

A Few Problems Elucidated . . . And New Questions Raised By Recent Dorset Finds In The North Baffin Island Region

G. MARY-ROUSSELIERE, O.M.I.¹

ABSTRACT. Several recent discoveries, made possible by exceptional conditions of preservation at the Nunguvik site (North Baffin Island), provide new information, among others, on the kayak and sled of the Dorset culture, and suggest that the Dorset people used skis. An engraved bone plate from the Dorset site of Sannirajaq (Hall Beach) pictures, associated with a caribou, an enigmatic object variously interpreted as a sled, a trap for caribou, or a wicker-trap.

RÉSUMÉ. Plusieurs découvertes récentes favorisées pour la plupart par les excellentes conditions de préservation du gisement de Nunguvik, fournissent des renseignements nouveaux sur les kayaks et les traîneaux des Dorsetiens, et suggèrent que ces derniers possédaient le ski. D'autre part, une pièce ornée, provenant du site dorsetien de Sannirajaq (Hall Beach), représente, associé à un caribou, un objet diversement interprété comme un traîneau, un piège ou une nasse.

Archaeologists of today must, in most cases, be satisfied with mere glimpses of prehistoric cultures, even in their material aspects. This is true not only of the 15,000 year-old Magdalenian of Europe, but almost as much of the Dorset culture that developed from the Arctic Small Tool tradition around the middle of the first millenium B.C., and flourished in the Eastern Arctic until the arrival of the Thule culture Eskimos, between the 11th and 14th century of the Christian era. At Nunguvik, we have two almost identical radiocarbon dates for the latest Dorset house (A.D. 1095) and the earliest Thule house (A.D. 1090). The corrected calendar dates fall within the 12th century (Ralph, *et al.*, 1973).

Variations of the Dorset harpoon heads during hundreds of years are relatively well known, and so are projectile points, knife blades and scrapers. Yet we do not know for sure whether the Dorset people had the bow and arrow. For years sled shoes had been found by the dozen (at Nunguvik, more than 30 were found in house 73 alone), but there was no indication of the kind of sled to which they were attached. No certain evidence had been recognized either of any watercraft, so much so that some archaeologists even doubted that the Dorset people had any kind of boat.

During the last fifteen years, however, several sites with exceptional conditions of preservation have provided much information on different types of Dorset artifacts made of organic material and particularly of wood. Foremost among these is the Nunguvik site (PgHb-1), where excavations have been carried out during nine seasons (Mary-Rousselière 1976: p. 42). There, below the 20 cm level, artifacts of organic material constitute sometimes 65% of the assemblage, and below 40 cm, the proportion of wooden objects reaches up to 50% of all specimens.

¹ Catholic Mission — Mission Catholique, Pond Inlet, N.W.T. X0A 0S0

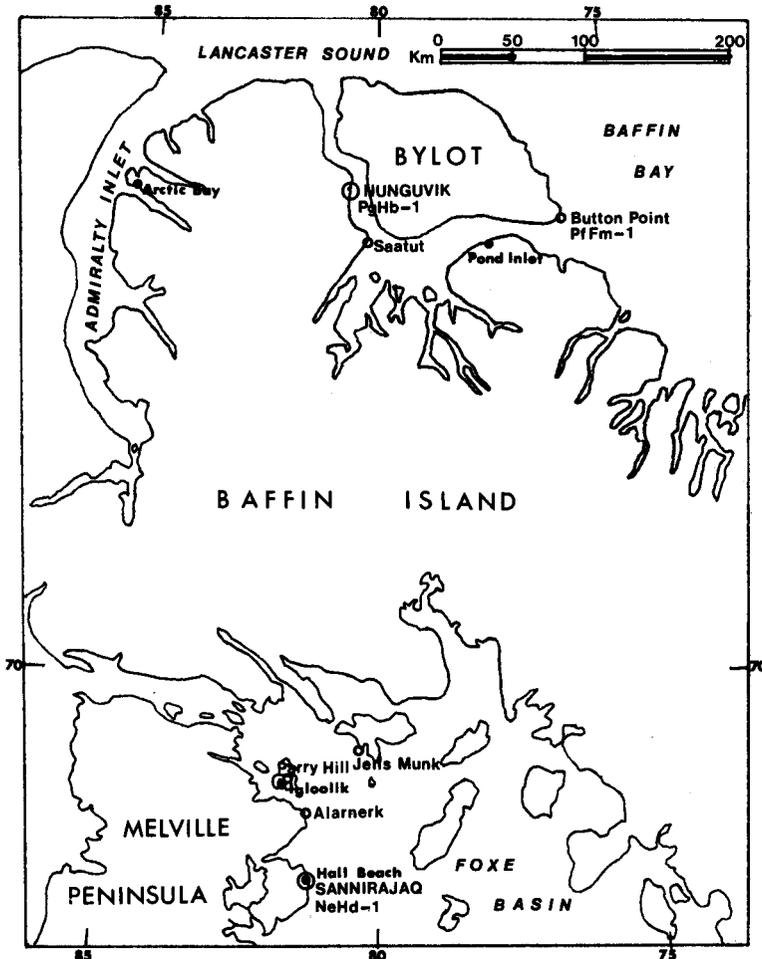


FIG. 1. The North Baffin region.

Before presenting the most interesting finds, a brief description of the site must be given. Nunguivik is situated on the west coast of Navy Board Inlet ($73^{\circ} 01' 30''$ N., $80^{\circ} 38'$ W., Fig. 1). It seems to have been inhabited almost continuously from early Dorset times down to late Thule, and more than 80 remains of habitations have been found between the 12 m level and the present sea level. However altitude does not have here the significance that it sometimes takes further south, as the level of the sea appears to have changed very little during the last 2000 years. The same beach level has sometimes been occupied for many centuries.

House 76 is located at the 5 m level and seems to have been occupied at two different times, according to the stratigraphy and to three of the four radiocarbon dates that we have. The first two dates are 1525 ± 100 (S-883, plant) and 1515 ± 70 B.P. (S-849, caribou bone); the third, 1310 ± 90 B.P. (S-845, plant). The fourth date, 2090 ± 55 B.P. (S-1202, charcoal), probably antedates the construction of the house.

House 73 is only about 1 m above sea level. Though excavations have not been completed, it seems that we have here a cluster of rooms or alcoves surrounding an almost empty space, with a paved entrance passage lined with upright stones. For this house we have seven radiocarbon dates ranging from 1935 ± 95 B.P. (S-1203, plant material), from the -50 to -60 cm level, to 1085 ± 90 B.P. (S-1205, caribou bone), from the top 15 cm. The last date indicates probably a late occupation of the land, after the house had been abandoned. The main occupation of the house is probably indicated by four other dates — all from plant material —: 1465 ± 85 B.P. (S-1204), 1490 ± 65 B.P. (S-846), 1510 ± 65 B.P. (S-1443), and 1550 ± 55 B.P. (S-1206).

Only a few metres south-west of house 73, and at about the same level, house 71 has been dated to 855 ± 70 B.P. (S-766), from a sample of plant mattress indicating the last occupation. It should be noted that a sample of the same material from Thule house 42, at the 12 m level, has given a date of 860 ± 90 B.P. (S-477). However no sign of Thule influence has been found in the Dorset house.

In these three Dorset houses have been found, besides several carvings of wood and other material, a great variety of wooden and composite handles, in a few instances with the stone tool still tied in place with sinew.

In 1974, we found in house 76 a small model of sled runner which did not seem very different from the modern Eskimo type. In 1975, it was in house 73 that we found a 40 cm long end piece of a full size wooden sled runner (Fig. 2a and b). It had two pairs of holes for the lashing of the cross-bars, and, at the lower part, three holes connected by transverse and longitudinal grooves, for the fastening of the shoes, several of which, made of ivory, antler and baleen, were found in the same house. It seems that, except

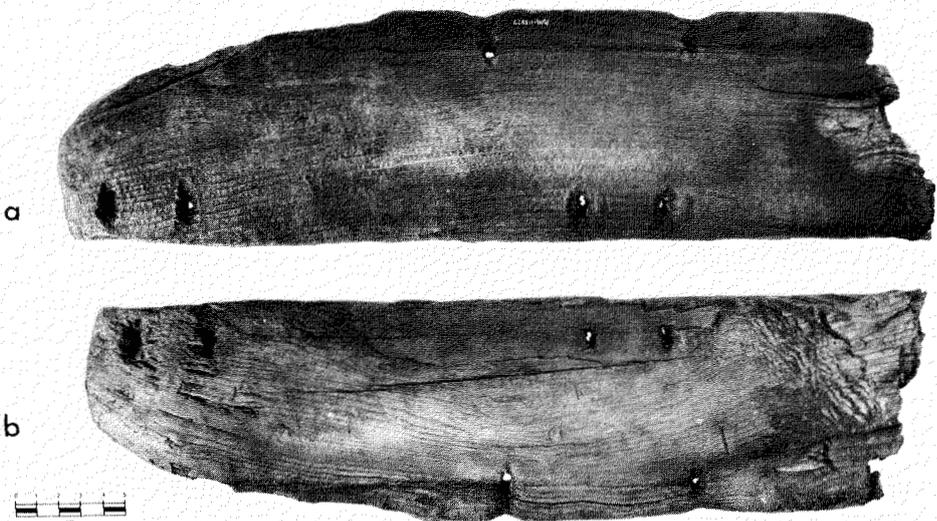


FIG. 2. a, b: End section of Dorset sled, from Nunguvik, house 73.

for the manner of attaching the shoeing, the Dorset sled looked very much like the Eskimo *qamutik*. However, it is not excluded that the Dorset people also used other kinds of sleds: a composite, curved, wooden piece (Fig. 3) from the same house looks suspiciously like the front part of a built-up sledge, though it may also have been fitted on the rear part of a *qamutik* or be part of a kayak.

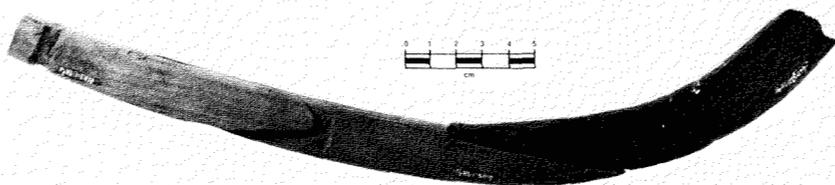


FIG. 3. Unidentified composite wooden object, from Nunguvik, house 73.

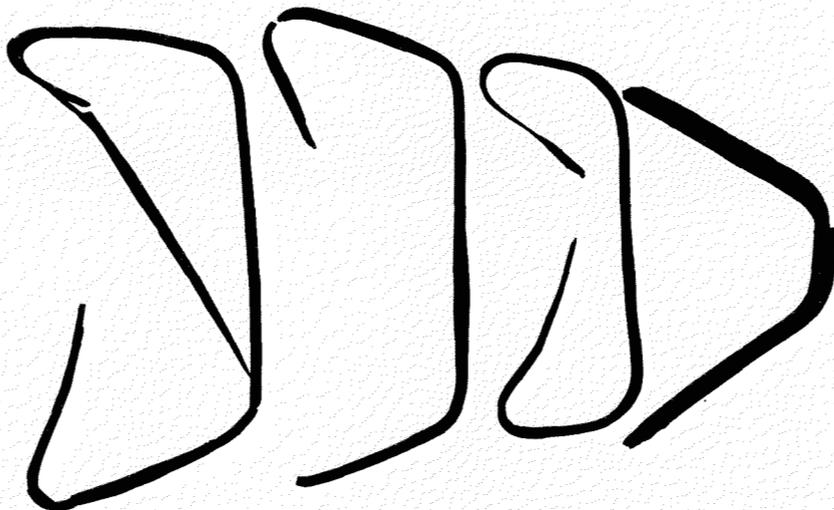


FIG. 4. Ribs of kayak model, from Nunguvik, house 71. The top rib is approximately 12 cm wide.

Parts of kayak or umiak models had already been found at Button Point in 1962, but in dubious stratigraphy. In 1970, several similar pieces of a kayak model were discovered in house 71. They were ribs (Fig. 4), straight at the bottom and meeting on the deck. Then, in 1974, a flat piece of wood, from 4 to 5 mm thick, measuring 312 mm by 30 to 40 mm and bent at an angle of 136° (Fig. 5, 6) was found in house 76. One end had been broken just after bending at a similar angle; the other was slightly bevelled, and the corresponding broken extremity of another wooden lath was still in place. This could hardly be anything but a rib fragment. The piece had been bent after being partly cut across on both faces, and tiny holes were regularly spaced on both sides of the piece, for the lashing of the longitudinal slats with sinew thread, fragments of which were still in the holes. The whole rib was carefully smoothed on the outside.

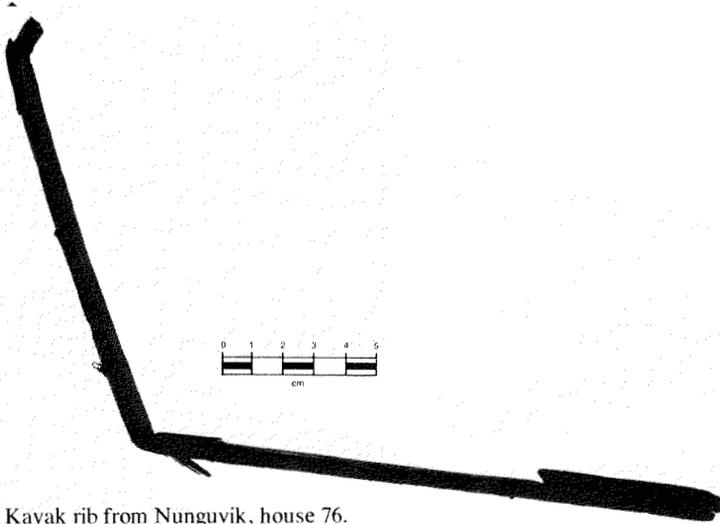


FIG. 5. Kayak rib from Nunguvik, house 76.

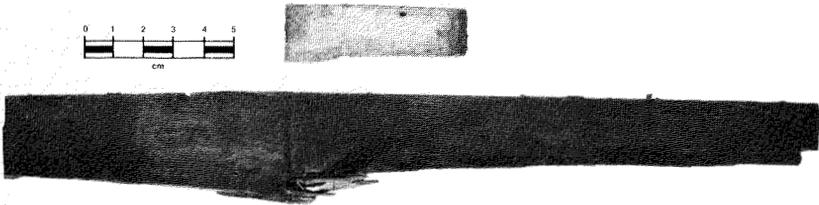


FIG. 6. Kayak rib from Nunguvik, house 76; convex side.

These finds support each other and suggest that the Dorset kayak was not very different from the modern sea kayak of the Baffinlanders, the main difference being that the ribs were more angularly bent, instead of being curved. Both the deck and the bottom appear to have been flat.

These two examples — sled and kayak — enable us to say that more traits inherited by the modern Eskimo culture were already present in the Dorset culture than was hitherto known.

Another similarity exists in fire-making techniques. In house 71, we have found a hearth of wood that has a charred pit connected with a groove for the tinder. It shows that at least these late Dorset people knew how to make fire by circular friction. Whether the wooden stick was rotated with a simple string, or with a bow, or just with the hands, remains unclear. One could of course imagine that the Dorset inhabitants of the house had borrowed the technique from their Thule neighbours, since the site may have been inhabited at the same time by representatives of the two cultures. However, as noted previously, no other sign of possible contact was found in house 71.

A more unexpected find was made in 1975 in house 73; that of a small ski-shaped wooden object (Fig. 7, 8). It is 160 mm long and 5 mm thick, measures 17 mm at the middle part, and gently tapers in a curve towards the ends which are both pointed and curved upwards, with traces of charring on the concave surface. In the middle of the upper surface are two transverse grooves ending on each side in tiny holes. On the opposite surface, directly

below one of these grooves, is another very shallow transverse groove. One half of a similar but slightly thinner object was found in the vicinity of the first one, and another half was brought to light in 1977, approximately at the same level.

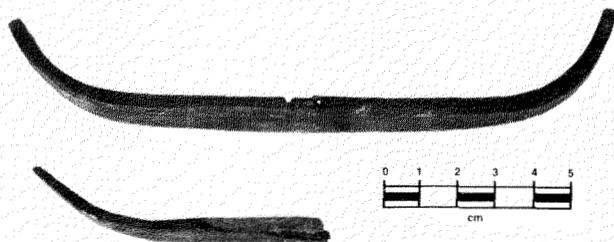


FIG. 7. "Model ski", side view.

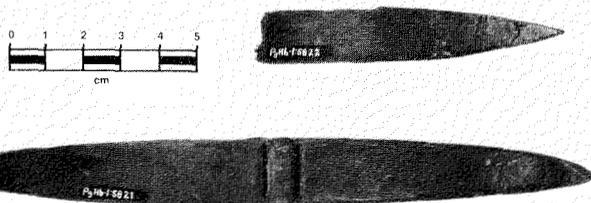


FIG. 8. "Model ski", from Nunguvik, house 73, seen from above.

The Eskimos to whom this piece has been shown have been unable to suggest any satisfactory explanation, and it is only reasonable, considering its shape, to regard it as a model ski. The two pairs of holes would correspond respectively to the toe and heel straps, and the groove on the under surface would allow a strengthening of the toe strap without impeding the sliding of the ski.

This specimen has been interpreted by some as a variant of the so-called "toy kayaks", known mostly from Button Point and a few other High Arctic Dorset sites. However I disagree with that interpretation for the following reasons.

In the first place, the outline of the two artifacts is slightly different: the sides of the "toy kayak" taper almost in a straight line from the middle wider part to the pointed ends, while the "ski" has almost parallel sides in the middle, whence they curve gradually towards the points. Above all, when seen from the side, instead of the slight uniform curve from end to end of the former, the latter is for the most part straight, but curves sharply at each end. While the kayak-shaped object, in its middle part, has only one transverse groove ending in small holes on each side — and sometimes near the point an oblong hole cut diagonally from the top to one of the sides —, the "ski" has two parallel grooves with two corresponding pairs of holes. Finally, contrary to the "ski" that shows no sign of ornamentation, the "kayaks" are generally profusely ornamented on the convex surface and on the sides with the

skeleton motif, and only occasionally and very sparsely on the concave face. These artifacts seem more likely to be ceremonial objects with representations of two bears — or human beings — having their heads at the opposite ends of the object.

Our model is very similar to ancient skis formerly used in Scandinavia and illustrated in different books of the 17th century, and especially to the Lappish ski, specimens of which, found in Sweden (and now at the Nordiska Museum in Stockholm), have been dated to between 1500 and 1200 B.C. It is said that "Lappish skis of all epochs have one feature in common — namely the point at both ends." (Bosi, 1960: 209 and pl. 4)

It is true that the available radiocarbon dates and the stratigraphy place our specimens between the 5th and the 7th century A.D. and seem to preclude any possible influence from the East through the Norsemen. However, skis have been known for a long time from circumpolar Eurasia. Many Siberian peoples, among whom the Samoyeds, the Tungus and the Gold, have used skis from time immemorial. According to Leroi-Gourhan, the Siberian ski is shorter and wider than the European one, and he illustrates a double-pointed ski which has only one curved end but two pairs of side holes in the middle part (Leroi-Gourhan, 1945: 253 and fig. 1055).

If, on the other hand, true skis are not known from the Eskimos, there is not a very great difference between skis and the wooden snow-shoes made by the Caribou Eskimos and described by Birket-Smith (1929 I: 184). These snow-shoes, like our model, have two holes on each side for the toe and heel straps, although these holes are placed near the fore-end. The use of wooden snow-shoes is also attested for the Copper Eskimos by Rasmussen (1932: 105). Birket-Smith points out that wooden snow-shoes are also known from the Eastern Cree, as well as from the Malecite, Penobscot and Iroquois, and suggests that this form "is possibly connected with the fundamental form of the ski in Eurasia" (Birket-Smith, 1929 II: 36, 37). Incidentally, it is to be noted that snow-shoes are known under the same Eskimo name from Alaska to Labrador, and that Peck, listing (with Erdman) the word used for skates, implies that it also designates "long snow-shoes" used for sliding (Peck 1925: 209, 210). In that particular case, a possible influence from Vinland cannot be discounted.

That skis were used in prehistoric times in the Pond Inlet area should not surprise us. Soft snow is encountered there more often than almost anywhere between Igloodik and Churchill, and it may have been even more so during milder periods. One could easily imagine the Dorset hunter using skis in order to avoid the cracking of the snow, while approaching a seal breathing hole in winter. They may also have been used on thin ice. The Polar Eskimos seem to have been quick to realize the advantage of skis. Among them, according to Holtved, "skis are used more commonly than snow shoes . . . They are made according to West Greenland pattern, covered on the underside by sealskin, and they are said to be useful when hunting *ûtoq*, because they make but little noise on the snow." (Holtved, 1967: 74 (Skis were originally introduced in West Greenland by the Danes.

The large amounts of wooden remains at Nunguvik and Button Point indicate that drift wood was available during the Dorset period and would have permitted the fabrication of skis. The latter might also have been made of baleen, great quantities of which are also found.

The last and most puzzling object to be described does not come from Nunguvik, but from the Sannirajaq site, near Hall Beach, on Melville Peninsula (NeHd-1).

I found the site accidentally in the early 1960's. It is situated a short distance west of the present Eskimo village, and appears to have been quite extensive. Unfortunately, it was almost entirely destroyed during the "DEW Line" construction period, when bulldozers scraped the top of the limestone ridges, in order to get gravel for the landing strip. In two hours, I found a record number of Dorset harpoon heads as well as other artifacts, just by following the bulldozer's tracks. The site is between 8 and 10 m above sea level, which is the late Dorset level in the region.

There, in the summer of 1974, Martina, a little girl, found a flat ornamented piece of bone — probably scapula — which she took to Fr. van de Velde, who sent it to me. It is apparently the slightly curved side of a composite box, less than 10 cm long, with a hole at one corner and a small groove along one of the concave edges. At least part of one of the long sides has been broken. On the convex face (Fig. 9b) is engraved the picture of a caribou, that appears to be

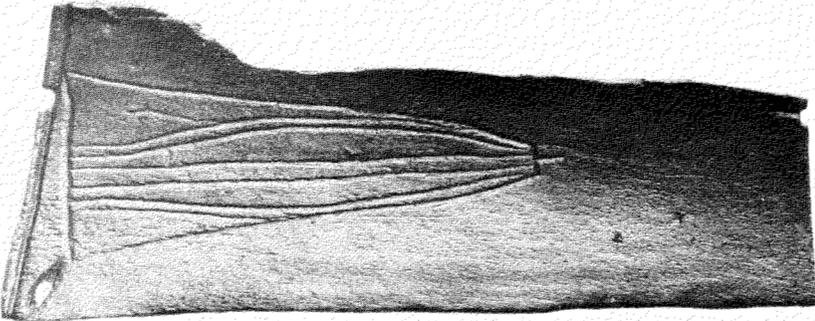


FIG. 9a. Ornamented bone plate from Hall Beach; concave side.



FIG. 9b. Ornamented bone plate from Dorset site, Hall Beach; convex side. Approximate length: 97 mm.

falling or pulling, ornamented with the skeleton design. Immediately behind the animal and pointing to it, is a roughly triangular, cross-hatched object, and just in front are two pairs of almost horizontal parallel lines, the upper ones slightly curved. A few other horizontal and diagonal lines are also faintly visible.

On the concave face (Fig. 9a) is another roughly triangular object, very carefully drawn, apparently a blow-up of the first one but without the transversal lines. The general outline is approximately that of an isosceles triangle with truncated point and slightly curved sides, or rather that of a delta-wing supersonic aircraft, with slightly flaring wings and a blunt nose from which extends a linear point. Inside the triangle are three pairs of parallel lines: the middle pair follow the median; the two other pairs begin near the middle one at the narrow end, expand in a curve on each side, ending at the base of the triangle near the middle pair.

It has been pointed out to me (Graham Rowley, pers. comm., 1974) that this object, and especially the front part, looks very much like the traditional wooden sledge of the Lapps, the *pulka*. Could the Dorset people have had domesticated caribou? A specialist of the Lappish culture, Mikel Utsi, is of the opinion that the caribou shown here "is certainly dragging a sled", and that the sled, "if it is drawn as seen from above, could be a Lappish *pulka*." (according to a letter from his wife, Dr. Lindgren, to Graham Rowley).

While caribou traction is not known from prehistoric Eskimo cultures, some archaeologists now believe that the Magdalenian people — who lived in western Europe approximately between 15,000 and 9,000 B.C. — had already domesticated the horse and the reindeer. There is no reason why the Dorset people could not have done the same with the caribou, especially if it is true that they had no dogs. Even after the discovery of a dog skull in a Dorset context, near Lake Harbour (Maxwell, 1973: 353), other archaeological evidence, such as the reduced size of the Dorset sled suggested by the narrowness of the shoe, — or lack of evidence — as well as the Eskimo traditions concerning the "Tunit" people, indicates that the use of dogs by the Dorset people must have been at most very limited.

In fact, the object illustrated on our artifact has much similarity, not only to the *pulka*, but to a baleen toboggan from Birnirk illustrated by Ford (1959: fig. 54). This type of toboggan has sometimes been used until recently in parts of Alaska, as well as by the *Sadlirmiut* of Southampton Island (Boas 1901: 72, fig. 95). However, it is hard to imagine why such a sled would have a flaring or wing shaped rear part, which could only act as a drag in the snow. The curved shapes of the double lines would also be difficult to explain in that case. Moreover, the picture on the convex face of the plate shows no sign of a connecting line between the caribou and the "sled".

The main objection is, of course, that — unless it was a local and short-lived attempt — one would expect that the domestication of the caribou at the end of the Dorset period would have left more traces — for instance in Eskimo traditions — and would have spread around, but such does not seem to be the case.

Another explanation has been suggested (Jorgen Meldgaard, pers. comm. 1975), that of a trap of the kind known to have been used in Scandinavia during prehistoric times and later in other parts of Europe (see Berg 1950-1951). These univalvular or bivalvular traps of various elongated shapes were made of wood and had wooden springs. In the Arctic, traps of analogous type could have been made of driftwood or of baleen. Perhaps our drawing might be compared with one of the Upper Paleolithic paintings of Lascaux, in which some archaeologists see the picture of a cow falling in a pitfall shown in front of her. It should be noted that in the drawing the mysterious object is not only shown behind the caribou, but that an attempt was apparently made to engrave it in front of the animal. That attempt seems to have been given up when the side of the bone plate broke.

It could be objected that if we have here a drawing of a Scandinavian type trap, why the cross-hatching? And if a simple pit covered with brush is represented, why the peculiar shape and the curves? . . .

Perhaps a more satisfactory interpretation could be found in a drawing reproduced in Rasmussen's book on the Copper Eskimos and representing "a fish trap (*qalo*) of plaited rushes" (Rasmussen 1932: 92). Except for a rounded end, it is very similar to the object shown behind the caribou. This kind of trap was placed in the middle of a stream between two stone barriers. The fish trap from the region east of Bathurst Inlet illustrated by Birket-Smith (1945: fig. 142 and p. 189), with its pointed end, looks even more like the Dorset engraving. "It is made of willow branches tied together" and is composed "of two roughly made cones, one with five, the other with four inside rings, and fastened at the back with sinew thread and babiche. The smaller one is placed inside the larger, and there is a crude handle made of a crooked branch."

It could be objected, of course, that there is no obvious relationship between a fish-trap and a caribou. But this interpretation has the advantage of corresponding more closely to our picture, as well as to a well-known Eskimo cultural element.

Other interpretations have been suggested: a projectile point, a blind, a boat. . . Some would take us into science fiction.

One point is clear: whoever made the drawings engraved them with what seems to be an unusual care, when we compare them with the very few other engraved pieces known from the Dorset culture; and the artist represented the same object not once but three times. One could perhaps explain it this way: the artist drew first the figure of the falling or pulling caribou, slightly right of center. Then, in front of the caribou, he — or she — started drawing the unidentified object, but in the course of doing so broke the side of the bone plate. Thus, not having enough space to finish it, he drew another picture on a smaller scale just behind the animal. Then, after finishing the cross-hatching, he found that the longitudinal lines had become blurred in the process, and decided to draw the object on a bigger scale on the opposite concave face, but without the transversal lines. Whatever it was, that object must have been of particular importance for the artist.

We may never know the answer to this puzzle, which like so many others has been left to us like a challenge by the mysterious Dorset people.

However, the Nunguvik site, among others, has already provided us with much invaluable information on the Dorset culture, and particularly on its wooden tools, means of transportation, and even ideology. It is likely to keep on shedding more light on the many-faceted Dorset picture.

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