

## The Timing of the Thule Migration

By Robert McGhee\*

**Summary:** The Thule culture of Arctic Canada is archaeologically ancestral to that of the Central and Eastern Arctic Inuit (Eskimos). The present paper examines evidence relating to the date of the migration which brought ancestral Inuit to Arctic Canada, and speculates on the nature and cause of this migration. It is concluded that earlier hypotheses, relating the Thule migration to expansion of hunting potential during the Mediaeval Warm Period, does not adequately explain the apparent rapidity of the movement, nor the fact that the ice-fields of the central Arctic must have been unproductive for Thule hunters despite the climatic amelioration of the time. It is suggested that the Thule migration occurred very rapidly, and may have taken place in order to obtain metal either from the Cape York meteorites of northwestern Greenland, or from the Norse Greenlandic colonies.

**Zusammenfassung:** Die Thule-Kultur des arktischen Kanada ist der archäologische Vorläufer jener der zentralen und östlichen arktischen Inuit (Eskimo). Dieser Artikel untersucht die Informationen über den Zeitpunkt der Ausbreitung, die die Vorfahren der Inuit in das arktische Kanada brachte, und versucht, Art und Ursache dieser Bewegung zu ergründen. Danach erklären frühere Hypothesen, die die Thule-Ausbreitung mit einer Ausweitung des Jagdpotentials während des mittelalterlichen Wärmeoptimums in Verbindung bringen, weder die offensichtliche Geschwindigkeit der Bewegung noch die Tatsache hinreichend, daß die Eisfelder der Zentralarktis trotz der Klimabesserung für die Thulejäger unproduktiv waren. Es wird daher angenommen, daß die Thule-Ausbreitung sehr schnell erfolgte und ausgeführt wurde in dem Bestreben, sich Metall entweder von den Kap York-Meteorsteinen in Nordwestgrönland oder von den normannischen Siedlungen in Grönland zu beschaffen.

When Therkel Mathiasen defined the Thule culture of Arctic Canada in 1927, he placed the origins of that culture in the western Arctic, more specifically in northern or northwestern Alaska. The western derivation of Thule culture was confirmed by later archaeological research, which also traced Thule origins to a relatively long developmental sequence on the coasts of the Bering and Chukchi Seas. The apparent absence of a related sequence in Arctic Canada led to the assumption that Thule culture was brought to Arctic Canada in the relatively recent past. The term "Thule migration" became commonly used in discussions of the appearance of Thule culture in the central and Eastern Arctic; less commonly used was the term "Thule expansion", also implying a relatively large-scale movement of people. The possibility that Thule culture reached Arctic Canada not through population movement, but by diffusion to an indigenous population, has rarely been seriously considered, and does not seem to be supported by the archaeological evidence.

Despite the general assumption that a major culture change occurred across Arctic Canada as the result of a population movement from Alaska in the relatively recent past, there has been surprisingly little discussion on the nature and timing of that movement. For over 50 years, brief statements on the subject have been made on the basis of limited evidence, and often accepted uncritically by later researchers.

The purpose of the present paper is to examine three interrelated questions, in the light of earlier assumptions and present evidence:

- (1) When did Thule pioneers first reach the Eastern Arctic?
- (2) How long did these pioneers spend on the way from their Alaskan homelands?
- (3) Why did the Thule people move into Arctic Canada, and how did this influence the nature of their eastward movement?

Each of these questions will be examined separately, although it is clear that the answer to any one will condition the nature of the speculation on the other two. The paper addresses specifically the movement of Thule people across Parry Channel to the eastern High Arctic, ignoring those who may have followed a more southerly route, as recently suggested by MORRISON (1983).

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## (1) THE DATE OF THULE ARRIVAL IN THE EASTERN ARCTIC

MATHIASSEN (1927: 7) had no way of dating the Thule villages which he excavated, and did not attempt to do so, contenting himself with a statement that if beach ridge chronologies in Arctic Canada were similar to those of Scandinavia (which he did not believe to be true), the Thule remains were over 1000 years old. Only after excavating Greenlandic sites, and defining Inugsuk as a developed phase of Thule culture which could be dated by evidence of contact with the Greenlandic Norse, did he suggest an age of about 1000 years for the Thule expansion from Alaska (MATHIASSEN, 1936: 125). HOLTVED (1944), also using evidence of Norse contact, placed the early Ruin Island and Nûgdliit phases of northwestern Greenland in the 14th century, and suggested that the first Thule people had arrived in the area shortly before, probably during the 11th and 12th centuries. Following JENNESS, however, HOLTVED (1944: 165) believed that Thule people had lived in Arctic Canada for several centuries prior to A. D. 1000.

During the 1950's, neither GIDDINGS' (1952) dendrochronological work on Thule-related sites in Alaska, nor the rather erratic early radiocarbon dates, allowed for greater precision on the date of the Thule movement to Arctic Canada; both fields of evidence only supported the view that it had occurred in the centuries around A. D. 1000. The present situation is not greatly different, except that a larger series of radiocarbon dates, and recently acquired evidence on contacts between the Thule people and the Greenlandic Norse, allow us to at least postulate a more precise date for the arrival of Thule people in the Eastern Arctic. Let us look briefly at these two lines of evidence in conjunction with one another.

In Norse historical accounts, the first recorded meeting between the Norse Greenlanders and people who can be identified as Thule culture Inuit, occurred about A. D. 1266 on the northern part of the west coast of Greenland. Farther to the north, in the Thule District (HOLTVED, 1944) and the adjacent Bache Peninsula of Ellesmere Island (SCHLEDERMANN, 1980), Thule sites have produced a number of objects obviously derived from the Norse, and several radiocarbon dates on these objects (woolen cloth and oak wood) are consistent with a thirteenth or fourteenth century age. Curiously, this Ruin Island variant of Thule culture, with its obvious Alaskan affinities (SCHLEDERMANN & MCCULLOUGH, 1980), appears stylistically to be the earliest known Thule phase in the Eastern Arctic, and has produced two tenth century radiocarbon dates on samples of willow, as well as other early dates on less reliable material. Speculation on the temporal position of Ruin Island, and its relationship to other Eastern Arctic Thule variants, is probably best left to the archaeologists currently working on this material from the Bache Peninsula. Before leaving the extreme High Arctic, however, it is worth noting that an early Thule component at Buchanan Lake on eastern Axel Heiberg Island, again associated with European material, has recently produced a radiocarbon date on muskoxen bone of A. D. 1050±90 (P. SUTHERLAND, personal communication 1982).

On more southerly High Arctic islands, early Thule occupation has been radiocarbon dated to the eleventh or twelfth centuries A. D. A site at Brooman Point on Bathurst Island has produced dates on caribou antler of A. D. 1080±30 and A. D. 1150±30. Early houses at the site of Nunguvik on northern Baffin Island have provided dates on heather and caribou bone of A. D. 1090±90 and A. D. 1100±95 (ROUSSELIERE, 1979). The styles of harpoon heads and other artifacts from these two sites are very similar, and both resemble the assemblages from the M1, M2 and Lake sites at Resolute Bay on Cornwallis Island (COLLINS, 1951). Smelted copper and bronze of European derivation was found at Brooman Point, and smelted copper was identified from the M2 site (FRANKLIN et al., 1981). A Thule village at Port Refuge on Devon Island, which produced a portion of a bronze vessel, appears stylistically to belong to the same phase of Thule culture (PARK, 1983). The harpoon heads in assemblages from these eastern High Arctic sites (Thule type 3 with Sicco-like decoration, vestigial sideblade sockets and bilateral expansion; Thule type 2 with lashing slots; Thule type 4 with marked dorsal and ventral ridges distal to the line-hole) are somewhat similar to those from the Ruin Island phase but do not show the same marked resemblance to Alaskan patterns. In JORDAN's (1979) seriation of harpoon heads from northwestern Greenland, these are the earliest forms, with an estimated eleventh or twelfth century date. This estimate is sup-

ported by the four radiocarbon dates cited above, ranging from A. D. 1080 to A. D. 1150.

If we accept an eleventh or twelfth century date for these Eastern Arctic Thule components, we must account for the fact that European, presumably Norse, material is associated with several of the sites, while the first Norse historical record of meetings with Inuit relates to the latter half of the thirteenth century. There is growing evidence, however, that the Norse may have been in sporadic contact with North American Arctic peoples prior to that date (MCGHEE, 1984). A few European-derived objects have been recovered from Dorset sites in arctic Quebec, apparently dating to the twelfth century or earlier. Perhaps more convincing is the account of the Arabic geographer al-Idrisi, writing in Sicily around A. D. 1150, who described a people living in the "innermost isles" of the North Atlantic who built their houses of whale bones and used the same material for most of their other artifacts (MCGHEE, 1984). This description would appear to fit the Thule culture Inuit more closely than any other known North Atlantic population, and suggests that tales of encounters with Inuit had reached Europe by at least the mid-twelfth century. This interpretation is supported by the archaeological evidence of Norse material recovered from Thule houses apparently dating one or two centuries earlier than the first Greenlandic account of contact between Norse and Inuit.

To answer our first question therefore, it currently appears that Thule people were present in the Eastern Arctic during the twelfth century, that there is little evidence of their presence in the region at a date much earlier than that time, and that the latter half of the eleventh century is the most likely time period for the arrival of the first Thule people in the east. This estimate appears to coincide with those of most archaeologists currently working in the area.

## (2) THE DURATION OF THE THULE MIGRATION

Let us now turn to the second question, the length of time that the Thule pioneers spent in traversing Arctic Canada from Alaska to Greenland. This question can be dealt with rather quickly, since there is very little evidence on which to base conjecture. Few scholars have been willing to estimate the rate of the Thule movement across Arctic Canada, resorting instead to descriptive phrases ranging from "must have required considerable time" (TAYLOR, 1963: 462) to "unusual rapidity" (YORGA, 1979: 288) and "extremely rapid" (DUMOND, 1977: 141). HOLTVED (1944: 164), impressed by the similarity of Ruin Island and Alaskan artifacts, gave two centuries as his guess for the time which it took the ancestors of the Ruin Island people to travel from Alaska to Greenland. When pressed, most Arctic prehistorians tend to use terms such as "a few generations" or "a century or so" to describe the period of time which elapsed between the initial movement of Thule people towards the east and their arrival on the shores of Baffin Bay.

Two decades ago, and on the basis of very little information, TAYLOR (1963) postulated that the Thule expansion began not from Alaska, but from an Alaskan-related population which occupied the western Canadian Arctic as far east as Amundsen Gulf and Dolphin and Union Strait. Although this thesis has not been proven by later work in the area, ARNOLD's (1984) studies on southern Banks Island demonstrate the existence in the Amundsen Gulf area of a Thule related population as early as the tenth century A. D., supporting the earlier suggestions based on stray finds and undated collections. We may probably assume that this region of the Western Arctic was occupied at east 50 or 100 years prior to the appearance of the first Thule people in the Eastern Arctic. The early Amundsen Gulf Thule population may have reached the area as the result of a gradual population expansion from North Alaska, along coasts which provided a similar environment and similar resources to those of their homeland. Whether or not this population provided the pioneers who moved eastward into the alien environments of the Central and Eastern Arctic, they were at least in a position which allowed these pioneers to move through known territory for roughly half of the distance between North Alaska and Baffin Bay.

Further discussion of the duration of the Thule migration is best included in the following speculations on the third question posed by the paper: what caused some Thule people to leave the Western Arctic and venture into the unknown areas to the east?

### (3) THE CAUSE OF THE THULE MIGRATION

During the first few decades of Thule archaeology, little discussion was afforded this topic. In 1963 TAYLOR (1963: 461) admitted that the causes of the Thule migration were not known; in suggesting possible causes, he listed such "plausible platitudes" as population pressure at home and hunting potential abroad, the elaboration of dog-sledding, and climatic amelioration in the centuries up to A. D. 1000. During the late 1960's and 1970's the latter hypothesis was taken up by several scholars (MCGHEE, 1971; MCCARTNEY, 1977; STANFORD, 1976) who saw the relatively warm climate of the Neo-Atlantic or Mediaeval Warm Period producing changes in ice conditions, and consequently in the ranges of marine mammals, which encouraged Thule hunters to expand eastward into Arctic Canada. With the accumulation of palaeoclimatic evidence over the past decade, suggesting that the Mediaeval Warm Period may have ended earlier and not affected all Arctic areas to the same extent, this hypothesis has been seriously questioned. Alternative explanations, involving economic and social pressures in Alaska (SCHLEDERMANN & MCCULLOUGH, 1980: 841), or "a complex series of events involving cultural as well as ecological variables (YORGA, 1979: 290) have been recently proposed as more likely causes for the Thule expansion into the Central and Eastern Arctic.

Either ecological or cultural explanations, or more plausibly a combination of the two, may well apply to the expansion of a Thule population from Alaska to the Amundsen Gulf region of the western Canadian Arctic during the ninth or tenth centuries A. D. Neither set of explanations, however, seem appropriate to the further movement of Thule people northwards and eastwards to the Lancaster Sound and Baffin Bay regions. There are three alternate routes by which travellers can reach Lancaster Sound and the eastern High Arctic from the Amundsen Gulf region. To the north they could travel either up the west coast of Banks Island and then east through McClure Strait, or up Prince of Wales Strait to the west end of Viscount Melville Sound and then east to Barrow Strait and Lancaster Sound. These routes present similar difficulties in the expanses of second-year and multi-year ice which choke McClure Strait and Melville Sound for most or all of the year, making both boating and sledding hazardous as well as difficult. To the east, they could have passed through Coronation Gulf and Queen Maud Gulf, then north through the channels west of Boothia Peninsula and Somerset Island. Here they would have encountered the extensive single-year ice which covers the gulfs of the Central-Arctic for most of the year, an environment to which the early Thule people of the region do not seem to have been well adapted (MORRISON, 1983); turning north, they would then have encountered the multi-year ice moving southward down McClintock Channel from Melville Sound.

It would seem likely that the slightly warmer climatic conditions of the Mediaeval Warm Period would have had little effect on the extent and seasonal duration of this multi-year ice, which is augmented by polar pack flowing through McClure Strait into Melville Sound, and then drifting southwards through both Prince of Wales Strait and McClintock Channel (LINDSAY, 1977). This ice barrier, over 500 km in extent, has probably always posed a difficulty to human travel, as well as restricting the ranges of bowhead whales and other sea mammals. Despite recent surveys, evidence of no more than casual Thule occupation has been found along the coasts of Melville Sound, and no evidence of early Thule occupation either here or along the coasts west of Somerset Island and Boothia Peninsula.

If we accept that the ice barrier between Amundsen Gulf in the west and Barrow Strait or Prince Regent Inlet in the east existed in early Thule times, it must have been a formidable obstacle to population expansion caused by cultural or economic reasons. Indeed, the apparent rarity of early Thule archaeological sites in the Amundsen Gulf region suggests that there must have been considerable room for population ex-

pansion in this region without the necessity of venturing farther to the east. It is difficult to argue that people may have been tempted eastward by hunting potential, since there is no reason to believe that the Eastern Arctic was ever more productive than the Amundsen Gulf region, and it could only be reached by a difficult journey through the unproductive icefields surrounding northern Banks and Victoria Islands.

In view of the situation described above, it is tempting to suggest that the Thule people who moved from Amundsen Gulf to the eastern High Arctic did so for a specific purpose, and one which was not closely tied to economic pressure in the west or hunting potential in the east. In searching for such a purpose, the most obvious possibilities lie in the relationships between the early Thule people and the Dorset population which occupied the Central and Eastern Arctic at the time. Late Dorset sites, which may have been inhabited at the time of the early Thule occupation of Amundsen Gulf, are known as far west as southern and western Victoria Island (MCGHEE, 1969; TAYLOR, 1972) and at least sporadic contacts probably occurred between the two groups. Assuming that there was contact between the peripheral Dorset and Thule populations, what could the Dorset people, have had that the Thule people wanted badly enough to tempt them eastward into the heart of the Dorset territory?

The most likely possibilities would seem to be access to hunting grounds or other resources. Access to hunting grounds seems an unlikely cause for Thule expansion. As was noted previously, there is no indication that the sea mammal hunting of the Central and Eastern Arctic was superior to that of Amundsen Gulf. The Dorset people did have greater access than did the Thule to the caribou, muskoxen and car resources of the Central Arctic, but these resources are concentrated on the Low Arctic islands and adjacent mainland, where there is as yet no evidence of very early Thule penetration. Most of the technological resources to which the Dorset population had superior access — wood, soapstone, native copper — also lie on the Central Arctic mainland, and would not seem a likely cause for Thule movement to the north and east.

The Late Dorset people did have access, however, to one resource which originated in the eastern High Arctic — meteoric iron from the Cape York meteorite fall in northwestern Greenland. Meteoric iron appears for the first time in Late Dorset collections from High Arctic sites such as Buchanan Lake (P. SUTHERLAND, personal communication 1983), and Dundas Island (MCGHEE, 1981). As far south as Igloolik, J. MELDGAARD reports (personal communication 1984) that iron was present in the latest Dorset occupations. Native copper recovered from Late Dorset sites in the High Arctic almost certainly originated from the Coppermine-Victoria Island area adjacent to the early Thule occupation of Amundsen Gulf, indicating the possibility of trade in iron passing in the opposite direction. If this did occur, it is likely that the Thule people of Amundsen Gulf were able to obtain small quantities of iron from their Dorset neighbors, and knew that the source of the metal lay somewhere to the east or north.

It seems certain that the early Thule people were heavily dependent on metal, particularly for the edges of tools for working bone, antler and ivory (McCartney and Mack 1973). Not only are metal fragments, oxide stains left in hafts by metal blades, hafts designed for metal blades, and organic materials worked with metal blades, found in all Canadian Thule assemblages, but these assemblages contain practically no stone tools capable of working the hard organic materials from which most items of Thule technology were manufactured. The Alaskan Thule people and their ancestors had probably obtained small quantities of metal by trade across Bering Strait throughout the first millennium A. D., and had learned to work it by hammering into useful cutting edges for tools and weapons. The existence of an alternative source of metal in the Eastern Arctic, and a source which was apparently in the hands of the relatively small, scattered and poorly-armed Dorset population, may have proved very attractive to Thule pioneers or adventurers, and may have led directly to the exploration of the eastern High Arctic.

If the above assumptions are correct, it is possible to postulate one or more rapid journeys of exploration, probably occurring during the eleventh century A. D., composed of a few families and lasting only a few years. The first half of the journey, through the unproductive icefields to the west of Lancaster

Sound, would probably have to have been made in a single season. Having reached the more productive waters of Lancaster Sound they could have hunted the same animals by the same techniques as they had in northern Alaska or the Amundsen Gulf area. Here they must also have encountered more Dorset people, who were probably able to give more precise directions to the source of the iron. Using the analogy of the mid-19th century migration of people from northern Baffin Island to northwestern Greenland (ROUSSELIERE, 1980), the remainder of the journey could have been accomplished in two or three years at most. The entire exploration and return to the western Arctic could easily have been carried out in less than a decade.

As the result of an exploration of this sort, the Thule people of Amundsen Gulf could have learned several things: that the Eastern Arctic provided similar resources to those of the west; that the region was occupied by a Dorset population which would not be much of a threat to immigrants; that meteoric iron was available for the taking; and possibly that the area was visited occasionally by Europeans, the Greenlandic Norse, from whom metal could be obtained either by trading or by attacks. Knowledge such as this would have made migration to the Eastern Arctic attractive to groups which, for social or economic reasons, were in trouble at home. Within a further decade, such a process could have resulted in a scatter of small Thule communities along the coasts of Lancaster Sound and Baffin Bay. Some of these communities, in turn, could quickly have decided to move south to the more productive areas of the Low Arctic Islands and Hudson Bay, thus creating the matrix from which the Thule occupation of the Eastern Arctic could be completed within one or two centuries.

To summarize, speculation based on our current knowledge of Canadian Arctic prehistory leads to the presentation of three hypotheses:

- (1) The first appearance of Thule people in the Eastern Arctic most probably occurred during the latter half of the eleventh century A. D.
- (2) The prime motivation for the movement of Thule people to the Eastern Arctic was the search for metal, in the form of either meteoric iron or smelted metal from the Norse colonies in Greenland.
- (3) Thule occupation of the Lancaster Sound and Baffin Bay region could have occurred, and probably did occur, within less than one or two decades of the first explorations of the Eastern Arctic.

Together, these hypotheses present a picture of a Thule migration which was much swifter and more deliberate than the gradual population expansion, resulting from environmental, economic or social processes, which is usually envisioned. I suggest, however, that this picture is more in accord with the evidence currently available, and helps to explain puzzling facts such as the very early radiocarbon dates on Thule sites in the eastern High Arctic, the similarity of these early Thule assemblages to those of Alaska, and the fact of Thule population expansion past the great sea-ice barriers of the Central Arctic.

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