"And They Took Away the Stones from Ramah":[1] Lithic Raw Material Sourcing and Eastern Arctic Archaeology

STEPHEN LORING

The quickening pace of archaeological research throughout the North American Arctic in recent years has destroyed many of the comfortable, uncomplicated views formerly held about the development of prehistoric cultures there. (Harp 1964b:184)

It is hard to imagine an archaeology without stone tools. Stone tools figure prominently in the definition of the human species, and as traces of past cultural presence their record is of the greatest duration and the broadest spatial distribution in defining our global tenure. The permanence of stone tools has been an inspiration for archaeologists and essayists alike (e.g., Thoreau 1962 [1906]:1212, 1454-1455).

Like many of their lower-latitude brethren, arctic archaeologists have relied disproportionately on stone tools, especially projectile points and bifaces, when erecting their interpretations of the past, disproportionately so in the sense that stone forms such a small percentage of the raw materials used by ancient human groups whose skin, wood, and bone artifact industries have often not survived. While arctic archaeologists are sometimes graced with frozen middens that can provide insight into the ancient perishable assemblages of former arctic foragers, stone yet remains the material culture currency of favor, and more so the further back in time one goes.

Prehistoric arctic inhabitants were an extraordinarily resourceful lot. Their knowledge of the intricacies and nuances of their mostly frozen world are, for the most part, beyond the ken, even beyond the imagination, of most people today. In a world where survival placed a premium on ingenuity and on knowledge derived from wide-ranging movement across the landscape, it is not surprising that what little the land afforded in the way of mineral resources was discovered and utilized. Across the Arctic, Inuit ancestors and their predecessors had discovered much that was of interest to them, including fossilized Pleistocene bones, meteoritic iron, float copper, coal, steatite, amber, nephrite, slate, quartz, crystal quartz, and, of course, a wide variety of cryptocrystalline silicates, fine-grained cherts, obsidian and metamorphosed sediments. These materials were used to fabricate the myriad hunting, butchering and manufacturing tools on which life was contingent and must have played a central role in the economic and spiritual life of these people.

The conchoidal fracturing properties of chert (the general term that geologists use to refer to sedimentary rocks composed of cryptocrystalline silicas, including materials also called flint, jasper, chalcedony, novaculite, agate, and quartzite) by which stone could be manipulated to produce a wide variety of cutting, scraping, and piercing edges, made knowledge of the

sources and varieties of this material a critical component of ancient Inuit adaptations. Useable outcrops of chert occur in a variety of different contexts, including nodules, discrete lenses, and layers in sedimentary deposits. Chert source localities can be unique, isolated outcrops, or part of a long stratigraphic bed providing many kilometers of exposed sediments. And in the Arctic, a variety of geomorphological processes, including solifluction, erosion, and water and glacial transport, can spread lithic raw materials far beyond their immediate source locality. The Precambrian crystalline rocks of the Canadian Shield contain a wide variety of cryptocrystalline lithic materials, including metamorphosed volcanics, sedimentary rocks, quartzite, and chert deposits as well as younger intrusive rocks (Bostock 1970), that are potentially suitable for making flaked stone tools. In the High Arctic archipelago, folded Mesozoic and Paleozoic strata contain igneous intrusions and sedimentary rocks (overlying the Precambrian basement complex) that contain outcrops of usable chert, slate, and quartzite deposits (Stockwell et al.1970).

Stone tool assemblages are the cornerstones of cultural chronologies in the Eastern Arctic and the principal means by which cultural evolution and change have been discerned and interpreted. Stone tool assemblages have been analyzed from a functionalist perspective to determine prehistoric technologies and site function. Group identity and regional and interregional social relationships have been postulated on the basis of stylistic affinities in certain classes of stone tools. Throughout the Arctic, functional, technological, and stylistic studies of stone tools have served as the primary basis for constructing Paleoeskimo culture history (McGhee 1979; Maxwell 1985; Schledermann 1990). Even when bone and wood are recovered, stone tool typologies provide the *lingua franca* of Paleo-eskimo archaeology in the Eastern Arctic.

Analysis of stone tool assemblages nearly always includes discussion of the lithic raw material that prehistoric peoples used to fashion their implements. This, in turn, has led to research directed at identifying these lithic sources (Bryan 1950; Clark and McFadyen-Clark 1993; Ericson and Purdy 1984; Findlow and Bolognese 1982; Luedtke 1976; Sieveking et al. 1972). Through study of lithic source localities and recognition of cultural lithic preferences for manufacturing projectile points and other chipped stone tools, archaeologists are provided with one of their best opportunities to look at prehistoric regional and interregional exchange and interaction systems, and the means to examine the social dynamics of trade and procurement patterns. Knowledge of the spread of lithic raw materials from their source localities is perhaps the best way that archaeologists can gain insight into the spatial dimensions of prehistoric cultures—the size, location, and durability of group territories and settlement patterns—as well as into group affinities and affiliations. Furthermore, differential access to lithic raw materials offers an opportunity to look at the emergence of hierarchical social structure through the use and control of exotic materials.

Through the identification and analysis of lithic raw material preference and use, it is possible to move beyond studies of cultural chronology, subsistence, and technology to get at notions of social systems and group identity. Social interaction is frequently inferred both by the stylistic affinities of stone tools and by the presence of exotic raw materials. In the Eastern Arctic, chert use is frequently culturally idiosyncratic and diagnostic (e.g., Maxwell 1973:48 in Baffin Island; Fitzhugh 1977a in Labrador) in that Paleoeskimo peoples predictably chose specific exotic chert sources even though appropriate materials were closer at hand. Indubitably, chert varieties were used to signal some form of social identity. The need of arctic foragers to maintain access to neighbors and resources is readily evidenced in the astonishing variety of exchange systems and systems of reciprocity that are featured in ethnographic observations. Furthermore, the need to facilitate access to information and distant social networks is essential for arctic

peoples living in sparsely populated landscapes. For prehistorians denied the evidence of ceremonial feasting, food sharing, and ritual paraphernalia, exotic lithic artifacts remain as tantalizing clues of such events. The challenge for archaeologists is in knowing how to interpret these phenomena.

Despite this potential for expanding our understanding of the prehistoric cultures of the Arctic, the sourcing of lithic raw materials has not figured significantly in Eastern Arctic research. A brief (not exhaustive) review of the literature reveals that while some researchers describe the local (apparently) dominant raw material in their chipped stone assemblages, for example, Wintemberg (1939:90, 1940:328) at Newfoundland Dorset sites; Maxwell (1973) for Baffin Island; Taylor (1968:15) for the Ungava coast and northeast coast of Hudson's Bay; Schledermann (1990) for Ellesmere Island; and Meldgaard (1952:222) for the Sarqaq assemblages from West Greenland, it is only recently that researchers have begun to describe and assess the source localities of exotic materials in their Paleoeskimo assemblages (Nagle 1986; Odess 1996). Other researchers ignored the raw material of their chipped stone assemblages entirely, for example, Leechman (1943) and O'Bryan (1953) in Hudson's Straits; Collins (1956a) on Southampton Island; Rowley (1940) at Abverdjar near Igloolik; Mary-Rousselière (1964) at Pelly Bay; and Knuth (1967) in northernmost Greenland. To be fair, this methodological lacuna is in part attributable to the episodic and wide geographical spread of Eastern Arctic archaeological research (to say nothing of the fiercely independent nature of arctic archaeologists), and the paucity of research projects prior to ca. 1970. Until recently, transportation costs and logistical constraints have inhibited wide geographical coverage in the Arctic of the sort that might facilitate a regional and interregional perspective on chert acquisition and consumption. A further hindrance to identifying sources of lithic raw materials is that the baseline geological mapping of much of the Eastern Arctic is yet in its infancy.

Notwithstanding the preceding historical qualifications, there is now available the cumulative testimony of over a half-century of archaeological investigations spread across the Eastern Arctic, as well as collaborative geological data and analytical procedures that could be mustered to address the questions of cultural affiliation and dynamics inherent in determining the sources and distributions of lithic raw materials.

Sourcing Lithic Raw Materials

Determining the source of lithic raw materials has figured significantly in a wide array of archaeological investigations (Luedtke 1992). Recognition of the potential research benefits of such analyses is predicated on the ability of matching artifacts with geological source samples. Frequently, however, lithic identifications are anecdotal, based on individual knowledge and experience. Such "eyeball analyses" (Luedtke 1993) are notoriously inaccurate given the similarity of some lithic materials (especially cherts!) and the tendency to underestimate source variability (Calogero 1992). The uniformity of chert chemical composition (being nearly entirely silicon dioxide) can also obscure analysis. Even within a single source, chert often has a wide color and texture variation that can make specific attribution difficult to determine.

With the following caveat in mind, chert identifications are frequently defined by visual macroscopic identification based on color, luster and translucency, macrofossil inclusions, and grain size (texture). While archaeologists regularly become familiar with local lithic types, there is an increasing likelihood of error in identifying similar-looking materials over a wide area. The likelihood of error is compounded in the Eastern Arctic where the low density of archaeologists and the large geographical distances between archaeological sites precludes a fine-grained site mosaic.

The uncertainty with strictly visual determinations of chert identification has led to the utilization of analytical methods based on chemical and petrographic

traits (Shotton 1970) and on trace element analysis (Luedtke 1978, 1987) for determining petrological and geochemical chert "signatures." Petrographic thin-sectioning and microscopy reveal the distinctive microcrystalline orientation of chert samples as well as diagnostic microfossils and carbonate composition (Prothero and Lavin 1990; Luedtke 1979, 1987). Additional techniques include neutron activation analysis and x-ray diffraction to provide chemical data on minor and trace elements that occur in different proportions in different chert deposits (Aspinall and Feather 1972; Luedtke 1979; Sieveking et al. 1972; Spielbauer 1984) and electron microprobe analysis of mineral inclusions to define mineral and element composition (Kempe and Templeman 1983; Malyk-Selivanova and Ashley 1995).

The potential for the recognition of regionally distinct chert sources is apparent from a few brief references in the Eastern Arctic literature. For example, Maxwell (1960:7) discusses the paleozoic quartzites and greywackes and low-grade chert that was available throughout northeastern Ellesmere, and the "excellent" (but not described) chert in the gravels of the adjacent Greenland coast. On Baffin Island, Maxwell (1973) mentions the local availability of small cobbles of some tan cherts. On Southampton Island, Collins (1956b:68) reports that a grey chert, available as nodules in the limestone formations of the southeastern shore, is representative of 99 percent of the stone tool inventory at the T-1 Early Dorset site. Unfortunately, none of these discussions quantify the nature or the amount of exotic materials or go beyond a casual description of the lithic types.

With more than seventy years of archaeological research, there now is some weight to the accumulated knowledge pertaining to prehistoric arctic occupations. Collections now housed in Canadian, English, and Danish museums provide a basis for making comparative observations on the utilization of lithic raw materials throughout the Eastern Arctic. A study of these archaeological assemblages could reveal the range of local lithic preferences throughout the entire Paleoeskimo sequence and provide the basis of an archaeological database to compare with samples of chert and other siliceous stones from geological sources. This is an exciting direction for future research in the Eastern Arctic that has the potential to explore cultural processes on a broad geographical scale.

Lithic Procurement Strategies

An understanding of the lithic procurement strategies of prehistoric arctic peoples holds great promise for moving beyond the narrow confines of established regional culture history. Some indication of this potential can be realized from a brief inspection of the significance of lithic procurement studies in the Paleoindian literature (Ellis and Lothrop 1989).

Both Paleoindian and prehistoric arctic peoples can be characterized, at least in their initial pioneering stage, as highly mobile colonizers with low population densities and challenging environmental constraints. Long-distance trade in exotic materials serves both to meet the demand for nonlocal necessities and to operate as a social mechanism to avert regional resource vagaries in hunter-gatherer adaptations in marginal environments (Gould 1978:289, 1980; Hayden 1982; McBryde 1984). Because Paleoindian lithic choices frequently did not conform to least-effort acquisition strategies, researchers have looked beyond narrow technological and utilitarian explanations to explain the presence of exotic raw materials (Ellis 1989). In the Paleoindian literature the use of exotic lithic raw materials has been interpreted as a means by which widely dispersed populations were kept in contact with one another (Wilmsen and Roberts 1978:177-179), as a stylistic means to signal group identity (Ellis 1989:156), as a resource anchor about which dispersed groups would predictably aggregate (Gardner 1977: 260), and as a measure of social flexibility and mobility of settlement-subsistence strategies (Meltzer 1984, 1989).

While much of the Paleoindian literature pertaining to lithic raw material procurement is bogged down in

debates over scheduling decisions, the acquisition and transportation of lithic raw materials, even over great distances, do not seem likely to have inhibited prehistoric arctic peoples. Northern native peoples early on perfected the technological means to traverse large distances by developing watercraft and dog-team traction. Seemingly audacious travels by northern natives, facilitating the distribution of goods and social interaction throughout the Arctic, are a stable feature of northern prehistory and ethnography (Rowley 1985). Long-distance trade has been recognized as a recurring leitmotif in the Western Arctic (Burch 1988b; Nagle 1984; Stefansson 1914a).

The Paleoindian debate over the scheduling decisions pertaining to the acquisition of lithic raw materials includes perceived constraints imposed by snow and ice cover and frozen ground for would-be quarriers. While these difficulties may be true in some temperate localities with especially heavy snowfalls, they would tend to be offset in the Arctic where wind keeps much of the ground relatively free of snow cover and where both snow and ice greatly facilitate travel. Pep Wheeler (1900-1974), Labrador's preeminent pioneering geologist, was fond of noting "that the windswept uplands offered more rock exposure in winter than the unglaciated southeastern United States at any season" (Morse 1977).

Lithic Sources and Procurement Strategies in Labrador

That lithic raw material preferences could be correlated with distinct cultural and temporal aspects of Labrador prehistory was realized by William Fitzhugh during his dissertation research in Hamilton Inlet (Fitzhugh 1972b). Much subsequent research in Labrador has been devoted to sourcing and describing the varieties of lithic raw materials used by prehistoric peoples, including the study of a wide variety of locally available stones (quartz, slate, and nephrite) and steatite (Allen et al. 1978; Allen et al. 1984; Nagle 1982, 1984). With the accelerated pace of research in Labrador during the 1970s, identifying lithic sources became a high priority. Cherts recovered from prehistoric sites in Labrador include the grey-banded Mugford cherts (Gramly 1978) and Ramah chert (Gramly 1978; Lazenby 1980) from the mountainous north coast. Chert sources from the Quebec-Labrador interior include Saunders chert, probably from the Seal Lake vicinity (McCaffrey et al. 1989), and the grey-green-tan cherts of the Sokoman-Ruth-Wishart and Fleming chert formations in the Labrador Trough region of north-central Quebec-Labrador (McCaffrey 1989a, 1989b).

Of all the wide variety of lithic raw materials in Labrador, none is so intimately associated with the prehistory of the region as is Ramah chert. Pioneering Maritime Archaic hunters and their families were the first to discover the Ramah chert quarries sometime around 7000 B.P., and its use became a prominent feature of the succeeding Maritime Archaic cultural sequence. Subsequent to the Maritime Archaic period, Ramah chert was an important feature of Groswater Dorset and Labrador Middle and Late Dorset cultures and was the nearly exclusive choice of the late prehistoric Indian cultures in Labrador. While archaeologists may sometimes be criticized for placing such a disproportionate interest in prehistoric lithic assemblages, it is not surprising given the visibility of chipped stone industries in the archaeological record. Nor is it surprising that a lithic raw material as beautiful and practical as Ramah chert would attract attention.

In the remainder of this chapter I explore the use and distribution of Ramah chert in order to assess its potential for elucidating prehistoric cultural dynamics in the "far Northeast" and as an example of the potential for similar studies throughout the Eastern Arctic.

On the Ramah Chert Trail

A lifelong interest in stone-tool manufacture and use led the antiquarian Sir Daniel Wilson to view collections and visit prehistoric quarrying sites in eastern North America and to correspond actively with colleagues at the Smithsonian and the Geological Survey of

Canada.[2] In a discussion of prehistoric lithic acquisition and distribution, Wilson provides the first reference to Ramah chert in the literature:

> [This] suitable and specially prized material were sometimes sought on different sites, and disseminated from them by the primitive trader. Along eastern Labrador and in Newfoundland arrow-heads are mostly fashioned out of a peculiar light-grey translucent quartzite. Dr. Bell informs me that near Chimo, south of Ungava Bay, is a spot resorted to by the Indians from time immemorial for this favorite material; and arrows made of it are not uncommon even in Nova Scotia. (Wilson 1889:84–85)

Robert Bell, a geologist and naturalist for the Geological Survey of Canada's 1884–1885 expedition to Hudson's Bay, probably encountered Ramah chert while visiting the prominent site of Nunaingok near Port Burwell at the extreme northern tip of Labrador and at Nachvak Fjord (Bell 1884).

The peripatetic Warren King Moorehead is the next to comment on this distinctive lithic material. Long before his celebrated excavations of the Red Paint Cemeteries in Maine, he wrote:

> A study of chipped implements . . . opens up a field of research of great possibilities. . . . For instance, chips of a certain stone, which appear to have come from Labrador, are said to be found occasionally in Maine or Massachusetts. If this statement is true, it leads us to question whether the Eskimo and the New England natives bartered, or whether there was a migration in earliest times from Labrador to New England, or vice versa. Or, whether the stone is found in New England as well as Labrador. (Moorehead 1910:249)

Fitzhugh (1972b:40) has suggested that Moorehead's Labrador derivation may possibly have originated from his knowledge of the Jewel Sornborger and Owen Bryant collections from northern Labrador and Alfred Kidder's collections from Newfoundland (all before 1910) at Harvard's Peabody Museum, probably brought to his attention by the museum's director Charles C. Willoughby. While Willoughby's excavations of several "Red Paint Indian" cemeteries did not produce any Ramah chert artifacts (Willoughby 1898), he would have been familiar with specimens, including Ramah chert stemmed points, from other Maine cemeteries that were already in the Peabody collections (Smith 1948:34, 68). Furthermore, the use of red ocher in the burials inclined the New England antiquarians to look to Newfoundland, the ancestral home of the Beothuk, as a logical place of cultural origins (Willoughby 1898:52).

Recognizable artifacts of Ramah chert first figured in Moorehead's (1922:105) *A Report on the Archaeology of Maine* and, subsequently, in Willoughby's (1935:53) *Antiquities of the New England Indians*, both of which featured plates with half a dozen stemmed points from Red Paint Indian graves in Maine and, in Willoughby's book, a large biface from Rhode Island. Moorehead (1922:97) called it "Labrador stone" and wrote, "We took from the graves [at Lancaster's on the Kennebec] also a number of spear heads of translucent quartzite, that peculiar unidentified material which is common in Labrador but has never been found in a natural state, a ledge or boulder, in the State of Maine." Willoughby (1935:51) describes the stone as "a translucent quartz interspersed with nearly black blotches and shadings of gray, a material apparently foreign to New England and only occurring in these states so far as known in the form of finished blades. The source of this material is apparently in Labrador and possibly also in Newfoundland."

It was, I believe, William Duncan Strong who, as the anthropologist with the Rawson-MacMillan Subarctic Expedition of 1927–1928, finally provided, if not the actual quarry source location, then conclusive proof in the form of well-documented archaeological assemblages of the Labrador derivation for Ramah chert (Strong 1930). Strong collected from several coastal sites between Nain and Hopedale where he recovered bifacially worked stone tools and debitage of a distinctive raw material that he called "translucent chalcedony." Strong's "Old Stone Culture" was a mélange of artifacts from what we now know to be a number of separate Paleoeskimo and prehistoric Indian cultures.

One location Strong collected from was a site at Sharp Hill in Big Bay, about halfway between Hopedale and Nain. Here an outcrop of fine-veined quartz had been quarried in antiquity leaving the surface littered with quarry debris as well as debitage from an occupational episode. Strong believed that both the quartz and "chalcedony" had been quarried from outcrops on Sharp Hill. The geology of the central Labrador coast precluded the likelihood that an outlying bed of Ramah chert could occur here, but Strong's suggestion was enough of a nagging concern that Fitzhugh invested considerable time in revisiting the site locality and eventually put to rest the specter of a separate southern outcrop of Ramah chert (Fitzhugh 1972b:42, 1974).

In 1934, Junius Bird excavated several Labrador Eskimo winter houses during his honeymoon in Labrador (Bird 1945). Beneath the house floor of one structure Bird uncovered points and flakes of the distinctive stone. Bird had previously made several voyages along the northern Labrador coast, first in 1927 as a member of the Putnam expedition to Baffin Island (Putnam 1928) and later with Captain Robert Bartlett, during which he had seen flakes of Ramah chert at sites in Eclipse Harbor and Newfoundland. The American Museum of Natural History, where Bird worked, also had a few Ramah chert bifaces from the Maine Red Paint Indian sites.

By the century's midpoint, it was generally conceded that Moorehead's "Labrador stone," the "translucent chalcedony" of Strong and Bird, was indeed derived from Labrador, although the actual provenance was yet unknown. It was Elmer Harp (1964b:255–256) who finally resolved the mystery of the source for this raw material, much of which he had seen in the course of fieldwork in southern Labrador and Newfoundland. Harp's research was framed within the context of Eskimo origins and the nature of Indian/Eskimo relationships, and he commented on the "widespread and persistent occurrence throughout the marginal northeast of translucent grey quartzite as a major raw material for chipped artifacts" (Harp 1964b:255). He noted the prevalence of this material in some of his collections from the Strait of Belle Isle and in the Red Paint burial sites from Maine.

Following World War II, the mineral potential of the Labrador peninsula attracted considerable attention. Through conversations with British Newfoundland Exploration, Ltd. (BRINEX) geologists, Harp learned of the presence of a broad band of translucent grey quartzite centered in the mountainous fjorded region of northern Labrador at Ramah Bay. Comparison of geological samples with archaeological specimens determined that, at last, the fabled source of what has come to be called Ramah chert was located. According to Harp's BRINEX informant, an Inuit to whom the material was shown, it looked like *tunnuyakh* (caribou back fat).

The Ramah chert trail next gets picked up by Fitzhugh who became familiar with the material during his dissertation research in Hamilton Inlet in 1968 and 69. Fitzhugh (1972b:40–44, 239–244) provides the first detailed description of the raw material, including a physical and chemical analysis and a description of the source localities. A history of the geological research and mapping of the Ramah series is in Morgan (1975). A detailed inspection of the quarry site by archaeologists was made in 1976 and during the Torngat Project research in 1977 and 1978. Descriptions of the Ramah chert quarry are in Gramly (1978) and Lazenby (1980). Lazenby (1984) also summarizes the geology of the Ramah chert source locality in the context of her study of Maritime Archaic chert use in Labrador.

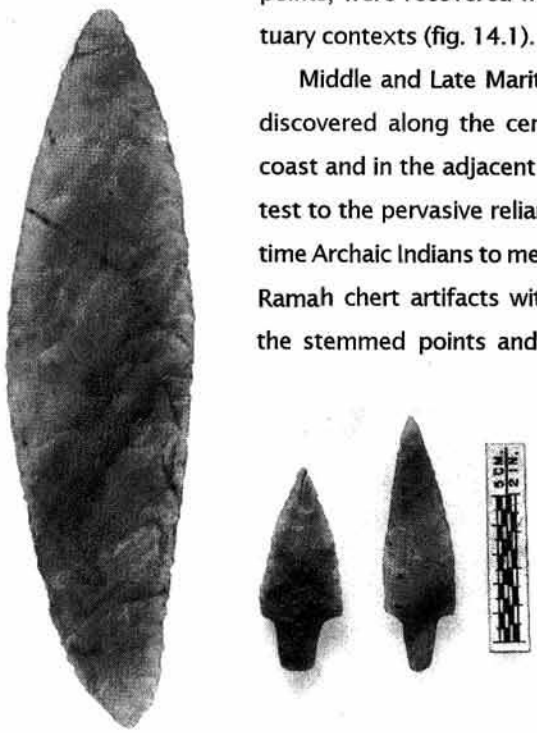
Ramah Chert in the Far Northeast

Given the prominent role that Ramah chert plays in Labrador prehistory, this chapter frames the prehistoric distribution of Ramah chert in the context of the cultural sequence in Labrador, essentially from the perspective of the residential cultural anchor, the Labrador starting point, from which chert distribution must have proceeded. Divided into four principal periods, these are: (1) the Maritime Archaic, ca. 7000 to 3500 B.P.; (2) the Paleoeskimo sequence, including Groswater Dorset, ca. 4100–2100 B.P., and Early-

Middle-Late Dorset in Labrador, ca. 2500–800 B.P., but excluding Pre-Dorset components; (3) the Late Prehistoric Period Indian cultures, ca. 1800–400 B.P.; and (4) Norse activity in the New World, ca. 1000 B.P.

Maritime Archaic

By 7000 B.P., intrepid Maritime Archaic hunters, probing the margins of the known world, discovered the spectacular Ramah chert outcrops. Early Maritime Archaic sites in southern and central Labrador have chipped stone assemblages that are characterized by quartz, red quartzite, and slate industries, essentially local lithic materials. With the discovery of the Ramah chert sources, Ramah chert became the preferred chipped-stone material, a preference that increased with time until it became the nearly exclusive choice in Late Maritime Archaic Rattlers Bight complex sites (4000–3700 B.P.; Lazenby 1984). The use of Ramah chert by Maritime Archaic groups in Labrador peaked at the same time as regional expressions of an elaborate mortuary tradition known from Labrador, Newfoundland, and the maritime Northeast. Excavations of a Maritime Archaic village and associated cemetery at Rattlers Bight in Hamilton Inlet (Fitzhugh 1976c), ca. 4100–3500 B.P., revealed stone-lined burial pits filled with stone and copper artifacts, sheets of mica, and walrus ivory, all covered and stained with brilliant red ocher. Ramah chert bifaces, stemmed points, quarry blanks, and flakes were included as burial furniture in several of the Rattles Bight graves. Although nearly identical to specimens recovered from the nearby occupation site, the Ramah chert flaked-stone assemblage from the burials was frequently larger and in pristine condition in comparison with resharpened and reused specimens from the village area.



14.1/ Ramah chert artifacts from Nulliak

Approximately 600 kilometers further north, at Nulliak, lies the largest Maritime Archaic site on the north coast (Fitzhugh 1981). The site at Nulliak dates to ca. 4300 B.P. A scant sixty kilometers from Ramah Bay, it must have facilitated access to the chert quarries. At Nulliak there are a number of long-houses and at least two large stone-capped burial mounds. Ramah chert artifacts, especially large numbers of stemmed points, were recovered from both domestic and mortuary contexts (fig. 14.1).

Middle and Late Maritime Archaic sites have been discovered along the central and southern Labrador coast and in the adjacent near-interior. These sites attest to the pervasive reliance on Ramah chert by Maritime Archaic Indians to meet their chipped-stone needs. Ramah chert artifacts with close stylistic affinities to the stemmed points and large bifaces from Rattlers Bight and Nulliak have been recovered from sites on the north shore of the Strait of Belle Isle, at Forteau Bay, and at the mouth of the Pinware River (Harp 1964b). These sites also contain Ramah chert debitage that testifies to the transport of Ramah chert as a lithic raw material, in addition to the artifacts that appear to have been brought in finished form from the north. As we will see, artifacts of Ramah chert extend far beyond the Straits region but, significantly, only as carefully finished stemmed points and semilunar bifaces. The Straits appear to mark the southern boundary of groups that had direct access to Ramah chert, either through procurement expeditions to the north or through exchange with closely allied groups. While the situation is not yet clear on Newfoundland, where few Maritime Archaic sites have been excavated, it is apparent that south and west of the Strait of Belle Isle

the transportation of Ramah chert is limited to carefully crafted objects of ceremonial significance.

On Newfoundland there is yet to be an excavation of a Maritime Archaic habitation site on par with those conducted in Labrador. Two cemetery excavations, at Port au Choix (Tuck 1976a) and Twillingate (MacLeod 1967), however, provide dramatic testimony to the continuity of a shared mortuary tradition linking sites in Newfoundland with those in Labrador, the Maritimes, and Maine. Three radiocarbon dates from the Twillingate burials average 3500 B.P., contemporaneous with the occupation at Rattlers Bight. Several Ramah chert artifacts, including a stemmed point and the portion of a semilunar biface, were recovered from the Twillingate burials. Ramah chert debitage was recovered from limited testing at an adjacent habitation site.

While no Ramah chert artifacts were recovered during the cemetery excavations at Port au Choix, a remarkable cache of Ramah chert bifaces was previously found on a beach terrace just below the Maritime Archaic cemetery (Harp 1964a:141-144). The cache, discovered in 1946 by Walter Billard while preparing his garden, consisted of seventy-three chipped stone implements, including sixty-four Ramah chert artifacts (seventeen broad leaf-shaped bifaces, six semilunar forms, thirty-seven unifaces, and four biface fragments). It is impossible to tell at this late date whether this material was originally interred as part of a mortuary feature or whether it is indicative of some other ritual or ceremony. Three other caches of Ramah chert bifaces have been recovered, two in southern Labrador and one on the Quebec North Shore; they are discussed in further detail below.

14.2/ Ramah chert stemmed point found eroding out from a probable burial feature at Indian Island, Old Town, Maine[4]

Moving up into the Gulf of the St. Lawrence, the fourth millennium B.P. use of Ramah chert appears to drop off precipitously. Whether this perception is a result of the paucity of research in the area or a historical reality only the test of time will tell. To date there is a single Ramah chert stemmed point reported from near Trois Rivières (Wright 1982:200) and another one from "New York."[3] Wright (1995:194) reports that some Ramah chert "specimens and flakes" have been found as far west as Cornwall, Ontario, but no provenance is provided.

While the use of Ramah chert in a Late Archaic context seems to diminish as one heads deeper into the interior toward the Great Lakes, the situation is dramatically different along the maritime coast south of Newfoundland into New England. There is a lacuna between Newfoundland and the coast of New Brunswick and Maine where Ramah chert artifacts have yet to be reported from a Late Archaic context. Interestingly, this gap coincides with a gap between the Late Archaic Maritime cemeteries of Newfoundland and Labrador (Tuck 1971) and the obviously allied Moorehead Mortuary complex cemeteries (Sanger 1973), Moorehead's Red Paint Indian cemeteries, in New Brunswick and Maine. Within this ceremonial mortuary context Ramah chert stem-med points and semilunar bifaces are a recognized but rare feature (fig. 14.2). Of the nine distinctive traits that Moorehead (1930: 47) applies to his description of the Red Paint Indian culture in Maine, he includes "spear heads of clear chalcedony known as the Labrador stone." These artifacts are clearly manufactured in Labrador and traded south in a context that maintains their significant symbolic value and importance. When documentation exists, Late Archaic Ramah chert artifacts appear to be derived exclusively from mortuary/ceremonial contexts.

Ramah chert artifacts remain extremely rare throughout the region: in the Maritimes only three stemmed points have been located in antiquarian collections (Patricia Allen, personal communication 1987). Stemmed points and large bifaces of Ramah chert, however, are a dramatic component of Late Archaic mortuary traditions in Maine, having been commented on

by numerous researchers who have worked in the area (Bourque 1971; Moorehead 1922; Robinson 2001; Smith 1948; Snow 1980; Willoughby 1935).

While most of the Maine cemetery sites were excavated prior to the advent of radiocarbon dating, recent excavations at two sites demonstrate that they are contemporaneous with Rattlers Bight and Nulliak occupations (Belcher et al. 1994:21; Snow 1975:50). Other than these mortuary finds there is only a sparse scattering of Ramah chert artifacts that have been identified in New England: (1) a semilunar Ramah chert biface acquired by the Smithsonian in 1868 from a site on Grand Lake Stream, St. Croix River, Maine[5] (fig. 14.3a); (2) the mid-section of a large Ramah chert semilunar biface recovered from the central Connecticut River Valley in the town of Hadley, Massachusetts, about seventy years ago (fig. 14.3b); and (3) at least four large bifaces from Rhode Island, apparently the southernmost appearance of Ramah chert during the Late Archaic period. The provenance of two of these specimens is only "Rhode Island" (Willoughby 1935:51); of the other two, one is from North Smithfield[6] (fig.14.4) and one from Wakefield (fig. 14.5).

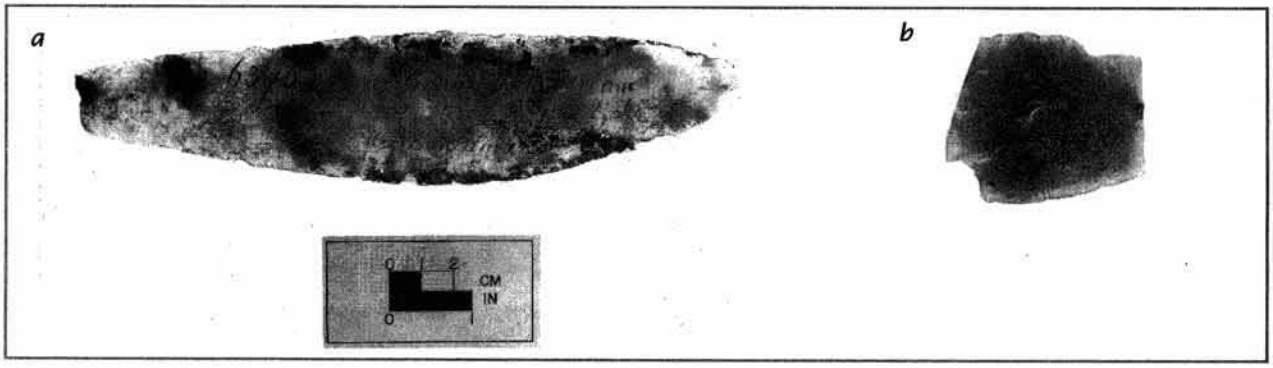
Paleoeskimo Archaeology

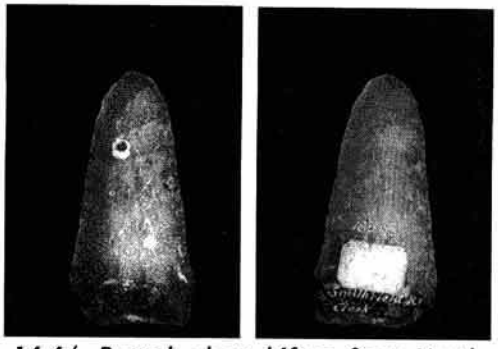
In Labrador, the use of Ramah chert by Paleoeskimo populations increases dramatically through time. Ramah chert occurs sparingly in some Pre-Dorset assemblages (4100-3300 B.P.); the pioneering Paleoeskimo population in Labrador preferred the finer-grained Cape Mugford cherts. However, transitional Groswater Dorset groups (2800–2200 B.P.) proved extremely eclectic in their consumption of lithic raw materials, with varying amounts of local (Ramah) and exotic (Cow Head cherts from Newfoundland's Northern Peninsula, first mentioned by Wintemberg [1939:88]) cherts in their assemblages. Groswater Dorset components at Nunaingok, at the extreme northern tip of Labrador, contain tools and debitage derived from Newfoundland sources. Digging at Nunaingok in 1935, Douglas Leechman found Paleoeskimo components full of "quartzite"—Ramah chert. Leechman (1943:365) wrote, "the source of the quartzite is not known to the modern Eskimos, who use fragments from the old village site when they have need of it."

Further south, at Postville (Loring and Cox 1986) on the central Labrador coast, 500 kilometers from the Ramah quarries and nearly a thousand kilometers from Newfoundland, the Groswater Dorset stone tool assemblage is composed of approximately 70 percent Newfoundland cherts and 25 percent Ramah. At the southern terminus of Groswater Dorset culture, at the Strait of Belle Isle on the Quebec North Shore (Pintal 1994:151; Plumet et al. 1994) and in Newfoundland (Auger 1986:113; Carignan 1975:47; Renouf 1994: 174), Newfoundland cherts dominate the assemblages, although a very small proportion of tools and debitage made of Ramah chert are always present.

Clearly, during the Groswater Dorset period in Newfoundland and Labrador the acquisition and generous consumption of chert from distant sources attests to the presence of fairly formal, elaborate, and

14.3/ Large Ramah chert bifaces from New England





14.4/ Ramah chert biface from North Smithfield, R.I.

sophisticated exchange and interaction networks. These networks, it has been hypothesized, served as a means to circumvent the constraints imposed by a linear coastal-maritime-settlement-subsistence strategy through reciprocity and kinship relations (Loring and Cox 1986:78).

With the advent of the Late Paleoeskimo tradition (ca. 2500-800 B.P.), the "classic" Early-Middle-Late Dorset of Labrador (Cox 1978; Tuck and Fitzhugh 1986), Ramah chert becomes the nearly exclusive lithic choice for flaked-stone tools and continues so until the Thule appropriation of the coast signals the end of Dorset culture (Nagle 1986). The lithic technology of Thule peoples consisted primarily of a ground-slate industry. Occasionally, in northern Labrador, we find small water-washed and/or ground and polished chunks of Ramah chert at Neoeskimo house sites, the purpose and significance of which must await further analysis. Nagle (1986) has written on the nearly exclusive use of Ramah chert by Dorset Paleoeskimos in Labrador. He tests Renfrew's (1977) distance-decay model, quantifying the nature of Ramah chert consumption and use in relation to increased distances from the quarry location.

Newfoundland Dorset, contemporaneous with Middle Dorset in Labrador, is most characterized by its particular regional stamp (Harp 1964a). Harp (1964a:91) describes the occurrence of Dorset artifacts made of "translucent grey quartzite" and others of "flint or chert" but source identifications are not hazarded. With the recognition of the northern Labrador source for Ramah chert, it is apparent that there must have been some interaction between Dorset populations in Newfoundland and Labrador; small quantities of Newfoundland cherts occur at Middle Dorset sites in the Nain area and further north (Jordan 1986:142).

North from Labrador it is rare to find site reports detailed enough to include the analysis of debitage and quantify the appearance of exotic lithic raw materials. In western Ungava Bay, Plumet's Tuvaaluk Program proves the exception to the rule. He and his colleagues (Desrosiers 1986; Labrèche 1986a; Plumet 1986b, 1994) note that Ramah chert, as well as other exotic materials, occur in trace amounts at the Paleoeskimo sites at Diana Bay. On Baffin Island, as part of the Meta Incognita Project in outer Frobisher Bay, Smithsonian researchers located several Early and Late Dorset sites some with a few flakes or a few tools of Ramah chert (Odess 1996, 1998).

14.5/ Ramah chert biface from Wakefield, R.I.

Further west at Nuvuk, a Dorset site near Cape Wolsten-holme, Nouveau Quebec, Leechman (1943: 366) hints at the presence of Ramah chert and of material likely to be derived from Southampton Island. At Southampton Island, some 1,200 kilometers from the Ramah chert quarries, Cox (1978:113) reports that Henry Collins's collections from T-1 contain "a few Ramah chert tools." This latter observation is especially interesting given Cox's claim of close similarities between the Early Dorset component at T-1 and Early Dorset sites in Labrador.

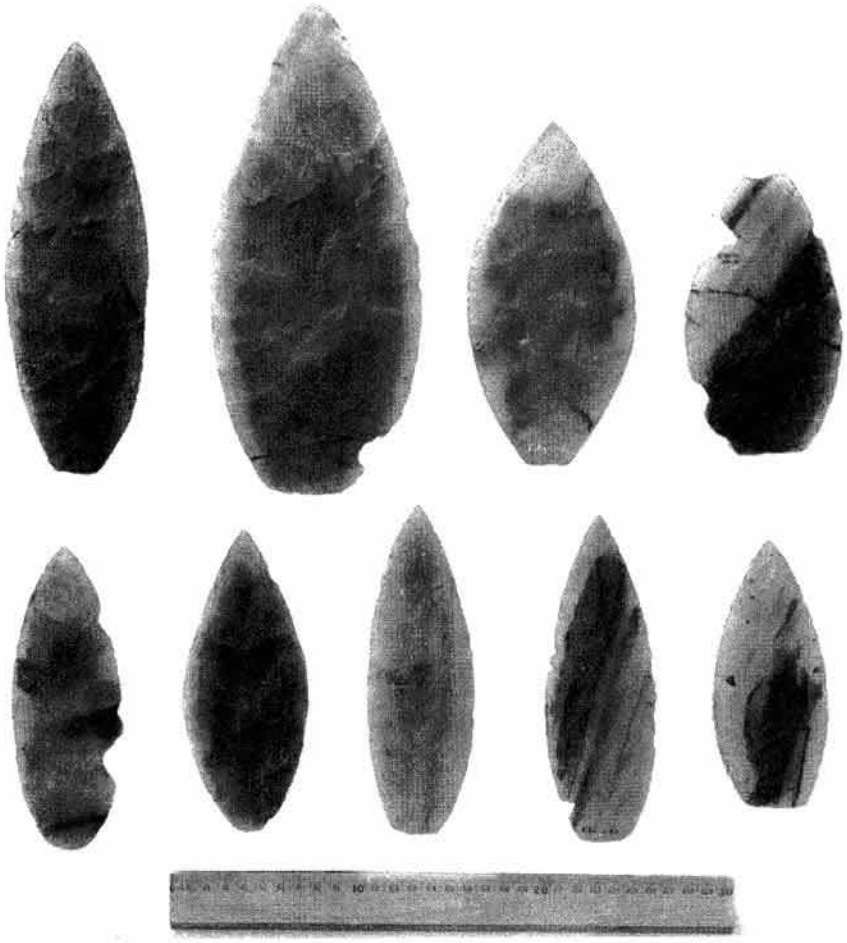
Late Prehistoric Period Indian Archaeology

Labrador's Indian prehistory is broken into three episodes. The initial Maritime Archaic period, ca. 7000–3500 B.P., is followed by a series of Intermediate Indian occupations, ca. 3500–2800 B.P. (Nagle 1978), and finally by the Late Prehistoric period with its Daniel Rattle and Pt. Revenge complexes, ca. 2000–400 B.P. (Fitzhugh 1978b; Loring 1988a, 1992). Coeval with Middle and Late Dorset Paleoeskimo occupations in northern Labrador, Late Prehistoric period Indian groups (the ancestors of the Innu) frequented the central Labrador coast and adjacent interior. While I have not encountered any contemporary traditions among the Innu that pertain to the use or knowledge of Ramah chert, it was the nearly exclusive lithic preference of their ancestors. This passion for Ramah chert necessitated a journey far to the north of the tree line to an alien world inhabited by strangers—a journey fraught with dangers.

Late Prehistoric period Indian stone tool assemblages are characterized by the conspicuous consumption of Ramah chert. Along the central Labrador coast, Daniel Rattle (ca. 1800–1000 B.P.) and Pt. Revenge (ca. 900–300 B.P.) complex sites are frequently found littered with large amounts of Ramah chert debitage (Loring 1992). The early Daniel Rattle components have a mixed bifacial and unifacial chipped-stone tool assemblage. The bifacial industry consists primarily of straight-based lanceolate forms and side-notched projectiles. The unifacial industry consists of a wide variety of quite large side and end scrapers and flake knives. This unifacial industry might have been an excellent technological strategy to maximize the potential use-life of stone tools, a valuable strategy for highly mobile, dispersed hunters and gatherers who lived hundreds of kilometers south of the Ramah chert quarries. Such economic assumptions, however, are negated by the expansive squandering of large amounts of Ramah chert in the form of debitage at these sites. Clearly, late prehistoric Indian groups in Labrador had no problems in getting large quantities of Ramah chert.

There is little evidence that Late Prehistoric period Indian groups lived north of Nain, although a thin trickle of diagnostic projectile points extends all the way to the southernmost extension of the Ramah quarries at Saglek. Rather, the north coast of Labrador was the homeland of Middle and Late Dorset peoples with whom Daniel Rattle and Pt. Revenge people must have been in contact. Dorset culture disappears around A.D. 1300 with the sudden appearance of Neoeskimo Thule invaders. Whatever social relations may have existed between Late Prehistoric period Indian and Paleoeskimo peoples were irrevocably severed.

With Thule cultural expansion along the entire Labrador coast, eventually extending all the way to Newfoundland, the Indian socioeconomic landscape was radically altered. Ramah chert retained its prominence in the lithic assemblage at late Pt. Revenge sites, but the flagrant consumption, characterized by the large volume of debitage in the earlier Daniel Rattle components, was superceded by apparent stinginess and intensive reworking and reuse of available materials. The latest radiocarbon-dated Pt. Revenge site is Aly's Head in Hamilton Inlet (Fitzhugh 1978b:159–160; Loring 1992:354–358). Charcoal from a hearth produced a date of 325 ± 80 (SI-1276) equivalent to A.D.1625. By this time the Thule and European appropriation of the coast appears to have been a factor in the withdrawal of Indians from a maritime setting and



14.6/ Casts of the Spingle cache bifaces held by the Archaeology Unit, Memorial University, St. John's.

coincidently from their economic and ceremonial-symbolic identity with Ramah chert.

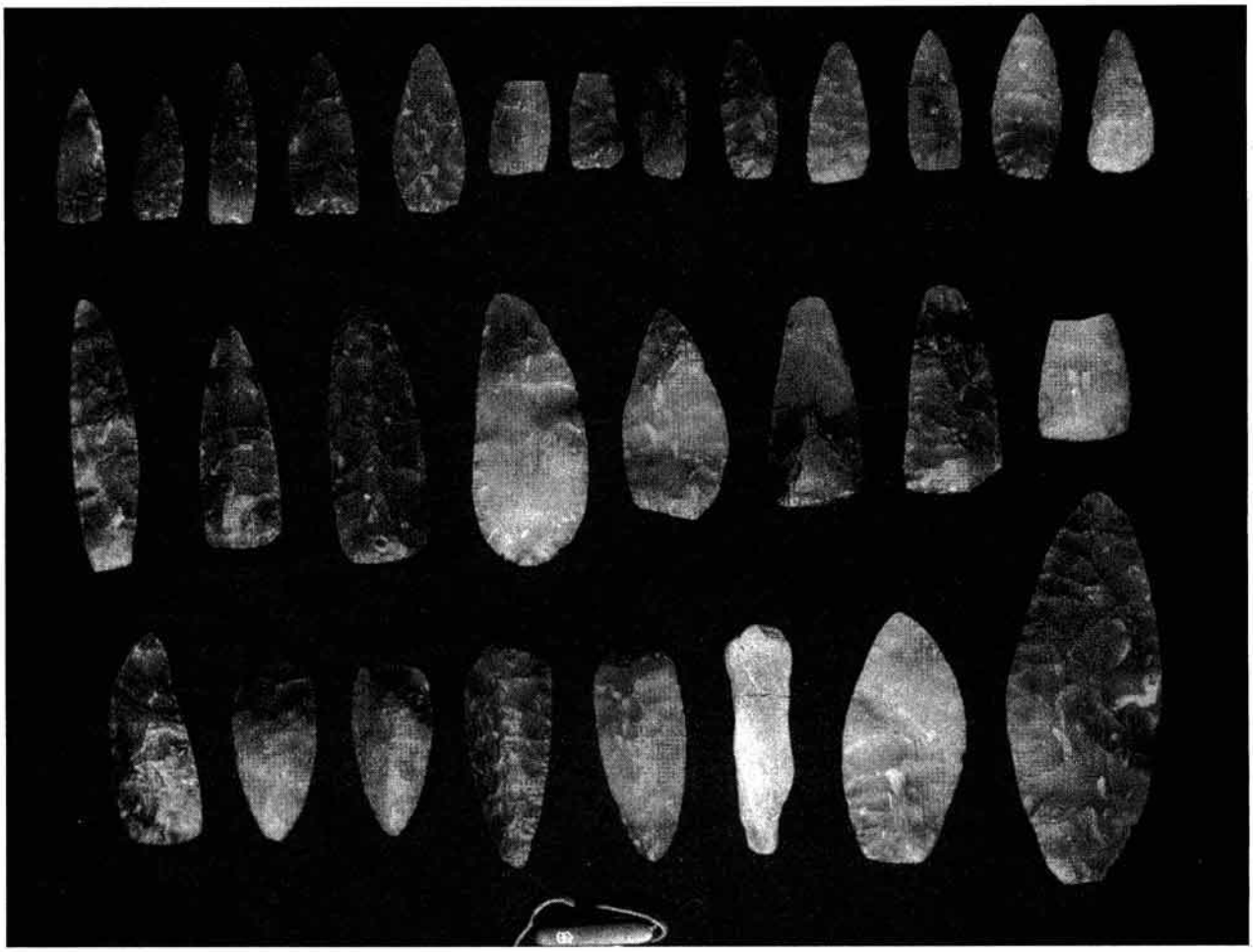
Late Prehistoric period Indian sites extend the full length of the central and southern coast of Labrador as far as the Quebec North Shore. At Blanc Sablon, a number of prominent Late Prehistoric period Indian sites with Ramah chert artifacts and debitage have been recorded (e.g., the Kidder collection at Harvard's Peabody Museum [Fitzhugh 1972b:plate 87a, e-k]; the Lawrence Jackson collection [Loring 1985:132–133]; materials collected by Harp [1964b]; and recent excavations conducted by Jean-Yves Pintal [1989, 1998, personal communication 1992, 1998]).

One of the more unusual characteristics of Ramah chert distribution during this time period is the appearance of three caches of Ramah chert bifaces, two from southern Labrador and one from the Quebec North Shore. In the fall of 1995, a spectacular cache of "about 90" large Ramah chert bifaces were found by a hunting party "between Port Hope Simpson and William's Harbour" along the southern Labrador coast (Pomeroy 1995). Details remain sketchy but newspaper photographs reveal an astonishing array of large Ramah chert unifacial tools and bifaces. Superficially, these artifacts bear a striking resemblance to tools from the Late Prehistoric period Daniel Rattle components at sites near Davis Inlet and Postville and to material recovered from the Spingle cache. A second extraordinary cache of Ramah chert artifacts from southern Labrador included at least nine remarkable bifaces, several biface fragments, and a number of flakes; it was discovered by Gordon Spingle in 1990 while gardening in front of his home in L'Anse-au-Clair, Labrador, on the Strait of Belle Isle (fig. 14.6). The Spingle bifaces are large (average length is 193 mm) and broad (maximum width is 113 mm; average width is 77 mm) with pronounced convex sides. The bifaces do not neatly slip into previously described categories. The lack of any associated materials makes their attribution difficult, but I believe they date to the Late Prehistoric period on the basis of their similarity to bifaces in the Stubbert cache, as discussed below.

The Stubbert cache of Ramah chert bifaces was found by Huey Stubbert in the village of Kegashka, on the Quebec North Shore approximately 350 kilometers west of the Strait of Belle Isle (Chism 1982; Loring 1992:446–449). The Stubbert cache consists

of twenty-nine large Ramah chert bifaces, an unworked tabular piece of Ramah chert, a biface of dark gray quartzite, and a polished stone rod of uncertain function (fig. 14.7). Several Stubbert cache bifaces are identical to lanceolate forms recovered from Daniel Rattle and Pt. Revenge sites in Labrador and to a specimen recovered from a cache of bifaces found in Saybrook, Connecticut (see below). Others include broad-bladed bifaces with convex sides, which in turn are similar to the bifaces in the Spingle cache. Maritime Archaic people also produced large Ramah chert bifaces, including lanceolate forms (Harp1964:243), but the absence of rectangular, semilunate and bipointed forms diagnostic of the Maritime Archaic period (Fitzhugh 1975:127, 1978a:78), and the recovery of both the small lanceolate bifaces and the large, narrow dagger-like forms from well-documented Daniel Rattle components, support the attribution of the Stubbert cache to the Late Prehistoric period. The similarity of the broad bifaces with convex, almost round, blade outlines links the Stubbert and Springle caches although, barring supportive further data, this attribution must remain tentative.

These three caches and the high percentage of Ramah chert utilized at Late Prehistoric period sites on the Quebec North Shore are not predicted by gradual fall-off models of down-the-line exchange (Renfrew 1977). Such dense accumulations of Ramah chert 1,600 kilometers from its source are not concentrated by hand-to-hand, trickle-down exchange but rather by highly motivated, direct procurement activities by individuals or small groups. In order to overcome the difficulties in bringing Ramah chert such a distance, there must have been a substantial social/ideological

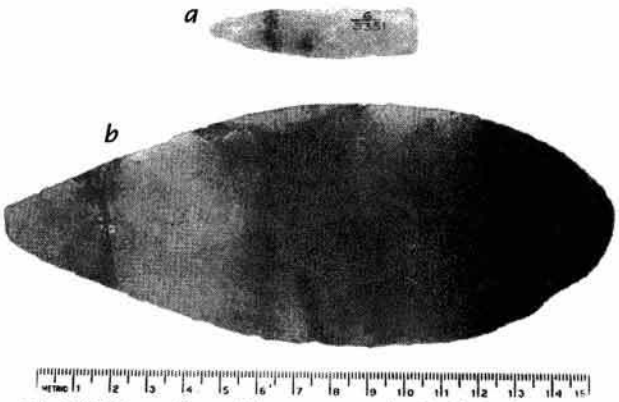


14.7/ Stubbert cache as photographed by William Fitzhugh in Kegashka, summer 2001

investment in the chert that would make it preferable to less distant raw materials. Further to the south and west, the value or significance of Ramah chert does not figure so centrally in the socioeconomic aspects of group identity.

Across the Straits in Newfoundland, Late Prehistoric period Indian cultures (a.k.a the Recent Indian period in Newfoundland) ancestral to the Beothuk appear to be closely allied with their Labrador neighbors. And while Ramah chert does not figure significantly in most of the Newfoundland assemblages, the marked stylistic convergence of the Labrador and Newfoundland stone tools attest to some interregional exchange and interaction. Ramah chert side-notched projectile points have been recovered at the Beaches site in Bonavista Bay (Carignan 1975:105, plate 26) and other Beaches assemblages, dating roughly between A.D. 800–1200 (Loring 1992:456–459). At the Bank site (DdAk-5)—an important Recent Indian site also in Bonavista Bay—a linear hearth feature was excavated that contained an impressive amount of Ramah chert tools and debitage, leading its excavator to suggest that the acquisition and consumption of exotic materials, like Ramah chert, may have figured significantly in ritual feasts and ceremonies (Schwarz 1992).

Moving west from the Strait of Belle Isle up the St. Lawrence estuary, Ramah chert is repeatedly found in small amounts at some Late Prehistoric period sites along the lower Quebec North Shore. Most often it occurs as isolated finds. Large unifacial Ramah chert scrapers, similar to specimens from the Daniel Rattle complex sites in Labrador, have been recovered near the Saguenay, at the Sainte-Marguerite River (Levesque 1962:23) and at Trois-Rivières (Marois and Ribes 1975:60, 95–96). Kidder and Tuck (1972) found Ramah chert debitage associated with small corner-notched projectile points from a mixed multicomponent site on Anticosti Island, and a small Levanna-like triangular arrowhead of Ramah chert was recovered from beside the Richelieu River north of Lake Champlain (Wright 1979:32–33).



14.8/ Bifaces from Vermont at the National Museum of the American Indian

From the Champlain Valley there are a pair of small bifaces of uncertain cultural/chronological attribution that are likely associated with this Late Prehistoric period distribution of Ramah chert. The first is a small Ramah chert flake point in the collection of William Benton of Vergennes, Vermont, which was found at the mouth of Otter Creek on Lake Champlain. While there is little doubt about the lithic material, its cultural attribution is less obvious as the flake point has stylistic affinities to flake points from the Maritime Archaic habitation site at Rattlers Bight in Hamilton Inlet (Fitzhugh 1972b, plate 79 a-p) and Windy Tickle near Hopedale (Strong 1930:plate 4 n-t). The second is a cylindrical-shaped biface or drill, a form that has no counterparts further north; it was found in the collections of the National Museum of the American Indian but contains no additional information besides its Vermont provenance (fig. 14.8a).

Perhaps the most interesting piece of Ramah chert to come out of Vermont is a large ovate biface recovered in 1895 from Barker Farm in Leicester, Addison County (fig. 14.8b). While the Late Prehistoric period attribution is uncertain, this biface could well be a Late Archaic specimen, its close affinity to bifaces in the Spingle cache from L'Anse-au-Clair, Labrador, makes a Late Prehistoric period attribution possible.

West of Vermont's Lake Champlain, the Late Prehistoric period trade in Ramah chert appears to drop off perceptibly, perhaps attesting to the emergence of less permeable social boundaries between the more

mobile Algonquian groups and incipient Iroquoian villages. However, an intensive survey of old museum collections might likely change this perspective and demonstrate further mechanisms of social interaction than heretofore perceived. For instance, while working through the collections of miscellaneous artifacts in the holdings of the Canadian Museum of Civilization, Jean-Luc Pilon (1999) reports finding three small lanceolate Ramah chert bifaces from two different sites on the lower Gatineau River that had been collected prior to 1936. Pilon likens the Gatineau River finds to Meadowwood cache blades but to this author they bear a very strong resemblance to the small straight-based bifaces found at Daniel's Rattle complex sites in Labrador (Loring 1985: fig. 7; 1992). And in the collections of the Smithsonian Institution, there is a large square-based Ramah chert biface that was found in Orleans County, New York (near Lake Ontario) in 1893 (fig. 14.9).

14.9/ Ramah chert biface from New York

With the diminution of the Ramah chert trail to the west, we return to the Maritimes to pick up the trail anew. It seems unlikely that individuals from La-brador would ever have traveled much beyond the Strait of Belle Isle. In the absence of direct contact and interaction there is, nevertheless, a diffusion of some materials and ideas, as Late Prehistoric period Indian sites in the Maritimes share a number of strong stylistic features with sites in Newfoundland and Labrador (Loring 1988b). While it has to be recognized as fundamentally different from the direct long-distance exchange and interaction that occurred among Indian groups further north, the late prehistoric cultures of the Maritimes, including Keenly-side's Maritime Woodland and the Ceramic period sites in Maine, contain provocative data on the distribution of Ramah chert during the Late Prehistoric period in the Northeast.

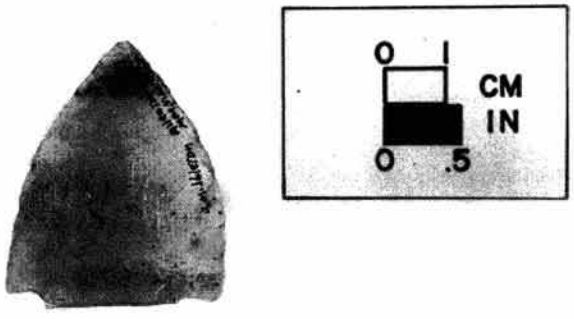
Ramah chert is very scarce in collections from the Maritimes according to David Sanger (personal communication 1987) and Stephen Davis (personal communication 1987). However, occasional flakes and locally manufactured tools of Ramah chert have been recovered: (1) Moira McCaffrey (personal communication 1994) reports locating several flakes of Ramah chert in the course of survey work on the Iles-de-la-Madeleine; (2) on Prince Edward Island, Ramah chert tools and debitage are a consistent feature of Late Prehistoric period Indian sites dating ca. 1050–850 B.P. (Keenlyside 1982, 1984; Keenlyside and Keenlyside 1976:30); and (3) on the New Brunswick mainland, traces of Ramah chert are also present at Late Prehistoric period sites.[7]

In the course of documenting archaeological collections on Prince Edward Island, David Keenlyside was shown a remarkable, small triangular projectile point that appears to be made of Ramah chert (personal communication 1995)[8] found along the Tracadie River. Typologically, this specimen seems similar to some Late Dorset endblades from northern Labrador coast. If it is indeed a Paleoeskimo artifact, then it joins an intriguing set of Paleoeskimo objects transposed from their northern point of origin (realizing a prediction made by the naturalist Alfred S. Packard [1885:473] more than a 100 years ago). Steven Cox has identified a Dorset ground and polished burin-like tool in the collections from the Goddard site, a Late Prehistoric period habitation site on the central Maine coast, and also a pair of Dorset bone harpoon heads from Smith and Wintemberg's (Smith and Wintemberg 1929:plate XX 1-2) excavation of the Merigomish shell heap in

Nova Scotia (Bourque and Cox 1981:24–25). As the Paleoeskimo artifacts from Maine and Nova Scotia are associated with Late Prehistoric period Indian shell middens they may have functioned as gift items or curiosities that signaled, as did Ramah chert, something exotic and desirable. They remain tangible evidence of the elaborate social mechanisms that linked Indian bands throughout the Far Northeast.

There are several Late Prehistoric period sites in New Brunswick along the Tracadie River that, according to David Keenlyside (personal communication 2000), have produced Ramah chert debitage and artifacts. One of these sites, the Savoie site (CiDf-11), produced a Ramah chert assemblage that included several hundred biface thinning flakes and a half-dozen or so scrapers and small bifacial knives (Keenlyside and Keenlyside 1976). The late prehistoric use of Ramah chert at the Savoie site is dated to 1025 ± 120 (SI-713).

The sparse trail of Ramah chert leading to New England becomes a bit more conspicuous when we reach the state of Maine. A number of Ramah chert artifacts have been recovered from a variety of late prehistoric Ceramic period sites along the central Maine coast: at the Jones Cove shell heap (Smith 1929:8) and the Watson site (Cox and Kopec 1988), both in Frenchman's Bay; a shell heap in Casco Bay (Arthur Spiess, personal communication 1989); and the Goddard site on Blue Hill Bay (Bourque and Cox 1981). These coastal sites all appear to be coeval with occupations ca. 1000–700 B.P. They have typical Late Ceramic period assemblages of small side-notched projectile points made out of both local and exotic lithic raw materials, including Ramah chert specimens (Kopec 1987). At both the Goddard and Watson sites a high percentage (30 percent at Goddard) of the lithic raw materials are derived from non-local lithic sources, including cherts from western New York, Vermont, and the Bay of Fundy, and jasper from Pennsylvania (Cox and Kopec 1988:42). More than 150 flakes of Ramah chert, including large preform reduction flakes and small bifacial resharpening flakes, and at least thirty Ramah chert artifacts (made into local styles of side-notched projectile points and end scrapers) were found at the Goddard site (Bourque and Cox 1981:15; Steven Cox, personal communication 1989).



14.10/ Monmouth County, NJ, biface

Ramah chert has also been recovered from several Late Prehistoric period interior sites in Maine: Steven Cox reported two flakes of Ramah chert in a large collection from Mattawamkeag on the upper Penobscot and several tools (a distal biface fragment, two end scrapers, and a couple of flakes) in a collection from Grand Lake Stream, a tributary of the St. Croix (Steven Cox, personal communication 1989); and Arthur Spiess and Robson Bonnichsen report finding a piece of Ramah chert near Munsungun Lake in 1980 (Arthur Spiess, personal communication 1989).

Eventually, the southerly trend of the Ramah chert trail peters out in southern New England and the mid-Atlantic states but not before some surprising manifestations. A lanceolate biface of Ramah chert was recovered as part of a cache found near the mouth of the Connecticut River at Saybrook, Connecticut, around 1942 (Loring 1992:484). The cache consists of twelve large, mottled-yellow-brown jasper bifaces, a parallel-sided, straight-based Ramah chert biface, and several rolled copper beads. Frequently, the attribution of caches composed of unfinished bifaces is problematic. In this case, however, the stylistic similarities of the Ramah chert lanceolate biface from the Saybrook cache with bifaces recovered from Daniel Rattle complex sites in Labrador unequivocally link the two in time. The distal portion of a broad-bladed Ramah

14.11/ The southernmost Ramah biface known to date was found in Maryland.

chert biface (fig. 14.10) with convex edges and what appear to be small side notches was recovered in Monmouth County, New Jersey, and was formerly in the Dorothy Middleton collection (Gary Fogelman, personal communication, November 2000). The convex blade outline has no clear Labrador antecedents and may be a form produced locally by a mid-Atlantic Middle Woodland tool manufacturer. And finally, the presently recognized most southerly occurrence of Ramah chert is a large, impressive biface (fig.14.11) found in Riverton, Maryland, and formerly in the Judge William Yates collection of Cambridge, Maryland (Fogelman 1997; personal communication, November 2000). Without closer inspection, it is difficult to ascertain whether this specimen has a Maritime Archaic or Late Prehistoric period association.

Ramah Chert and Vikings

Persistent, but inconclusive, references to the presence of a pair of Newfoundland-Labrador corner-notched projectile points recovered from Norse sites in Western Greenland are tantalizing suggestions of another form of culture contact (Berglund 1981; McGhee 1984a; Rowlett 1982). One specimen, possibly made of Ramah chert, was found in 1930 at Sandnes in Vesterbygden (Roussell 1936:106); the second, made of quartz, was a stray find recovered from rocks on the shore below the Norse ruins at Brattahlid, the very site from which Thorfinn Karlsefni left on a Vinland expedition in 1003 (Meldgaard 1961). A recent report of Ramah-like quartzite from East Greenland potentially complicates this situation (Gulløv and Rosing 1993). But, as the now famous recovery of a Norwegian penny—minted between A.D. 1065 and 1080—from the Goddard site in Maine (Bourque and Cox 1981) attests, small forgotten objects can, by their context, eloquently attest to complex historical processes and events.

Questionable Associations of Ramah Chert

Finally, there are a number of references to the occurrence of Ramah chert that have surfaced in the literature that I believe need to be discredited. Anecdotal references sometimes have a way of entrenching themselves, no matter that the evidence is strictly hearsay. In his initial discussion of Ramah chert in the Hamilton Inlet monograph, Fitzhugh (1972b:40) makes reference to the appearance of Ramah chert artifacts recovered from as far away as Maryland and Florida (repeated by Lazenby [1980:632] and Wright [1995:194]). The Maryland find, which Fitzhugh heard about from James Tuck, appears to be the Judge William Yates specimen previously referred to. The Florida specimen was reported by the Labrador geologist Everett Wheeler. Fitzhugh himself never saw these artifacts, and I have been unable to affirm the Florida attribution.

In Vermont, several bifaces from the Boucher site, an Early Woodland cemetery near Swanton, have erroneously been identified as being made of Ramah chert (Haviland and Power 1994:98). Instead, they are almost certainly Mistassini quartzite from Lac Albanel in central Quebec (McCaffrey personal communication; Heckenberger et al. 1990).

It is interesting to speculate why the Ramah chert trail does not appear to penetrate into the Great Lakes region of the midcontinent. The St. Lawrence seems every bit a natural highway as do routes along the coast. Yet a casual examination of museum collections (Boston, New York, Washington) has yet to ferret out Ramah chert specimens, beyond the one western New York biface. The westernmost distribution of Ramah chert is attributable to a Maritime Archaic bipointed biface found near Peterborough, Ontario (Moira McCaffrey, personal communication).[9] Other than the previous reference to specimens seen by J. V. Wright (1995:194), and the specimens reported by Pilon (1999), there are no reports of Ramah chert from Ontario (Michael Spence, personal communication 1988) or the Great Lakes region (K.C. Dawson and Ronald Mason, personal communications 1987). Mason no longer stands behind his statement that Ramah chert artifacts have been recovered at Shield Archaic sites in the Great Lakes (Mason 1981:138).

Although Haviland and Power (1994:63) believe a "close relationship" exists between the Vergennes Archaic of the Champlain Basin and the Maritime Archaic of the Far Northeast, I am less convinced. If we look at the distribution of exotic materials recovered from Archaic sites in Vermont, the lack of any significant numbers of artifacts made of Ramah chert or other products from the Maritimes, coupled with the surprising quantities of copper tools (cold hammered from Lake Superior nuggets) in antiquarian collections, suggests Vermont Archaic social relations more likely took a westward orientation. Late Archaic interregional cultural dynamics remain among the most intriguing problems in North American archaeology. Pioneering studies on the distribution of raw materials far from their sources have significantly structured perceptions of eastern United States prehistory (e.g., Seeman 1979; Griffin 1965). Quantifying the nature and dynamics of long-distance exchange (of both raw materials and artifacts) has provided archaeologists with one of their best means to approach questions of precapitalist economies, territoriality, and the emergence of political autonomy and authority.

Discussion

In this chapter, I have hoped to demonstrate the potential that the study of the acquisition and distribution of lithic raw materials holds for enlightening perceptions on the social dynamics of prehistoric cultures. (It is also an oblique testimony to the value inherent in old museum collections.) The absence of discussions of lithic raw material variability and use, of descriptions of lithic sources, and of analyses of raw material percentages and composition of assemblages is, with some exceptions, the norm in the archaeological literature of the Eastern Arctic. Such studies and analyses, however, would seem to hold the promise of revealing the intensity (or lack thereof) of interregional contact and exchange among dispersed arctic populations as has been suggested by this review of the use and distribution of Ramah chert. After nearly a century of speculation, much of the mystery about Ramah chert has been resolved. It remains for the next generation of scholars to articulate the mystery for further revelation of prehistoric adaptations in the Eastern Arctic and the Far Northeast. The distribution of Ramah chert challenges assumptions about the boundedness of arctic and subarctic peoples, invites new theories for modeling group interaction and interregional contact, trade and communication, and the boundaries of social groups. Some indication of these directions can be inferred from the following concluding notes.

Ramah Chert Distribution during the Late Maritime Archaic Period: ca. 4500–3500 B.P.

The consumption of Ramah chert in Maritime Archaic sites in Labrador is an entirely different proposition from its appearance and use at Moorehead period burials in Maine and the Maritimes. In Labrador, Ramah use transcends domestic and ceremonial life; it is

the raw material used in a wide variety of cutting and scraping tools recovered from midden and house excavations and, as chunks of raw material, flakes, stemmed points, and a variety of large biface styles, it is found in ocher-stained burial pits. South of Labrador, Ramah chert loses its mundane connotations entirely. There is no evidence that Ramah chert was being transported as a raw material; rather, classic Labrador forms—stemmed points, semilunar bifaces, and lanceolate bifaces—went south to be "consumed" in an exclusive mortuary context.

The actual number of Ramah chert points and bifaces in the Maine burials is, after all, small and could be the result of a single procurement/acquisition event. In this respect, the Ramah chert situation is somewhat analogous to the appearance of Yellowstone obsidian in Ohio Hopewell assemblages where the spectacular nature of the raw material and the drama inherent in its appearance so far from its source overshadows the fact that the actual amount of raw material is slight (Griffin 1965:146). So, while the temptation is to see the transportation of Ramah chert to New England as part of a formal long-distance exchange network, it seems equally likely that the Ramah chert in the Maine cemeteries could stem from a unique event or from several casual encounters. The exclusive appearance of Ramah chert in Maine mortuary features suggests that special individuals were being selected for extraordinary treatment. These were individuals who were able to parlay their knowledge, reputation, skills, or prestige to gain access to exclusive materials. In thinking about the evolution of tribal identities, Bender (1985:23) links social behavior and material culture with "leadership geared to specific subsistence activities," and with mediation and decision-making pertinent to "alliance, marriage and exchange." The specialized nature of some Maritime Archaic activities, specifically the dangerous activities associated with long-distance voyages, deep-sea fishery, and hunting large marine mammals, would necessitate special leadership roles and organizational authority. Such individuals might acquire specialized knowledge of distant peoples and resources.

In a discussion of Maritime Archaic symbolic traditions, Fitzhugh (1985c) has suggested that many Indian groups in the Northeast share a common outlook that links spiritual identity with individual practices and beliefs. The lack of rigid ceremonial practices (suggested by the variability in regional Late Archaic burial conventions) parallels the relatively informal social hierarchies that epitomize the loosely knit band structure of subarctic Indian groups. In a similar sentiment, Bourque (1994) has questioned adaptational models of interregional exchange "systems," suggesting alternatively that trade might result from unique historical events initiated by adventuresome individuals seeking personal power and prestige. Such a scenario might better explain the cluster of Ramah chert stemmed points in Maine and the Ramah chert bifaces in Rhode Island.

For hunters, with their intimate knowledge of environment and local resources and their profound belief in the spiritual component of killing animals, it is not too far-fetched to link the symbolic ideological significance of stone projectile points with social power, recognition, and prestige. This is evident in later Early and Middle Woodland societies in the Northeast where large, exotic bifaces figure prominently in mortuary ceremonialism. I have suggested that the prevalence of large bifaces in Early-Middle Woodland ceremonial features indicates their seminal role in ritual behaviors, forming a symbolic medium that was recognizable over a large area and among dispersed groups (Loring 1989).

That these Ramah chert stemmed points were not passed along as heirlooms but in every case with good provenance were "consumed" as mortuary offerings suggests that they represented objects of significance to individuals, not necessarily evidence of an established or sustained formal association between widely separated contemporaneous groups.

Ramah Chert Distribution during the Late Prehistoric Period: ca. 1800–400 B.P.

The Late Prehistoric period distribution of Ramah chert among northeastern Indian groups is quite different from that of the preceding Maritime Archaic period. The patterns of Ramah chert occurrence in New England and the Maritimes never suggest actual chert procurement expeditions launched from the south. As detailed above, the fourth millennium B.P. distribution of Ramah chert throughout the Far Northeast is limited to specimens manufactured by Maritime Archaic Indian groups in central and northern Labrador and subsequently dispersed to the south as finished objects. With the Late Prehistoric period distribution of Ramah chert in the Northeast, however, there is evidence of both the transport of Labrador-manufactured bifaces (the biface from western New York, the specimen from the Saybrook cache, the Yates biface) as well as the transport of Ramah chert as a raw material. This latter interpretation is supported both by the recovery of Ramah chert flakes, evidence of tool manufacture, and by chipped-stone artifacts made into local (non-Labrador) styles. The transport of raw material appears to signal a different mechanism of distribution than that of the preceding Maritime Archaic period. The distribution of Ramah chert from northern Labrador is one means we have to question the rigidity, permeability, and continuity of prehistoric group boundaries. With a variety of quality, flakable lithic raw material available from local sources, the choice to acquire exotic raw material is a social and ideological decision, not just an economic one.

As with the preceding Maritime Archaic cultures, Late Prehistoric period Indian groups in Labrador had a nearly exclusive reliance on Ramah chert for the manufacture of their chipped-stone assemblage. Ramah chert was critical to the success and the definition of social and economic systems in Labrador. South of Labrador and the Quebec North Shore and in Newfoundland and the adjacent Maritime Provinces, local lithic raw materials are the preferred choice for tool manufacture, so that Ramah chert is not as likely to have such socioeconomic significance.

It seems plausible that exotic materials like Ramah chert would come attached to knowledge and information that had social connotations. In Labrador and along the Strait of Belle Isle, early Late Prehistoric period Indian populations would have had contact with coeval Middle and Late Dorset groups and competed for access to certain coastal resources. The large quantities of Ramah chert in the collections from the Strait of Belle Isle and the adjacent Quebec North Shore signal strong, direct channels of trade and communication with Indian groups in Labrador. This interpretation is further strengthened by the presence of caches of Ramah chert bifaces, which could be construed to indicate direct procurement or acquisition of Ramah from the source in northern Labrador. Caches suggest control over a valued resource. Such an interpretation argues for the existence of a strong Indian identity with allegiance to nonlocal groups as a hedge against subsistence shortfalls and ethnic competition. In Maine and the Maritimes, Ramah chert would no longer provide the critical means of social integration and regional interdependence that it clearly did along the Strait of Belle Isle and the Quebec North Shore (where the percentages of Ramah chert in site assemblages are very high), but the information that accompanied the raw material would serve to define relationships between groups and prevent rigid social and territorial boundaries from forming. Lacking preservation of exotic materials—food, plant materials, medicine, fur—chert may be, as Barbara Luedkte (1987:45) has called it, "the tip of the 'trade iceberg.'"

A social system that facilitated the distribution of exotic raw materials remained in place throughout the Late Prehistoric period in the Far Northeast. The large, square-based Ramah chert bifaces recovered from the caches near Blanc Sablon, at Kegashka, and in Saybrook, Connecticut, are early diagnostic forms at Daniel Rattle complex sites and date to ca.1800–1400 B.P., while the small, notched Ramah chert projectile points from

sites in the Maritimes and New England postdate 1000 B.P. At the Goddard site, Ramah chert was distributed throughout the Ceramic Period occupation so that its presence is not indicative of just a single procurement episode (Bourque and Cox 1981).

14.12/ The quarry cirque at Ramah Bay, Labrador

To the best of my knowledge, the southern Ramah chert trail ends with the bifaces recovered in the Say-brook, Connecticut cache and with the Yates biface from Maryland. These artifacts have traveled nearly 3,500 kilometers from their source in Labrador's Torn-gat Mountains. They remain a tantalizing testament to the power of material objects to evoke wonder and amazement, even in such disparate social contexts as a feature in a Late Woodland ceremony and as objects of twenty-first-century academic speculation.[10]

Ramah Bay and Ramah Chert

Before leaving Labrador it seems appropriate to consider the less tangible dimension of Ramah chert acquisition and use. Given the pervasive spiritual dimension in the lifeways of northern hunters and the prominence of Ramah chert use, at least by prehistoric Indians and Paleoeskimos in Labrador, it is inconceivable that the material, and the place from where it was derived, would not have been laden with spiritual significance. Ritual and ceremony would have been an integral feature of procurement activities. In considering the spiritual landscape attendant on Ramah chert procurement, I offer the following observation.

Some of the most accessible and highest quality chert at Ramah is to be obtained along the walls of a prominent glacial cirque carved into the mountain massif on the north side of Ramah Bay (fig. 14.12). The chert-bearing deposits are reached by following a stream that drains the cirque. The final approach to the quarry bowl passes through a dramatic band of iron-rich rocks that have stained the streambed and surrounding rocks a brilliant blood red. Here, the narrow stream valley is at its most constricted point with sheer cliffs rising on both sides. The symbolic pairing of the red-ocher–stained rocks with the source for the material with which the most sacred practice—the killing of animals—was intimately associated must have figured significantly in the telling of the story.

Acknowledgments

I suspect that Elmer Harp has long forgotten our first meeting when, in 1971, as an undergraduate from Goddard College in Plainfield, Vermont, I wandered down to the Dartmouth College Museum in Hanover to look through their boxes of arrowheads from northern New England as part of a B.A. thesis on Vermont archaeology. I hadn't met too many archaeologists then, so Elmer set the standard for politeness in the profession; at least he wasn't impatient at my

then decidedly antiquarian proclivities. My archaeological elders were Warren King Moorehead, C. C. Willoughby, Maurice Robbins, William Ritchie, and a cadre of odd Vermonters (Leslie Truax, William Ross, John Bailey, and Godfrey Olsen). Armed with a copy of Ritchie's *A Typology of New York State Projectile Points*, I was then attempting to unravel the prehistory of northern New England, arguably a prehistoric landscape every bit as remote and disjointed as that of the Eastern Arctic.

A very conspicuous thanks is due Moira Mc-Caffrey, who not only has the coveted distinction of ferreting out the earliest reference to Ramah chert in the literature but was also responsible for bringing information on the Stubbert cache to my attention. I would like to acknowledge Noel Broadbent for translating the Berglund article for me and William Fitzhugh, Moira McCaffrey, and Daniel Odess for their comments on earlier drafts.

At least for some of us, Ramah Bay remains a haunted place, impossible to write about and not remember Anne Abraham, who disappeared there during the Smithsonian's initial reconnaissance in 1976. No one has dwelled in Ramah Bay since the Moravians abandoned their short-lived mission community (1871–1907). The Moravian grave markers in "God's Acre" have fallen so that only a few stones from the mission's foundation and the row of Inuit sod-house ruins remain. Time has a way of playing tricks in northern Labrador. No doubt, on their leaving, the Moravians were aware of the Old Testament passage, if not the irony, from 1 Kings 15:21–22: "and they took away the stones of Ramah."

Notes

1. The quotation in the chapter title comes from Old Testament I Kings 15:21–22.

2. I am indebted to Moira McCaffrey for sleuthing out this reference.

3. In the Smithsonian Institution, NMAI #24/9538; no additional provenance data is available.

4. Found by Maurice Crandall ca. 1943. Three additional similar stemmed points and a distal portion of a large biface, all of Ramah chert, from this site are in the NMAI collections (20/2352).

5. In the Smithsonian Institution, NMNH #A-6376: G. A. Boardman collection, Milltown, Maine.

6. This item is from the J. H. Clark collection purchased in 1875. Clark acquired archaeological material from throughout southern New England. The biface is 101 mm in length and has a broad tip and a broad expanding blade; this is 49 mm wide at its shoulders where it forms an obtuse angle that becomes the stem with straight sides and base; it has heavily ground lower lateral and basal edges.

7. Large unifacial Ramah chert scrapers have been recovered at the Old Mission Point site in the northern part of the province and at the Howe site on the Northwest Miramichi River (P. Allen, personal communicaion 1987)

8. At the Annual Meeting of the Canadian Archaeological Association in Ottawa, May 2002, I had the opportunity to examine this artifact in the company of David Keenlyside, Rob Ferguson, David Denton, and Moira McCaffrey. We all agreed that the specimen certainly appears to be made of Ramah chert. The artifact was a surface find from the eroding Jones site on PEI found by Rollie and Jeanette Jones. It is clearly associated with a group of small, asymmetrical triangular projectile points with deep concave bases that have been recovered from the Jones site, as well as at other sites in New Brunswick and on the Magdelaine Islands, which are attributable to a Late Paleoindian tradition dating to circa 9000–10,000 B.P. (See also Tuck, 1984)

9. In the Royal Ontario Museum #22896, recovered from Concession 6, Carden Township, Victoria County, Ontario. The biface is missing one end and the surviving section is 23 cm long and 6.5 cm wide.

10. Least one suppose that Ramah chert artifacts remain exclusively in the purview of researchers and archaeologists—and Labrador's Innu and Inuit descendants of those who left the tools and debitage behind—it is worth noting that a Ramah chert biface figures significantly in William Sarabande's (1998) "First Americans," a novel of the post-Pleistocene maritime Northeast.

'And they took away the stones from Ramah': lithic raw material sourcing and Eastern Arctic archaeology. Was originally published in 2002 in Honoring Our Elders: A History of Eastern Arctic Archaeology., edited by William Fitzhugh, Stephen Loring and Daniel Odess, Contributions to Circumpolar Anthropology, volume 2. Arctic Studies Center, Smithsonian Institution, Washington, D.C., pp. 163-185.