

On the Development of Whaling in the Western  
Thule Culture

By *John Bockstoe*

*Sertryk*

FOLK

*Reprint*

Vol. 18 1976  
KØBENHAVN

## On the Development of Whaling in the Western Thule Culture

By *John Bockstoe*

In this essay the development of intensive whaling in the Western Thule culture of Arctic Alaska is considered in regard to several postulated pre-conditions. The constraints of technology, human organization, food resources, population, climate and landforms are briefly discussed<sup>1</sup>.

In an earlier paper I discussed the probability that the Birnirk culture had replaced the Norton and Ipiutak cultures on the American side of Bering Strait during a period of scarcity in the caribou and fish resources (Bockstoe, 1973 a). Birnirk hunters, because of their advanced harpoon technology, which included the drag float apparatus, were able to rely heavily on pinnipeds, especially during late spring and summer—a time of the year when Norton and Ipiutak hunters, who lacked drag float equipment, would have been forced to seek other sources of food. The primary dependence on the more stable sea mammal resources allowed Birnirk settlements to be maintained, during periods of scarcity in other resources, in areas where less technologically-advanced groups would have been unable to subsist (Bockstoe, 1973 a).

Birnirk settlements have been reported at only a few places in north-western Alaska: the Barrow area (Ford, 1959; Stanford, 1973), Point Hope (Larsen and Rainey, 1948), Cape Krusenstern (Giddings and Anderson, n. d.), the Cape Prince of Wales area (Collins, 1940), and at Cape Nome (Bockstoe, 1973 b). These sites are situated in areas which, today, are known for the most productive sea mammal hunting. For the most part, Birnirk remains have been dated from the middle to the later part of the first millennium A.D.

In the later part of the first millennium A.D., as the Birnirk culture developed into the Western Thule culture, its subsistence economy became more broadly based: greater numbers of caribou remains have been found in

several sites; and it is probable that in some areas, fish resources also began to be relied upon. At the same time an expansion of settlement into new areas occurred, and the development of intensive whaling hunting took place at a few sites (Bockstoce, 1973 b).

The development of intensive whaling in northwestern Alaska most probably occurred because several preconditions had been fulfilled. One of the most important of these contributory factors was the presence of a subsistence economy which was more broadly-based than the Birnirk economy. By about A.D. 800 to 1000 a wider use of resources occurred in post-Birnirk sites. For instance, of the faunal remains found in the early Western Thule House 7 at Cape Krusenstern, 36 % are caribou bones (Giddings, 1967: 94), but sites of the Birnirk culture on the whole do not show as strong a utilization of caribou. Similar indications of this new emphasis are suggested by a comparison of the ratios of harpoon and arrow heads found in the Birnirk type-site (12: 2) with those found in the Nunagiak site (1: 2), which has been estimated as having been inhabited about A.D. 1100-1200<sup>2</sup> (Taylor, 1963: 461). Stanford (1973) has also noted an increase in the amount of caribou remains found in the post-Birnirk levels of the Walakpa site near Barrow: Of the total bone count, about 22 % are caribou in the early levels (B 6 to B 10), and about 32 % are caribou in the middle levels (A 7 to B 5). This situation is most likely accounted for by an increase in the numbers of caribou which were available to the post-Birnirk hunters.

The more variegated post-Birnirk resource base may have accounted for an increase in the population of northwestern Alaska. The Birnirk beaches at Cape Krusenstern, in contrast to the Western Thule beaches, appear to have been more sparsely populated (Giddings, 1967: 101; Giddings and Anderson, n. d.) and a similar situation has been noted in the sites near Cape Prince of Wales (Collins, p. c.). Likewise, it is logical that the exploitation of other important resources would have allowed a tolerance for a lessened sea mammal yield, and therefore, that post-Birnirk sites would have been located not only in areas where Birnirk settlements had been, and which therefore had excellent sea mammal hunting potential, but also in other areas without this optimum resource advantage—Cape Denbigh, for instance (Giddings, 1964). This reasoning is consistent with the postulate that an early Thule (Stanford, 1973: 322) population inhabited an area east of Point Barrow, and spread as far as, or possibly farther than, the Mackenzie River delta (Taylor, 1963).

A broadened resource base, with increased food supply, would have been important because it would have allowed hunters to alter their hunting strategy. During whaling season it is not possible for whalers to engage seriously in other hunting activities: In order to have the most chances of taking whales, it was mandatory for the members of a whaling crew to main-

tain a 24-hour vigil beside their boat during the eight-week spring whaling season (Brower, ms.; Rainey, 1947). In northwestern Alaska winter and spring sea mammal hunting is known to provide a reliable source of food; if, however, eight weeks of specialized, possibly unproductive, hunting occur, then it is obvious that a surplus of food must be on hand to provide for this period. It seems, then, that a resource base which is reliable, but which lacks the probability of allowing the temporary accumulation of large surpluses of food, would tend to preclude the intensive hunting of whales because of the possibility of failure.

If a hunting group lacks the ability to accumulate large surpluses of food, then it must concentrate its hunting efforts on resources which can be obtained regularly and reliably. Conversely, with sufficient surpluses on hand it is possible to invest substantial effort into the hunting of less predictable resources which can yield larger amounts of food in proportion to the amount of energy expended. Thus, an effective hunting strategy, producing modest but regular food returns, can be altered upon the accumulation of sufficient surpluses to concentrate temporarily on a less certain food resource from which greater returns are possible. It is probable, therefore, that the more limited resource base available to Birnirk hunters was not adequate to support intensive whaling in northwestern Alaska.

The post-Birnirk development of intensive whaling also would undoubtedly have been dependent on four other interrelated factors: the presence of whales within range of the hunters; the possession of an effective technology for taking whales; a sufficient population for efficient hunting; and an ability to organize a cooperative effort.

The Birnirk technology included the necessary equipment for whaling: drag float apparatus, toggling harpoon heads, and *umiaks*. It is most likely that the necessary intra-crew cooperation—control by a boat captain over about seven or eight men—also existed.

Another factor in the organization for whaling, cooperation between several crews, may have been absent among Birnirk hunters. A coordinated effort between a number of whaling crews is necessary for maximum success in securing wounded whales; and this depends, at least partially, on having a sufficient population to man several whaling boats. It is possible that the Birnirk population was not large enough in any area to man enough boats for an efficient whaling operation. A post-Birnirk population increase, which was postulated above, may have been sufficient to remedy this.

The presence of whales within reach of hunters is dependent primarily on ice and landforms. In historic times, Bowhead whales, when travelling from the Bering Sea to their feeding grounds in the Beaufort Sea, have been forced close to the coast of northwestern Alaska by the leads in the ice. The position and character of these leads are crucial to the productivity of the spring

whaling season (Brower, ms., Maher and Wilimovsky, 1963) because the Eskimos must wait at the edge of the leads for the whales to pass. McGhee (1970) has suggested that the ice pack, if less extensive during a period of climatic warming, may not have functioned to force the whales close to shore. It is possible too, that in a cooler period, when the ice pack would probably have lasted longer near shore, more whales would have been found close to points of land farther to the south. Fluctuations between warmer and cooler climatic periods would then have caused certain points of land to have varied in their usefulness as whaling sites (Bockstoce, 1973 b, Stanford, 1973). In fact, Cape Krusenstern was occupied by whale hunters at about A.D. 1300-1400 (Giddings, 1967: 80-100), but in historic times, no whaling has been carried on there. Cape Krusenstern's use as a whaling site apparently coincided with a cooler period, which Bryson and Wendland (1967) have estimated to have begun after about A.D. 1200.

But whaling developed in the Bering Strait region about 1000 years before it is known to have been practiced intensively in northwestern Alaska. In the area of Bering Strait and St. Lawrence Island the abundant sea mammal resources have allowed stable, possibly large, human populations. And the inhabitants there at that time possessed drag float apparatus. In this area landforms rather than ice and climate, have contributed to the development of whaling. Both in Bering Strait and in the strait between Cape Chaplin and St. Lawrence Island, whales are forced by the landforms within the range of the hunters: Today at St. Lawrence Island large bodies of open water are often encountered during the whaling season and ice does not seem to be a significant factor in determining the whales' movements. The whaling crews, therefore, travel under sail to likely whaling spots.

It is interesting that during the millennium before the development of the Western Thule culture, other cultures, north of Bering Strait, were undoubtedly acquainted with whaling but did not practice it intensively. A whaling harpoon head has been found in an Ipiutak assemblage at Cape Krusenstern, and one was discovered in association with a Norton site at Singauruk, near Cape Prince of Wales (Giddings and Anderson, n. d.). Furthermore, three whaling harpoon heads were found at Point Hope in the Near Ipiutak phase of about the first century B.C. (Larsen, 1968; Larsen, p. c.; Larsen and Rainey, 1948). Because the Norton and Ipiutak cultures—and possibly Near Ipiutak as well—lacked drag float apparatus, which is a *sine qua non* for effective whaling, it is not surprising that these whaling harpoon heads are rare.

It is impossible to state with certainty why whaling should have failed to develop north of Bering Strait at a time when it was certainly being practiced south of there. It seems, however, that conditions were not conducive to its development because important contributory elements were lacking: It

was not until about A.D. 1000 that climatological, biological, demographic, technological and organizational factors coincided to allow the development of intensive whaling in northwestern Alaska.

## NOTES

1. Ethnographical Research on Eskimo Whaling has been sponsored by The University Museum, Philadelphia. I wish to thank Drs. Douglas Anderson, Henry Collins and William Taylor for their critical comments. Logistical support at Barrow, Alaska was provided by the Naval Arctic Research Laboratory.
2. These dates are presented according to Taylor's revision (1963) of Ford's estimate (1959). Stanford (1973), however, postulates a longer period of inhabitation.

## LITERATURE

- Bockstoe, John*  
 1973 a "A Prehistoric Population Change in the Bering Strait Region"; *The Polar Record*, Vol. 16, no. 103, Cambridge.
- 1973 b *Aspects of the Archaeology of Cape Nome, Alaska: 2000 Years of Cultural Change at Bering Strait*; unpublished D. Phil. dissertation, University of Oxford.
- Brower, Charles*  
 ms. *The Northernmost American: An Autobiography*; typescript, Naval Arctic Research Laboratory, Barrow, Alaska.
- Bryson, Reid and Wendland, Wayne*  
 1967 "Tentative Climatic Patterns for Some Late Glacial and Post-Glacial Episodes in Central North America"; *Life, Land and Water*; W. J. Mayer-Oakes, (ed.), Conference on Environmental Studies of the Glacial Lake Agassiz Region, Winnipeg.
- Collins, Henry B., Jr.*  
 1940 "Outline of Eskimo Prehistory"; *Smithsonian Miscellaneous Collections*, Vol. 100, Washington.
- p. c. Personal communication.
- Ford, James A.*  
 1959 "Eskimo Prehistory in the Vicinity of Point Barrow, Alaska"; *Anthropological Papers of the American Museum of Natural History*, Vol. 47, Part 1, New York.
- Giddings, James L.*  
 1964 *The Archeology of Cape Denbigh*; Brown University Press, Providence.  
 1967 *Ancient Men of the Arctic*; New York.
- Giddings, James L. and Anderson, Douglas D.*  
 n. d. Beach Ridge Archeology. In preparation.

*Larsen, Helge*

1968 "Near Ipiutak and Uelen-Okvik"; *Folk*, Vol. 10, Copenhagen  
p. c. Personal communication.

*Larsen, Helge and Rainey, Froelich*

1948 "Ipiutak and the Arctic Whale Hunting Culture"; *Anthropological Papers of the American Museum of Natural History*, Vol. 42, part 1, New York.

*McGhee, Robert*

1970 "Speculations on Climatic Change and Thule Culture Development"; *Folk*, Vol. 11-12, Copenhagen.

*Maher, W. J. and Wilimovsky, N. J.*

1963 "The Annual Catch of Bowhead Whales by Eskimos at Point Barrow, Alaska"; *Journal of Mammology*, Vol. 44, no. 1, Lawrence, Kansas.

*Rainey, Froelich*

1947 "The Whale Hunters of Tigara"; *Anthropological Papers of the American Museum of Natural History*, Vol. 41, part 2, New York.

*Stanford, Dennis*

1973 *The Origins of Thule Culture*; unpublished Ph. D. dissertation, University of New Mexico, Albuquerque.

*Taylor, William*

1963 "Hypotheses on the Origin of Canadian Thule Culture"; *American Antiquity*, Vol. 28, no. 4.

*John Bockstoe*

Old Dartmouth Historical Society  
(New Bedford Whaling Museum)  
Mass., U.S.A.