The Nordenskiöld Collection of Eskimo Material Culture from Port Clarence, Alaska

James W. VanStone
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Abstract

Collections of the Folkens Museum Etnografiska in Stockholm, Sweden, contain 246 ethnographic objects collected by A. E. Nordenskiöld at Port Clarence, Alaska, during his circumnavigation of Europe and Asia in 1879-1880. The artifacts in this collection are described and illustrated. For comparative purposes, information is included from previous studies of western Alaskan Eskimo material culture, especially those of Field Museum’s Port Clarence and Kotzebue Sound collections (VanStone, 1976, 1980).

1. Introduction

Historical Background

Port Clarence and Grantley Harbor were observed and named in September 1827 by Captain Frederick William Beechey of H.M.S. Blossom during his second season of arctic exploration in cooperation with Captain (later Sir) John Franklin’s second expedition (figs. 1–2). It is apparent, however, that earlier Russian charts showed an inlet in this area of the Alaskan coast (Bockstoce, 1977, pp. 6–7; VanStone, 1973, pp. 11–19). Recognizing the importance of these two coastal indentations, free from ocean swell, as the best harbors on the American side of Bering Strait north of the Aleutian Islands, Beechey noted that “these two ports, situated so near Bering’s Strait, may at some future time be of great importance to navigation, as they will be found particularly useful by vessels which may not wish to pass the strait in bad weather” (Beechey, 1831, vol. 2, p. 267). Grantley Harbor, spacious and well protected from moving ice, was further described as “well adapted to purposes of repair” and “sufficiently deep to receive a frigate, provided she lands her guns” (Beechey, 1831, vol. 2, p. 268).

Beechey remained only four days in the newly observed harbors before heading north, but his prediction concerning their utility and future use proved remarkably accurate. Between 1849 and 1854 at least six of the ships searching for Franklin’s third expedition came to Port Clarence (Collinson, 1875, pp. 114–120), and for three consecutive years a search ship wintered in Grantley Harbor (Collinson, 1889, pp. 68–69, 70–73, 76–79, 128–134). Seamen from H.M.S. Plover and Rattlesnake built houses on Point Spencer across from the present village of Teller and made many trips to inland Eskimo villages, including the important settlement of Sinramiut on the northeast coast of Port Clarence and Kauwerak at the mouth of the Kuzitrin River. In turn, many Eskimos visited the ships out of curiosity and to trade. Although Port Clarence Eskimos met the crews of exploring vessels sporadically during the early 19th century, these contacts with the Franklin search vessels almost certainly represented their first sustained interaction with Europeans.

In 1828 Beechey (1831, vol. 2, p. 265) had estimated a population of 400 in the Port Clarence region, a figure that probably included Kauwerak, the second largest village on the mainland of Seward Peninsula (Ray, 1964, pp. 75–76). The area was especially suitable for human habitation in the early to mid-19th century. There were large herds of caribou, particularly north and east of Kauwerak village. Productive fishing was undertaken at almost all times of the year, in spring in Tuksuk Channel and in summer and fall in Imuruk Basin, Grantley Harbor, and tributary rivers. Ptarmigan were plentiful in winter and ducks and geese during the spring and summer. There were no whales or walrus in the region, but sea mammal products were obtained in trade. Even the inland...

VANSTONE: NORDENSKIÖLD COLLECTION
people made umiaks covered with walrus hide for travels on the rivers and along the coast. Belugas and spotted seals entered Grantley Harbor and were taken in nets near the entrance to Tukusk Channel. In winter and spring seals were taken off Point Spencer, and by the middle of May many inland families had arrived at the coast to hunt. Some families from Port Clarence and Grantley Harbor went to Cape Douglas to hunt seals. For many generations international trading fairs were held annually at Point Spencer, attracting Eskimos from Siberia and the north Alaskan coast as well as from Diomede and King islands (Ray, 1964, p. 75, 1984, p. 300).

In September 1866, 39 members of the Western Union Telegraph Expedition landed at Port Clarence to construct sections of a telegraph line intended to cross Bering Strait and connect the capitals of America and Europe. This contingent of the expedition built the first nonnative settlement in the Bering Strait region, five small buildings called Libbyville, in Grantley Harbor across from Teller; there they spent the winter of 1866–1867. Some miles of telegraph line were built, but the project was abandoned when news was received of the successful laying of the Atlantic cable and of the purchase of Russian America by the United States. When Libbyville was vacated in July 1867, the buildings were given to an Eskimo “chief” and the telegraph wire was left behind to be used by the Eskimos for a variety of purposes. While the expedition was based in Port Clarence, many Eskimos were employed as interpreters, packers, posthole diggers, and cooks. In addition, they manufactured miniature sleds, snowshoes, engraved pieces of ivory, and other items to trade.

**Fig. 1.** Map of Alaska.
with expedition members. Although Eskimos had previously traded enthusiastically with early explorers, this was apparently the first time that souvenirs were made specifically for trade or sale to white men (Ray, 1964, p. 75, 1984, p. 300).

In 1848 the first commercial whaling ship passed through Bering Strait into the Arctic Ocean. Port Clarence was not a port of call for the whalers during the heyday of sailing ships in the 1850s and 1860s, although a few called there to obtain fresh drinking water and driftwood for fuel (Ray, 1975, p. 198). After steam whaling vessels were introduced into the arctic fleet in 1880, however, the ships were able to winter in the Arctic and Port Clarence became an important midsummer rendezvous for the fleet. The ships gathered about 1 July to await the arrival of a vessel from San Francisco with fresh provisions, mail, and coal, and to which they could transfer their spring catch of baleen and oil before entering arctic waters once again. In 1884 the U.S. Revenue Marine Service established a coal stockpile on Point Spencer from which the whalers could obtain an emergency supply (Jackson, 1894, p. 15; Swineford, 1898, p. 182; U.S. Coast and Geodetic Survey, 1899, p. 194; VanStone, 1958, p. 5; Ray, 1964, p. 75, 1975, pp. 200-201). Intensive contact between Eskimos and the crews of whaling ships was only a year in the future, when Nordenskiöld’s expedition anchored in Port Clarence on 21 July 1879.

The Vega Expedition

Nils Adolf Eric, Baron Nordenskiöld, considered one of the foremost arctic explorers, was born
in Helsingfors, Finland (fig. 3). In 1858 he made his first arctic exploration, serving as a geologist on an expedition to Spitsbergen. Returning there three years later, he made a boat journey through Hinlopen Strait, which separates the two largest islands in the Spitsbergen group. In 1864 he was the leader of a party equipped to winter on Spitsbergen, but was forced to return when supplies were diverted to the assistance of some shipwrecked walrus hunters. Beginning in 1868 he made two attempts to reach the North Pole using Spitsbergen as a base, and in between these trips, in 1870, he made his first expedition to the Greenland ice cap (Mirskey, 1970, pp. 268–270).

At about this time, Nordensköld became interested in the voyages being undertaken by whaling ships in the region of Novaya Zemlya and the Kara Sea. The unknown stretch of water along the Siberian coast fascinated him and he made two reconnoitering trips, reaching the mouth of the Yenisey River in 1875 and 1876. On the basis of these voyages, the explorer came to believe that the condition of the ice would make it possible to undertake a circumnavigation of Europe and Asia by forcing a northeast passage to China and Japan, thus solving a problem that had baffled arctic explorers for more than 300 years. Nordensköld believed that the open navigable water which had allowed him to cross the Kara Sea in two successive years “extended in all probability as far as Behring’s Straits, and that a circumnavigation of the old world was thus within the bounds of possibility” (Nordensköld, 1881, vol. 2, p. 1). By 1878 Nordensköld was ready for his attempt at the Northeast Passage.

The expedition’s vessel, the Vega, a ship of 300 tons (fig. 4) driven by steam engines as well as sails, was captained by Lieutenant Louis Palander of the Swedish navy who had been with Nordensköld to Spitsbergen in 1872. The expedition left the harbor at Karlskrona on 22 June 1878 and reached the mouth of the Lena on 27 August. The Vega was frozen in near the entrance to Kolychinskaya Bay on the Chukchi Peninsula, just 120 miles from the open water of the Chukchi Sea, from 28 September 1878 to 18 July 1879. The ship was freed from the ice on the afternoon of 18 July and reached St. Lawrence Bay on 20 July, thus becoming the first ship to navigate the Northeast Passage. After brief visits to St. Lawrence Island, Port Clarence, and Bering Island in the Komandorskiye group, the expedition returned home by way of Japan, Hong Kong, Singapore, and the Suez Canal, arriving in Stockholm on 28 April 1880 (Nordensköld, 1881).

Prior to his departure Nordensköld was aware of the importance of Port Clarence, both as an excellent, ice-free harbor and as a place where mail could be sent and received courtesy of the whaling ships that visited the harbor in summer on their way to San Francisco and Honolulu (Nordensköld, MS 123). The Vega anchored in Port Clarence at 2:00 pm on the afternoon of 21 July 1879. “Immediately after the anchor fell we were visited by several very large skin boats and a large number of kayaks” (Nordensköld, 1881, vol. 2, p. 228).

Nordensköld had made ethnographic collections in Greenland, but in 1875 and 1876, on his Siberian voyages, he was unable to make use of the trade goods he had brought with him for barter because the natives at the mouth of the Yenisey River wanted only Russian paper money. Therefore, when the Vega left Karlskrona he took with him “only money, not wares intended for barter.” Because of this, his trade with the Chukchi, when they were first encountered in September 1878, “suffered from a sensible want of the first condition for the successful prosecution of a commercial undertaking, goods in demand.” To his dismay, he discovered that

... money was of little use here. A twenty-five rouble note was less valued by the
Chukches than a showy soap-box, and a gold or silver coin less than tin or brass buttons. I could, indeed, get rid of a few fifty-øre pieces, but only after I had first adapted them by boring to take the place of earrings.

Nordenskiöld did, however, have some tobacco and Dutch clay pipes which at least served as "gifts of welcome" to the natives who visited the ship. The pipes were too fragile for adult Chukchis, but served as gifts to children to secure the goodwill of their parents (Nordenskiöld, 1881, vol. 1, pp. 439-440).

Fortunately at Port Clarence the explorer had much material to trade because of the large amount of winter equipment that would be of no use to the expedition as it moved into warmer climates.

After the natives came on board a lively trade commenced, whereby I acquired some arrow-points and stone fish-hooks. Anxious to procure as abundant material as possible for instituting a comparison between the household articles of the Eskimos and the Chukches, I examined carefully the skin-bags which the natives had with them. In doing so I picked out one thing after the other and they did not object to me making an inventory (Nordenskiöld, 1881, vol. 2, pp. 228, 230).

On one trip ashore Nordenskiöld turned his "riches to account by making visits like a pedlar in the tent villages with sacks full of felt hats, thick clothes, stockings, ammunition, etc., for which goods I received a beautiful and choice collection of ethnographical articles." The Eskimos were "honourable in their dealings though given to begging and to much haggling in making a bargain." On another trip ashore the explorer made an interesting discovery. "Behind the tents were found, erected on posts a metre and a half in height, roughly-formed wooden images of birds with expanded wings painted red. I endeavored without success to purchase these tent-idols for a large new felt hat—an article of exchange for which in other cases I could obtain almost anything whatever" (Nordenskiöld, 1881, vol. 2, pp. 236-239).
Nordenskiöld noted that many natives were in the process of moving to more northerly hunting grounds and fishing places and to trade fairs. Others had pitched tents of white cotton cloth along the shores of the inner harbor. "A certain elegance and order prevailed in their small tents, the floor of which was covered with mats of plaited plants. In many places vessels formed by cocoa-nut shells were to be seen, brought thither, like some of the mats, by whalers from the South Sea Islands" (Nordenskiöld, 1881, vol. 2, p. 233). Nordenskiöld noted only a few winter dwellings abandoned for the summer.

Members of the expedition found the natives to be "friendly and accommodating, and less disposed to liquor than the Chukch [sic] people." Two men spoke a little English and many wore European clothing. One man had been to San Francisco and another to Honolulu, presumably with whaling ships. "For the most part their household and hunting implements, axes, knives, saws, and breechloaders, revolvers, etc., were of American origin, but they still used or preserved in the lumber repositories of the tent, bow and arrows, bird-darts, bone boat-hooks, and various stone implements" (Nordenskiöld, 1881, vol. 2, pp. 231–233; MS 7).

On the afternoon of 26 July the Vega left Port Clarence, making a brief return to the Chukchi Peninsula before heading for St. Lawrence Island, where it anchored on 31 July and remained until 2 August. During this brief visit Nordenskiöld collected a few ethnographic items. On 14 August the Vega anchored off Bering Island and departed for Yokohama on 19 August (Nordenskiöld, 1881, vol. 2, pp. 242, 250, 295).

II. The Collection

Introduction

In the catalog of the Folkens Museum Etnografiska in Stockholm the Nordenskiöld collection of ethnographic items from Port Clarence is assigned 253 catalog numbers. In a few cases more than one object has the same number. At the time this study was undertaken, 231 catalog numbers representing 246 objects were located in storage and on exhibition (see Appendix), leaving objects represented by 22 numbers unaccounted for and apparently lost. The collection as cataloged also includes objects collected by Nordenskiöld on St. Lawrence Island and Bering Island. All the St. Lawrence specimens were identified, but only two, both skin parkas, were located; they are included in the descriptions which follow. The objects collected on Bering Island could not be identified with certainty, but two skin bags were tentatively so identified and they are included in this study.

The present condition of much of the Nordenskiöld collection is reasonably good. Occasionally pieces of particular objects are missing, some sinew has disintegrated, and skins have dried and split. With one or two exceptions, items of clothing are in poor condition.

Virtually the only information concerning Nordenskiöld's collecting methods are those mentioned in his published account of the expedition (Nordenskiöld, 1881) and described in the Introduction to this study. It should be emphasized that although, with the few exceptions noted above, the entire collection was made at Port Clarence during the Vega's four-day visit, the assemblage still cannot be said to have an accurate provenience. As noted in the Introduction, Port Clarence was a traditional trading center, and the added presence of whaling ships each year attracted large numbers of Eskimos from distant settlements during the summer months. Although these Eskimos were attracted by an opportunity to trade with the whaling vessels, it is clear that they were equally satisfied to trade with Nordenskiöld and members of his crew. As a result, of course, the provenience "Port Clarence" may mean little as far as determining accurately the place where a particular artifact was made and used. Unsatisfactory as such a provenience designation may be, it is more useful than those characteristic of many museum collections which read simply "Alaska" or "Eskimo."

The Nordenskiöld collection is sufficiently varied so that the items of material culture can be described and discussed within the following use categories: sea and land hunting, fishing, tools and manufactures, household equipment, clothing, travel and transportation, ceremonial equipment, personal adornment, tobacco complex, toys and games, and raw materials. The descriptions which follow, although hopefully sufficient to make clear the special characteristics of each artifact type, are brief, and the reader is urged to pay close attention to the photographs. In addition to the basic artifact descriptions, each use category contains relevant comparisons with similar specimens in published collections. For these comparisons I have relied heavily on Nelson (1983), Fitzhugh and Kaplan (1982), and VanStone (1976, 1980), but other eth-
nographic accounts and published catalogs of museum specimens have also been utilized.

Sea and Land Hunting

The collection contains six ice-hunting harpoons, five of which vary in length from 182 cm to 263 cm, measurements made from the distal end of the foreshaft to the proximal end of the ice pick. The sixth specimen lacks a foreshaft and has a total length of 170 cm. All these harpoons are similar in construction, consisting of a spruce wood shaft, a socket piece of walrus penis bone (5) or ivory (1) with sharp shoulders and wedge-shaped (5) or bifurcated (1) tangs, and ivory (5) or metal (1) ice picks (fig. 5a; Nordenskiöld, 1881, vol. 2, p. 229, no. 6). All five harpoons have fixed ivory foreshafts with sharp shoulders, conical tangs, and triangular line holes. Four have closed socketed harpoon heads with spurred tangs, triangular line holes, and blade slits parallel with the line hole. Three of these heads have metal blades held in place with a metal rivet; the fourth head lacks a blade. One harpoon head, with a bifurcated tang, has been split from the blade slit to the line hole and repaired with a metal rivet. There is another split between the bifurcations of the spur and this has been similarly repaired (fig. 6b). On one harpoon there is a cover for the head made from a single piece of sealskin fringed at one end and sewn up one side.

Five socket pieces are lashed to the shaft with baleen and the sixth, with a bifurcated tang, is held in place with ivory pegs. Five socket pieces have three raised encircling parallel ridges at or near the center which serve as grooves for the lashing that holds the foreshaft to the socket piece. Ivory finger rests are present on all six harpoons. Three are curved without decoration and lashed to the shaft with baleen, while three are in the shape of a seal's head with inset eyes and nostrils of baleen. Two of these are lashed to the shaft with baleen and one with sealskin line.

Each of the harpoons has a sealskin retaining line attached to the socket piece and ice pick and fastened to the shaft at one or more places with baleen or sealskin line. It has been suggested that this line would prevent the loss of the socket piece and ice pick should they accidentally become detached from the shaft (Bockstoce, 1977, p. 33). The ivory ice picks on three specimens have sharp shoulders and wedge-shaped tangs, while on two the shoulders are sloping and the tangs conical. The metal ice pick on one harpoon has a flattened, leaf-shaped blade with a narrow, rectangular tang. All the ice picks are fastened to the shaft with sealskin line.

Ice hunting harpoons from Port Clarence and Kotzebue Sound similar to those in the Nordenskiöld collection were described and illustrated by VanStone (1976, p. 8, pl. 1b, 1980, p. 20, figs. 3–4), and Bockstoce (1977, p. 36, fig. 13) described and illustrated one collected by William Beechey at Kotzebue Sound. Nelson collected a similar harpoon in northern Norton Sound; it was described as having been used for walrus (Fitzhugh & Kaplan, 1982, pp. 80–81).

In addition to the ice-hunting harpoon just described, the Nordenskiöld collection contains a harpoon line with harpoon head consisting of two pieces of walrus skin line knotted together through a loop that is lashed with sinew. At one end is a small walrus tooth toggle and at the other a bone harpoon head with closed socket, single spur, triangular line hole, and metal blade held in place with an ivory peg.

A single bone harpoon head 13 cm long has a centrally located triangular line hole, closed socket, and single spur. The jadeite blade has beveled edges and a straight base. It is hafted parallel with the line hole and held in place with an ivory peg. This harpoon head was illustrated by Nordenskiöld (1881, vol. 1, p. 229, no. 3). An ivory ice pick 14.5 cm long is wedge-shaped at the proximal end and scored for hafting to a shaft.

For greater comfort when hunting seals at breathing holes or at the edge of the ice a sealing stool was used. The collection contains a single example that is the typical three-legged type but larger and heavier than most and lacking the legs. The oval top of spruce wood measures 42 cm by 21 cm and is beveled along the edges. On the underside the area around the leg holes is raised so that the legs can be seated more firmly.

Snow goggles prevent snow blindness by restricting the amount of light reaching the wearer's eyes. The collection contains two pairs, both of two-piece construction, the upper half including the visor consisting of one piece and the lower half the other. The two halves are lashed with sinew on both sides and in the center between the eye-holes. A pair of holes at each end is drilled to receive a two-strand sinew cord. On one pair two small pads of grass wrapped in cloth are attached to the cord; their use is unknown. The eye-holes of both pairs are oval and have lenses of window glass. It is difficult to imagine how these would...
function to restrict light. Both pairs are painted on the outside with red pigment and blackened around the eyeholes on the inside and under the visors, presumably to suppress glare (fig. 7). One pair of snow goggles was illustrated by Nordenskiöld (1881, vol. 2, p. 234, no. 12).

A bleached sealskin float used for hunting walruses and belugas has the body openings tied off with sinew. At the head is a wood float toggle to which is attached a length of heavy walrus skin line with a loop at the end for attaching other lines and floats. At one front flipper is an ivory stopper with a wooden plug; it is held in place with sinew lashing. Set in the rear end is a wooden float plug in the shape of a human face with a downturned mouth. The forehead is painted black and the rest of the face red. Inset in one eye is a fragment of pyrites and in the other a chip from a large blue bead. A tuft of seal hair extends from the center of the forehead. Above this plug the skin of the float is bunched together and tied in several places with sinew. Extending from it is a bunch of long hair, possibly caribou, and a loop of sealskin is also attached at this point. A somewhat similar float with an anthropomorphic plug, collected by Nelson on King Island, was described and illustrated by Fitzhugh and Kaplan (1982, p. 80).

The collection also contains a single wooden anthropomorphic float plug similar to the one just described. It is deeply grooved to fit into the float. A piece of intestine has been stretched across the back, presumably to provide a tighter fit, and there is a braided sinew line around the groove. On this plug, as on the one previously described, the forehead is painted black and the rest of the face red. One eye is inset with a blue bead and the other with a fragment of pyrites. A tuft of seal whiskers extends from the center of the forehead (fig. 8b). This plug was illustrated by Nordenskiöld (1881, vol. 2, p. 241, no. 3). Anthropomorphic float plugs from Port Clarence collected by Beechey and Bruce were described and illustrated by Bockstoce (1977, p. 69, fig. 46) and VanStone (1976, p. 10, pl. 4a,h).

An anthropomorphic carving of ivory is tentatively identified as a float plug and is so indicated in the inventory. It is carved at one end to represent the head and shoulders of a man wearing a conical hunting hat ornamented with incised lines and dots. The features, including a mustache, are crudely depicted with incised lines. At either end of the shoulders are small round holes suggesting that separate arms may have been attached. The opposite end is worked to a small round peg that seems too small for a float plug (fig. 9e). The figure, with arms attached, may have been pegged into a model boat.

The collection contains two pairs of linked float plugs of ivory which are conical at one end with a constricted neck and have a ring at the other end (fig. 9b–c). On one pair the ring is in the shape of a sealskin float and ornamented with baleen insets (fig. 9c). Similar float plugs from the Bering Strait area were described and illustrated by Nelson (1983, p. 141, pl. LVb, 11–12). There are also three one-piece ivory plugs with lashing grooves, two of which have tops in the shape of seals’ heads with eyes, nostrils, and ears inset with baleen. One has a conical base (fig. 9d) and the other a flat base (fig. 8a). The third, which is 2 cm wide, has a convex top. A float plug in the form of a seal’s head was described and illustrated by Nelson (1983, p. 140, pl. LVa, 10).

Float toggles attached to floats served as handles and for looping line. The Nordenskiöld collection contains two such toggles, both of which are recessed in the center and scored for lashings. The first, 8.2 cm long, has rounded ends ornamented with incised spurred lines. On the second toggle the ends are carved to represent a fish, the gills indicated in low relief and the eyes inset with baleen (fig. 9a). A fish-shaped toggle was described and illustrated by Nelson (1983, p. 145, pl. LVa, 30) and a seal-shaped toggle was collected at Port Clarence by Bruce (VanStone, 1976, p. 10, pl. 40).

The collection contains four lances with oval spruce wood shafts varying in length from 119 cm to 146 cm that have pronounced curves toward the proximal end. The points are of blue or grey chert carefully worked on all surfaces and hafted to the shaft by insertion of the tang into a broad slot at the distal end; one lance has a pronounced lashing knob. The lashing on three specimens is baleen, one end of which is inserted into a slit in the shaft; there is sinew lashing on one lance. The shafts of three have suspension holes and loops of sealskin at the proximal end of the shaft (fig. 5d; Nordenskiöld, 1881, vol. 2, p. 229, no. 2).

According to Nelson (1983, p. 145), this style of lance, for killing previously harpooned walrus and belugas, was used in the Bering Strait area and northward along the Arctic coast. The examples he illustrated (1983, pl. LVb, 3–4) appear to be longer and lighter than those in the Nordenskiöld collection and their shafts are not curved. The same can be said of two lances from Kotzebue Sound collected by Beechey and illustrated by Bockstoce (1977, pp. 46–47). A lance that closely resembles those described here, collected in Kot-
zabue Sound by Bruce, was described and illustrated by VanStone (1976, p. 29, pl. 5b).

A carefully worked blue chert spear- or lance point, oval in cross section, has sloping shoulders and a broad tang with a convex base (fig. 6c; Nordenskiöld, 1881, vol. 2, p. 229, no. 7). It is somewhat larger than the points on the previously described lances and closely resembles points collected by Beechey in Kotzebue Sound and by Bruce in Kotzebue Sound and Port Clarence (VanStone, 1976, pl. 6j, 1980, p. 11, pl. 4l,k; Bockstoce, 1977, pp. 46–47).

A second style of lance, the points of which are detachable, was used in the Norton Sound region and along the coast of southwest Alaska for killing disabled seals or walrus. Nelson (1983, p. 146, pl. LVb, 1–2) described and illustrated two such lances from Nunivak Island. The Nordenskiöld collection contains 24 detachable lance heads which vary in length from 30.8 cm to 46.5 cm. Twenty-one have thin metal blades (fig. 10e) and three have blades of black chert, blue chert, and obsidian (fig. 10d). The metal blades are triangular in shape while the chert and obsidian blades have broad rectangular tangs. All blades are lashed to their shafts with baleen, the proximal ends of which are inserted into a slit in the shaft, and all have lashing knobs. One lance head has a length of sealskin line attached through a hole near the proximal end of the shaft (fig. 10c).

A single specimen is constructed somewhat differently from the others. Instead of having the metal blade attached directly to the shaft, it fits into a separate antler socket piece with an asymmetrical tang that is joined to a similarly prepared surface of the shaft. The two are attached with wooden pegs and lashed with a strip of baleen which has become loose. The blade is held in place with a metal rivet.

On one lance head there is an ownership mark consisting of a straight line with a pair of spurs at one end. This mark extends downward from the lashing and does not resemble any of the marks which occur on lance heads collected by Nelson (Fitzhugh & Kaplan, 1982, p. 85).

Detachable lance heads from southwest Alaska and as far north as Cape Nome were described and illustrated by Nelson (1983, pp. 146–147, pl. LVIIa, 16, 18–26) and examples from Port Clarence by VanStone (1976, p. 10, pl. 4f–g,m–n). Nordenskiöld (1881, vol. 2, p. 229, no. 8) illustrated five of the lance heads that he collected.

According to Nelson (1983, p. 146), every hunter carried a bag or quiver in which detachable lance heads were kept, and he illustrated such a bag from the lower Yukon made of fish skin (1983, p. 146, pl. LVIIa, 17). The Nordenskiöld collection contains two such quivers made of tanned sealskin. The upper part of each bag is a single piece of skin sewn along one side in a running stitch with thin sealskin line. The bottom is also a separate piece sewn with sealskin line; each stitch is drawn tight so that the upper edge is bunched at the seam. A length of sealskin line is attached to the rim (fig. 11a). One of these bags containing detachable lance heads was illustrated by Nordenskiöld (1881, vol. 2, p. 229, no. 9).

Twenty objects in the Nordenskiöld collection have been identified as drag handles with loops of sealskin line used for hauling dead seals over the ice. Eight of these are complete, including ivory handles and heavy seal- or walrus skin loops attached through holes at the base of the handles. Three handles are in the shape of seals with eyes, nostrils, and ears inset with baleen. On one the body is covered with small triangular incisions filled with black pigment. One of these was illustrated by Nordenskiöld (1881, vol. 2, p. 237, no. 5). A similar seal-shaped drag handle from Port Clarence was described and illustrated by Van Stone (1976, pp. 11–12, pl. 6b).

On three specimens the ivory handles are more elaborately carved animal heads, probably polar bears. On one there are six deep grooves which circle the carving behind the head. The eyes are inset with blue beads and the nostrils with baleen. On top of the head between the ears is a large inset blue bead. The mouth and teeth are indicated by three narrow slits (fig. 12b). The second has a pair of deep V-shaped grooves at the back and on each side of the head are elongated figures of seals. The eyes of the polar bear's head are inset with blue beads and the nostrils with baleen. The eyes and nostrils of the seal heads are inset with baleen. The strap extends through a slot on the underside of the handle. The third handle has three deep grooves encircling it behind the head. The animal's eyes are inset with blue beads and the nostrils with baleen. Along the sides of the head human arms and hands are carved in relief (fig. 12c). All three of these drag handles were illustrated by Nordenskiöld (1881, vol. 2, p. 237, nos. 1, 3–4).

A pair of ivory handles are in the shape of flying human figures, presumably shamans. On one the eyes, nostrils, and mouth are inset with baleen and there are incised lines across the back at the shoulders and above the feet. The figure also has a short tail (fig. 12a; Nordenskiöld, 1881, vol. 2, p. 237, 9
The other is virtually identical except somewhat shorter. There is a hole on each side of the head, apparently for some kind of appendage, and the eyes are inset with pyrites. The skin loops extend through slits in the undersides of the figures.

Five drag handles of ivory have no loops attached. Two are in the shape of a polar bear’s head. On both the ears are clearly indicated and the nostrils and eyes are inset with baleen. One has a single hole drilled through at an angle (fig. 13c), and on the other a short piece of cord is looped through a pair of holes at the back (fig. 13b). Three are seal-shaped, two including the entire body and the other just the head only. Eyes, ears, and nostrils are inset with baleen and there are drilled holes for the skin loop. All are approximately 5 cm long.

A quite different style of drag handle consists of a short length of seal-skin line with a handle formed from a rectangular piece of bone with a line hole at one end and a triangular-shaped piece at the other with a deep notch cut on one side so that it will swivel on a bone peg. At the other end of the line is a section of bone, round in cross section, that tapers at one end and has a pair of drilled line holes slightly off center (fig. 12d). Another example is similar but lacks a handle that swivels. The collection also contains a length of seal-skin line with four handles, two of antler and two of ivory approximately 15 cm long, that have one or two closely spaced line holes slightly off center.

An ivory carving of a seal 14.5 cm long and with a drilled hole at the tail may also be a drag handle. The eyes and nostrils are inset with baleen, the whiskers and eyebrows indicated with incised dots, and the mouth and rear flippers by incised lines.

The collection also contains 12 objects that are identified in the inventory as line attackers used to attach one float line to another or to join lines along the shafts of spears. It is possible that some of these may have served as drag handles even though all are quite small, ranging in length from 2.5 cm to 5 cm. Two of ivory are in the shape of polar bear heads; the eyes, nostrils, and ears are inset with baleen. On one the incised mouth shows teeth, and toward the back is a hole that runs through the object at an angle and opens at the top by means of a narrow slit (fig. 13d). The other, more crudely carved and 4.2 cm long, also has a line hole that runs through it at an angle.

Three ivory specimens are carved to represent seals’ heads. One includes the front flippers and is exceptionally well carved. Eyebrows are indicated with short, incised lines and the nostrils by two drilled holes. The mouth is an incised line with short spurs to indicate teeth. At the back is a very small line hole that runs diagonally from the lower side through the back (fig. 13a). The other two have the eyes and nostrils inset with baleen and line holes running through the center. Another attacker that is seal-shaped has the eyes and nostrils inset with baleen, front flippers carved in relief, and the back flippers indicated with incised lines. It is 5 cm long with a line hole running from under the chin through the back of the head.

Two line attackers, one 3.5 cm and the other 4.5 cm long, are simple oval pieces of ivory slightly convex and narrow at each end with a pair of drilled line holes. There is also a short length of seal-skin line with three line attackers made from bear’s teeth. A single hole in each is drilled through one side and out the lower end.

According to Nelson (1983, pp. 130–131), seals killed in spring were in danger of sinking when being towed behind a kayak because they lacked sufficient fat to keep them afloat. To prevent sinking, several slits were made in the skin with a long, pointed implement to loosen the skin from the blubber. With the aid of a hollow tube, air was forced between the skin and the blubber to float the seal. The Nordenskiöld collection contains two implements which are tentatively identified as probes to loosen sealskin. The first consists of a narrow, slightly curved piece of ivory, round in cross section and pointed at the distal end. On the inner surface there are small, raised knobs at regular intervals. The proximal end is cut to form a rectangular tang and hafted to a wooden handle lashed with sealskin line and pegged with ivory pegs (fig. 14d).

The second probe, also of ivory, is roughly triangular in cross section, pointed at the distal end, and also with small raised knobs at intervals along the inner surface. At the proximal end is a short, rectangular tang with a drilled suspension hole. At one time it may also have had a wooden handle, but the tang is scored and wrapped with sealskin line (Nordenskiöld, 1881, vol. 2, p. 229, no. 5). Similar probes from Sledge Island and northwest Alaska were illustrated by Nelson (1983, pl. LII, 13) and Jacobsen (Woldt, 1884, p. 245, nos. 6–7); one was collected by Bruce at Port Clarence (VanStone, 1976, p. 12).

Bird spears in the Nordenskiöld collection, thrown with the aid of a throwing board to kill waterfowl when they are moulting and unable to fly, are of two types. The first, of which there are five varying in length from 155 cm to 169 cm, consists of a round spruce wood shaft with a long
ivory point. Four of these points are symmetrically barbed with the barbs occurring in paired groups; the fourth is barbed along one side only. On the rear surface of one point near the proximal end is the engraved figure of an animal. On two spears the points fit into a bone socket piece with a split tang that fits over the end of the shaft and is held in place with ivory pegs. A single ivory peg holds the point in the socket piece. The points on the other three spears have wedge-shaped tongs that fit directly into the shaft. Set in grooves along the shafts of all five spears, about half the distance from the tip, are three ivory prongs lashed equidistantly around the circumference of the shaft with the barbed points extending outward to form a triangle. They are laced in place with sinew. The proximal ends of the shafts are recessed to receive the throwing board peg. On one spear there are bands of black pigment around the shaft just below the socket piece and at the proximal end. Another spear has a band of black pigment just below the hafted tang of the point (fig. 5b; Nordenskiöld, 1881, vol. 2, p. 229, no. 1).

The second type of bird spear, of which there is only one example in the Nordenskiöld collection, 137 cm in total length, has a round spruce wood shaft to the end of which are attached three rounded tapering points lashed along the inner side and set in the form of a triangle. In the center is a thick prong of antler symmetrically barbed. It has a sharp shoulder which fits into a slot in the end of the shaft and is held in place with sinew lashing. Sinew lashing also secures the prongs to each other and to the center prong. The proximal end of the shaft is recessed to receive the throwing board peg (fig. 5c). This type of spear could be used for fish as well as birds. It is identified as a bird spear because the prongs are slightly splayed to catch the wing or neck of an escaping fowl rather than closely parallel to pierce the body of a fish.

Both types of bird spears from Port Clarence and the first type from Kotzebue Sound were described and illustrated by VanStone (1976, pp. 13–14, pl. 3b,c, 1980, pp. 29–30, fig. 6a). Both types from various locations in west Alaska were described and illustrated by Nelson (1983, pp. 151–152, pl. LX; Fitzhugh & Kaplan, 1982, pp. 74–75).

Throwing boards, which functionally increase the length of the user’s forearm, enable bird spears and light scaling harpoons to be thrown with greater force by a person seated in a kayak. Nelson (1983, p. 153) noted that among Eskimos living in the vicinity of Unalakleet on Norton Sound the length of the throwing board was equal to the distance from the user’s right elbow to the tip of his extended index finger.

The four throwing boards in the Nordenskiöld collection, all made of spruce wood for right-handed individuals, approximate the length mentioned by Nelson. They are grooved along one side to receive the shaft and have an ivory peg at the distal end which is mortised into the frame and holds the proximal end of the spear or harpoon shaft in place. Each board has a hole for the first finger and a grip, which has finger grooves on one specimen, for the rest of the hand. Each has an ivory finger peg at the proximal end as part of the grip. On the back of one board is a row of blue and white beads extending down the center of an incised groove filled with red pigment that runs from the finger hole to the distal end of the board (fig. 10f). This groove may represent a lifeline, which Eskimos considered to be the “central spiritual and biological channel of an organism” (Fitzhugh & Kaplan, 1982, p. 201). Throwing boards show many slight variations in the design of the grip since each hunter fashioned this artifact in his own way for his own use.

A device for taking birds is the gorget, a piece of antler, bone, or ivory sharpened at both ends with a lashing groove in the center. There are four ivory gorgets in the Nordenskiöld collection, each one fastened to a short length of baleen line with a loop at the end. Three are tied together with a length of sealskin line (fig. 15). Gorgets were embedded in a piece of fish or meat that was then swallowed by a bird, the baleen line being fastened to an anchor. When the bird attempted to fly away the gorget turned in its throat, preventing escape. Similar gorgets from Port Clarence and Kotzebue Sound were described and illustrated by VanStone (1976, p. 15, pl. 6f, 1980, p. 30, pl. 7i).

The collection contains a set of bird snares consisting of a strip of baleen approximately 2 m in length, along which are placed at regular intervals a series of nooses of the same material approximately 10 cm in diameter. This set of snares resembles specimens described and illustrated by Nelson (1983, p. 134, pl. LI, 1; Fitzhugh & Kaplan, 1982, pp. 108–109) and VanStone (1980, p. 30, pl. 8b) as used for catching ducks and other waterfowl near the grassy borders of lakes. The line of snares, fastened to stakes at each end with a sealskin line, was set just above the surface of the water so that the nooses floated on the surface among the grass and weeds. The method of operation of such a set of snares is depicted on a
mammoth tusk from Unalakleet in the Royal Ontario Museum; it was engraved in 1899, probably by the Eskimo artist Joe Austin Kakarook (VanStone, 1963; Ray, 1977, p. 236).

A single complete arrow with a spruce wood shaft was presumably used for hunting large game or possibly for war. The shaft flattens toward the proximal end and has an ivory head with a single pronounced barb, a sharp shoulder, and a conical tang that fits into the distal end of the shaft and is lashed in place with sinew. The ownership mark on the arrowhead consists of a straight line with three spurs extending from one side. This arrow is fitted with a pair of complete black feathers, their butts pointing toward the tip. The butts are inserted into slits in the shaft and the other ends lashed to the shaft with baleen (fig. 10b). Arrows similar to this one from coastal areas north of Kotzebue Sound were described and illustrated by Bockstoce (1977, pp. 27–31).

There are two incomplete arrows, one with the head missing and a shaft flattened at the proximal end in the same manner as the complete specimen. The other is broken at the proximal end and has an ivory head similar to the one on the complete arrow and with the same owner’s mark. The collection also contains four arrowheads, three of ivory and one of bone. Two of the ivory heads, 11.5 and 12 cm long, are identical to the one on the complete arrow and have the same owner’s mark. The third, 16.5 cm long, is triangular in cross section without barbs and has a sloping shoulder and scored conical tang. The bone head, 6 cm in length, has a single barb and tapers to a wedge-shaped, scored tang.

A single bird arrow has a round spruce wood shaft which flattens toward the proximal end and a blunt ivory head that is drilled to fit over the distal end of the shaft. This arrow is fitted in the same manner as the previously described complete arrow (fig. 10a).

A bag identified in the inventory as a “hunting bag” is made from a wolf’s head with the nose pointing toward the rim. The wolf’s head makes up fully one side and part of the reverse. The remainder of the bag consists of irregular pieces of caribou and sealskin. There is a carrying strap of sealskin tied on each side to a wider strip of the same material (fig. 11b).

**Fishing**

The Nordenskiöld collection contains a single dip net with an oval frame of heavy wire 56 cm by 27 cm. The mesh, approximately 4 cm square, is of sealskin. A sealskin strap is tied along one of the long edges of the rim. Such a net, presumably held vertically in the water, was probably held at the openings of traps or weirs in winter.

**Gill nets**, probably for salmon, are represented in the collection by two complete specimens. One is made of finely cut sealskin with a mesh approximately 4 cm square. There are thick seal- or walrus skin selvage lines attached at either end to the top and bottom of vertical sticks approximately 72 cm long. A row of small bladder floats, tied with sealskin at each end, are strung at intervals along the top. The weights, similarly strung along the bottom, are a combination of notched, unworked stones and crescent-shaped sections of whale bone. The second net is made of two-strand sinew cord with a mesh approximately 4 cm square. There are sealskin selvage lines, bladder floats, and roughly shaped whalebone sinkers.

The length and width of these nets, together with the exact number of floats and sinkers, cannot be determined with certainty as they are too fragile to be unrolled. Similar nets, but with wood rather than bladder floats, were collected by Bruce at Port Clarence and Kotzebue Sound (VanStone, 1976, p. 16, 1980, p. 33). The collection also contains two net sinkers formed from water-worn beach pebbles notched on opposite sides; a length of sealskin line is attached to each.

A thrusting fish spear with three ivory prongs is represented by the distal end only. The two side prongs are barbed along the inner side and the center prong along both sides. The side prongs, grooved for lashing, fit into notches in the shaft and are lashed with baleen. The center prong fits into a slot in the end of the shaft and is lashed with the same material. All three are lashed together with braided sinew just above the end of the shaft (fig. 16a; Nordenskiöld, 1881, vol. 2, p. 229, no. 4). Such spears, widespread throughout western Alaska, were generally used in the fall through holes in the ice of lakes for whitefish and pickerel.

The collection contains five shuttle-like spruce wood tomcod rods, only one of which represents a complete assemblage including line, sinker, leader, and hook. This rod is oval in cross section and deeply notched at both ends. Just below the notch at the distal end the rod is grooved and a length of sinew line attached. Baleen line is attached to the sinew and wound around the length of the rod. At the end of this line is an oval ivory sinker to which are attached two short quill leaders. Three
small hooks are tied to the leaders, two on one and one on the other. Two of these hooks have ivory shanks and three small metal barbs. The third is a single piece of ivory with three small barbs carved at the distal end (fig. 17a).

The second rod, oval in cross section and concave at the proximal end, has an ivory tip inserted in a slit in the distal end and lashed with sinew. The tip is perforated to receive the line and notched for winding the baleen line around the rod when not in use. At the end of the line is an ivory fish-shaped lure from which extends a quill leader. This rod assemblage was illustrated by Nordenskiöld (1881, vol. 2, p. 234, nos. 7–8), but in his drawing there are two leaders and two hooks.

Three oval spruce wood rods varying in length from 48.5 cm to 56.5 cm are deeply notched at both ends and slightly flattened along both surfaces to receive baleen line and quill leaders. The sinkers and hooks are missing.

A somewhat crooked spruce wood rod, round in cross section and 83 cm long, is more crudely made. It is unworked at the ends and single strand sinew line is wrapped around it near the distal end. Attached to the line is a long, thin ivory lure from which extends a short piece of sinew line with a metal hook, handmade from an iron nail, the shank of which is wrapped with sinew and small pieces of red cloth.

A quite different style of rod, presumably also for tomcod, is a slightly curved piece of ivory with a short length of braided sinew at the proximal end. At the distal end is an even shorter length of braided sinew, a quill leader, and a copper hook wrapped with sinew and a small piece of fish skin. Above the shank of the hook are two small red beads (fig. 16c).

Shuttle-like wooden tomcod rods from the Norton Sound region similar to those in the Nordenskiöld collection were described and illustrated by Nelson (1983, pp. 176, 177, 181, pl. LXVIII, 24–27). Three similar rods were collected by Bruce at Port Clarence (VanStone, 1976, p. 18, pl. 9h).

The Nordenskiöld collection contains seven complete lurehook assemblages, three of which have sinkers of two-piece construction. Two of these are oval sinkers of ground dark calcite, motled on one specimen, the distal portion of which is made of ivory fitted over the stone and held in place with an ivory peg. These sinkers were intended to serve as lures as there are eyes inset with baleen on each side of the ivory cap. At each end are grooved line holes. Extending from the line hole at the proximal end is a length of braided sinew with a loop at the end. At the distal end a quill leader is fastened to a strip of sealskin. Fastened to the leader on one specimen is a hook with an antler shank with three metal barbs. At either end of the shank is a pair of blue beads and two orange bits of horny sheath from the bills of crested auklets, presumably intended to wave in the water and attract fish (fig. 17c; Nordenskiöld, 1881, vol. 2, p. 234, no. 9). On the other assemblage the hook has a two-piece ivory shank with a single barb made from a small nail. At either end of the shank is a blue bead and an orange auklet sheath.

The third lurehook assemblage has an elongated two-piece sinker of banded calcite and ivory. The ivory cap, at the proximal end, has a line hole and is lashed to the stone portion with baleen. Approximately 3 cm from the distal end of the sinker a hole is drilled through at right angles to the line holes. From it on either side extends a quill leader, held in place with a wooden peg, to which are attached a pair of hooks with bird-bone shanks and four metal barbs made from small nails. At the end of each hook are pairs of blue beads and auklet sheaths (fig. 17d).

Three lurehook assemblages have one-piece sinkers of dark calcite from 9.5 cm to 11.5 cm in length, on one of which there are white bands. At the proximal ends looped lengths of bleached sealskin extend from line holes. At the distal ends there are similar loops to which small pieces of fringed sealskin are attached to wave in the water and attract fish. Quill leaders are attached to these sealskin loops. On one the hook has a shank of red calcite and a small metal barb (fig. 17e). The other two shanks are of ivory with metal barbs. Blue beads and auklet sheaths are attached at either end of the shank (fig. 17b).

The seventh lurehook assemblage has an elongated ivory sinker that is roughly fish-shaped with a grooved line hole at the proximal end. Approximately 6 cm from the distal end are three encircling slits through which extend baleen leaders. To these are attached two hooks with ivory shanks and separate ivory barbs attached with strips of fish skin; a third hook is copper wrapped with fish skin. A fourth ivory hook hangs from a suspension hole at the distal end of the sinker, the copper barb attached with fish skin (fig. 16b). The assemblages with small barbs were presumably used to catch sculpin, grayling, herring, and tomcod, while the larger hooks were for larger fish.

The collection contains seven sinkers varying in length from 9 cm to 13 cm in length. Three are of two-piece construction involving oval pieces of
banded calcite with ivory and stone attachments. On one an ivory cap is attached at the proximal end with baleen lashing. In shape it tapers toward the proximal end and resembles the previously described sinker on a complete assemblage (fig. 17c). Another has an ivory cap at the distal end which fits over an oval calcite piece and is held in place with an ivory peg. Eyes are inset with pieces of wood. This one also resembles a previously described sinker (fig. 17c). The third has a cap of white calcite which fits over a darker banded piece of the same material and is fastened with a strip of baleen.

Three sinkers are oval pieces of banded calcite with line holes at each end. The fourth, of dark calcite, is roughly fish-shaped with grooves near the distal end to represent gills. All these sinkers have fragments of sealskin lines and quill leaders attached.

There are 12 complete or nearly complete fish-hooks in the Nordenskiöld collection. Six of these have two-piece shanks of ivory and calcite, the two pieces fastened together with strips of feather quill. All have barbs of small nails or sharpened pieces of copper. Attached to the hooks are feather quill leaders, small blue beads, and auklet sheaths (fig. 18a). Several of these composite hooks were illustrated by Nordenskiöld (1881, vol. 2, p. 234, nos. 1–5), who noted that they were made in the form of beetles. Nelson (1983, pp. 178–179, pl. LXIX, 12, 20, 21, 22; Fitzhugh & Kaplan, 1982, p. 96) described and illustrated similar hooks and noted that they were used when fishing for sculpin.

One tomcod hook has a two-piece ivory Shank, one section of “fossil” ivory, slotted and pegged together with ivory pegs. There is a short baleen leader and a single copper barb. Attached at the proximal and distal ends are small white beads and auklet sheaths. Another has an antler Shank inset with a rectangular piece of ivory. At the distal end is a metal barb, a pair of blue beads, and two auklet sheaths.

Hooks with multiple barbs were used when jigg- ing for tomcod. Two in the Nordenskiöld collection have ivory shanks which broaden at the distal end to receive metal barbs (fig. 18b).

A pair of fishhooks have curved wooden shanks which widen and are grooved at the distal end to receive a pair of ivory barbs lashed in place with baleen. At the proximal end are short strips of sealskin attached to the hooks with braided sinew (fig. 18c; Nordenskiöld, 1881, vol. 2, p. 234, no. 10). Somewhat similar hooks, but with a single barb, were illustrated by Nelson (1983, pp. 180–181, pl. LXIII, 27, LXIX, 11) and described as being used for wolffish.

Nordenskiöld also collected three lurehook shank parts which clearly show the manner in which the ivory and stone parts of composite hooks were fastened together. The stone sections show the lashing grooves and the cut end which is A-shaped to fit into the V-shaped groove in the lower ivory sections.

Tools and Manufactures

The collection contains two adze blades of approximately the same size, both made of jadeite. One is complete, smoothly ground along the working edges, and tapers slightly toward the proximal end (fig. 19a; Nordenskiöld, 1881, vol. 2, p. 237, no. 7). The other, unfinished, is worked on both surfaces at the distal end and is roughly rectangular in shape. There are indications of cutting with a stone saw along one side. Both blades were presumably hafted directly to the handle and were used to plane or split wood. Jadeite comes from only one place in western Alaska, near the village of Shungnak on the Kobuk River not far from Kotzebue Sound. Although traded widely and used extensively for knife and adze blades, it is a difficult material to work.

The typical Eskimo bow drill is represented by a drill mouthpiece and shank. The mouthpiece, used to brace the Shank and provide pressure on the bit, leaves the operator’s hands free to guide the drill bow and to secure the object being worked on. This mouthpiece has a stone inset of fine grained porphyritic material with a hole to receive the proximal end of the Shank. A piece of animal gut was used to seal the stone inset, since the depression carved to receive it was apparently a little too large (fig. 19f). There is usually considerable variation in the shape of drill mouthpieces, as there is in the handles of throwing boards, since each implement was made to fit the special requirements of its user. The Shank, apparently for a fire drill, tapers at the proximal end to a small knob for seating in the hole in the mouthpiece and is slightly scorched around the distal end (fig. 19e).

The drill bow was in widespread use among Eskimos of northwest Alaska, with a Shank, bit, and mouthpiece to produce a rapid turning of the bit. The use of the bow with its line wrapped around the Shank produced rapid rotation. Drill bows are among the most interesting objects of Eskimo material culture because they are often decorated with
elaborately engraved designs that illustrate various aspects of native life, and a great deal of time and effort was invested in their decoration. Nelson (1983, pp. 774–775) provided a detailed description of their manufacture. Bows with the type of engraved decoration seen on the specimens in most museum collections are apparently a recent addition to western Eskimo material culture. This style of engraving was not known before A.D. 1200 and developed primarily during the 19th century (Ray, 1969, p. 11).

The Nordenskiöld collection contains five drill bows of walrus ivory with cords made of strips of sealskin. All are engraved with what Ray (1969, pp. 14–15) has defined as the “old engraving style.” This style of engraving, characterized by the use of “a minimum of detail to create a maximum of action,” is confined primarily to bag handles and drill bows produced after 1880. Human figures are usually represented as stick men, and the incisions are filled with black ash mixed with oil. The bows are decorated with a variety of subjects in random combination or with rows of animals or whales’ tails. Sometimes sides are blank or partly blank because they are unfinished.

The Nordenskiöld drill bows are rectangular in cross section and thus have four surfaces for engraving. They range in length from 27 cm to 49 cm. On one only the inner, concave surface is decorated with a row of walrus. The second is engraved on two surfaces, on one with a row of birds and on the other with a row of walrus heads. The third bow is the longest, 49 cm, and is broken, having been repaired with sealskin lashing. It is decorated on all four surfaces and the scenes include rows of birds and walrus, whale tails, men in a large umiak, and hunters hunting walrus from kayaks and whales from umiaks. Men are also depicted butchering a whale, hunting polar bears with spears, carrying ice picks, and dragging a bearded seal (fig. 14a).

The fourth drill bow is also heavily engraved on all four surfaces. Scenes include a village with houses and elevated caches, a row of whales, men hunting birds with bows and arrows from an umiak, and a European sailing ship. Men are also shown fighting with spears and bows and arrows near a row of skin tents, and whales and walrus are randomly distributed on all surfaces. On one surface is a spurred line approximately 9 cm long which may indicate a count of animals killed (figs. 14b, 20–21).

The fifth drill bow lacks a cord and is engraved on three sides only. Along one surface is a herd of walrus and a semi-subterranean house; on the second a man is hunting walrus from a kayak. Engraving on the third surface is very crude; there are some birds and a man in a kayak, and also a crude engraving, not filled with black pigment, of a sea mammal pulling a float. The decoration of this drill bow is obviously unfinished.

Another method of rotating the drill shank was with a drill strap, one example of which is included in the Nordenskiöld collection. It consists of a broad strip of sealskin with a polar bear incisor at each end. Oval line holes are drilled in the center of each tooth (fig. 19c). This method of shank rotation required the use of both hands and was used primarily with fire drills.

A rather short drill shank 16 cm long is rounded at the proximal end for insertion into the mouthpiece. It has a metal bit which is deeply grooved along one side with sharpened edges, suggesting its use as a chisel. If this is a correct assumption, then this modified shank would have been held in the hand and not used with the mouthpiece and drill bow.

Two combs were possibly used in making thread from sinew and thus can be identified as sinew shredders. One is made of ivory with four widely spaced teeth. The comb tapers to a point at the proximal end where there is a small suspension hole. Below this hole is a large oval opening. The implement is ornamented with spurred lines, primarily at the proximal end, but also just below the oval opening. On either side near the center are a large number of indiscriminately incised lines gathered at the center in a bunch which resemble bunches of grass (or sinew?) tied in the middle (fig. 19b).

The second shredder has a wooden handle with a knob at the proximal end. The distal end is covered with an oval ivory piece cut to form teeth and held in place with baleen pegs. There is a short sealskin suspension strap (fig. 19d; Nordenskiöld, 1881, vol. 2, p. 237, no. 8). According to informants in the Kotzebue Sound region, combs like these were sometimes used to thin the hair of winter caribou skins. The implement was used like a brush and pulled toward the user (VanStone, 1980, p. 45). Shredders that somewhat resemble those described here were described and illustrated by Nelson (1983, pp. 110–111, pl. XLVII A; Fitzhugh & Kaplan, 1982, p. 124) and collected at Kotzebue Sound by Bruce (VanStone, 1980, p. 45, pl. 19c,e–f).

A curved piece of split bone, 37.5 cm long and deeply concave along one surface, narrows at the

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proximal end to form a grip and is rounded at the distal end. It is identified in the inventory as a snow scraper for removing snow from the cover of a kayak. It only vaguely resembles the “snow beaters” described by Nelson for beating snow from clothing and articles made of fur (Nelson, 1983, pp. 77–78, fig. 21).

Household Equipment

An ivory needle case that flares toward the upper end is ornamented with parallel and spurred line decoration. Carved in relief on either side are a seal and two walrus heads. The case is hollow and there is a wooden plug in the distal end (fig. 22d; Nordenskiöld, 1881, vol. 2, p. 241, no. 7).

A curved ivory bucket handle with suspension holes at each end is ornamented across the top with alternating whales and seals’ heads carved in relief. The eyes and nostrils of the seals are inset with pieces of baleen (fig. 22e; Nordenskiöld, 1881, vol. 2, p. 237, no. 10). This handle may have been for a water bucket, possibly used in ceremonies connected with whaling. An ivory bucket handle from Cape Darby with carved representations of whales’ tails was described and illustrated by Nelson (1983, p. 101, pl. XLIII, 14). Handles with whales carved in relief were collected by Bruce at Port Clarence and Kotzebue Sound (VanStone, 1976, p. 23, pl. 18a, 1980, p. 46, pl. 19g).

Like bow drills, bag handles were also decorated with elaborately engraved designs. The Norden-
skiöld collection contains a single example that is rectangular in cross section with suspension holes drilled at right angles to the long surface. Engraved decoration in the old engraving style (Ray, 1969, pp. 14–15) on all four surfaces includes a herd of caribou on two surfaces and rows of birds on the other two (fig. 14c). Informants believed that engraved handles like this one represented a tally of game killed by a particular hunter and that the bag to which it was fastened would have contained materials or substances associated with hunting (VanStone, 1980, p. 47).

A small utility bag 10 cm high is made of a combination of tightly woven grass and sealskin. The rounded lower part is made of woven grass and the upper part of two pieces of bleached sealskin, one large piece with a much smaller V-shaped inset. Around the opening is a border of softened sealskin attached in a loop through which runs a drawstring of the same material. Sewing throughout is with single-strand sinew.

A grass bag with a conical bottom consists of vertical warp strands spaced closely together and more widely spaced woof strands fastened tightly around the warp strands at intervals to produce a pattern of triangles. Toward the bottom the weaving is tighter with straight warp and woof strands. The border consists of an openwork arrangement of braided grass. Decoration on this bag consists of pieces of blue, black, and red yarn woven into the grass to form horizontal bands of varying lengths (fig. 22a). Both this bag and the previously described utility bag may have been collected on Bering Island.

The collection contains a narrow, oval pouch 27.5 cm high and 13 cm wide made of a single piece of beaver skin with the fur on the outside. Since there is no sewing, it may be the complete skin of a beaver kit; there is no border.

A spoon of jadeite has a broad handle that widens at the distal end to form the bowl, broken on each side near the tip. A centrally located incised groove runs the length of the handle and there is a suspension hole at the proximal end (fig. 22b).

Clothing

The Nordenskiöld collection contains a single man’s parka in very poor condition. It has a total length of 100 cm and is 53 cm wide below the arms. This is an undecorated parka of ground squirrel skins and the garment is cut straight across in front and back. Around the hood and under the arms many irregularly shaped pieces are used. The ruff around the hood opening consists of two rectangular strips, an inner ruff of caribou skin and an outer of wolf skin. There are strips of wolf skin around the cuffs and the bottom edge.

There are two women’s parkas, both apparently collected on St. Lawrence Island, one of which is for summer wear and is made of ground-squirrel skins. In the front extending vertically on either side of the hood to just below the armpits are narrow strips of trimmed white reindeer skin. Short vertical bands of the same material with pieces of red wool yarn sewn in the seams occur at the shoulders, and there are short horizontal bands at the ends of these vertical strips. Short strips of wolverine fur are sewn below or at the side of these short rectangular bands. In all the seams joining the white reindeer skin to the squirrel skins are sewn very narrow strips of tanned sealskin so that each seam stands out clearly.

The lower end of the garment narrows to a
rounded flap in both the front and back, the back flap being somewhat longer. Four strips of trimmed white reindeer skin of varying widths extend around the bottom. Short lengths of red wool yarn are sewn into one seam, and all seams are outlined with narrow strips of tanned sealskin. There is no decoration around the cuffs. A rectangular strip made up of small pieces of hare skin extends vertically down the center of the back of the hood. On either side of this strip are pieces of trimmed white reindeer skin which extend down the back of the garment to a point just below the level of the armpits. At the ends of these pieces are horizontal strips of the same material similar to those on the front of the garment and decorated in the same manner. Two strips of wolverine skin are attached at the top of the hood. There is no ruff, but a narrow strip of caribou or reindeer skin has been sewn along the inside border of the hood. Sewing throughout is with sinew sewn with an over-under stitch (figs. 23–24).

A similar woman’s parka was collected by Bruce in Kotzebue Sound (VanStone, 1980, p. 55, pls. 32–33). According to Nelson (1983, p. 33), women’s parkas north of the mouth of the Yukon River were more elaborately decorated than those south of this area because of the availability of white reindeer skin, an excellent material for decoration.

The second woman’s parka, so identified in the collection inventory, is constructed of the breasts of eider ducks sewn in vertical rows. It is 110 cm long and 62 cm wide below the armpits. In front there are four rows of six skins each and a row of four. Each sleeve consists of 10 skins plus a single skin sewn horizontally at each shoulder. The hood consists of three skins in front under the chin and five on the back; there is a ruff of wolverine skin. Around the lower edge is a border of rectangular pieces of eider skin showing the darker feathers; there is also a fringe of hare skin. On the back of the garment there are four vertical rows of seven eider breasts and a row of four. At the four corners of each breast in front and back are tufts of darker feathers. The garment is cut evenly across the front and back and sewing throughout is with sinew.

A woman’s coat with a collar is made of eider duck skins sewn in vertical rows of breasts alternating with backs. It has a total length of 127 cm and the width below the armpits is 85 cm. The cuffs are formed of pieces of sealskin sewn with the hair side in. There are similar rectangular strips around the lower edge to form a border. Just inside this border is a band of red pigment 4 cm wide that runs around the entire garment. There is a similar band around the inside of each cuff. The collar is 8 cm wide made of black wool strout over which has been sewn a piece of patterned cotton cloth.

The Nordenskiöld collection contains two virtually identical raincoats made from seals’ intestines sewn in vertical strips. One is fragmentary and on a partly destroyed manikin, once a figure seated in a kayak. It is too fragmentary for descriptive purposes. On the second coat the vertical strips on the front and back, which include occasional V-shaped insets, are approximately 14 cm wide. Each sleeve includes four strips sewn horizontally and there are separate horizontal strips at the shoulders. There is also a separate strip of intestine around the lower edge with a border of polar bear skin from which most of the hair has deteriorated. The top of the hood is a single piece and around the opening is a narrow strip of tanned sealskin. There are narrow strips of polar bear skin around the cuffs. Sewing throughout is with sinew and the garment was turned inside out after being sewn.

**Travel and Transportation**

The Nordenskiöld collection contains a single full-sized kayak which the explorer purchased “without difficulty for an old felt hat and 500 Remington cartridges” (Nordenskiöld, 1881, vol. 2, p. 239). It closely resembles a vessel from King Island described and illustrated by Nelson (1983, p. 220, pl. LXXIX, 4). This form of kayak is comparatively short and broad with an upturned bow and circular opening through the bow piece similar to vessels from Nunivak Island. The stern is different, however, and curves down to the level of the keel point. According to Nelson, these King Island kayaks were strongly made and Eskimos sometimes traveled in them as far as St. Lawrence Island and the Siberian coast. Significant measurements of the kayak collected by Nordenskiöld at Port Clarence are as follows:

- **Length**: 213 cm
- **Width**: 169 cm
- **Height**: 62 cm

At front of cockpit including coaming—37 cm
At front of cockpit without coaming—34 cm
At back of cockpit including coaming—35.5 cm

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at back of cockpit without coaming—32 cm
cockpit opening
length without coaming—62.5 cm
width without coaming—49 cm
length between deck beams—62 cm

The heaviest construction parts of this kayak are the gunwales which, when viewed from the top, exhibit a continuous curve for the vessel's entire length. In the center of the cockpit section the gunwales are 3.5 cm by 2 cm and in the bow they appear to join together and may be lashed. In the stern the keel broadens and is notched on either side at the top to receive the ends of the gunwales. The upper edges of the gunwales are higher in the center section than they are in the stern, but about the same as in the bow. As a result the bottom is virtually straight except where the bow begins to turn up.

Below the gunwales on each side of the keel are four stringers, thin strips of wood, oval in cross section, which are lashed to the outside of the ribs with sealskin line. These stringers, which appear to be of relatively uniform width, are approximately 1.5 cm wide. In the center of the cockpit the keel is approximately 2 cm wide, but underneath it constricts on either side and is thus narrower along the bottom. The ribs in the area of the cockpit are of varying widths, 2–2.5 cm, and oval in cross section. There are 28 ribs spaced at irregular intervals and mortised into the underside of the gunwales.

The deck beams are difficult to examine in a covered kayak but there appear to be five fore and the same number aft of the cockpit, numbers that include the fore and aft cockpit beams. All are rectangular in cross section and are mortised into the sides of the gunwales. This form of attachment is reinforced by continuous sealskin lashing that is wound around one deck beam at the mortise, inserted in a hole in the gunwale between the deck beams, and then wrapped around the next one. At irregular intervals sealskin lashing also extends from a deck beam at the gunwale to the first stringer.

The fore and aft deck ridges are single pieces that fit into slots in the top of the deck beams and are lashed to them with sealskin line. Cockpit stanchions on each side of the cockpit are rectangular and at the ends fit outside the cockpit coaming and gunwales. These stanchions are 9.5 cm wide at the center but slightly narrower at the top and wider at the bottom, where they are lashed to a pair of ribs and around the gunwales with sealskin line. In the center of each stanchion is a blue bead.

The cockpit coaming is almost completely covered with skin, but it appears to be a single scarfed piece approximately 5 cm by 3 cm. It is probably recessed along the lower edge as are Hooper Bay cockpit coamings (Zimmerly, 1979, pp. xvii, 94). Because of the cover, construction of the bow and stern pieces cannot be described with certainty; however, it is likely that, as with Hooper Bay kayaks, there are upper and lower bow and stern pieces (Zimmerly, 1979, pp. xvii, 97).

The cover of this Port Clarence kayak is complete and in excellent condition. The skins are sewn with an elaborate double seam in order to make the seams completely waterproof. There are few references to the sewing of boat covers in the literature, but Murdoch (1988, pp. 133–134) described the sewing of waterproof boots at Point Barrow and stated that the same method was used to sew the waterproof seams for boat covers.

The two pieces [of skin] are put together, flesh side to flesh side, so that the edge of one projects beyond the other, which is then 'blind-stitched' down by sewing it 'over and over' on the edge, taking pains to run the stitches only part way through the other piece. The seam is then turned and the edge of the outer piece is turned in and 'run' down to the grain side of the under with fine stitches which do not run through to the flesh side of it. Thus in neither seam are there holes through both pieces at once.

Murdoch noted that waterproof boots were sewn with fine sinew, but the cover on this kayak is sewn with heavy sealskin line.

The entire rear half of the vessel, including the cockpit and an area in front of it for approximately 52 cm, is covered with a single bearded seal skin cut and sewn in part before being fitted over the frame. Sewing is along the deck ridge. This skin is stretched over the cockpit coaming and lashed with sealskin line through holes that are approximately 5 cm apart. At each lashing hole the line draws the skin over the coaming and is then threaded through a pair of holes on the outside of the coaming. Thus the skin presses closely to the coaming on the outside.

The front of the kayak for a distance of approximately 142 cm from the bow is also covered with a single skin cut and sewn in part before being fitted over the frame. The sewing is along the deck ridge, around the inside of the bow hole, and down the keel at the front for a distance of approximately
37 cm. The sewing around the bow hole, in a running stitch, is on the outside. Between this skin covering and the one that covers the back two-thirds of the vessel is a large piece of skin extending across the deck. It is 28 cm wide where it crosses the front deck ridge but only 8 cm wide near the gunwales. Extending downward from this section in the center at the front deck ridge is a small triangular piece 22 cm long and 8 cm wide at the end nearest the cockpit, where this piece joins the larger one.

There are two deck straps of seal thong forward of the cockpit and one aft. The first forward strap is approximately 14 cm in front of the cockpit. It is a double strap anchored to the gunwales on each side through the cover and also attached to the deck ridge by being passed through the skin cover at the seam. Attached to this double strap on the starboard side is an ivory harpoon rest decorated with spurred lines. Approximately 102 cm in front of the cockpit is a single deck strap anchored through the cover to the gunwales on both sides. On the starboard side of this strap is another ivory harpoon rest in the shape of a polar bear's head and upper body; the eyes and nostrils are inset with baleen. There is a double deck strap approximately 10 cm aft of the cockpit anchored in the same manner as those in front. A single thong runs from these straps at the deck ridge around the starboard side of the cockpit to the paired deck straps in front. Attached to it is an ivory spear guard with a concave surface to fit over the side of the cockpit coaming and an outward projecting tip with a long, narrow opening in the center.

At the stern of the vessel, just forward of the point where the stern piece begins to slope downward, there is a short doubled loop of sealskin thong anchored through the skin cover (but not through any part of the frame) at the seam. Presumably it served to aid in carrying the vessel.

The Nordenskiöld collection contains four kayak paddles which vary in total length from 147 to 158 cm. All are of the single blade type with the handle terminating in a crossbar cut from the same piece of wood. The blades, which narrow slightly toward the distal end, have central ridges on both sides. A crack in the tip of one blade has been repaired by reinforcement with a thin triangular piece of ivory having closely-spaced holes around the edges; it is stitched to the blade with sealskin. The surfaces of the blades are decorated with different designs in red and black pigment which are identical on both blade surfaces (fig. 25a; Nordenskiöld, 1881, vol. 2, p. 241, no. 4).

In 1816 Ludovik Choris, a member of the Kotzebue expedition, collected a number of painted paddles in the Bering Strait region, several of which are decorated with red and black pigment (Choris, 1822, pl. III). Nelson (1983, p. 224, pl. LXXX, 7-9) noted that kayak paddles from Nunivak Island, the adjacent mainland, and Bering Strait islands were decorated with designs in red and black paint which represented ownership marks or "totem signs." Two paddles with blades decorated in the same colors were collected by Bruce in Kotzebue Sound (VanStone, 1980, p. 64, fig. 17a).

An oval bone object, 5.7 cm long and 2.3 cm high with projections on the lower side, is tentatively identified as a crosspiece for a kayak paddle, although none of the complete paddles has a separate crosspiece. There is a round hole in the oval section to receive the end of the handle. The identification is based on a similar object from the lower Yukon described and illustrated by Nelson (1983, p. 224, pl. LXXVII, 29).

There are two harpoon line holders, both consisting of a circular wooden frame, lap-spliced and lashed with baleen, and two projecting supports which slant outward toward the proximal end. Between these two supports and at right angles to them is a short piece of wood notched to fit over the deck ridge of the kayak. At the front of one line holder are four ivory seals, each in a parallel, upright position and notched to fit over the frame to which they are lashed with baleen. The heads of two look straight up and the other two look forward. Their eyes, nostrils, and ears are inset with baleen (fig. 25d). On the other line holder there are four seals in a similar position but fitted into the lap-splice with heads facing upwards. Harpoon line holders fitted directly in front of the cockpit on the deck of the kayak. The harpoon line was coiled in the holder in such a manner that it could pay out smoothly when the weapon was thrown.

Three ivory harpoon rests are strung on a length of seal- or walrus skin line. Such rests were designed to prevent spears, or possibly paddles, from falling off the sloping deck of a kayak and were fastened upright to the deck strap at the gunwale on each side. These rests are slightly curved and widen toward the lower end where there is a line hole. They have deep parallel grooves on the bottom (fig. 26b). Similar harpoon rests collected by Bruce at Port Clarence and Kotzebue Sound were described and illustrated by VanStone (1976, p. 33, pl. 32g, 1980, p. 63, pl. 45m).

Although deck straps for kayaks were generally
plain sealskin lines, sometimes they were ornamented with carved ivory beads. The Nordenskiöld collection contains two deck straps with beads, one with 14, six of which are carved to represent inflated sealskin floats decorated with spurred lines and the others representing seal or beluga heads with eyes, nostrils, and blow holes inset with baleen. The other has 11 beads, four in the shape of simple cylinders that narrow at each end and are ornamented with spurred lines, five in the form of sealskin floats similarly ornamented, and two that are round and decorated with incised dots. Each bead is approximately 3 cm long. Twelve deck strap beads are strung on a short length of sealskin line. Four are barrel-like cylinders ornamented with spurred lines and the remainder are in the form of sealskin floats similarly ornamented (fig. 6a). Nelson (1983, p. 228, pl. LXXVIII, 1) described and illustrated an ornamented deck strap from King Island and noted that similar straps were collected at various locations between Bristol Bay and Kotzebue Sound.

Boathooks were useful to hunters in kayaks during landings on the ice or along rocky shores and also served to fend off ice when paddling at sea in the spring and fall. The collection contains four boathooks which consist of ivory hooks attached with baleen or sealskin line to the ends of long spruce wood shafts. The hooks have two or more line holes and are flattened at the end which fits against the shaft. On one the hook is undecorated and on another it is ornamented with a series of parallel incised lines. The most elaborately decorated hook has parallel incised spurred lines along two sides. On one side is the relief carving of a whale and on the upper surface are a seal head and two walrus heads carved in relief. The eyes and nostrils are inset with baleen, and whiskers on the walrus heads are indicated with incised dots (fig. 25b; Nordenskiöld, 1881, vol. 2, p. 241, no. 5). The fourth boathook is somewhat different. The hook is short and hafted almost parallel with the shaft. There are two line holes and the lashing is baleen. The distal end is carved to represent an animal’s head, with pronounced ears and eyes inset with baleen; the proximal, hook end is bifurcated (fig. 25c). The collection also contains a single undecorated ivory tip for a boathook. Similar boathooks were described and illustrated by Nelson (1983, pp. 222–223, pl. LXXX, 3–5; Fitzhugh & Kaplan, 1982, p. 63).

The collection contains two blocks for rigging an umiak. A heavy double hook of ivory is attached to a thick loop of walrus skin line (fig. 26a).

The second ivory block, 5 cm long, is also thick and heavy with a line hole at the proximal end. Both somewhat resemble a block from Sledge Island described and illustrated by Nelson (1983, p. 218, pl. LXXVIII, 19), one from Kotzebue Sound collected by Bruce (VanStone, 1980, p. 64, pl. 45b), and another from Cape Prince of Wales collected by Jacobsen (Woldt, 1977, p. 144, fig. 54, 1).

A form of swivel frequently used on harness traces or towlines to prevent the line from becoming twisted consists of a rectangular block with a hole in the center, through which a short rod with an enlarged head has been inserted. The head is carved to represent a seal’s head with eyes and nostrils inset with baleen. There are line holes in the four corners of the block. Thick loops of walrus skin line extend from the block and from a line hole in the distal end of the rod (fig. 26d).

There are two ivory harness blocks or fasteners, 2.3 cm by 1 cm and 4.2 cm by 2 cm, with holes passing through them in two directions and used to connect two sections of a dog harness. Similar fasteners from a variety of locations between Norton Sound and Point Hope were described and illustrated by Nelson (1983, pp. 210–211, pl. LXXVI, 6, 12), and Bruce collected one in Kotzebue Sound (VanStone, 1980, pp. 61–62, pl. 45).

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A single pair of ice creepers is made from rectangular blocks of ivory cut so as to form a pattern of pointed cleats on one surface. There are a pair of laterally drilled holes at each end for the sealskin line that fastens the creepers to the boots (fig. 26c). Such creepers were fastened to the undersides of boots to help the wearer walk on smooth ice with little or no snow. Similar ice creepers from Cape Darby and the Diomede Islands were described and illustrated by Nelson (1983, pp. 215–216, fig. 69, 1–1a, 3). A pair was also collected by Bruce in Kotzebue Sound (VanStone, 1980, p. 27, pl. 4k).

The collection contains an unfinished pair of creepers, 8 cm by 4 cm, with cleats cut on one surface but without line holes.

Ceremonial Equipment

The Nordenskiöld collection contains four spruce wood carvings associated with two graves which
the explorer encountered near an abandoned whaling station on the north side of Port Clarence.

The corpses had been laid on the ground fully clothed, without the protection of any coffin, but surrounded by a close fence consisting of a number of tent poles driven crosswise into the ground. Alongside one of the corpses lay a kayak with oars, a loaded double-barrelled gun with locks at half-cock and caps on, various other weapons, clothes, tinderbox, snow-shoes, drinking-vessels, two masks carved in wood and smeared with blood... and strangely-shaped animal figures (Nordenskiöld, 1881, vol. 2, p. 238, illus. p. 239).

The first of the masks referred to probably represents the head of a caribou or reindeer. The eyes and nostrils are drilled holes and the mouth a deep groove. The nose and part of the lower jaw is a separate piece of wood attached with wooden pegs and painted black. The rest of the mask is unpainted. There are drilled holes on either side for attachment of a headband (fig. 27c; Nordenskiöld, 1881, vol. 2, p. 241, no. 2). Two similar masks but with holes between the ears for the insertion of wooden antlers were collected at Port Clarence by Bruce (VanStone, 1976, p. 38, pl. 39).

The second mask is carved in high relief, especially the forehead, cheeks, and chin. The eyes are deep slits and the nose is in the shape of a whale's tail. The mouth is a narrow slit with a protruding lower lip. In the center of the forehead a small human face is carved in relief. There are no holes for the attachment of a headband. The entire mask appears to have been painted black and there is a band of red extending across the forehead just above the eyes (fig. 27b; Nordenskiöld, 1881, vol. 2, p. 241, no. 1). The whale's tail motif was widely used on masks in northwest Alaska (VanStone, 1968/1969, p. 837, pl. 6a–b).

The first of the "strangely-shaped" animal figures mentioned by Nordenskiöld has short, stubby legs and a broad, pointed tail. Viewed from the side, the head is that of an animal with inset wooden teeth. From the top the face is human, also with inset wooden teeth. Behind the head, across the shoulders, is another row of inset wooden teeth with a line of red paint on either side. The lower parts of the front legs are also painted red as is the head, except for an area at the back which forms part of the forehead of the human face. The rest of the body was painted black but much of the color has faded or worn off (fig. 27a; Nordenskiöld, 1881, vol. 2, p. 240).

Throughout northwest Alaska an important category of wooden object was the shaman's helper, and the human-animal figure just described appears to belong to that category (Ray, 1977, pp. 13–14). According to Rainey (1959, p. 13), at Point Hope such a figure, called kikituk, had a long head and sharp teeth and was used to "kill opposing shamans in deadly battles between the supernatural powers of the titans in the profession." A powerful Point Hope shaman, Asetchuk, is said to have given birth to a kikituk during a seance and then used it to kill a rival Siberian shaman. A kikituk with ivory teeth and moveable lower jaw excavated from a ceremonial house at Point Hope somewhat resembles the figure in the Nordenskiöld collection. It was illustrated in a line drawing by Rainey (1959, p. 13) and a color photograph by Oswalt (1967, pl. 10).

The second wooden figure from one of the graves at Port Clarence, presumably also a shaman's helper, is the carved representation of an animal with pronounced ears and a long, thick tail. Only the front legs are carved and, except for the thick tail, the figure resembles a mouse. Two wooden pegs, possibly for appendages, are inserted into the center of the body, but only one extends completely through it. The insides of the ears and an area around the eyes are painted red while the rest of the figure is black (fig. 27d).

Personal Adornment

The collection contains eight men's labrets, four of ground and polished stone, one of jet, and three of ivory; all are approximately the same size. Each has a flat or slightly concave, flared proximal end which rested against the wearer's lower gum and held the labret in place. The proximal ends which project through the skin are oval or round and of slightly varying lengths. The illustrated examples are typical (fig. 28a–b; Nordenskiöld, 1881, vol. 2, p. 237, no. 9). In addition to the complete labrets, there is a single labret blank, a piece of quartz that has been smoothed to an approximately triangular shape in preparation for making the finished object.

The only other item of personal adornment in the collection is a necklace of crab claws strung on a single strand of sinew (fig. 28c).
Tobacco Complex

Nelson (1983, pp. 272–273) noted that tobacco was made into snuff by shredding, drying, and pounding the leaves. Pounding was accomplished with a wooden mortar and pestle, and the powder was sifted through an intestine sieve. The snuff was kept in small boxes, often elaborately decorated, and the narcotic was used by placing one end of a tube in the box and inhaling through the other end. The Nordenskiöld collection contains a wooden snuffbox carved in the shape of a seal. The eyes are inset on either side of the head. The cover is carved at both ends to represent animal heads with eyes inset with small blue beads (fig. 22c). This box somewhat resembles a much more elaborately carved example from the lower Yukon described and illustrated by Nelson (1983, p. 274, pl. LXXXVI, 12; Fitzhugh & Kaplan, 1982, p. 166).

A tobacco pipe is illustrated by the explorer and identified, perhaps incorrectly, as a Chukchi specimen (Nordenskiöld, 1881, vol. 2, p. 117, no. 7). This pipe conforms to the most common style of Eskimo pipes in that it has a small, cylindrical bowl with a flaring top set at the end of a two-piece wooden stem which is lashed with sealskin line. There may have been an antler or ivory mouthpiece, suggested in the illustration, but it is missing.

Lead bowls for pipes were made by the Eskimos in molds constructed specifically for the purpose. Such a mold was described and illustrated by Nelson (1983, p. 281, pl. LXXXVIII, 13). According to Nelson (1983, p. 280), pipe stems were made in two sections so that they could be opened to retrieve nicotine, which was then mixed with chewing tobacco.

Toys and Games

The Nordenskiöld collection contains five ivory dolls which range in height from 4.5 cm to 10 cm. Four of these are dressed in skin clothing. A male and a female doll without arms but with feet and facial features clearly indicated are dressed in parkas of tanned sealskin decorated around the hood opening and lower edges with bleached sealskin. The female doll’s parka has a long, rounded flap front and back (fig. 29a–b). On two armless dolls the feet and features are indicated. One, a female, is dressed in a long parka made of caribou skin edged with hare skin (fig. 29d); on the other a hare skin garment is badly deteriorated. The fifth ivory figure, which lacks clothing and may be a shamanistic figure rather than a doll, is armless and the sex is not indicated. It has a distended stomach and the face is upturned (fig. 29c).

Nelson (1983, pp. 342–343) noted that wherever he traveled along the coast and on the Kuskokwim and Yukon rivers he found dolls of ivory and other materials to be in common use. Some of these he illustrated (1983, pl. XCIII, figs. 127–129) and many more were illustrated by Ray (1977, pls. 44–46).

Four small ivory bird carvings were presumably used as gaming pieces. They have a flat lower surface enabling them to sit upright, and three have eyes inset with baleen; all have small drilled holes at the tip of the tail (fig. 30c). One carving represents a pair of birds, one behind the other (fig. 30b). Nelson (1983, p. 342, fig. 125) collected a number of similar bird images, usually geese, murrels, or other waterfowl, which he described as having been used in a children’s game, but he gave no details concerning the game. Bird images collected by Nelson were also illustrated by Ray (1977, p. 31).

An ivory polar bear carving has a man stretched across its back in a prone position with the legs and arms pressing against the sides of the animal and the head resting on its neck (fig. 30a). The bear itself is similar to one collected by Bruce at Port Clarence and illustrated by Ray (1977, pl. 28). She considered it typical of the bear form on the mainland during the latter part of the 19th century. Nelson (1983, p. 347, fig. 135) described and illustrated a similar carving from Norton Bay but with the head of the man facing the tail. He considered this figure to be the illustration of an event in a folktale.

Raw Materials

Raw materials in the Nordenskiöld collection include a piece of jade cut with a stone saw, three beach pebbles of banded calcite described in the inventory as having been selected as raw material for labrets, a coil of bleached sealskin approximately 1 cm wide, and three small pieces of prepared seal intestine, apparently collected as samples.
III. Conclusions

As noted in the Introduction, Nordenskiöld's voyage on the Vega did not provide his first opportunity for ethnographic collecting. He had collected during his voyages to Greenland in the early 1870s and, to a limited extent, at the mouth of the Yenisey River in 1875 and 1876. In the fall and winter of 1878, when the Vega encountered the Chukchi, he made an impressive collection totaling 911 items of material culture in spite of having limited goods to trade. By the time he reached Port Clarence in July 1879, Nordenskiöld had considerable experience trading with native peoples and, because members of the expedition no longer needed winter clothing, many desirable items were available to exchange for ethnographic objects. He wanted a collection that would lend itself to comparison with the Chukchi material collected earlier, and he may also have had some kind of exhibition in mind since his collections were exhibited in the Royal Library in Stockholm within a few months of the expedition's return.

The collection that Nordenskiöld assembled at Port Clarence invites comparison with the one made by Miner W. Bruce in the same place 13 years later for Field Columbian Museum (later Field Museum of Natural History) in Chicago (VanStone, 1976). Unlike other late 19th century collectors working in Alaska, notably John Murdoch in 1881–1883 (Murdoch, 1988) and E. W. Nelson in 1881–1884 (Nelson, 1983), Bruce was essentially a dealer in Eskimo curios and without scientific affiliation or experience. Nordenskiöld, on the other hand, was a noted scientist with a worldwide reputation. Nevertheless, he seems to have been unaware of the special problems related to accurate data collection at Port Clarence, where the annual presence of whaling vessels attracted Eskimos from all over western Alaska. Although in his book Nordenskiöld (1881) provided some information concerning his collecting methods and illustrated representative examples from his collection, the individual items are undocumented, either in his published accounts of the expedition or in his unpublished letters and diaries, currently deposited in the Stockholms Universitetsbibliotek.

Nordenskiöld's Port Clarence collection is less than half the size of Bruce's but, consisting as it does of 246 pieces, it is nevertheless sizable considering that the Vega was anchored in the area for only four days. Both collections contain many duplicates, but in number of artifact types the Nordenskiöld collection approximates the Bruce collection only in the categories of sea and land hunting, fishing, and travel and transportation. The following artifact types occur in the Nordenskiöld collection but are absent from the assemblage made by Bruce:

*Sea and land hunting*
- sealing stool
- lance
- quiver for detachable lance heads
- line attacher
- linked float plug
- gorget
- hunting bag

*Fishing*
- dip net

*Tools and manufactures*
- sinew shredder
- snow scraper for kayak (?)  

*Travel and transportation*
- kayak
- ice creeper

These additions obviously do not contribute significantly to the Port Clarence inventory, but simply emphasize the fact that the Nordenskiöld collection is an interesting supplement to the collection made by Bruce in 1893.

The Nordenskiöld collection does provide, however, an interesting opportunity to focus on changing Eskimo technologies at a time when Euro-Americans were beginning to arrive in western Alaska in significant numbers. With reference to the material culture of Yupik-speaking Eskimos in southwest Alaska, Oswalt (1972), refining a methodology first suggested by Quimby and Spoehr (1951), identified four categories, or clusters, of material objects reflecting the presence or absence of historical introductions in contemporary collections and thus serving as a rough measure of technological change. They are as follows:

*Eskimo continuities*—Objects which were made locally of local materials at the time of historic contact; i.e., traditional Eskimo material culture.
Western imports—Objects of western European culture imported directly and accepted into the inventory of Eskimo material culture.

Eskimo-derived forms—Objects manufactured locally by Eskimos and modeled after aboriginal forms, but made with imported materials foreign to the Eskimo environment.

Western-derived forms—Locally manufactured items modeled after foreign forms using local or imported material or a combination of the two.

The category of Eskimo continuities is perhaps not relevant to a discussion of 19th century collections. In the late 19th century, traditional Eskimo material culture in western Alaska was still largely intact and the majority of artifacts collected by Bruce and Nordenskiöld belong in this category. It has been suggested (Oswalt, 1972, p. 84) that in some communities undergoing change, aboriginal Eskimo manufactures could continue to exist as heirlooms long after they ceased to serve their original function. It will be recalled that Nordenskiöld observed most native household and hunting equipment to be of American origin and that more traditional items, not actually in use at the time of his visit, were preserved in the tents.

It is certain that Nordenskiöld, like Bruce and other 19th century collectors (Quimby & Spoehr, 1951, p. 146), desired to acquire only traditional manufactures and, as much as possible, purposely avoided foreign-made objects and those showing foreign influence. Thus the Eskimo continuities in the Nordenskiöld and Bruce collections may not represent accurately the number in actual use at the time the collections were made. Whether Eskimo continuities observed in storage by Nordenskiöld, and possibly by other collectors, were regarded as heirlooms by the people who made them is questionable. It may be that they had not been out of use long enough to be lost or destroyed.

Three of Oswalt's material culture clusters were applied to Bruce's Port Clarence and Kotzebue Sound collections in previous publications (VanStone, 1976, pp. 49–50, 1980, pp. 72–73). For the Port Clarence collection the following examples were identified:

Western imports

muzzle-loading firearms (inferred)
glass beads
yarn and cloth used for decoration
and in the manufacture of clothing

Eskimo-derived forms

harpoon ice pick from an iron spike
metal harpoon blade
metal harpoon blade rivet
metal lance blade
glass beads for eyes in animal carvings
metal adze blade
hammerhead made from an iron spike
metal awl point
drill made from a nail
circular metal scraper blade (inferred)

Western-derived forms

bullet mold of stone
powder flask of wood and antler
antler reloading tool
ivory letter opener
miniature ivory knife, copy of European cutlery
crosscut saw with metal blade
glass tray (?)
grass mat, copy of hooked rug
match or percussion cap box of wood
reindeer skin coat
leather belt
ivory buttons
sealskin slippers
sealskin gloves
ivory pipe
ivory cigar holder
toy crossbow of wood
toy guitar of wood

For the Bruce Kotzebue Sound collection, the following material culture clusters were identified:

Western imports

muzzle-loading firearms (inferred)
tobacco (inferred)
glass beads

Eskimo-derived forms

metal harpoon blade
metal harpoon blade rivet
metal arrowhead
brass tacks as decoration on box lid
metal fishhook shank
metal fishhook barb
string fishhook leader
metal eyes in lurehook
strip of copper in lurehook shank to attract fish
cloth as border on boots
cloth decorative trim on mittens
needle case of can metal
It will be noted that in all three collections the Eskimo-derived forms used were often direct substitutions. For example, twine was substituted for sinew as a fishhook leader and beads as an inset decoration in place of ivory or baleen. For others, however, new skills were required. To prepare blades for a harpoon head or adze, for example, metalworking techniques were required. Although some Eskimo-derived forms might be expected to pass out of general use rather rapidly, Oswalt (1972, p. 88) has shown that seal-hunting harpoons and fishing equipment, because they incorporated metal points in efficient traditional forms, continued to be important down to recent times.

Western-derived forms are relatively abundant in the two Bruce collections, but most of them have relatively unimportant functions and it might be expected that they would have been replaced by imported counterparts in the near future. Oswalt (1972, p. 92) has suggested that objects based on western models were locally made during a transitional period when Eskimos desired new western products but lacked the means to obtain them.

In comparing the material culture clusters in the Nordenskjöld collection with those in the Bruce Port Clarence and Kotzebue Sound collections, the differing sizes of the assemblages obviously must be recognized. Nevertheless, interesting features are the small number of western imports and western-derived forms obtained by Nordenskjöld. In the other two collections, the latter category clearly includes artifacts that were manufactured for sale rather than for local use. It is to be expected that there would be fewer such forms in the Kotzebue Sound collection than in either Port Clarence collection, since the Sound was outside the whaling grounds and received fewer visits from whaling and trading ships than did Port Clarence. Also, as previously noted, it is probable that Nordenskjöld's primary interest was in the acquisition of "pure" traditional Eskimo manufactures.

Another relevant factor related to the virtual absence of western-derived forms from the Nordenskjöld collection is that it was made just prior to the establishment of a coal stockpile on Point Spencer from which the whalers could obtain an emergency supply. By 1890, 11 years after the Vega's visit but two years before that of Bruce, virtually the entire whaling fleet stopped at Port Clarence each summer. Their crews were willing customers for ivory pipes, letter openers, and other market art as well as miniatures made locally in exact duplication of Eskimo continuities and intended exclusively for sale.
Oswalt (1972, p. 89) believed that the vitality of Eskimo material culture is most clearly revealed in the category of Eskimo-derived forms, since integrating new materials into aboriginal forms assures their continuity. Because of the disparate sizes of the Nordenskiöld and Bruce collections and the factor of collector selection, a numerical comparison of Eskimo-derived forms may not be meaningful. It is clear, however, that Eskimos living and trading in the Port Clarence and Kotzebue Sound areas were fully aware of the advantages of using exotic materials in the manufacture of traditional artifact types, especially weapons and tools. In particular, they recognized the superiority of metal as a blade material and this, as Oswalt noted, accounts for the longevity of harpoons, fishhooks, drills, and other implements based on aboriginal models.

An examination of the three collections being compared here, as well as those of other late 19th century collectors, shows that the process of material culture change was already well advanced in western Alaska 40 years after the first sustained contact. This is not surprising, given the extent of early contact trade involving peoples of the Bering Strait area and those in northeast Asia. In fact, it is doubtful if a collection of totally traditional Eskimo material culture could have been made anywhere in northwest Alaska even by the earliest explorers in the area.

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Appendix

The Nordenskiöld Port Clarence Eskimo Collection

Following is a list of the Nordenskiöld Port Clarence Eskimo specimens described in this study and housed in the Folkens Museum Etnografiska, Stockholm. It is not a complete list as it appears in the catalog of the museum. Objects that could not be located are not included. Where museum catalog numbers are preceded by an asterisk (*), the specimens are illustrated here. Identifications given here do not invariably correspond to those in the catalog.

Sea and Land Hunting

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<th>Catalog Number</th>
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1880.4.1138 arrowhead
1880.4.1139 arrowhead
*1880.4.1135 bird arrow
*1880.4.1049 "hunting bag"

Fishing
1880.4.1053 dip net
1880.4.1198 gill net
1880.4.1199 gill net
1880.4.1196 net sinker
1880.4.1197 net sinker
*1880.4.1154 distal end of fish spear
*1880.4.1187 tomcod rod with sinker and hooks
1880.4.1186 tomcod rod with sinker and hook
1880.4.1161 tomcod rod
1880.4.1190 tomcod rod
1880.4.1191 tomcod rod
1880.4.1186 tomcod rod with sinker and hook
*1880.4.1185 tomcod rod with hook
*1880.4.1176 lurehook assemblage
1880.4.1173 lurehook assemblage
*1880.4.1177 lurehook assemblage
*1880.4.1172 lurehook assemblage
*1880.4.1174 lurehook assemblage
1880.4.1171 lurehook assemblage
*1880.4.1184 lurehook assemblage
*1880.4.1178 sinker
1880.4.1175 sinker
1880.4.1183 sinker
1880.4.1179 sinker
1880.4.1180 sinker
1880.4.1182 sinker
*1880.4.1181 sinker
*1880.4.1160 fishhook
1880.4.1161 fishhook
1880.4.1165 fishhook
1880.4.1167 fishhook
1880.4.1166 fishhook
1880.4.1168 fishhook
1880.4.1164 fishhook
1880.4.1162 fishhook
*1880.4.1158 fishhook
1880.4.1159 fishhook
*1880.4.1157 fishhook
1880.4.1155 fishhook
1880.4.1169 fishhook shank part
1880.4.1170 fishhook shank part
1880.4.1163 fishhook shank part

Household Equipment
*1880.4.1241 snuff box
*1880.4.1039 needle case
*1880.4.1038 bucket handle
*1880.4.1034 bag handle
1880.4.1052 utility bag (Bering Island?)
*1880.4.1051 grass bag (Bering Island?)
1880.4.1050 pouch
*1880.4.1042 spoon

Clothing
1880.4.1000 man's parka
*1880.4.1001 woman's parka (St. Lawrence Island)
1880.4.1002 woman's parka (St. Lawrence Island)
1880.4.1003 woman's coat
1880.4.1008 raincoat, fragmentary
1880.4.1004 raincoat

Travel and Transportation
1880.4.1206 kayak
*1880.4.1231 kayak paddle
1880.4.1232 kayak paddle
1880.4.1233 kayak paddle
1880.4.1234 kayak paddle
1880.4.1222 crosspiece for kayak paddle (?)
*1880.4.1207 harpoon line holder
1880.4.1208 harpoon line holder
*1880.4.1226 harpoon rests (3)
1880.4.1223 kayak deck strap with beads
1880.4.1224 kayak deck strap with beads
*1880.4.1225 beads for kayak deck strap
1880.4.1216 boathook
1880.4.1217 boathook
*1880.4.1218 boathook
*1880.4.1219 boathook
1880.4.1220 tip for boathook
*1880.4.1221 block for rigging umiak
1880.4.1100 block for rigging umiak
*1880.4.1057 swivel
1880.4.1227 harness block or fastener
1880.4.1228 harness block or fastener
*1880.4.1023 ice creeper
1880.4.1024 ice creeper
1880.4.1201 unfinished ice creeper
1880.4.1202 unfinished ice creeper

Tools and Manufactures
*1880.4.1037 adze blade
1880.4.1036 unfinished adze blade
*1880.4.1026 drill mouthpiece
*1880.4.1025 drill shank
1880.4.1029 drill bow
1880.4.1030 drill bow
*1880.4.1031 drill bow
*1880.4.1032 drill bow
*1880.4.1033 drill bow
*1880.4.1028 drill strap
1880.4.1035 chisel (?)
*1880.4.1041 sinew shredder

Ceremonial Equipment
*1880.4.1237 mask
*1880.4.1238 mask
*1880.4.1239 animal figure
*1880.4.1240 animal figure

Personal Adornment
1880.4.1011 labret
1880.4.1012 labret
*1880.4.1017 labret
1880.4.1016 labret
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<tr>
<td>1880.4.1249</td>
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<tr>
<td>*1880.4.1251</td>
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<td>*1880.4.1247</td>
<td>polar bear carving</td>
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*Smoking Complex*

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<td>1880.4.1047</td>
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*Toys and Games*

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<td>1880.4.1245</td>
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<tr>
<td>*1880.4.1043</td>
<td>piece of cut jade</td>
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<td>1880.4.1021</td>
<td>beach pebble</td>
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<td>1880.4.1022</td>
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<td>1880.4.1023</td>
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<tr>
<td>1880.4.1086</td>
<td>coil of sealskin line</td>
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<tr>
<td>1880.4.1046</td>
<td>pieces of prepared seal intestine (3)</td>
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Fig. 5.  a, ice hunting harpoon (1880.4.1085); b, bird spear (1880.4.1147); c, bird spear (1880.4.1146); d, lance (1880.4.1129). (Photograph courtesy Folkens Museum Etnografiska, Stockholm.)
Fig. 6.  a, kayak deck strap beads (1880.4.1225); b, harpoon head (1880.4.1084); c, spear- or lance point (1880.4.1130).  (Photograph courtesy Folkens Museum Etnografiska, Stockholm.)
Fig. 7. Snow goggles (1880.4.1152). (Photograph courtesy Folkens Museum Etnografiska, Stockholm.)
Fig. 8.  a, float plug (1880.4.1095); b, float plug (1880.4.1229). (Photograph courtesy Folkens Museum Etnografiska, Stockholm.)
Fig. 10.  a, bird arrow (1880.4.1135); b, arrow (1880.4.1134); c, detachable lance head (1880.4.1118); d, detachable lance head (1880.4.1102); e, detachable lance head (1880.4.1106); f, throwing board (1880.4.1143). (Photograph courtesy Folkens Museum Etnografiska, Stockholm.)
Fig. 11.  a. quiver (1880.4.1125); b. “hunting bag” (1880.4.1049). (Photograph courtesy Folkens Museum Etnografiska, Stockholm.)
Fig. 12.  

a, drag handle (1880.4.1059); b, drag handle (1880.4.1055); c, drag handle (1880.4.1061); d, drag handle (1880.4.1074). (Photograph courtesy Folkens Museum Etnografiska, Stockholm.)
Fig. 13.  

a. line attacher (?) (1880.4.1252);  
b. drag handle (1880.4.1064);  
c. drag handle (1880.4.1070);  
d. line attacher (?) (1880.4.1067). (Photograph courtesy Folkens Museum Etnografiska, Stockholm.)
Fig. 14. a, drill bow (1880.4.1031); b, drill bow (1880.4.1032); c, bag handle (1880.4.1034); d, probe to loosen sealskin (7) (1880.4.1079). (Photograph courtesy Folkens Museum Etnografiska, Stockholm.)
Fig. 15. Gorgets (1880.4.1155). (Photograph courtesy Folkens Museum Etnografiska, Stockholm.)
Fig. 16.  a, fish spear (1880.4.1154);  b, lurehook assemblage (1880.4.1184);  c, tomcod rod (1880.4.1185). (Photograph courtesy Folkens Museum Etnografska, Stockholm.)
Fig. 18. a. fishhook (1880.4.1160); b. fishhook (1880.4.1158); c. fishhook (1880.4.1157). (Photograph courtesy Folkens Museum Etnografiska, Stockholm.)
Fig. 19. a, adze blade (1880.4.1037); b, sinew shredder (1880.4.1041); c, drill strap (1880.4.1028); d, sinew shredder (1880.4.1040); e, drill shank (1880.4.1025); f, drill mouthpiece (1880.4.1026). (Photograph courtesy Folkens Museum Etnografiska, Stockholm.)
Fig. 20. Drill bow (1880.4.1032). (Photograph courtesy Folkens Museum Etnografiska, Stockholm.)
Fig. 21. Drill bow (1880.4.1032). (Photograph courtesy Folkens Museum Etnografiska, Stockholm.)
Fig. 22.  

a, grass bag (1880.4.1051); b, spoon (1880.4.1042); c, snuffbox (1880.4.1241); d, needle case (1880.4.1039); e, bucket handle (1880.4.1038). (Photograph courtesy Folkens Museum Etnografiska, Stockholm.)
Fig. 23. Woman's parka, front (1880.4.1001). (Photograph courtesy Folkens Museum Etnografiska, Stockholm.)
Fig. 24. Woman's parka, back (1880.4.1001). (Photograph courtesy Folkens Museum Etnografiska, Stockholm.)
Fig. 26.  a, block for rigging umiak (1880.4.1221); b, harpoon rests (1880.4.1226); c, ice creeper (1880.4.1023); d, swivel (1880.4.1057). (Photograph courtesy Folkens Museum Etnografiska, Stockholm.)
Fig. 27.  a, animal figure (1880.4.1239); b, mask (1880.4.1238); c, mask (1880.4.1237); d, animal figure (1880.4.1240). (Photograph courtesy Folkens Museum Etnografiska, Stockholm.)
Fig. 30.  a, polar bear carving (1880.4.1247); b, gaming piece (1880.4.1251); c, gaming piece (1880.4.1248). (Photograph courtesy Folkens Museum Etnografiska, Stockholm.)