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The Question of Contact Between Dorset Paleo-Eskimos and Early Europeans in the Eastern Arctic

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The Dorset culture of Arctic Canada and Greenland is an archaeological construct developed through 80 years of discussions, shared knowledge, and opinions among a small circle of archaeologists and art historians. This construct was originally viewed as an early form of Eskimo culture, then as a product of cultural influences emanating from forest Indian societies, and possibly as a conduit for the spread of technologies from Siberia to Subarctic North America (Campbell 1962; Jenness 1925; Meldgaard 1962). However, these hypotheses were generally abandoned as accumulating archaeological knowledge failed to produce the expected evidence of contacts with forest cultures or of Dorset participation in the evolving Eskimo cultural tradition of Alaska and Siberia. Most perplexing to archaeologists was the minimal evidence of contact between Dorset people and Thule-culture Inuit who moved into the eastern Arctic in the centuries after AD 1000 (Friesen 2000; McGhee 1997; Park 1993, 2000).

The apparent disappearance of the Dorset people, either before or shortly after Inuit began immigrating to Arctic Canada from Alaska, led to the growing recognition that they had played little or no role in the development of Inuit culture and society. Dorset culture began to be considered as an entity that was not only unique

but showed little resemblance to other hunting peoples known to history and anthropology (Friesen 2000:216; McGhee 1996:7). The Paleo-Eskimo cultural tradition, of which Dorset represents approximately the final 2,000 years, was portrayed as one that was technologically conservative, molded primarily by adaptation to the distinctive environmental conditions of Arctic Canada and Greenland, and developed in apparent isolation from adjacent peoples and cultures of both the boreal forests and the western Arctic (Maxwell 1985; McGhee 1996). In summarizing the conclusions of a 1972 symposium on the Paleo-Eskimo tradition in Arctic Canada, Maxwell characterized Dorset as "a closed cultural system" except for possible contact with Thule Inuit culture during its "terminal years" (1976:3).

The view of Dorset culture as unique, isolated, and possibly extinct by the date traditionally ascribed to Eirik the Red's discovery of Greenland is not conducive to the easy acceptance of evidence suggesting contact between the Dorset and early European occupants of the eastern Arctic. Indeed, it can be proposed that these assumptions regarding the isolation of Dorset culture may have precluded the recognition of such evidence in archaeological material excavated over the past five decades.

Archaeological Evidence of the Norse in North America

The westward expansion of the Norse between the eighth and eleventh centuries AD (Fitzhugh and Ward 2000; Jones 1986) is well documented archaeologically. Numerous excavations have confirmed the Icelandic saga accounts of the ninth-century discovery of Iceland and the late-tenth-century discovery and settlement of southwestern Greenland. Limited Norse exploration of northeastern North America is also described in the Icelandic sagas, and the interpretation of these narratives led Helge Ingstad (1985) to the discovery and excavation of a small Norse settlement at L'Anse aux Meadows on the northern tip of Newfoundland. Americanist archaeologists were initially skeptical of this identification, and for several years Ingstad (1985:11) had few supporters. The Norse attribution of the L'Anse aux Meadows site is now generally accepted, and Linderoth Wallace (2003) makes a strong argument for the locality representing the remains of the actual outpost described as *Straumfjord* or *Leifsbudir* in the Vinland sagas.

Thule-culture Inuit sites in Arctic Canada have produced a number of specimens of European origin, which are attributed to contact with the Greenlandic Norse. Most are small pieces of smelted iron, copper, and bronze, but the inventory also includes portions of a bronze trader's balance and a bronze pot, as well as an Inuit carving from southern Baffin Island (within a few kilometers of the Nanook site discussed below) that represents a person in European clothing (McCartney and Mack 1973; McGhee 1984; Sabo and Sabo 1978; Schledermann 2000; Sutherland 2000a). Schledermann (1980, 2000) reports the recovery of materials as diverse as iron ship rivets, chain mail, woolen cloth, and a carpenter's plane from early Inuit sites on eastern Ellesmere Island. He (2000:251) argues that the nature and quantity of materials found here and in adjacent northwestern Greenland suggest that direct contact occurred in this region,

probably during the thirteenth century and perhaps involving the shipwreck of a Norse vessel. Most Norse material from Inuit sites in other regions is likely to have been dispersed through Inuit trade routes from this primary contact area (Schledermann 2000:252), although the carving mentioned above may indicate a direct Norse presence on southern Baffin Island. Small objects of smelted metal have also been reported from three Dorset sites, one in the High Arctic, one on the south coast of Hudson Strait, and one on the east coast of Hudson Bay (Sutherland 2000a:247).

In temperate North America numerous finds have been proposed as evidence of a Norse presence, but none aside from L'Anse aux Meadows has achieved general scholarly acceptance. The purported evidence includes a mix of clear misattributions such as the colonial-period Newport Tower, obvious forgeries of which the Kensington Stone is the prime example, and a wide array of simple frauds and naive misidentifications (Linderoth Wallace and Fitzhugh 2000; Wahlgren 1986). As a result, the archaeological community has become wary of claims relating to precolumbian European activity in the New World and responds vigorously in questioning such assertions. This stance has been a justifiable reaction to patently false evidence in areas that are geographically distant from the known Norse sphere of activities.

However, a similar response was precipitated when Thomas E. Lee (1968 and numerous later publications) reported a complex of puzzling evidence from the southern coast of Hudson Strait. Some of Lee's finds were apparently associated with Dorset-culture occupations, and the location in Nunavik (the Ungava region of northern Quebec) provided a geographical context that might plausibly relate to Norse activity. Although the indications presented may have been inadequate (McGhee 1984:20), the vigorous rejection of Lee's claims by eminent Americanist archaeologists appears to have been largely based on prejudice rather than on

consideration of the evidence offered (McKusick 1980).

It is perhaps not surprising, therefore, that several decades later preliminary presentations of evidence suggesting Dorset–Norse contact on Baffin Island and in Labrador (Sutherland 2000b, 2002) have again met with dismissive reactions (Odess and Alix 2004; Park 2004). The first public response (Park 2004) associated this evidence with Lee’s widely discredited Nunavik finds, the Kensington Stone, and the “Farfarers” created by novelist Farley Mowat.

The current chapter attempts to address this response by outlining the historical and geographical factors that indicate that the eastern coasts of Baffin Island and northern Labrador, as well as Hudson Strait, might be expected to have been within the sphere of activities undertaken by Norse hunters or traders. The nature of the evidence relating to early European activity on Baffin Island and in northern Labrador is briefly summarized. Finally, the chapter discusses significant questions that need to be answered before we attain a clear picture of social and cultural developments in the eastern Canadian Arctic during the centuries around AD 1000.

Historical and Geographical Context

The period during which precolumbian Europeans are most likely to have had a significant presence along the eastern coasts of Baffin Island and Labrador begins with the Vinland explorations of the early eleventh century and ends with the disappearance of the Norse Greenlandic colonies during the mid-fifteenth century. In this chapter, the term *Viking* denotes the pre-Christian phase of Norse culture dating between the late eighth and early eleventh centuries AD, while the following four centuries are ascribed to the “Medieval” period.

Both *Eirik the Red’s Saga* and *The Greenlanders’ Saga* (Jones 1986:186–232) report that the Norse named three countries to the west of Greenland. From south to north these are Vin-

land, which historians now generally place in the Gulf of St. Lawrence region; Markland, described as a forested landscape that is usually identified as southern and central Labrador; and Helluland, a barren and rocky region that is considered to likely comprise the tundra coasts of northern Labrador and Baffin Island. The saga accounts relate to the Viking period around AD 1000, while an entry in an Icelandic annal for the year 1347 refers to the arrival of a ship from Markland, suggesting that visits to the Labrador coast continued for over three centuries (Gad 1971:123). The most likely route to the forests of Markland would have passed along the coasts of Helluland.

The route from Greenland to Helluland is shorter and more sheltered than open-sea crossings between Europe, Iceland, and Greenland and would have posed no difficulty for Norse sailors. With the ships available during the Viking and Medieval periods, the crossing of Davis Strait could have been accomplished in two days under normal conditions (Vinner 1993: 100). The present distribution of sea ice in Davis Strait and the Labrador Sea would restrict such voyages to the period between early July and late November (Natural Resources Canada 2005). However, the earlier phases of the Norse expansion coincided with a warmer climatic episode and a reduction in the annual extent of sea ice throughout the Arctic Basin (Ogilvie et al. 2001), which may have allowed the navigation season in Davis Strait to begin several weeks earlier.

The Norse abandonment of their attempted settlement in Vinland is generally ascribed to fear of native attack (Linderoth Wallace 2003: 216). An important consideration in Norse decisions to visit any of the lands west of Greenland would have been the presence of an indigenous population. The aboriginal occupants of Vinland and Markland would likely have been the ancestors of the Algonkian-speaking peoples of southern Labrador and the coasts of the Gulf of St. Lawrence (Odess et al. 2000:200). Related

Indian peoples occupied the Subarctic forests of the Labrador coast but probably did not penetrate the tundra regions to the north. The 1347 annal entry referring to a Markland voyage—which Þorláksson (2001:73) proposes was associated with the Greenlanders' continuing need for timber and bog iron ore—suggests that such journeys were made despite the fact that the area was occupied by an Indian population.

The tundra regions to the north of tree line in Labrador and Nunavik are now the traditional lands of the Inuit. However, the first historical account of an Arctic people who can probably be identified as ancestral Inuit dates to AD 1266 and refers to the High Arctic region of northwestern Greenland. McGhee (this volume) presents an interpretation of current archaeological evidence suggesting that the initial movement of Inuit from Alaska to the eastern Arctic occurred at about this time and that the first immigrants were attracted to the eastern High Arctic by access to meteoric iron and items of Norse metal technology.

If one accepts this late timing for the arrival of the Inuit, the region that was called Helluland would have been inhabited by neither Indians nor Inuit during the first centuries of the Norse occupation of Greenland. Many portions of the region were likely occupied by Dorset Paleo-Eskimos, whose ancestors had been the primary inhabitants of the eastern Arctic for over three millennia (Maxwell 1985:215–245). Park (2000) questions the radiocarbon dating evidence that indicates Dorset survival into this period, but his skepticism is contradicted by an accumulating series of associated radiocarbon dates between the eleventh and fifteenth centuries AD (Fitzhugh 1994; Friesen 2004; Sutherland 2000b). The Dorset people can probably be identified with the *Tuniit* of Inuit oral tradition, in which they are described as a relatively harmless people who could easily be displaced by ancestral Inuit. Current archaeological evidence has been interpreted as supporting the characterization of Dorset people as a poorly armed,

relatively nonterritorial society with a sparse and dispersed population, averse to intercommunity conflict and relatively open to communication with other groups (Friesen 2000). Small parties of Dorset people, inhabiting a tundra environment where the Greenlandic Norse felt at home, are not likely to have been a significant deterrent to early European visits to and use of the region.

Greenlandic Norse society required a continuing supply of select animal products—walrus tusks and hides, narwhal tusks, polar bear hides, and occasional live bears—which could be used for the payment of Norwegian taxes and church tithes, as well as for commercial trade with northern Europe (Arneborg 1996, 2000). These animals were probably soon extirpated from southwestern Greenland, necessitating annual hunting trips far up the Greenland coast to the region known as *Nordsetur*. Helluland populations of walrus, narwhal, and polar bear would have been comparable or superior to those of the *Nordsetur*, and the forest regions on the southern fringe of Helluland supported populations of animals such as mink, marten, otter, and beaver, the furs of which would have been highly valued by the Norse. These resources, observed during voyages to Markland and Vinland, would have been tempting to parties searching for new hunting grounds.

If the Norse hunted in this region, contact with the local Dorset populations would have been inevitable. It has been argued (Sutherland 2000a:246–247) that the indigenous hunting peoples of Arctic Canada possessed ivory, for which Norse visitors would probably have been willing to trade for small pieces of metal such as those found in a few Dorset sites from Arctic Canada and northwestern Greenland. The resources of Helluland would therefore have been not only a potential magnet for Norse commercial hunting but an encouragement to the establishment of mutually beneficial relations with the local Dorset population.

In sum, there seems to be no persuasive argument against the inherent probability of pre-

columbian Europeans having visited the coasts of Baffin Island and northern Labrador and having made contact with the native inhabitants. The region was known to the Greenlandic Norse and was within easy reach by sailors possessing the ships and navigational skills of the period, the environment was familiar, and it contained valuable resources that were scarce in the vicinity of the home colonies. Perhaps most important, it was occupied only by small bands of people who may have been neither capable of nor interested in mounting an effective defense against visitors and whose interests were more likely to have been in the development of trade.

Recently Recognized Archaeological Evidence from Dorset Sites in Arctic Canada
A report published in 2000 provided a brief description of unusual materials that had been found in existing museum collections from three Dorset archaeological localities on Baffin Island (Nunguvik, Cape Tanfield, and Willows Island; Figure 14.1); material from a fourth locality in northern Labrador (Avayalik Island) was also mentioned (Sutherland 2000b). The article focused on the presence of technological elements that were anomalous for known Dorset Paleo-Eskimo assemblages. Artifacts discussed included lengths of spun and plied cordage and a variety of wooden objects that in form and workmanship resembled Viking and medieval Norse specimens. A Norse association was supported by the recovery, from house complex N73 at Nunguvik on northern Baffin Island, of three artifacts made from a species of pine rarely found in the Arctic drift; two of these contained holes made by iron nails, and one had been radiocarbon dated to the late thirteenth or early fourteenth centuries AD (Mary-Rousselière 2002:105). The plied cordage spun from arctic hare fur that was found in this collection and other assemblages was entirely comparable to yarns from two textile fragments recovered from fourteenth-century deposits at the Greenlandic Norse farm Gården under

Sandet (Østergård 1998; Walton Rogers 1999a, 1999b, personal communication 2000). Late Dorset portraits of human faces, which several researchers had observed as having European-like features, were discussed as possible evidence of contact, and new examples were illustrated.

Since the appearance of that preliminary report, continued examinations of museum collections from the four site localities noted above have increased the number and variety of materials suggestive of an early European presence (Sutherland 2002). The significance of these finds has been explored through library research and study of museum collections in Scandinavia, the British Isles, and Greenland. In addition, further investigations have been conducted at three of the sites. Archaeological excavation was carried out in 2000 and 2001 at Nunguvik, in order to gather information on the context from which the earlier collections had been derived. In 2001, limited testing was conducted at the Nanook site on Cape Tanfield on the south coast of Baffin Island, and in 2002 a brief visit was made to Willows Island 4 located in outer Frobisher Bay. It was decided that the Nanook site possessed the highest potential for providing significant information related to the study, and excavations were undertaken in 2002 and 2003.

Full descriptions of the information and materials recovered during these investigations will be reported elsewhere. The following section presents a summary of evidence that adds to the pattern of anomalous technological elements described earlier.

1. Artifacts

Excavations at the Nanook site have added significantly to the assemblages recovered by earlier researchers (Arundale 1976; Maxwell 1973: 159–190). Material identifications and technical and comparative analyses have been undertaken on a range of artifacts obtained as a result of these new investigations, as well as on specimens that were previously excavated from Nanook,



FIGURE 14.1. Map showing the Greenlandic Norse colonies and the site localities on Baffin Island and in Labrador.

adjacent sites in the Tanfield Valley, Willows Island 4, Nunguvik, and Avayalik-1.

Numerous pieces of cordage in lengths up to 470 mm have been recovered from the Nanook site; all are spun from animal hair (Figure 14.2) and are comparable in structure and man-

ufacture to specimens from Norse Greenland (Walton Rogers 2001a, 2001b, 2004a, 2005a). Microscopic analysis has been carried out on more than 100 samples. Most have been identified as arctic hare, the species that had also been used in cordage from Nunguvik and Willows

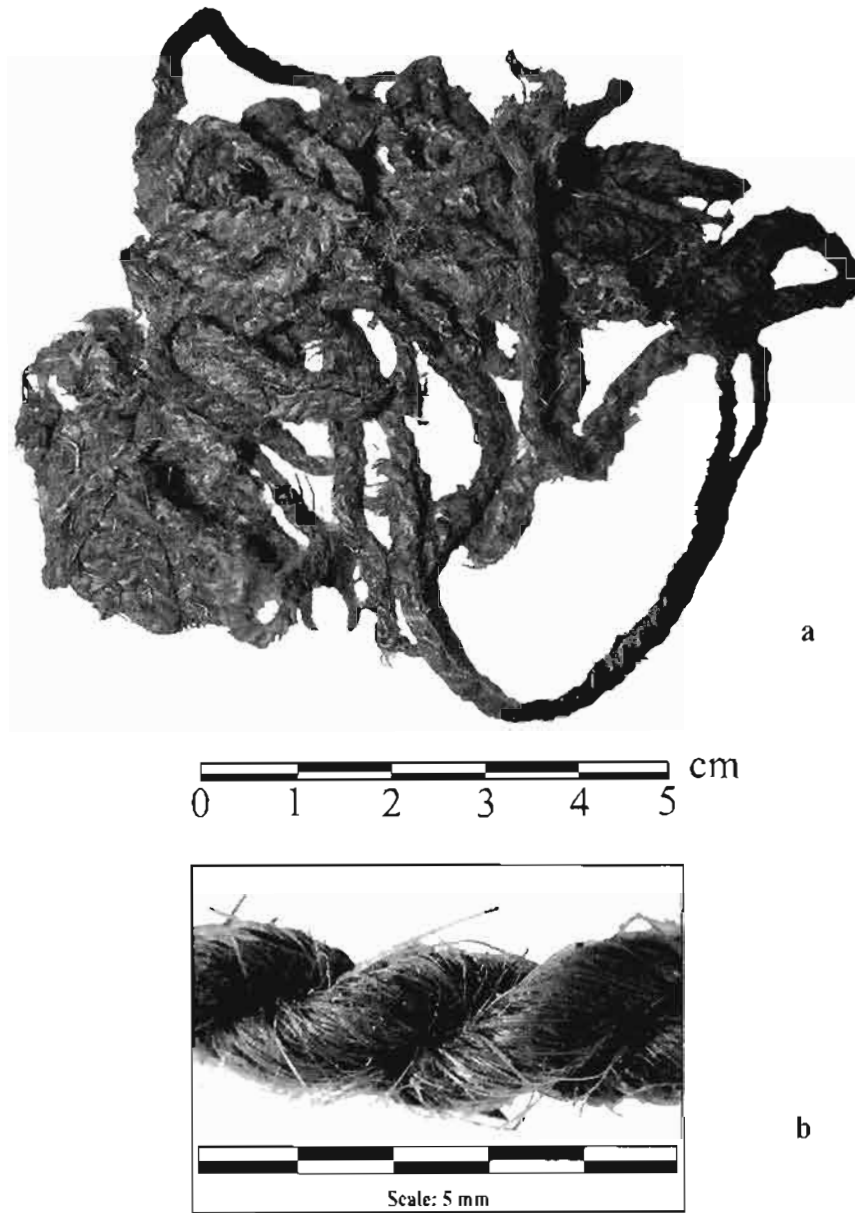


FIGURE 14.2. Arctic hare fur cordage from the Nanook site (KdDq-9-3: 4797).

Island 4 (Walton Rogers 2000a, 2001a, 2001b, 2003, 2004a, 2005a). Two samples from Nanook have been identified as fox (Walton Rogers 2003, 2004a); two, as muskrat; and one, as mink (Walton Rogers 2004a). The nearby Tanfield site also produced cordage made from what has

been identified as probable mink fur (Walton Rogers 2004b). Hare and fox were in all likelihood present on Baffin Island at the time the cordage was produced; the ranges of mink and muskrat extend to approximately the northern forest limit, which today occurs in central

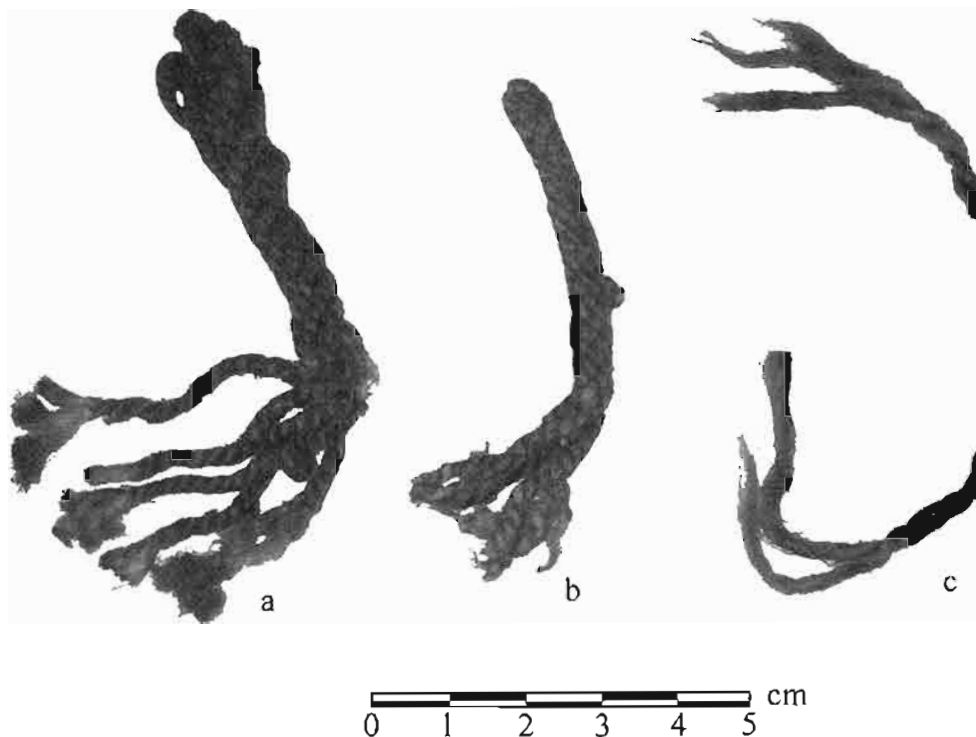


FIGURE 14.3. Cordage from the Avayalik-1 site: (a) JaDb-10. 3606 (fox fur), (b) JaDb-10: 3611 (fox fur), (c) JaDb-10:3614 (dog hair).

Labrador and which also approaches the Arctic coast at the bottom of the Ungava Bay in Nunavik. The variety of species represented in these samples adds to those recently recognized in cordage from the Avayalik-1 site in northern Labrador, where 13 specimens were identified as fox; one, as dog; and one, as possible fox combined with the hair of an unidentified species (Walton Rogers 2000b; Figure 14.3). None of the cordage from any of the sites investigated was found to be of musk ox hair, an identification that had been reported previously for specimens from Cape Tanfield (Maxwell 1985:131, 206), Willows Island 4 (Odess 1998:429), and Avayalik-1 (Jordan 1980:623).

Abrasive stones are generally found in low frequencies in Paleo-Eskimo assemblages and vary widely in form and raw material. In contrast, a number of distinctively shaped whet-

stones made from a narrow range of raw materials are present in collections from each of the Dorset sites containing cordage and other anomalous materials. Most are elongated forms with rectangular cross sections and are polished over one or more faces. Some are carefully finished bar-like specimens with rectangular cross sections tapering toward one end and dressed on the faces that are not polished (Figure 14.4). The whetstones are directly comparable to those from Viking and medieval Norse assemblages in Greenland and northern Europe (e.g., Kars 1983:9–10; Mainman and Rogers 2000:2484–2497; Petersen 1951:253; Roussell 1941:253). Petrographic analysis of a sample of the whetstones recovered from Nanook and Willows Island 4 (Thompson 2004) identified their composition as quartz-rich metamorphic rocks that have excellent qualities for use as hones. Whetstones of

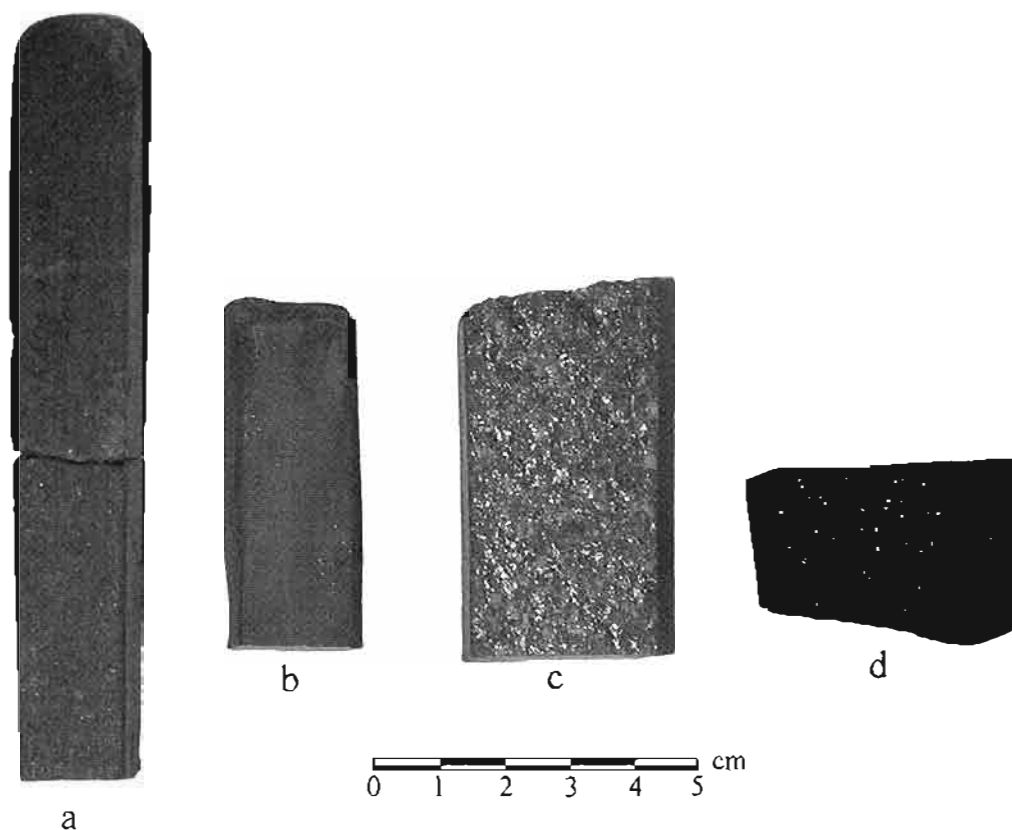


FIGURE 14.4. Whetstones from Nanook, Nunguvik, and Willows Island: (a) KdDq-9: 678 and KdDq-9: 5183, (b) Pghb-1: 10417, (c) KeDe-14: 2797, (d) KeDe-14: 1929.

similar material extracted from quarries in Norway were widely traded (Myrvoll 1985). However, geochronological analysis of four of the specimens from Nanook and Willows Island 4, using the $^{40}\text{Ar}/^{39}\text{Ar}$ method applied to micas in the rock, indicates that the material is not from a Norwegian source (Mitchell et al. 1984; Thompson 2005; Villeneuve 2004). The age is consistent with a source either on southern or eastern Baffin Island or in western Greenland (Thompson 2005). Research on identifying the origin of the raw material is continuing.

In addition to the spun cordage and whetstones, a wide variety of other artifacts bear resemblances to those from Viking and medieval European assemblages. These include thin rect-

angular wooden pieces with a groove or step across one face, similar to staves from small containers (e.g., Nørlund and Stenberger 1934:119; Roussel 1936:136–137; Vedbaek 1991:61). Further examples of mortise and tenon joinery have also been found. Other small wooden objects, with oval or rectangular cross sections and series of notches cut along one or more surfaces, are within the range of variability of tally sticks in archaeological collections from Norse sites in Greenland and in northern Europe (Figure 14.5; e.g., Morris 2000:2338; Roesdahl and Wilson 1992:310; Roussel 1936:153, 1941:273). A portion of a spade-like object made from whalebone has a spatulate blade section shouldered bilaterally to a narrow haft (Figure 14.6). In size and form,



FIGURE 14.5. Notched wooden sticks (tallies) from Nunguvik, Tanfield, and Nanook: (a) PgHb-1: 15186, (b) PgHb-1: 5926, (c) KdDq-7-3: 930, (d) KdDq-9: 9003.

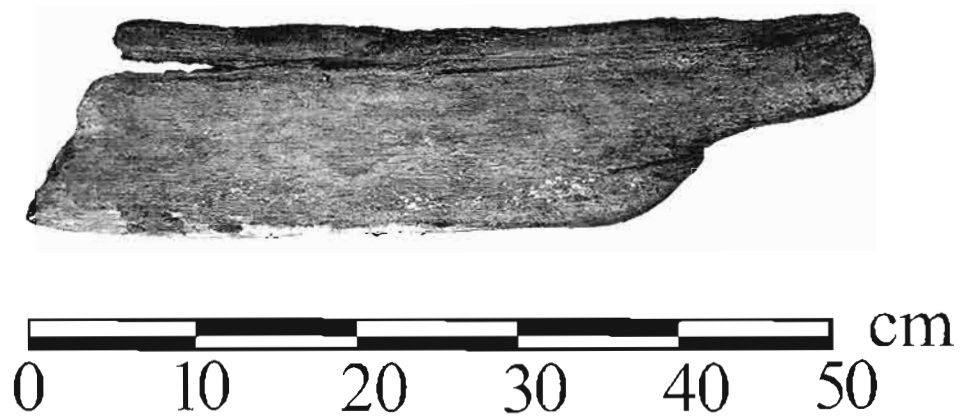


FIGURE 14.6. Whalebone spade-like object (one lateral edge is broken; KdDq-9: 9450).

this artifact, from the Nanook site, falls within the range of whalebone or wooden spades recovered from Greenlandic Norse deposits and assumed to have been used in the construction of turf-walled structures (e.g., Roussell 1936:114–115, 1941:271). Other artifacts that are unique and do not resemble Dorset forms or styles will be described in future reports.

A number of the wooden specimens from Nanook that are comparable to those found in Viking and medieval Norse assemblages have been microscopically examined. Beech (*Fagus* sp.) was identified, as well as white pine (*Pinus strobus* or *Pinus sembra*) and fir (*Abies* sp. [Corbeil et al. 2000:2; Lafèche 2003a, 2003b]). Beech has not been reported as having been found in Arctic driftwood; the other two species are rarely encountered in Arctic Canada (Dyke et al. 1997: 1–16) and more specifically on southern Baffin Island (Laeyendecker 1993:155–172).

2. Architectural Features

During the earlier investigations at Nanook, Maxwell (1980:309) reported excavating an architectural feature that appears to be unique for Paleo-Eskimo sites: a straight wall 1 m wide and 15 m in length, built from coursed stones separated by layers of cut turf. Unfortunately, this feature was largely removed by Maxwell's and Arundale's excavations, leaving only two sections of approximately 1 m² in extent. These remnants are composed of three to four courses of stones standing to a height of 35 to 40 cm, with small pieces of cut sod between the stone courses. The recent excavations encountered additional architectural features that are not typical of known Dorset structures. One of these is a section of what appears to be a straight wall measuring 1.5 m wide and consisting of two parallel rows of boulders separated by sod fill (Figures 14.7 and 14.8).

The removal of water and sediment from the central area of this site in 2002 revealed another unusual feature. This comprises two parallel rows of rocks set closely together, ex-

tending over a distance of 6 m and resembling a floor drain (Figure 14.9). Earlier excavators have confirmed that this feature was not built in the course of archaeological work in order to remove water from the site (Wendy Arundale, personal communication 2002) and that in fact this area of the site was not excavated to the level of this feature (Al Dekin, personal communication 2003). No similar structure is known from Dorset sites in the eastern Arctic, while drains are a common feature of Viking and medieval Norse dwellings in Greenland and elsewhere (e.g., Morris 1996; Murray 1983; Roussell 1936; Vedbaek 1993).

3. Faunal Remains

Most of the abundant and well-preserved faunal remains recovered from the Nanook site are assumed to be associated with the various Paleo-Eskimo occupations of the locality. Analysis of animal bones from the recent excavations at Nanook has not yet been completed, but preliminary observations, together with an earlier study undertaken by Arundale (1976), suggest a heavy representation of seals, together with caribou and other animals and birds that are present today in the local environment.

Several other species that have been identified in the remains from the site are not commonly found in Paleo-Eskimo faunal assemblages in the eastern Arctic and may indicate contacts with other regions and other cultural groups such as the Norse. Two such unexpected finds, gray seal (*Halichoreus grypus*) and dog (*Canis familiaris*), were reported by Arundale (1976) and Cleland (1973). Gray seals seldom range north of central Labrador under current conditions, and populations are concentrated in the temperate waters of the Gulf of St. Lawrence (Banfield 1974:369). Dog remains are rarely associated with Paleo-Eskimo occupations, and it has been argued that Paleo-Eskimo people would have had very few dogs (Morey and Aaris-Sørensen 2002). More than one type of dog is known to have been kept by the Norse,



FIGURE 14.7. The Nanook site (KdDq-9) with a view of (1) one remaining section of the 15-m-long wall, (2) the drain, and (3) another wall-like feature.

and their remains have been found at a number of sites in Greenland (Enghoff 2003:95–96). In addition to the bones from the Nanook site, dog remains have been reported from house complex N73 and the adjacent Dorset house N71 at Nunguvik (Mary-Rousselière 2002:76, 107–109). As previously mentioned, dog hair cordage was recovered from Avayalik-1; it is interesting to note that a textile fragment associated with other Norse finds from an Inuit site in northwest Greenland is made from what has been identified as probable dog hair spun with sheep's wool (Østergård 2004:117).

In association with the identifications made on cordage, analyses of other samples of animal hair were undertaken. This has resulted in the recognition of one Old World species and the possibility of a second. One probable and two definite identifications of *Rattus* sp. have

been made on samples from the Nanook site as well as one definite identification from the adjacent Tanfield site (Walton Rogers 2002a, 2004b, 2005a, 2005b). There has also been a tentative identification of horse mane hair (*Equus* sp.) on two samples from the Nanook site (Walton Rogers 2004a, 2005b). The research was performed by two specialists with broad experience in fiber analysis (Penelope Walton Rogers, Textile Research in Archaeology; Dr. Philip Greaves, Microtex International). An attempt is currently under way to confirm these results using biomolecular techniques.

Current Questions

The information recovered from additional excavation at the Nanook site, together with that acquired from further examination of museum collections, adds new elements to the pattern



FIGURE 14.8. Detail of one of the two remaining sections of the coursed stone wall at the Nanook site (KdDq-9).

of anomalous material that has been described previously (Sutherland 2000b, 2002). However, two important questions remain unresolved.

1. What Was the Nature and Extent of Contact Between Dorset People and Early Europeans?

As noted earlier, a few specimens of smelted metal have been reported from Dorset-culture sites in Arctic Canada. These include a small copper object from the eastern coast of Hudson Bay (Harp 1975), another from northern Nunavik (Plumet 1982), and a fragment of smelted iron in a probable Dorset context on Axel Heiberg Island (Laver 1983). A fragment of a bronze pot has also been recovered from a Dorset site in northwestern Greenland (Appelt et al. 1998). Such finds suggest contact with the Norse, but the contact need only have been brief, ephemeral, and not necessarily direct.

In contrast, the artifacts discussed in this chapter are related to technologies that seem unlikely candidates for interhemispheric trade and instead appear to have local associations. Yarn manufactured from wild animal hair is very rare in Norse textiles from Greenland (Østergård 2004), which strongly suggests that the material recovered from Canadian Arctic sites was spun west of Davis Strait, rather than being imported from Greenland. The whetstones that are entirely comparable in form to those found in Norse assemblages may also have been made from material quarried locally. Items such as spun cordage and small wooden artifacts, neither of which can have had critical functions in Dorset technology, are unlikely to have been dispersed from a single source through aboriginal trade networks. The broad geographical distribution of the assemblages sharing a similar



FIGURE 14.9. Drainage feature at the Nanook site (KdDq-9).

technological pattern—along approximately 1,500 km of coast—suggests that if these assemblages demonstrate contact between Dorset and Norse, such contacts were not limited to one location or a few chance encounters.

The rat remains identified from Dorset sites at the Cape Tanfield locality strongly suggest the landing of a European vessel in the area. They may also provide proxy evidence for the existence of European-style structures at the specific site areas in which they were found, since these commensal animals could not have survived the Arctic climate without shelter, nor could they have sheltered safely in small and crowded aboriginal dwellings. These interpretations suggest the possibility that European visitors built and attempted to occupy lodgings in at least one locality.

Another source of evidence relating to the

nature of early European activity lies in the spun cordage that is associated with all of the Dorset assemblages under discussion. Critics of the hypothesis of early European contact (Odess and Alix 2004; Park 2004) have argued that spinning may have been an indigenous Paleo-Eskimo technology or one that might have been acquired from Indian peoples to the south. However, the technique is not known from Paleo-Eskimo assemblages in other regions, including those where there is extensive organic preservation, or from the traditional cultures of either Arctic or Subarctic New World peoples. Moreover, the waterproof and well-insulated clothing required for living comfortably in Arctic and Subarctic climates is much more efficiently tailored from animal pelts than from woven cordage. Cordage spun from the short fibers of local wild animal hair would have been too weak to

have served as fishing line, for binding components of sleds or boats, and for most tasks for which line is required in northern economies; for all of these purposes, sinew and babiche (long thin strips of animal hide) are both superior and more easily obtained.

If this technology was acquired through communication with indigenous groups practicing textile production, it would most likely have occurred during the expansion of the Adena mortuary complex into the temperate regions of eastern Canada approximately 2,500 years ago (Wright 1999:601), at a time when a Dorset population occupied Newfoundland. However, no evidence of travel across the intervening Gulf of St. Lawrence exists from the period of the Adena intrusion, nor have any other indications of contact or cultural exchange been noted. Adena cordage, like almost all that of temperate North American technologies, was twisted or spun from the long and tough fibers of plants; the spinning of short and slippery fibers of wild animal hair requires a different level of skill. Park's (2004) suggestion that Dorset cordage may be related to animal hair textiles from an early site in New Brunswick must refer to the single animal hair textile described from the Adena-related Augustine Mound. This textile fragment is not spun but constructed of a warp of possible vegetable fiber or sinew wrapped with bundles of moose hair (Gordon 1997:59–60). On the basis of a brief examination of the cordage associated with Dorset assemblages, the late James Petersen (personal communication 2005) stated that it was strikingly different from any of the prehistoric cordages from northeastern North America with which he was familiar.

If spinning technology was acquired by Dorset people through contact with an adjacent population, a more likely candidate would be the Greenlandic Norse, whose clothing was based on spun wool and whose settlements have produced two examples of spun hare-fur cordage comparable to that recovered from local Dorset sites. The recovery of other examples of goat

hair, in addition to the three specimens attached to cordage from Nunguvik that were identified as "highly probable" goat hair by Walton Rogers (1999a, 2000a), would provide further support for a Norse attribution. If the cordage associated with Dorset sites was spun by Dorset individuals, and if they learned the techniques involved from Norse visitors, the acquisition of the necessary skill implies close and probably repeated observation of the Norse women who practiced the technology. Even if the cordage was spun locally by Norse women, it implies a European presence that must have been significantly more extensive than a few coastal visits by male hunting and trading parties.

2. When Did Such Contact Likely Occur?

All four of the site localities discussed in this chapter contain extensive cultural deposits related to Paleo-Eskimo habitation. The principal occupations at each locality have been attributed to Middle Dorset culture. All of the sites are characterized by complex stratigraphy in a permafrost environment, the use of turf as building material, and therefore the potential for incorporation of well-preserved earlier materials in later structures. The localities have also produced either archaeological evidence of Late Dorset occupation, or radiocarbon dates that relate to the early second millennium AD, or both.

A radiocarbon dating program undertaken to clarify the temporal associations of the unusual technologies has not yet proven successful. The hypothesis that the European presence in the area was that of the Greenlandic Norse would suggest that these technologies should date to the Viking or Medieval periods between roughly the tenth and fifteenth centuries AD. However, the majority of the dates associated with these sites range through much of the first millennium AD, significantly earlier than the generally accepted date for the Norse expansion to Greenland.

Before speculating on a pre-Norse association of these technologies, it would be wise to examine the radiocarbon results. McGhee

(2000:188–189) has noted a series of mechanisms that appear to have produced “a consistent bias” toward early radiocarbon measurements on Arctic samples, especially those that have been excavated from permafrost environments. Results obtained recently on two samples from the Nanook site appear to provide evidence in support of this observation. An alternative treatment procedure was applied by the radiocarbon dating laboratory to two cordage samples selected from a series of samples recovered from a localized context and which have consistently dated to the first millennium AD. This procedure resulted in disintegration of the cordage and removal of much of the hair. The remaining components produced dates in the mid–second millennium BC, indicating the presence of older carbon that is not likely to have been temporally associated with the manufacture of the cordage. Until the problems with radiocarbon dating of this material are resolved, it is not considered useful to publish the dates obtained.

A further argument critical of the current radiocarbon chronology may be made in terms of the cordage spun from wild animal hair. This unique technology has now been associated with radiocarbon dates ranging over more than a millennium, yet it is difficult to envision the technique as a temporally persistent element of the local technology. Spinning animal hair to produce cordage as consistently well made as that found in these assemblages would require the acquisition of considerable skill and knowledge, as well as continuing practice of the craft in order to maintain and pass on the requisite technical abilities (Walton Rogers 2000b, personal communication 2001). Such expertise might be mastered for the production of a novelty or prestige item, but it seems unlikely that the demanding skills required would be passed down over a period of several centuries. This would seem to be particularly improbable when more effective alternative cordage products, such as sinew and babiche, were available to the Dorset. The cordage and associated materials probably relate to a more temporally

limited period than is currently suggested by radiocarbon dating.

As noted above, spun cordage is unlikely to have had a critical or even a practical function in Dorset technology. It can be further suggested that the production of cordage from the hair of local animals was more likely to have been associated with the use of the material by Europeans, either locally or as a product for export, rather than by Dorset people. In this context, it might be noted that pigmented bear fur, indicative of brown or black bear (either *Ursus arctos*, *U. americanus*, or *U. arctos horribilis*) and bison hair (either *Bison bison* or *Bison bonasus*) have been identified among the samples recovered from Gården under Sander. Walton Rogers (1998:72) argues that these specimens were most likely imported from North America. If these finds indicate Greenlandic Norse interest in furs from the lands west of Greenland, such interest may have been extended to products manufactured from the fur of New World animals.

Summary

This chapter has explored the implications of anomalous technologies associated with Dorset-culture site localities on Baffin Island and in northern Labrador. The arguments presented can be summarized as follows:

1. The ocean-facing coasts of Baffin Island and Labrador are within the known range of activities undertaken by the Norse occupants of Greenland between the tenth and fourteenth centuries AD. The region would have supported animal resources that were highly valued by the Norse. The local environment, navigation conditions, and indigenous occupants are not likely to have impeded Norse access to these resources.
2. Archaeological collections from four Dorset-culture site localities, from northern Baffin Island to northern Labrador, contain specimens that fall outside the range of artifacts known from other Dorset assemblages, including those where a range of organic materials are preserved. Many

of these specimens relate to technologies that more closely resemble those of medieval Europe than of aboriginal northeastern North America. Specific resemblances exist between specimens recovered from these assemblages and artifacts used by the Norse. Excavation at the Nanook site has recovered this type of material in apparent association with architectural features that are not known from other Paleo-Eskimo sites but which are similar to construction techniques and features from Norse occupations in Greenland and elsewhere. The identification of rat remains and possible horsehair in association with these features provides further evidence suggesting the presence of Europeans at the site.

3. Questions remain regarding the temporal associations of the material summarized above. The radiocarbon method appears to date this material to a time earlier than the Viking Norse expansion across the North Atlantic. However, there are clear indications that problems exist in the dating of these samples.

Considering the sum of the evidence, the most economical hypothesis explaining the ex-

istence of anomalous materials at Dorset sites in the eastern Canadian Arctic involves a European presence in the area during the Viking and/or Medieval periods. This presence may have taken the form of visits by Norse hunters and traders in order to exploit the valuable ivory and fur resources of the region. The broad geographical distribution of Dorset sites that have produced a similar pattern of atypical artifacts suggests that contact between Norse and Dorset is likely to have occurred in several areas. Architectural information recovered from the Nanook site may indicate that the Norse occupied at least one locality in the region they called Helluland.

Finally, we must consider the implications of the radiocarbon dating series associated with the finds. If these materials are evidence of contact during the Viking and Medieval Norse occupation of Greenland, then it is apparent that our use of the radiocarbon dating method in the eastern Arctic is complicated by problems that are not clearly understood. On the other hand, if the radiocarbon series is at least partially correct, we must assess the currently remote possibility that the materials described in this chapter may be associated with pre-Viking European visitors.

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