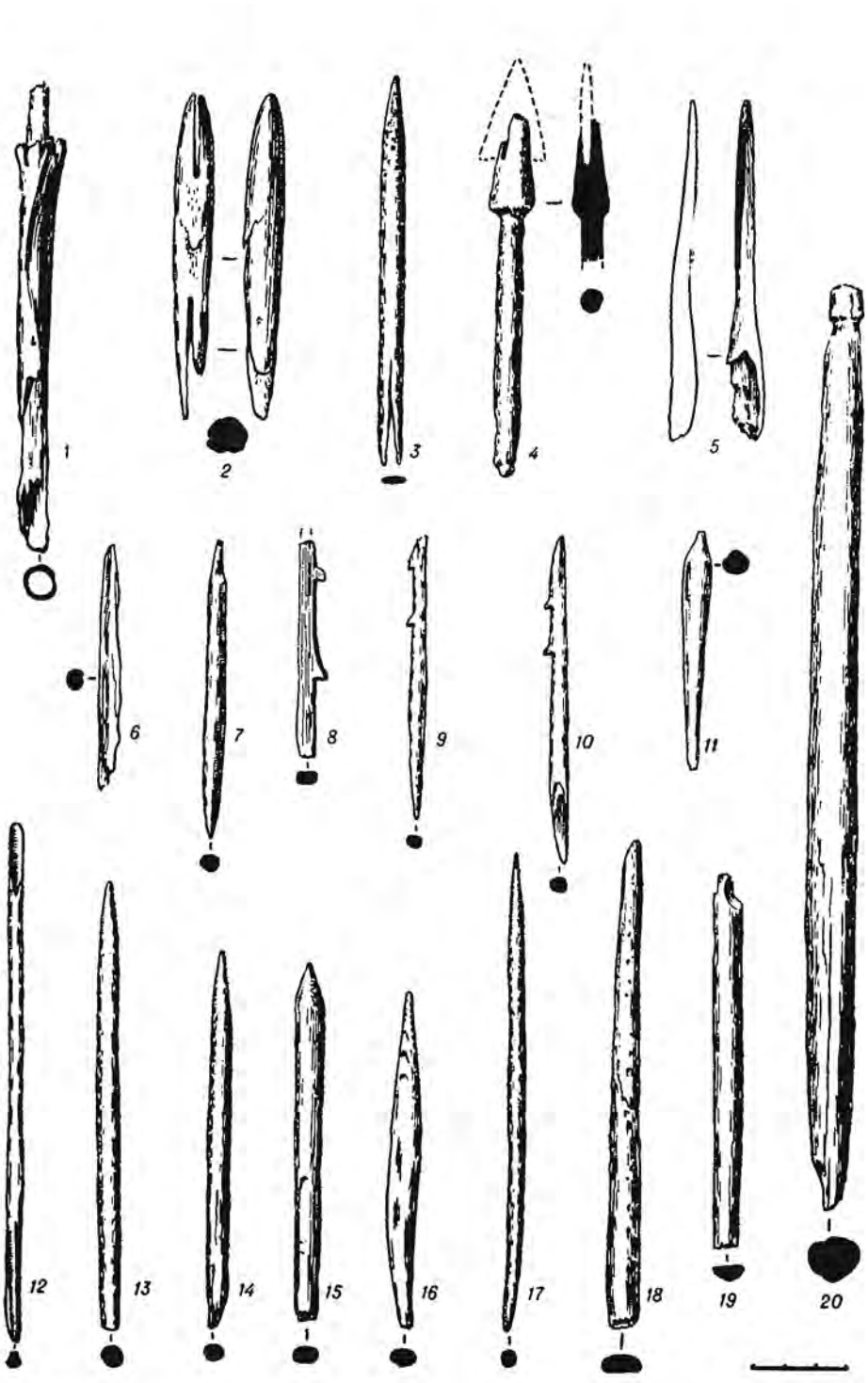


Plate 5. Hunting Equipment: 2, 3, 5–7, 11–18—arrowheads, Sarychev Bay, House 1 (Nos. 58, 899, numberless, 889, 54, 63, 69, 906, 904, 55, 903, 57, 53); 4—the same, House in Vtoraya Bay (No. 14); 8–10—bird darts, House 1 (Nos. 163, 165, 166); 19—piece of a bow, same place (No. 864); 20—the same, House in Vtoraya Bay (No. 204); 1—handle of long-bone with inserted wooden rod, House 1 (No. 59).

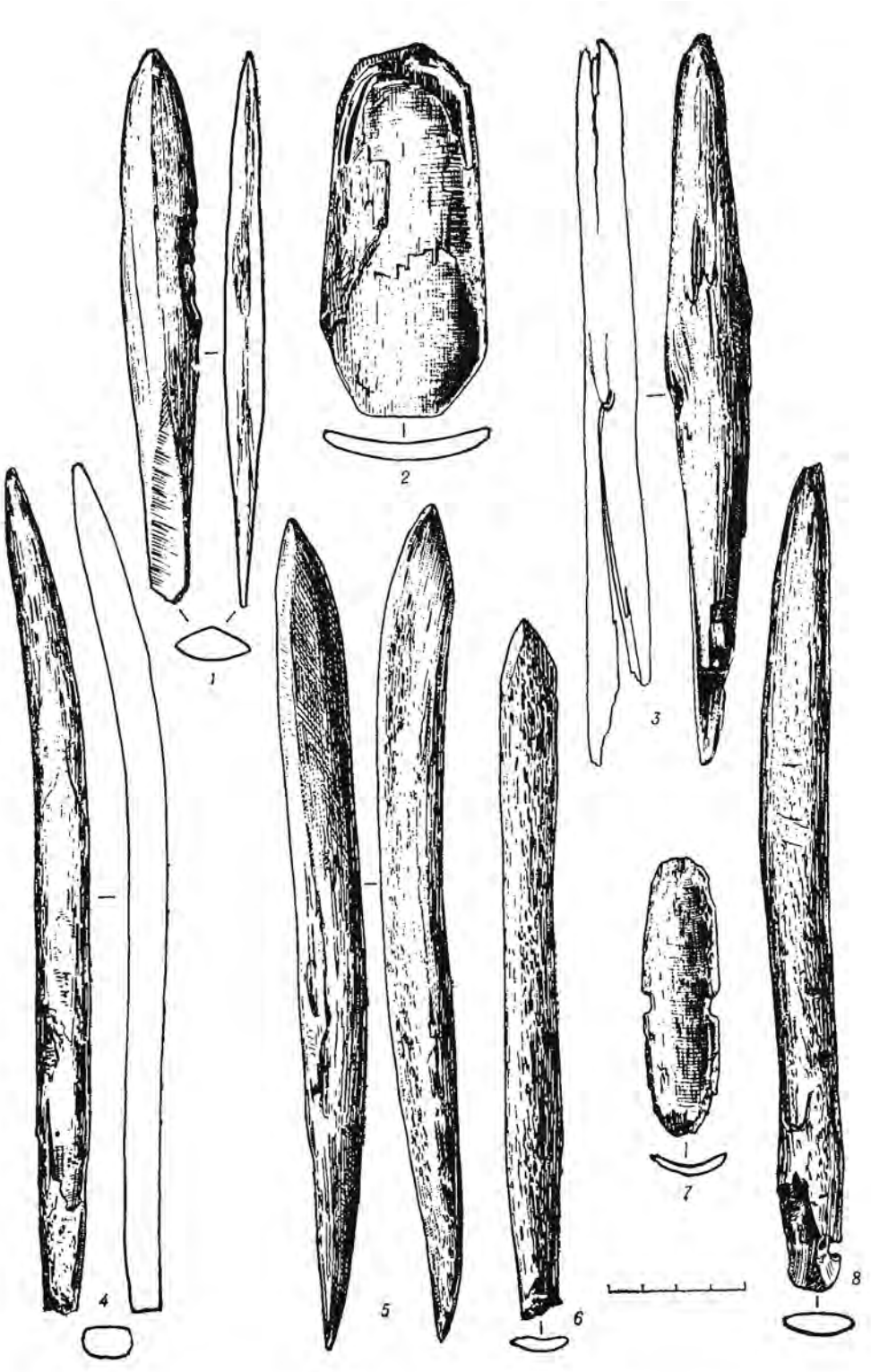


Plate 6. Hunting Equipment. Spear heads: 3–5—Sarychev Bay, House 1 (No. 107), House 5 (No. 19), and House in Vtoraya Bay (No. 12). Daggers: 1, 6, 8—House 1 (numberless and No. 715), House in Vtoraya Bay (No. 197); 2—wrist guard, 7—bow reinforcer (Nos. 661, 662).

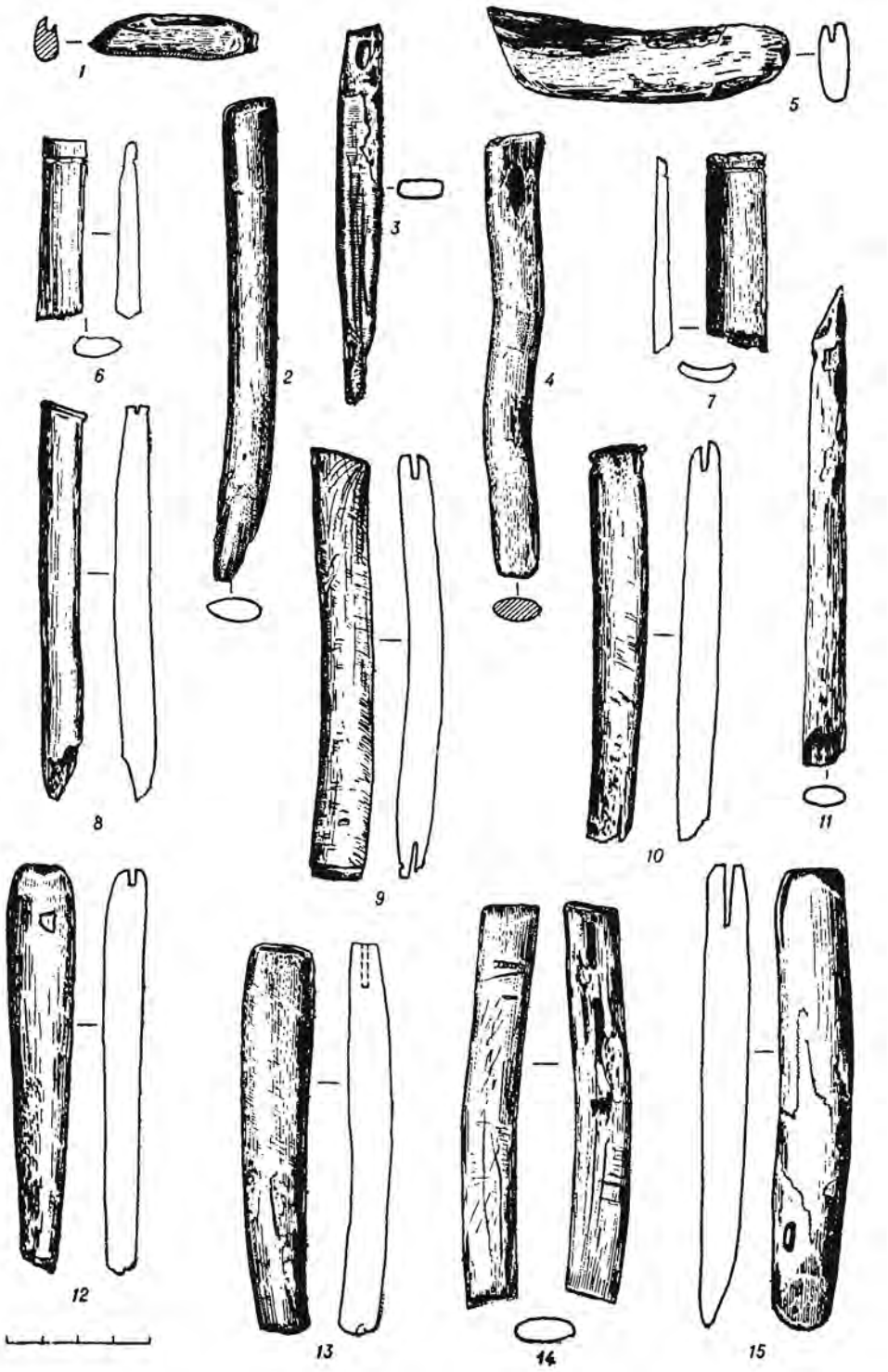


Plate 7. Tools for butchering carcasses and working hides: 1–5—handles of women's knives, Sarychev Bay, House 1 (No. 187) and House in Vtoraya Bay (No. 11); 2–4, 6–15—handles of men's knives, House 1 (Nos. 686, 39, 83, 81, 689, 692, 687, 688, 679); House 5 (Nos. 11, 12); House in Vtoraya Bay (No. 9, 8).

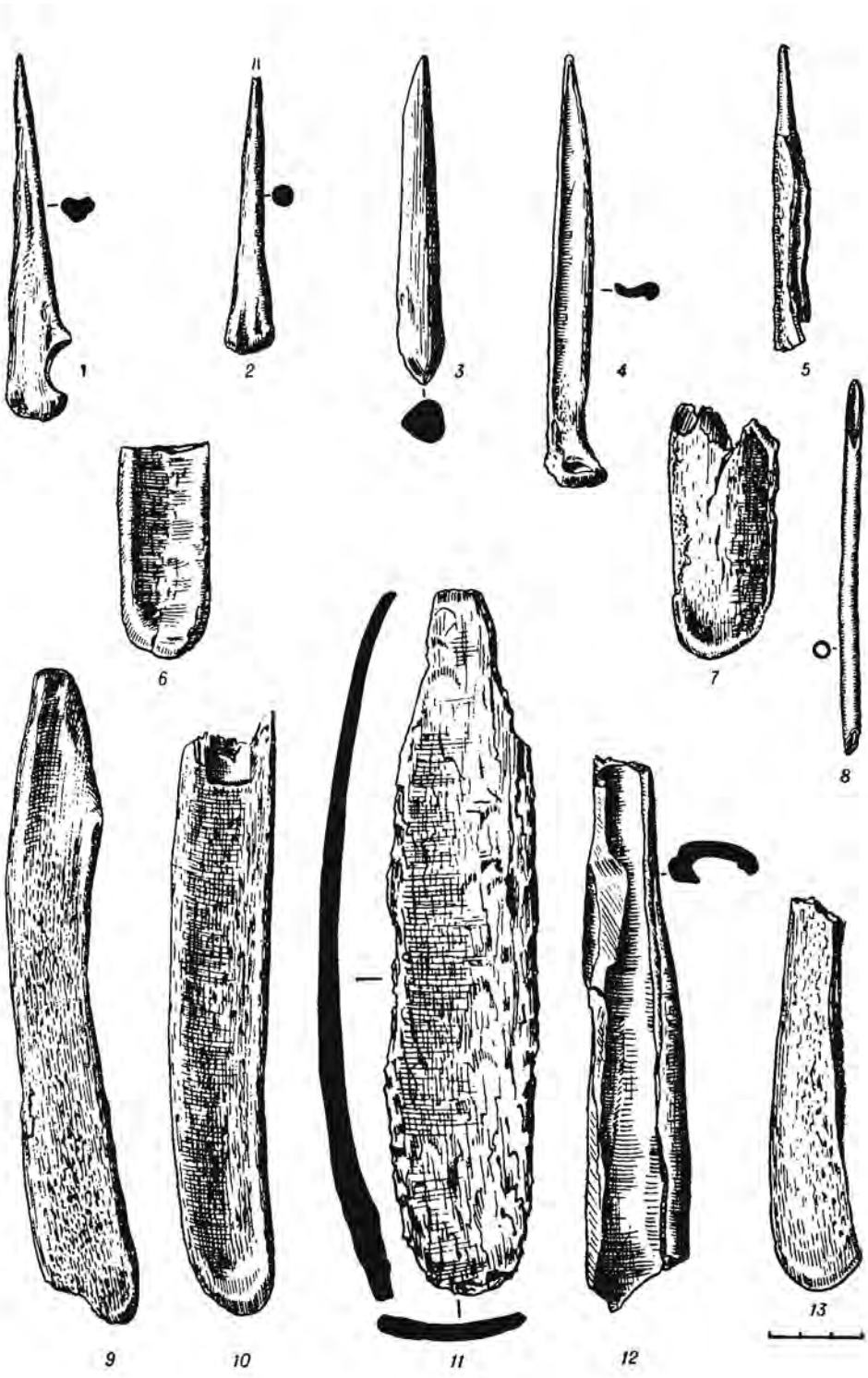


Plate 8. Tools for working hides: 1–5, 8—awls and punches, Sarychev Bay, House 1 (Nos. 671, 676, 41, 51, 56, 732); 6, 7, 9, 11, 13—paddles or polishers, House 1 (Nos. 93, 665, 710, 711, 709). 10—the same, House 5 (No. 18); 12—piece of a bone scraper, House 1 (No. 776).

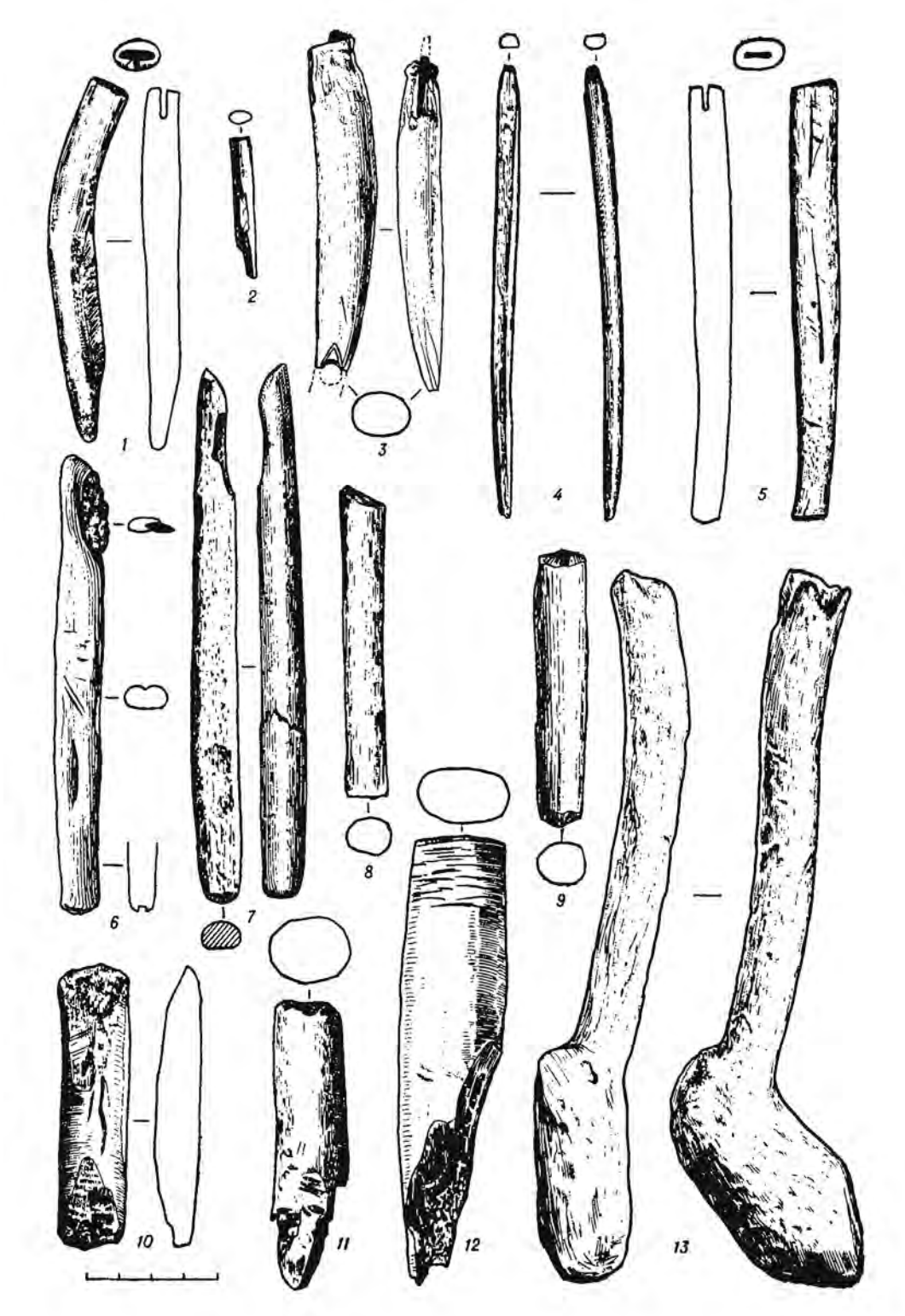


Plate 9. Tools for working wood and bone: 1, 3, 5, 8—handles of "planing" knives (Nos. 685, 62, 683, 684); 6, 7—the same, "curved" knives (Nos. 49, 38); 2, 4, 9—handles of miniature drills or knives (Nos. 936, 683a, 84); 10, 11—wedges (Nos. 708, 709), Sarychev Bay, House 1; 12—wedge, House in Vtoraya Bay (No. 190); 13—hammer, Sarychev Bay, House 5 (No. 22).

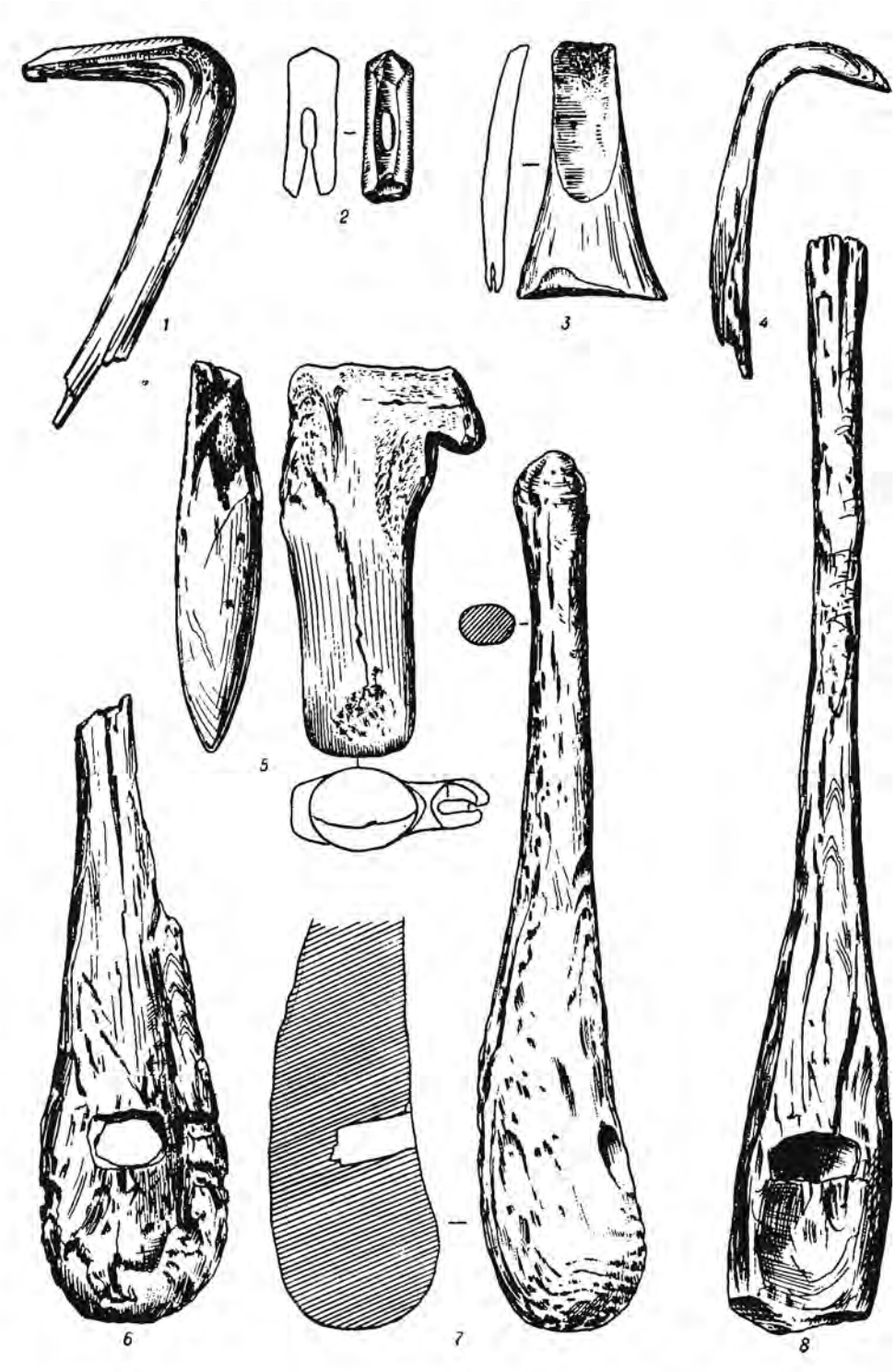


Plate 10. Tools for working wood and bone. Adze sockets: 2—House in Vtoraya Bay (No. 10), 3—Sarychev Bay, House 1 (No. 694). Adze or axe handles: 1, 4, 8—House 1 (Nos. 160, 860, 856); 6, 7—House in Vtoraya Bay (Nos. 188, 36); 5—antler axe, Sarychev Bay, House 5 (No. 21).

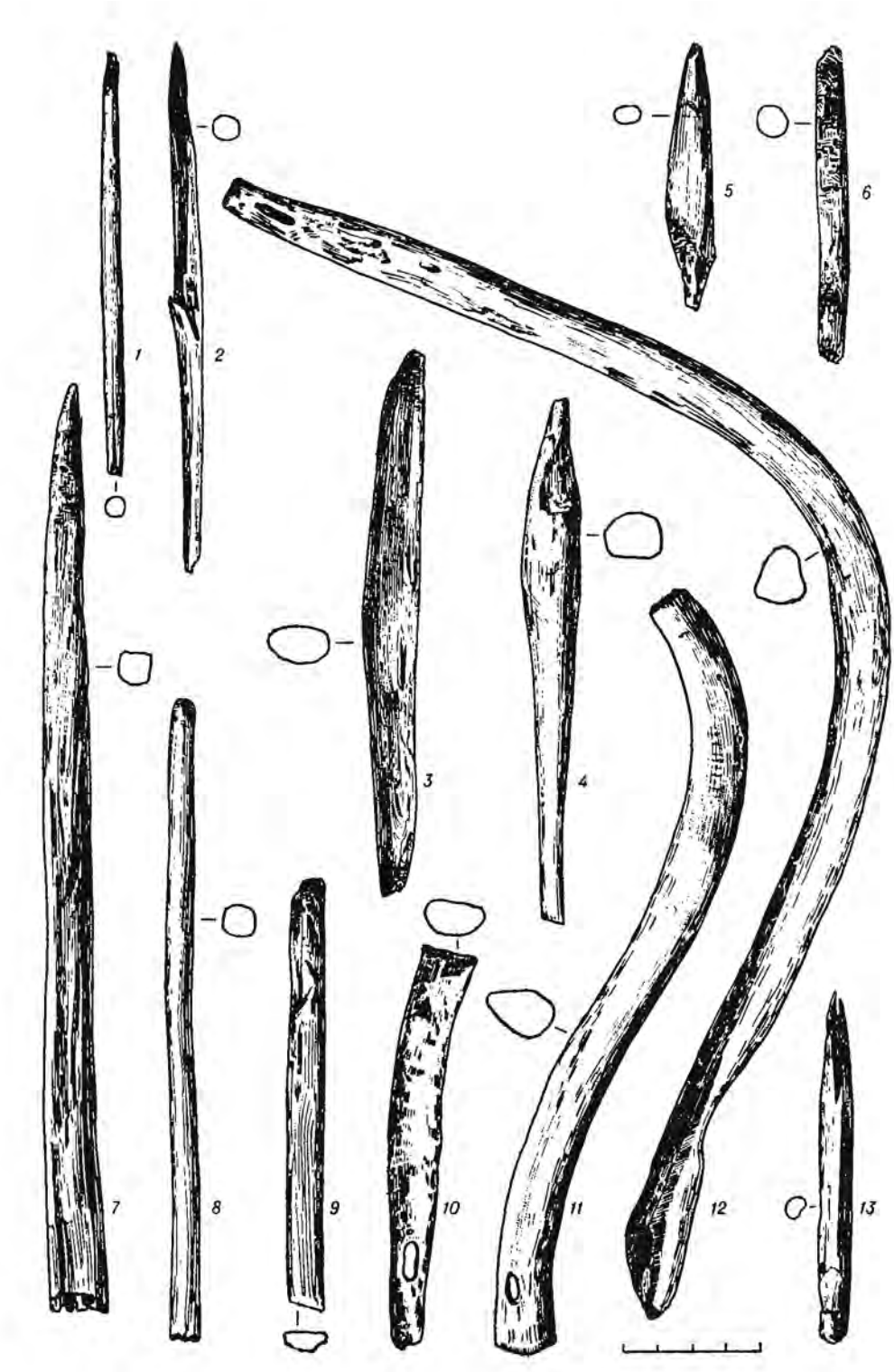


Plate 11. Tools for making fire with a drill: 1–9—drill shaft, Sarychev Bay, House 1 (Nos. 900, 896, 875, 892, 893, 891, 898, 878, 116); bow drills: 10–12—House in Vtoraya Bay (Nos. 199, 220, 210); 13—Sarychev Bay, House 1 (No. 874).

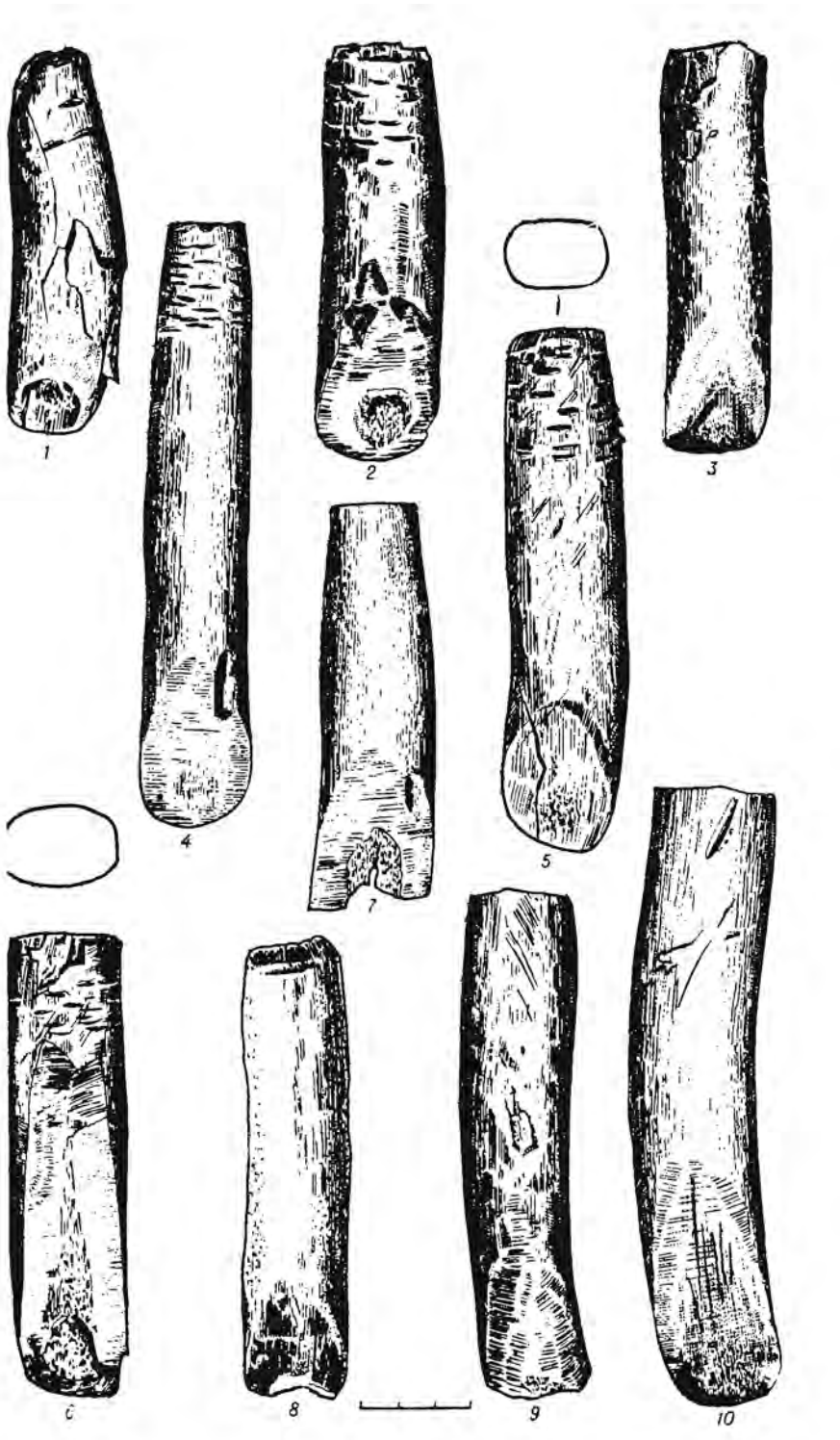


Plate 12. Tools for digging. Mattocks: 1–4, 7–10—Sarychev Bay, House 1 (Nos. 705, 3, 699, 698, 700, 2, 697); 6—House 5 (No. 20); 5—House in Vtoraya Bay (No. 6).

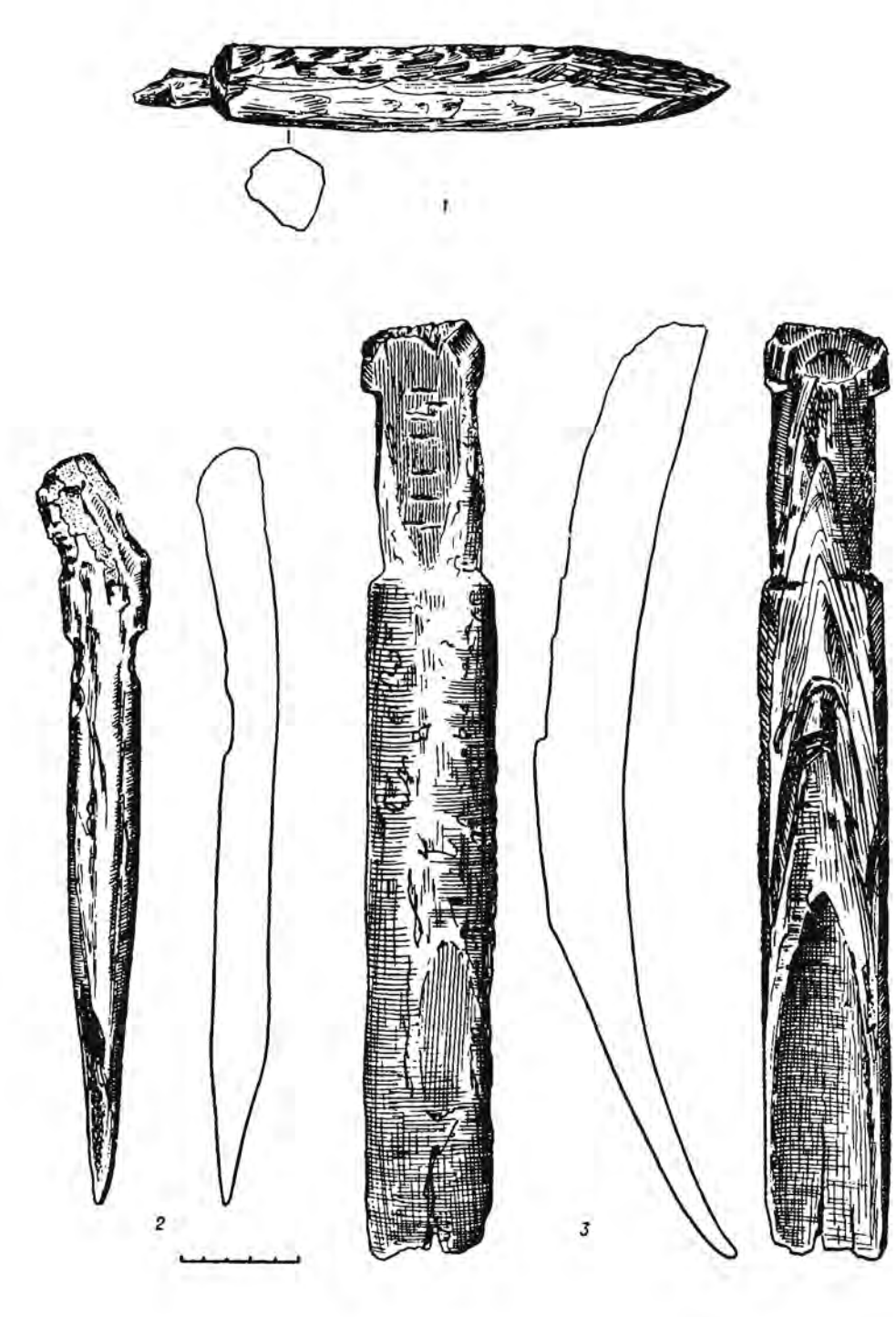


Plate 13. Tools for digging. Picks: 2—Sarychev Bay, House 1 (No. 734); 1—House in Vtoraya Bay (No. 194); 3—large mattock, same place (No. 187).

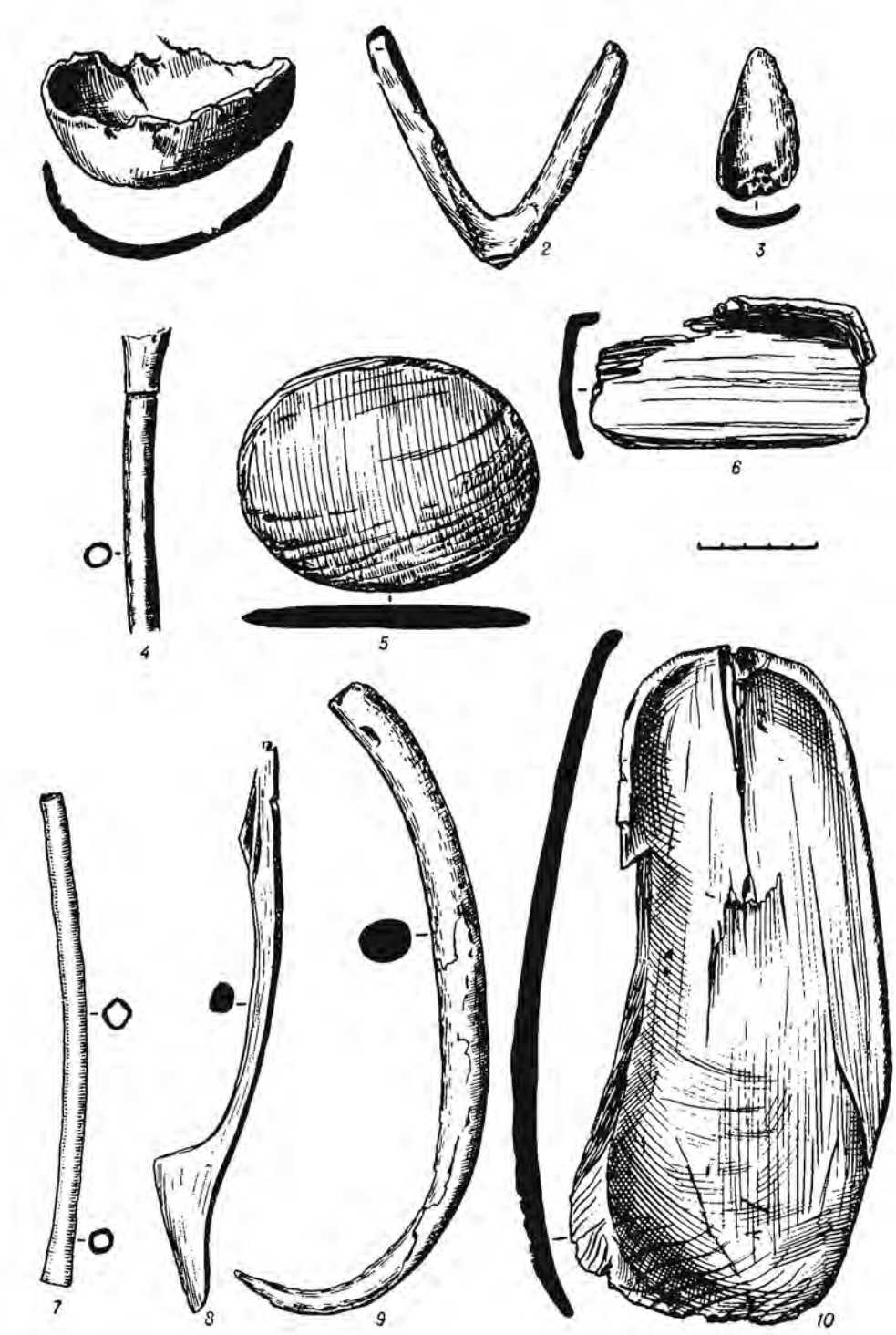


Plate 14. Objects of domestic use: 1—wooden cup (No. 24), House in Vtoraya Bay; 5, 6, 10—a bottom and wooden trays (Nos. 122, 766, 161, 123); 3—antler spoon (No. 663); 4, 7—drinking tubes (Nos. 724, 721); 2, 9—bone hooks (Nos. 766, 712), Sarychev Bay, House 1; 8—wooden hook (?) (No. 23), House 5.

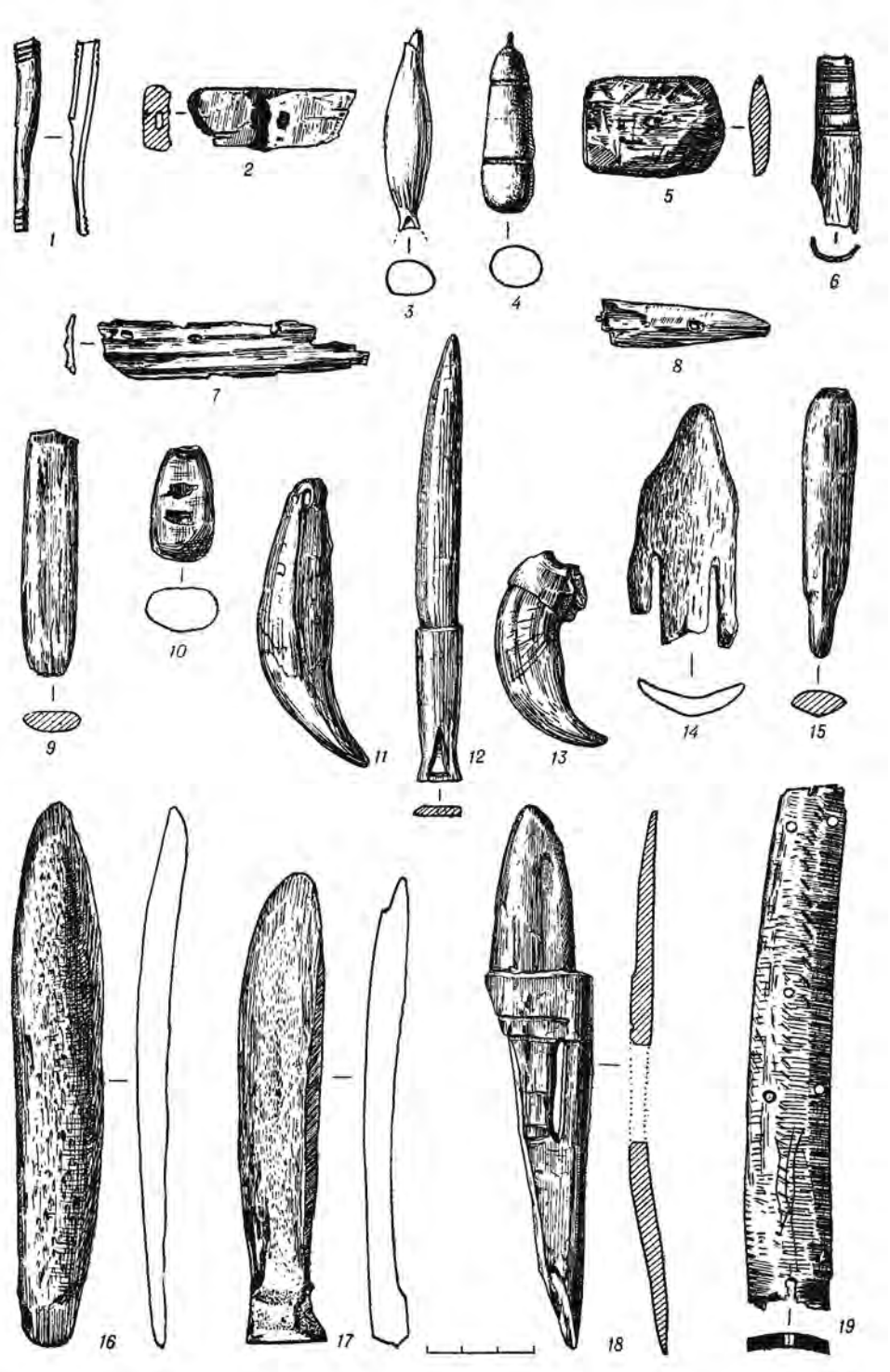


Plate 15. Items of dress and adornment: 1, 6—needles (Nos. 92, 7, 747); 2, 5—buttons (Nos. 34, 159); 8—headband (No. 162); 11, 13—amulets (Nos. 49, 35); 9, 15—instruments for sewing boots (Nos. 43, 42); 19—an armor plate (No. 10), Sarychev Bay, House 1; 7—same (No. 16), House 5; 10—button (No. 13), House in Vtoraya Bay. Art objects: 3—seal figurine; 4—pendant (Nos. 24, 29), Sarychev Bay, House 5; 12, 18—model knives (Nos. 90, 12); 14—figurine of flying bird (?) (No. 66); 16—fish figurine (No. 745), House 1; 17—bone instrument.

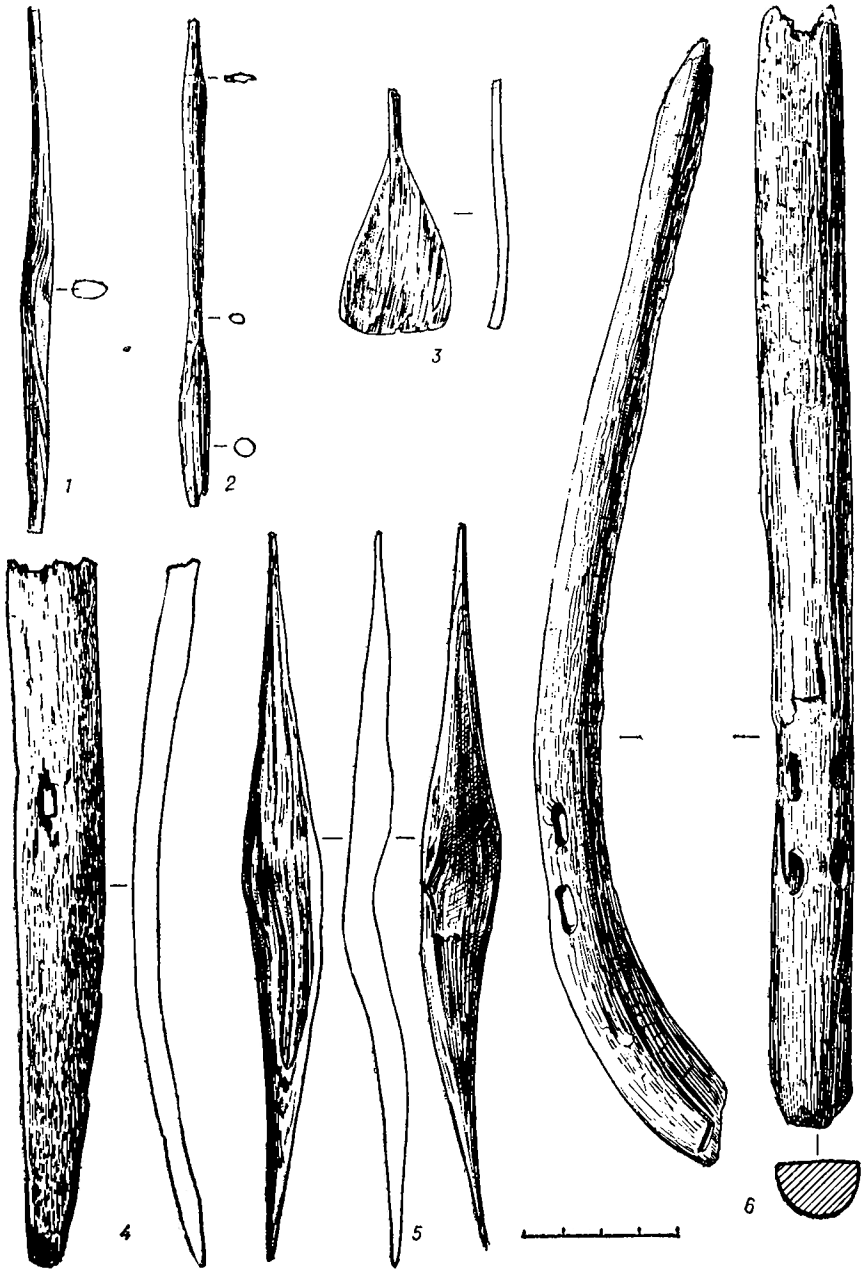


Plate 16. Means of transportation: 4, 6—sled runners (Nos. 715, 125); 1, 5—kayaks (toys) (Nos. 115, 890); 2, 3—paddles (toys) (Nos. 911, 91?), Sarychev Bay, House 1.

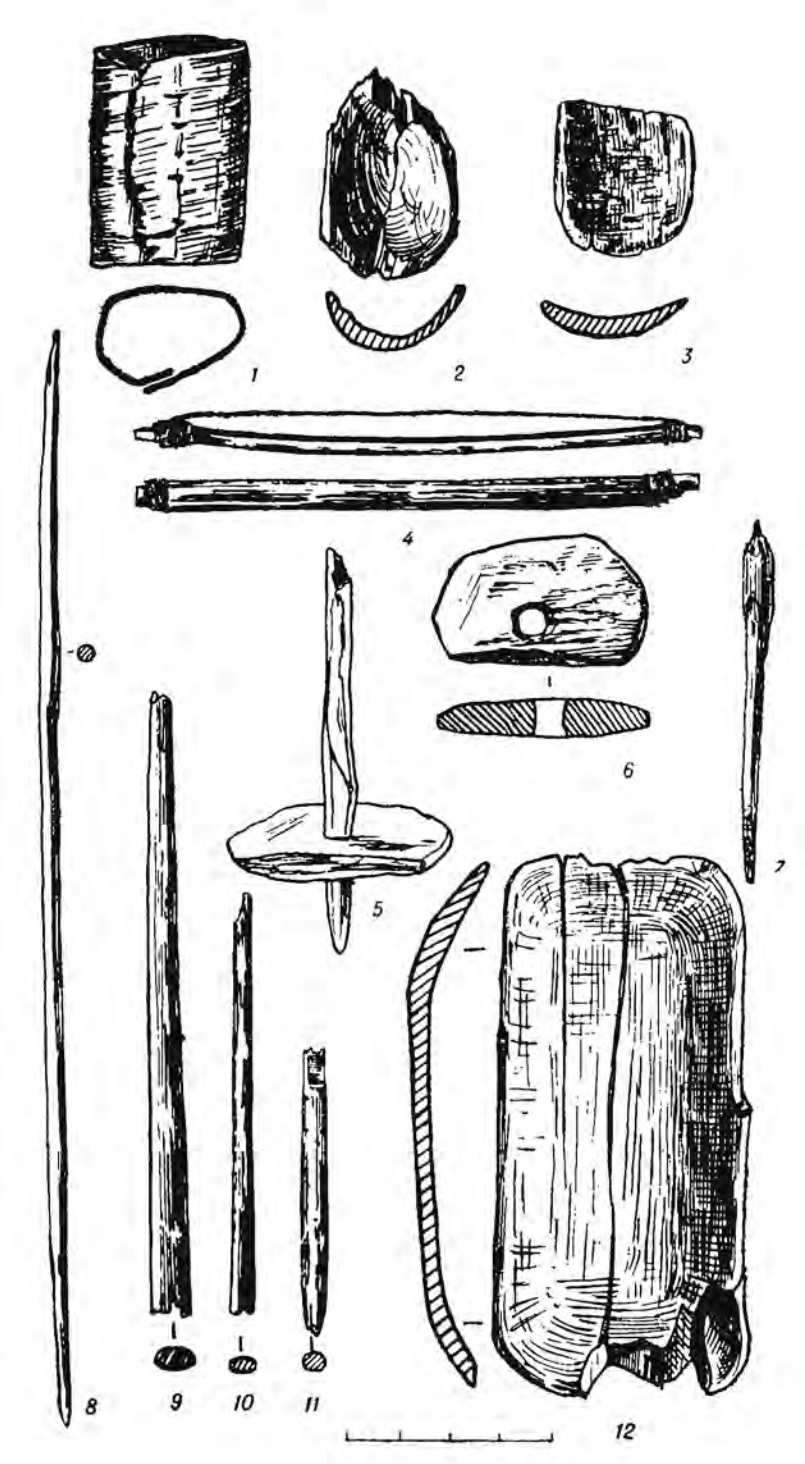


Plate 17. Toys: 4—bow (No. 100); 7–11—arrows (Nos. 901, 902, 65, 74, 914); 5, 6—tops (Nos. 89, 156); 1, 12—birch bark bowl (No. 1032) and dish (small tub) (No. 88); 3—fat scraper (No. 664), Sarychev Bay, House 1; 2—cup (No. 27), House in Vtoraya Bay.

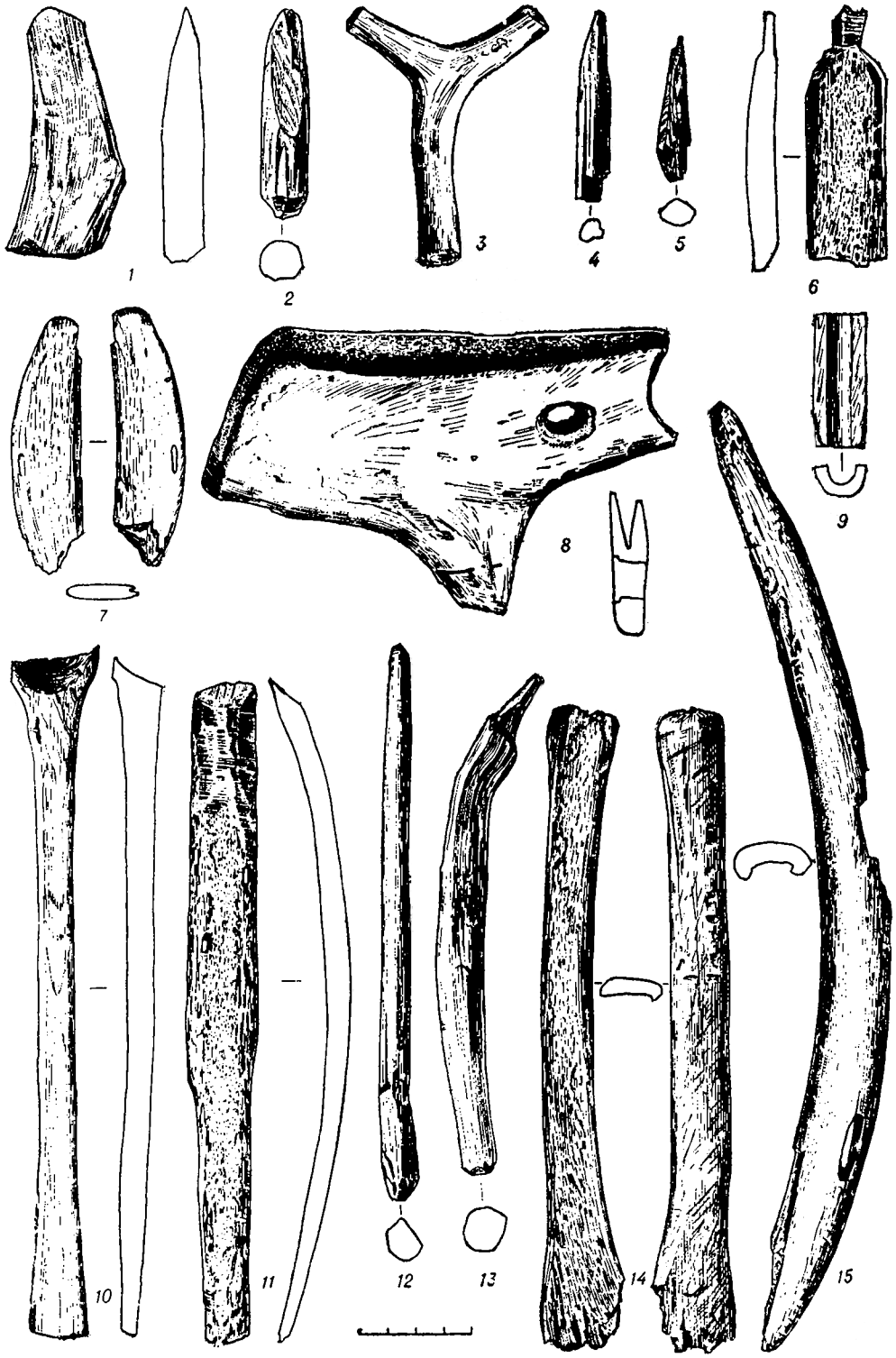


Plate 18. Items of indeterminate assignment and fragments of worked antler, bone, and wood: 1–8, 10–15—Sarychev Bay, House 1 (Nos. 829, 863, numberless, 947, 910, 667, 681, 736, 859, 714, 873, 869, 768, 713); 9—House in Vtoraya Bay (No. 200).

Plate 19. Worked deer antler: 1–3—pieces of antler cut longitudinally (Nos.792, 772, 806); 6, 8—same, cut transversely (Nos. 790, 793); 4, 5—same, with deep longitudinal cut (numberless and No. 737); 7—drilled segment of antler (No. 813); 9–13—cut pieces of antler (Nos. 808, 769, 785, 787, 783), Sarychev Bay, House 1.

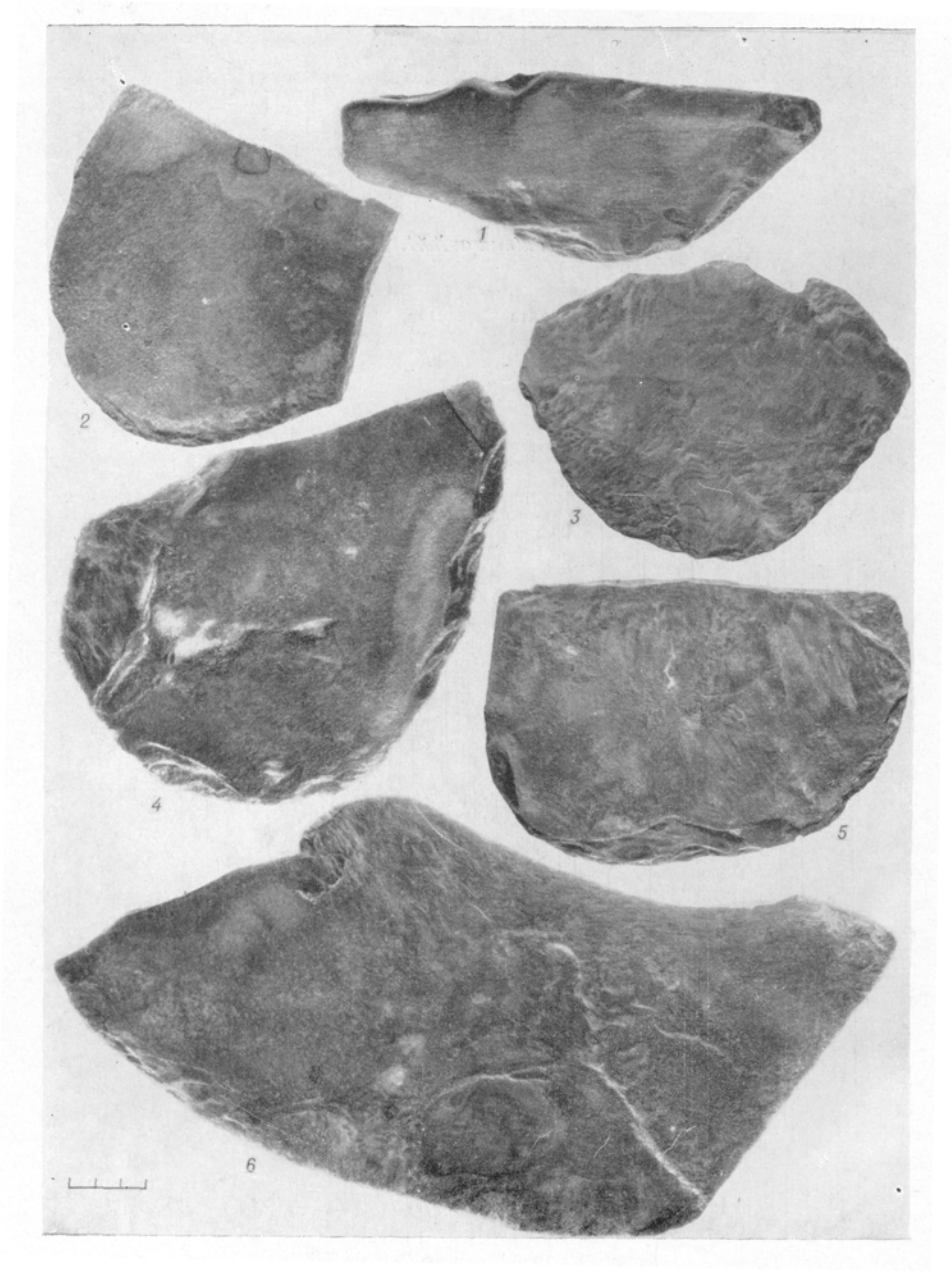


Plate 20. Stone tools. Whale knives: 1, 3, 5—Sarychev Bay, House 1 (Nos. 168, 173, 172); 4, 6—House 5 (Nos. 32, 3); 2—House in Vtoraya Bay (No. 157).

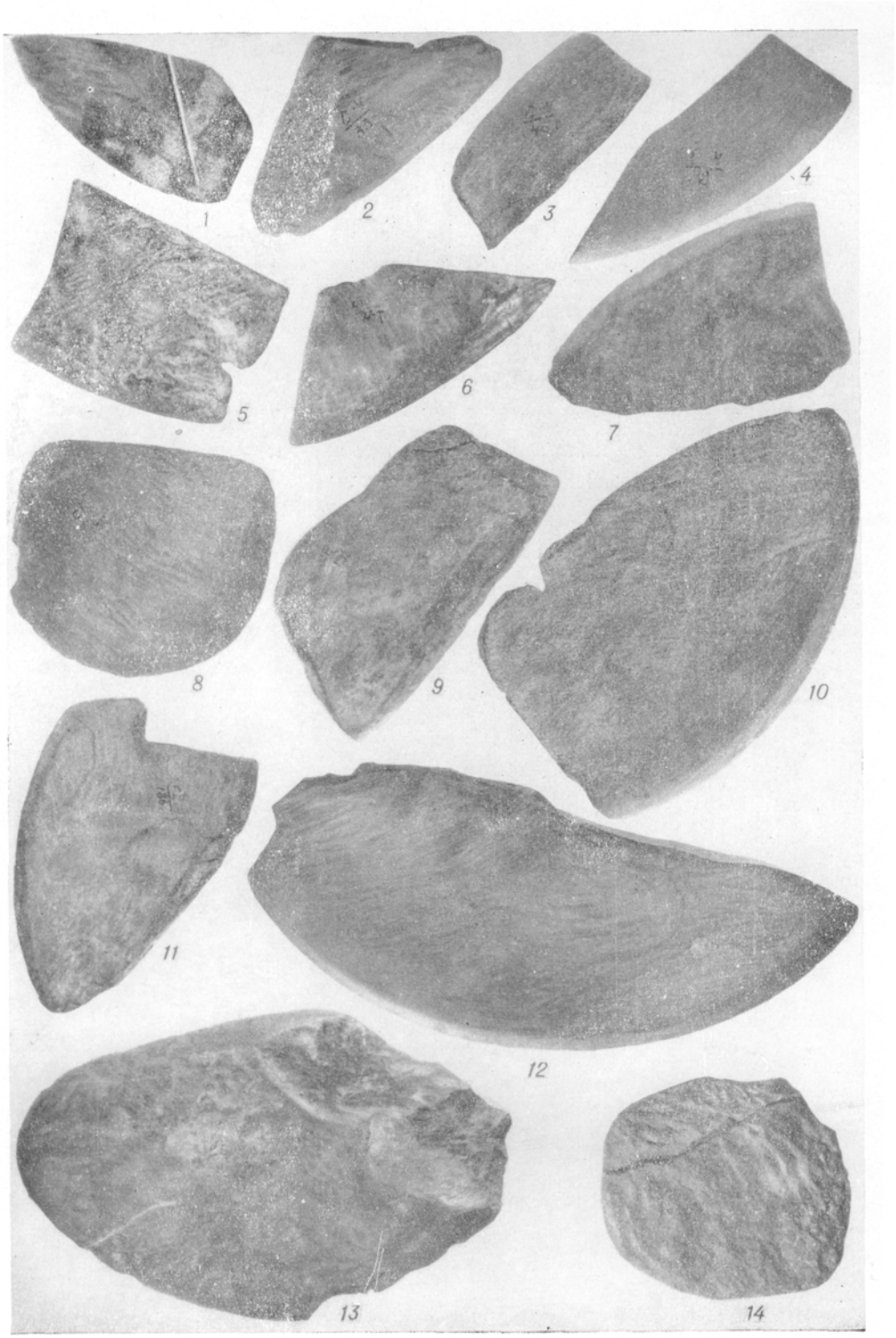


Plate 21. Stone tools. Women's knives: 1–4, 7—Sarychev Bay, House 5 (Nos. 36, 33, 48d, 38, 39); 5, 6, 8–11, 13—House 1 (Nos. 196, 227, 180, 191, 152a, 186, 152); 14—House in Vtoraya Bay (No. 49).

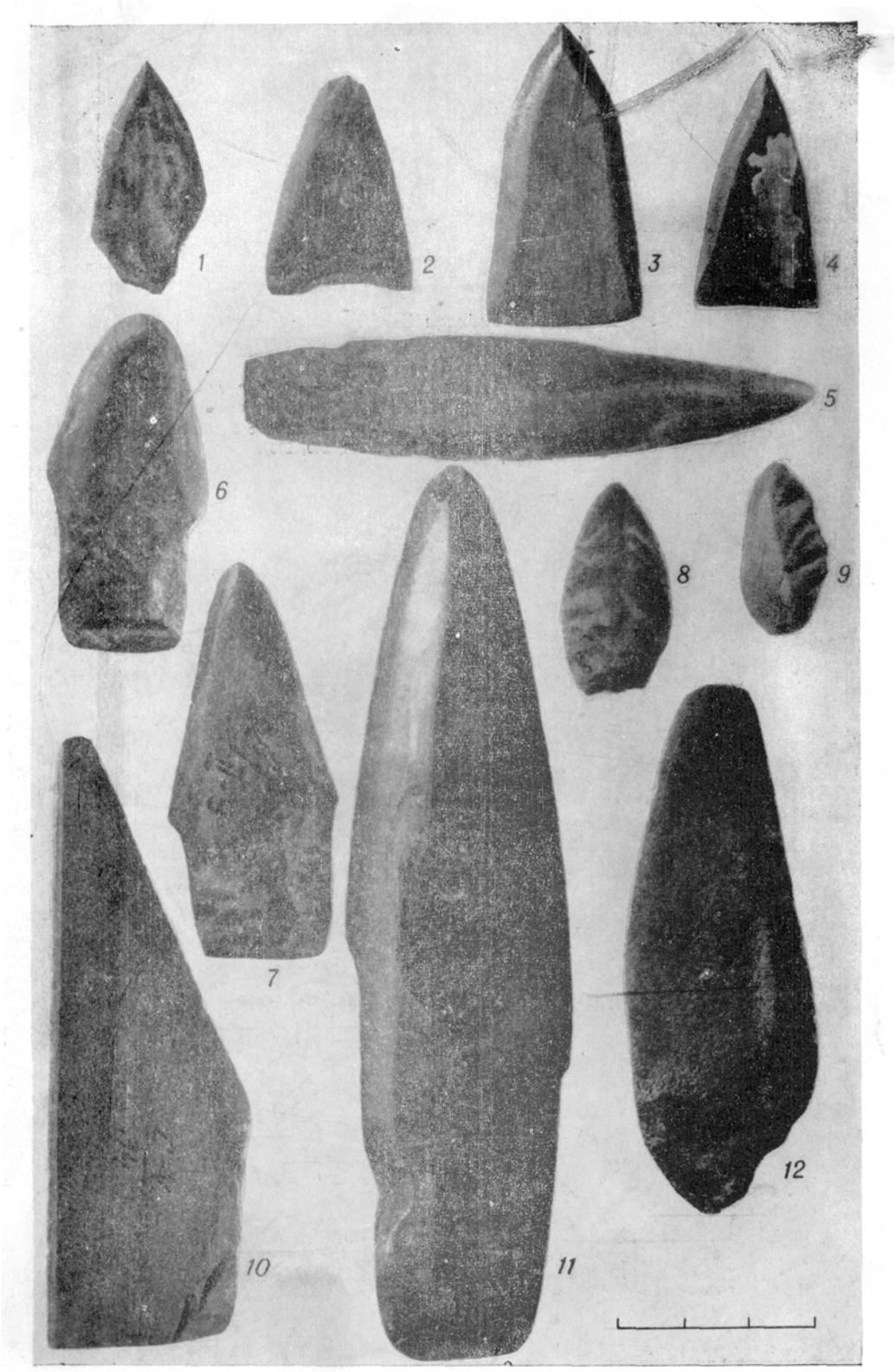
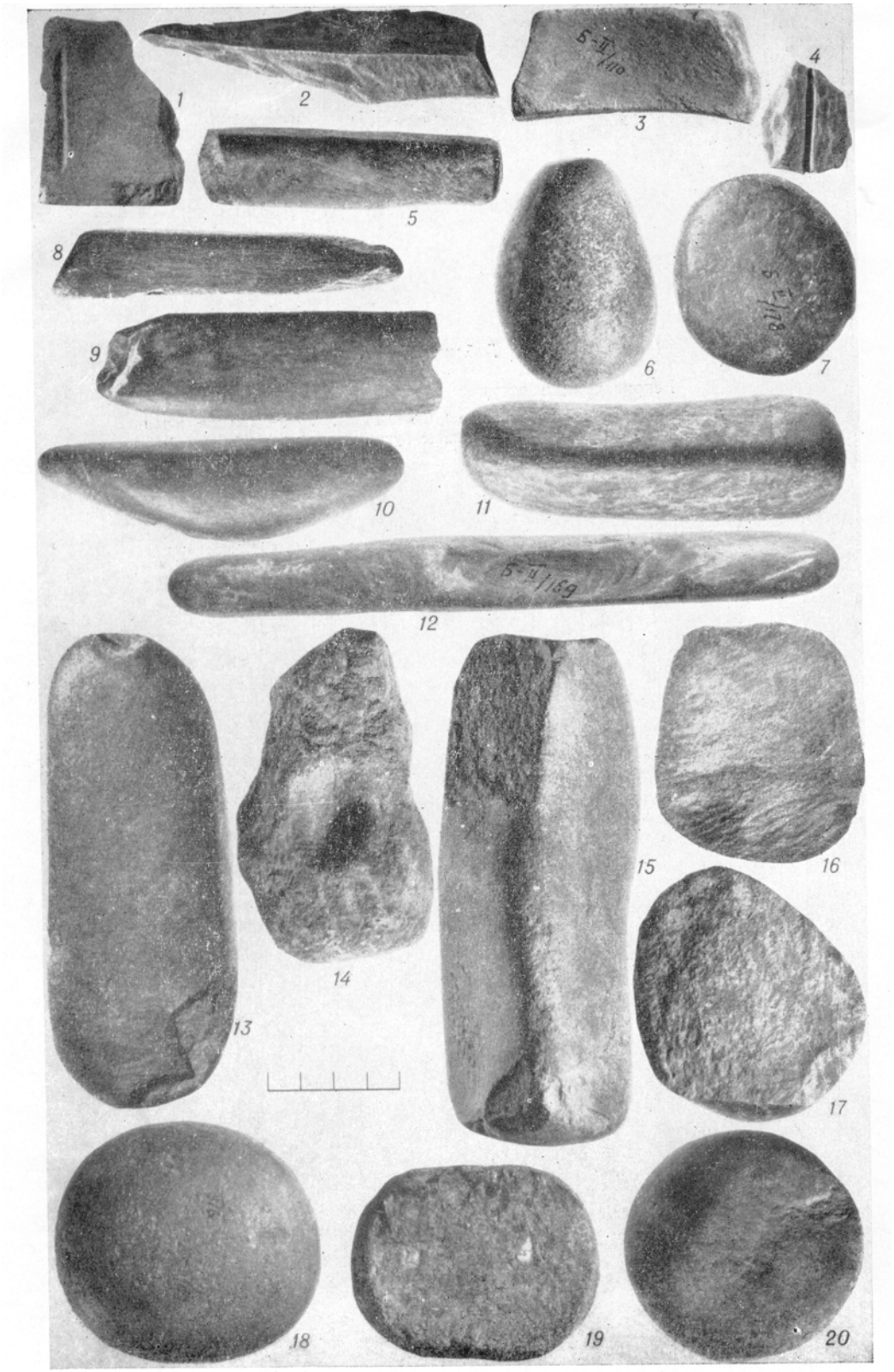


Plate 22. Stone Tools. Terminal and lateral inset blades and harpoon heads: 1–5, 8–9—Sarychev Bay, House 1 (Nos. 145–150, 151). Men's knives: 6, 12—House 1 (Nos. 138, 136); 10—House 5 (No. 34); 7, 11—House in Vtoraya Bay (Nos. 175, 20).

Plate 23. Stone tools. Planing knives: 1, 2, 3, 7, 10—Sarychev Bay, House 5; 5, 8, 13—House 1 (Nos. 267, 235, numberless); 4, 6, 9—House in Vtoraya Bay (Nos. 68, 177, 80). Discoid scrapers: 11, 16—House 5 (Nos. 50, 73); 12, 14, 15—House 1 (Nos. 248, 240, 243).

Plate 25. Stone tools. Whetstones and grinding slabs: 1—Sarychev Bay, House 1 (No. 314); 4—House 5 (No. 86); 8, 14—House in Vtoraya Bay (Nos. 111, 114). Pestles: 11—House 1 (No. 306); 12—House in Vtoraya Bay (No. 169); 2—perforator (No. 117). In the same place cobbles with traces of work (pressure flakers, anvils): 5, 9, 10—House 1 (Nos. 308, 309, 312); 7, 13—House in Vtoraya Bay (Nos. 178, 172). Hammers (batons): 6—House 5 (No. 49); 18—House 1 (No. 316); 15, 20—House in Vtoraya Bay (Nos. 173, 107); 19—grindstone (No. 315), House 1; 16, 17—cobbles broken in half (Nos. 260, 263), same place.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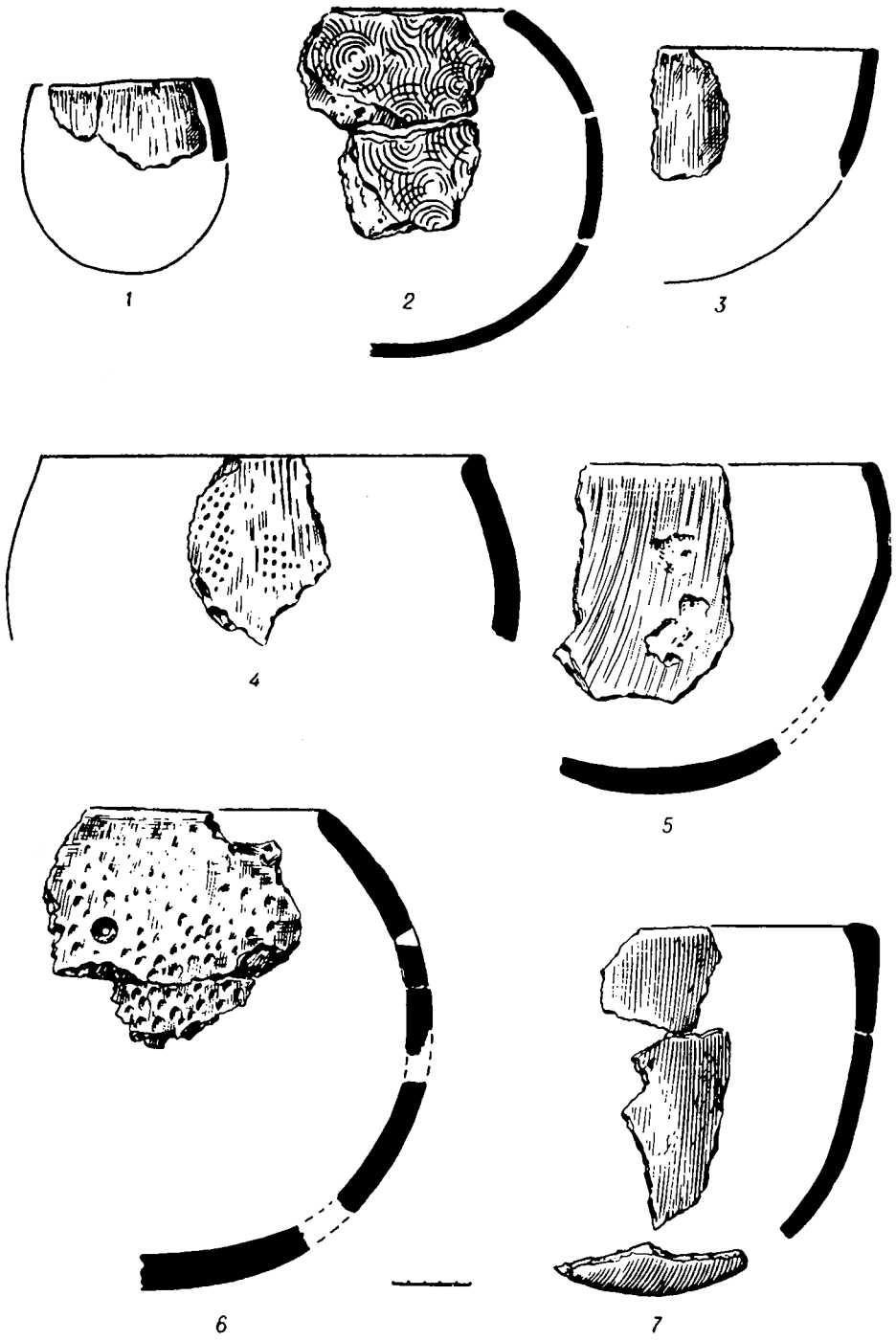

Plate 26. Reconstruction of vessels from houses at Cape Baranov: 1, 6—Sarychev Bay, House 1 (No. 604, 379); 2, 7—same place, House 5 (Nos. 101, 93); 3–5—House in Vtoraya Bay (Nos. 495, 30, 370).

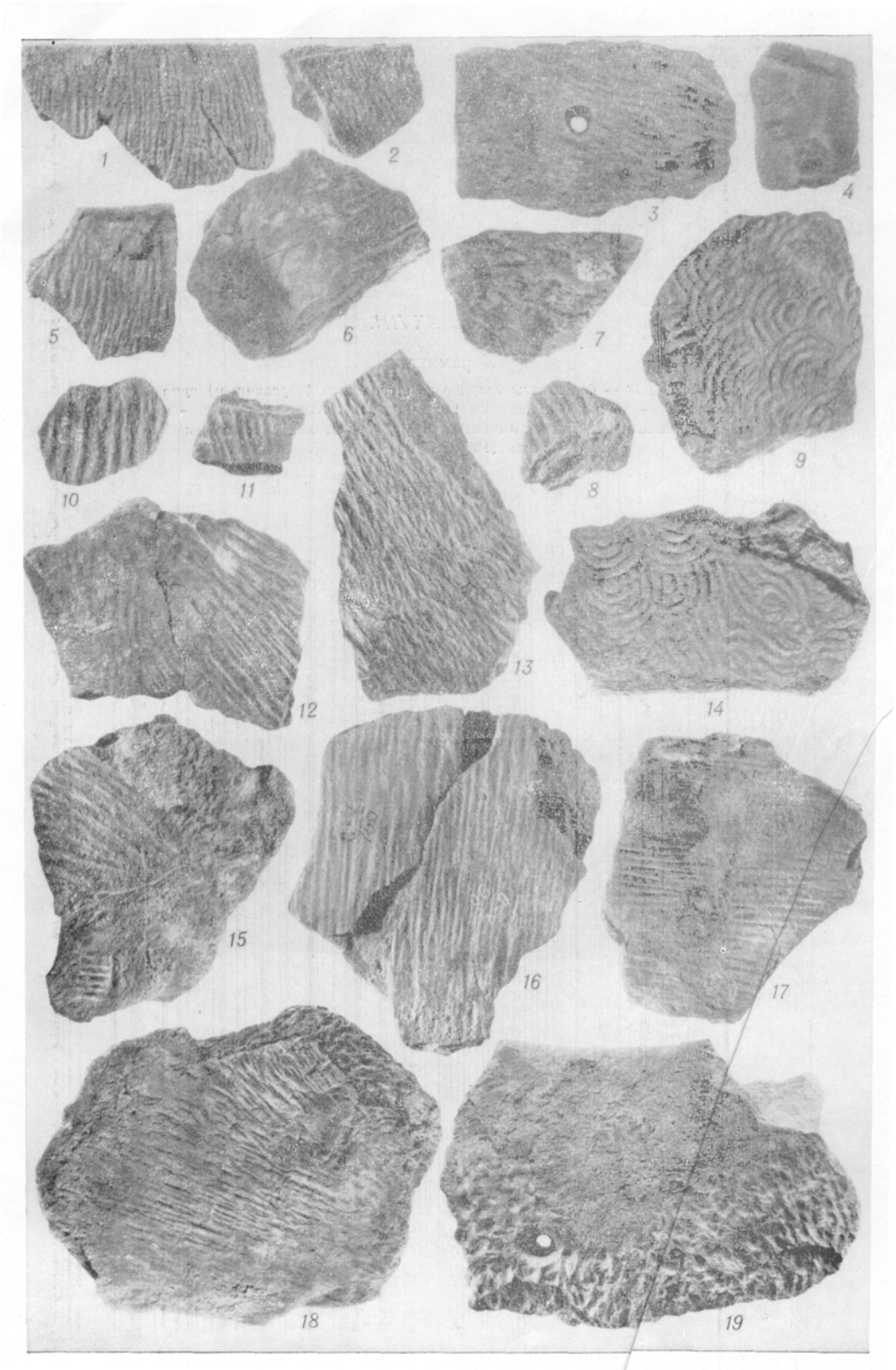

Plate 27. Ceramics. Fragments of vessels with lined design (cord and stamp): 1, 2, 5, 6, 8, 11–13, 15, 17, 18—Sarychev Bay, House 1; 10, 16—House 5; 9, 14—fragments with curvilinear design, same place; 19—with textile design, House 1; 3, 4—without design; 7—with textile imprints on the inside.

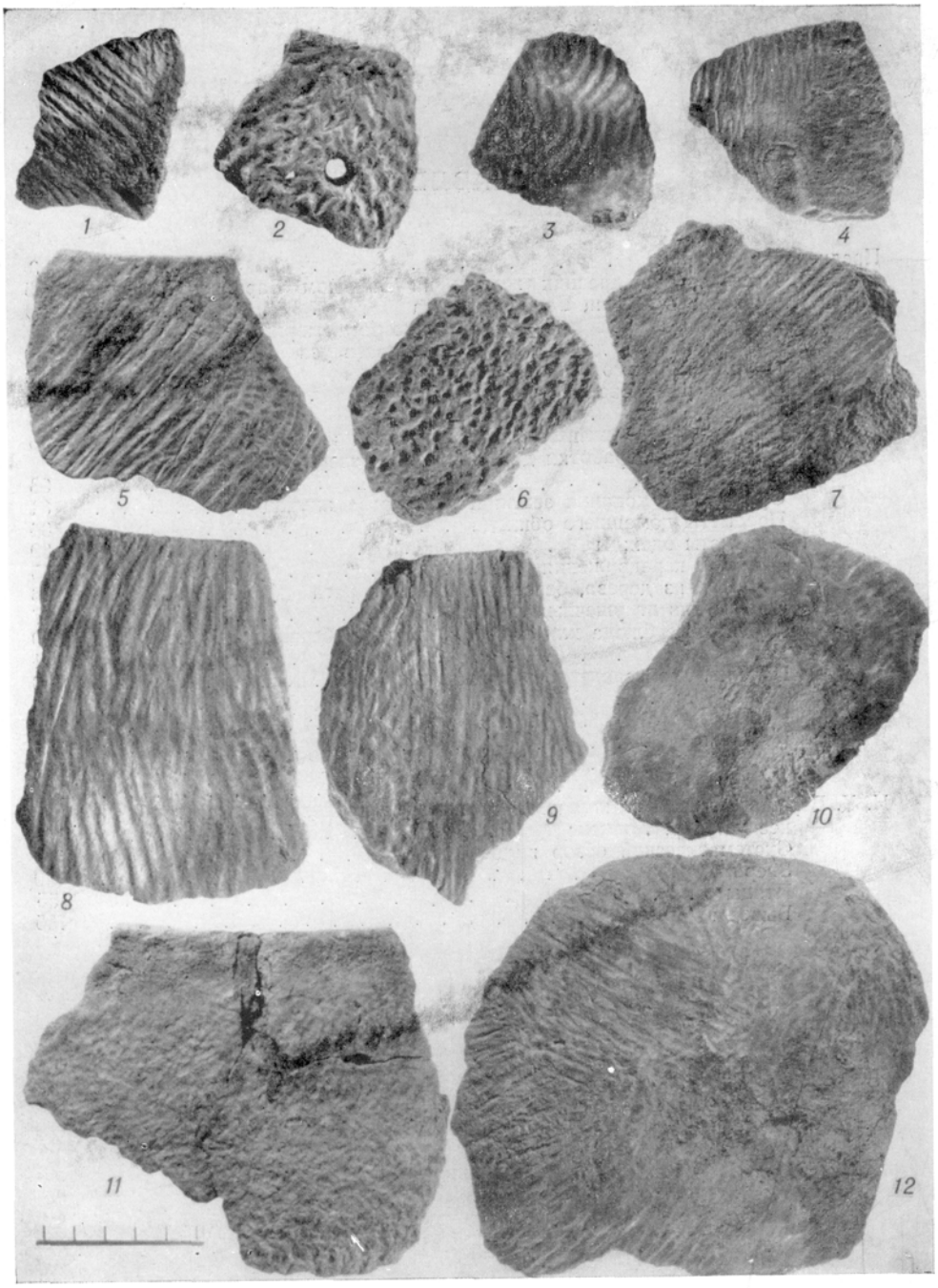

Plate 28. Ceramics. 1, 4, 5, 7, 18, 12—fragments of vessels with lined (cord) design; 9—same, with checkerboard (stamped) design; 3, 10—same, with curvilinear (stamped) design; 2, 6, 11—same, with textile design, House in Vtoraya Bay.

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ABBREVIATIONS

AN—Akademii nauk (Russian Academy of Sciences).

ASSR—Avtonomnaya Sovetskaya Sotsialisticheskaya Respublika (Autonomous Soviet Socialist Republic)

ChOKM—Chukotskogo okruzhnogo kraevedcheskogo muzeya (Chukotka District Regional Museum).

in-ta—instituta (of the institute).

otd-nie—otdeleniya (division).

RAN—Russkaya akademii nauk (Russian Academy of Sciences).

SA—Sovetskaya arkheologiya (Soviet Archaeology).

SE—Sovetskaya etnografiya (Soviet Ethnography).

SSSR—Soyuz Sovietskikh Sotsialisticheskikh Respublik (Union of Soviet Socialist Republics).

Interdisciplinary Scientific Research Institute).

vyp.—Vypis’ (Extract).

zap.—Zapiski (Notes).