Examining Diachronic Use of Exotic Lithic Material from a Multicomponent Archaeological Site on Newfoundland, Canada

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Examining Diachronic Use of Exotic Lithic Material from a Multicomponent Archaeological Site on Newfoundland, Canada

A Thesis presented to the Honors College and the Anthropology Honors Department of University at Albany

By

Addison Robbins
Abstract

Newfoundland has been home to several different cultural groups such as the Maritime Archaic, different Paleo-Eskimo groups, the Beothuk, and many others. These cultures are all unique in their own ways and the majority have been documented using the exotic material, Ramah chert. This material is typically found within seabed's or within deep lakes because of the continuous sediment deposit. The excavation and lab analysis have emphasized the continuous use of this material over time. This can be attributed to several factors such as cultural significance or durability. This paper will mainly touch on the culturally significant aspects because of the rarity of the material and the extensive measures it takes to gain access to the material overall.
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Chapter 1

Introduction

The Inspector Island site (DiAq-1) is a multi-component archaeological site in Notre Dame Bay on the north side of the island of Newfoundland in eastern Canada (Figure 1). Newfoundland is a large island just off the coast of mainland Canada and because of the southern flow of the Labrador current from the High Arctic, it has a Subarctic ecosystem and at various times in the past had more Arctic-like conditions that attracted Arctic-adapted cultures. The region has a long history of reliance upon coastal and marine resources, from its earliest Indigenous inhabitants to European colonists and into the modern era.

The first inhabitants of this area were the Maritime Archaic who initially colonized the island around 6,500 years ago (Holly 2013; Wolff 2024) and occupied it for over 3,000 years. They abandoned the island around 3,200 years ago and it was subsequently colonized by several Paleo-Inuit groups beginning around 2,800 years ago. Around the same time the ancestors of the Beothuk, also colonized the island. The last Paleo-Inuit group, the Dorset abandoned the island around 1,200 years ago, and the ancestral Beothuk people continued to occupy the island until AS 1829, when the last known Beothuk woman, Shanawdithit, died of tuberculosis. The Beothuk’s demise was due to a combination of European colonization that began in the 16th century, the diseases and conflict they brought with them, and poor ecological conditions in the interior of the island. With the exception of the post-contact era Beothuk, all of the
groups heavily relied upon stone tools (i.e. lithics) to meet their technological needs. Therefore, the understanding of the sources and use of lithic material is essential to understanding many aspects of their history.

![Map of Newfoundland and Labrador](image)

**Figure 1: Map of Newfoundland and Labrador. Red circle indicates approximate location of Inspector Island.**

This research examines evidence associated with the Maritime Archaic and Paleo-Inuit cultures use of an important lithic material. These Indigenous groups were unique but shared and affinity for a particularly important raw material Ramah chert. Ramah chert is an important and culturally significant material and it has been found in many areas that
are great distances from any the source material at Ramah Bay (Figure 1) in northern Labrador on the mainland, including as far south as Vermont (Curtis and Desrosiers 2017). Meaning Indigenous cultures of Newfoundland and Labrador found enough significance for this material to be traded over great distances. The Inspector Island site is one of the places where Ramah chert was recovered in 2022 (Wolff et al. 2023). That material will be the main artifact assemblage investigated in the research presented here. Therefore, a study of Ramah chert at Inspector Island, over 1,200 km away from its source, could provide insight into its practical and ideological value in areas that are extreme distances from the source area. The main research question of the study is does the use of this exotic material change diachronically and cross-culturally at the Inspector Island site? If there is evidence of change, what does that mean culturally? Is there conservation of the material due to the distance from the source, and what does the frequency of the material suggest about relationships of island groups with their mainland counterparts?
Chapter 2

A Brief History of Ramah Chert

Figure 2: Maritime Archaic Ramah chert projectile point from the Inspector Island Site (DiAq-1)

Chert is a type of rock primarily made from silica (book cite), or silicon dioxide, with a microcrystalline structure (Buchanan 2010). There are different materials that have similar chemical composition to chert, such as quartz (Buchanan 2010). Chert typically forms within the seabed and large lakes because of the sediment deposits that accumulate (Curtis and Desrosiers 2017). The general chert material is common and is extremely hard and durable which makes it ideal for creating durable and sharp-edged
tools. The Ramah group is a sedimentary layer that was deposited in what is now known as Northern Labrador and is an overlay of two geological strata in the Nullataktok formation, from the Nachvak to the Saglek fiords (Curtis and Desrosiers 2017). Since this specific layer of chert is relatively small geographically, this creates an exotic aspect to this material, which may have also made it ideologically important (Loring 2002). The most common characteristic of Ramah chert in this area is a near translucent opacity and a sugary texture (Figure 2), but it can also have inclusions of black and green colors.

Past people would procure Ramah chert from ‘outcrops’ or sometimes in secondary locations where the original source had eroded out and been transported by rivers or glacial action. The main outcrop is in a glacial cirque located in the Torngat mountain range of northern Labrador, not far from the coast. There are also ‘quarry-related’ sites in the Ramah Bay area that have related evidence of manufacturing but no associated geological outcrop (Curtis and Desrosier 2017). These related sites are identified by the abundance of manufacturing debitage of Ramah chert. The quarries are geologically discrete areas and previous excavations have revealed some evidence that there were special ceremonial activities in the area at various times in the past. Artifacts recovered from the source area also include cores, flakes (utilized and unutilized), macroblades, microblades, and bifaces (Curtis and Desrosiers 2017). These indicated an intense use of the quarries and could represent the cultural significance of Ramah chert due to the time-consuming process of traveling to the quarries from long distances, long-distance exchange networks, and harvesting the material.
Chapter 3

Culture History

Maritime Archaic

One of the first known cultural groups that inhabited Newfoundland was the Maritime Archaic. This group settled on the nearby mainland of Labrador over 8,000 years ago (Tuck and McGhee 1975), and moved onto the island much later, occupying it from 6,500 to 3,200 years ago according to current archaeological evidence (Holly 2013; Wolff 2024). Their cultural range spanned the near entirety of the Canadian northeastern coast and near islands and may have ranged down into northern Maine. This group’s economy was particularly tied to marine and coastal resources and they were established seal hunters. They used these resources for food, building purposes, raw materials for tools, and other everyday activities. Archaeological evidence suggests that there were significant cultural aspects throughout the Maritime Archaic tradition regarding the use of Ramah chert. One of the prime examples is the high frequencies of Ramah chert recovered within their longhouses on sites in northern Labrador (Hood 1993; Wolff 2022). Over the millennia they inhabited Newfoundland and Labrador, archeological records indicate their populations grew and ranged from fifty to one hundred in each community (Hood 1993). However, the end of their cultural tradition is still a question being investigated by archeologists today (see e.g. Wolff 2024), but was likely the result of the dynamics of the challenging environment in which they lived or from cultural interactions with other groups on the mainland. Regardless, as was stated in the previous chapter, they abandoned the island of Newfoundland by 3,200 years
ago, and their cultural traditions on the mainland changed significantly enough that they become unrecognizable in the archaeological record (Holly 2013; Tuck and Pastore 1985).

**Paleo-Inuit**

After about a 400-year hiatus on the island following Archaic abandonment, other groups from the Arctic migrated south and began to inhabit the island. These groups were mostly specialized sea mammal hunters and had their own cultural traditions or rituals. They occupied Labrador and Newfoundland in various forms for over 1,500 years before also abandoning it during a climatic warming period, contracting north to the High Arctic. Before this abandonment, the Paleo-Inuit were went through several different cultural phases related to technological innovation and adaptation to the region. The earliest archaeologically identified Paleo-Inuit people were the Pre-Dorset, who occupied the Labrador coast and near interior from around 4000 to 3000 BP and did make some use of Ramah, mainly to produce different types of blades. The sites further from the quarries did not have any known Ramah chert found, likely because of the greater distance from the quarry (Curtis et al. 2017).

The Pre-Dorset gave way to the late pre-dorest and were culturally abundant from 3000 to 2200 BP. This era did have an abundant material found and around half of the artifacts found were made of Ramah chert. however, it is to be noted that some of the sites had virtually no Ramah chert which can indicate cultural differences or lack of material due to higher distance between quarries (Curtis et al. 2017). Another migration of Paleo-Inuit peoples, known as the Dorset, entered the region around 2,200 years
ago. They appeared to have used Ramah chert more heavily as several sites have
more than 90 percent of Ramah chert making up the artifacts found. It generally seems,
however, that the farther you get from the source location of Ramay Bay, the less
frequency you find, with some Dorset sites in southern Labrador and on the island
having less than 3 percent of artifacts made of Ramah (Curtis et al. 2017). The Dorset
abandoned the island of Newfoundland around 1,200 years ago, and shortly after
abandoned Labrador. As stated above, they contracted to the north and continued to
reside in the High Arctic of Canada and western Greenland until as late as 1,000-800
years ago, when the ancestors of the modern Inuit migrated across the region. The Late
Dorset sites were also similar to previous Dorset sites in regards to raw material use,
with some having a high percentage of Ramah chert and others with virtually none.
However, the presence of any Ramah chert at all can contribute to the idea that the
exoticness of the material, as well as its valuable physical properties, were significant
enough to travel great distances or trade to obtain even the smallest portion of it.

**Beothuk**

Around the same time as the earliest Paleo-Inuit people moved onto the island of
Newfoundland, ancestral Beothuk peoples were also starting to settle on its shores.
They were ethnically different, being Amerindian rather than Paleo-Inuit in origin. Before
European exploration and colonization started to overtake parts of Newfoundland, the
ancestral Beothuk, who had long shared the island with the Dorset, created an island
culture that had a more mixed, generalized economy. One of the main differences
between the preceding Maritime Archaic and the contemporaneous Paleo-Inuit groups
on the island was that the Beothuk were less dependent on marine animals. The
Beothuk utilized more interior resources, such as caribou, some species of birds, and freshwater and anadromous fish (e.g. salmon), tracking the specific migratory patterns for hunting and fishing. Once European colonization intensified, the Beothuk were driven continuously inland and lost significant access to key resources. The settlers and the Beothuk became adversaries, and most encounters were usually violent in nature. Over time the continuous violence and depletion of resources for the Beothuk led to their cultural extinction, ending in 1829, when the last known Beothuk, a young woman named Shanawdithit, succumbed to tuberculosis (Howley 1915: Marshall 2010).
Chapter 4

Methods

Excavation Method

The site of Inspector Island has been continuously excavated for over the past decade, but we will be discussing the methodology of the most recent excavation of this site. The leading researchers identified the specific area they were going to excavate and then used the known units provided by the local government to divide the square footage of the site. After the site was labeled by unit, it was further divided into quadrants, NW, SW, NW, and SE. They began to do pit hole tests to find areas with an abundance of artifacts and debitage. Then the excavation began with screen tests to filter out the majority of the material and gather debitage and other artifacts. There were also pit tests done where large samples of soil were gathered and taken back to the lab to be filtered out. Once the screen tests were done the artifacts were bagged and labeled with the site number, unit number, level found, field number, and a general identification of what the artifact is. These bags were then brought back to the lab to begin the process of identification and analysis.

Lab analysis

The lab analysis began by dividing the bags up by the specific unit and trying to get a visual on what types of artifacts were found where. This process took several days and tedious sorting through over hundreds of materials. After the sorting was done, we went unit by unit and took out the artifacts and cleaned them by using a scrubbing tool
to gently scrub off any grime left on them. This was done because it allowed us to better look at the physical details, better understand the possible material, and what tasks they might have been used for. We then let them sit and dry for a couple of days and then re-bagged them and set them out so we could keep everything organized by unit.

After the initial look at the artifacts, we went bag by bag to analyze each piece and sort it by material. We had an extremely broad range of materials found such as quartz, ochre, Ramah, etc. but this paper will be focusing specifically on the Ramah chert found. When we were analyzing we looked to see what features we could find that would indicate the use of the artifact. Some of the common features we found were bulbs of percussion, pressure scars, and chipping from tool use. Many of the pieces found were debitage but some had indications that they were used for scraping, cutting (knives), hunting, or are ‘cores’ which are the substances left over when making certain tools. When looking through the artifacts I found seven pieces of Ramah chert that were primally flakes, presumably remanence from tool making. The rarity of the substances raises some questions about cultural significance, which will be discussed later in the paper.

After the materials were divided and the Ramah chert was identified I started to examine and note the characteristics of each artifact. I noted the overall visual description, length, width, thickness, weight, unit number and coordinates, culture, condition, collection method, and level found. I also examined each piece to find any features the artifacts could have had, such as bulbs of percussion. This process was tedious, but the data collected gave us a much better picture of what Ramah was typically used for and the units it was found in.
Artifacts

The first artifact that we analyzed was a stemmed projectile point (Figure 2) and was the biggest Ramah chert artifact recovered from the Inspector Island site. This point was found in units N122 and E93, with a northing of 122.63 and easting of 93.25, which made the quadrant NW. These measurements are important because they allow us to understand the relationship this artifact has with others in close proximity. The level this was found in was level C, which is the third from the surface level and tells us that the culture it was used by was possibly the maritime archaic. It was 38.06 mm in length, 18.26 mm wide, 6.08 mm thick, and weighing in at 5.3 grams. The condition it was found in was broken but in otherwise fair condition, likely being broken during the initial use of the tool and then being discarded later on. The overall cross-section of the artifact is biconvex, meaning both the sides are curved. The visual description is a bifacial, projectile point missing distal and proximal ends, with both speckled oxidized inclusions and black inclusions, a sugary texture, possible impact fractures on the distal end, very slight shoulders, and transverse flaking along both lateral margins of the stem for hafting. This description along with the other data collected indicates that this was used for possibly prying something open or even possibly used for hunting purposes. The tips of the artifact were broken off which makes definite use determination very difficult.
The next artifact analyzed is a Ramah chert flake that was found in unit N114 E103, with a northing of 114.25 and an easting of 103.25, specifically within quadrant SW and level B. Because of this level, we have determined that the culture that most likely created this flake is an unknown Paleo-Eskimo group. Since there are several different cultural ‘eras’ within these groups it is difficult to determine which specific group it could have in. This flake was found in good condition with no visible broken pieces or chips. The length is 7.32 mm, the width is 18.26 mm, the thickness being 1.43 mm, and weighs less than 0.1 grams. This particular artifact was found in the screen during the excavation which makes the northing and easting estimated, and also had an unknown orientation. The artifact itself has an un-uniform cross-section with a visual description of being translucent, with a sugary texture, very small in size, and possibly a finishing flake. This description allows us to better understand the use it had within tool production and why it was discarded without seeing any chips.

The third artifact found is a Ramah chert flak that was found is another Ramah chert flake that was found in unit N114 E103, with a northing of 114.75 and an easting of 103.75, which puts this flake in the northeast quadrant. This flake was found in level B which indicates that the culture that made this flake was an unknown paleo-eskimo group. This flake was found to be in good condition with no visible chips, indicating this most likely it came off during the tool-making process and was immediately discarded. This flake was 7.03 mm in length, 13.05 mm in width, 2.06 mm thick, and weighed in at less than 0.01 grams. This flake was also found in the screen during the excavation process which makes the measurements of the northing and easting estimated. The overall shape of this flake is irregular with a unique color of grey, rather than the more
common white and translucent. This flake is unique because there is a partial bulb of percussion found which indicates that this was a flake that flew off during hard hammering.

The fourth artifact present is an additional Ramah chert flake found in unit N 114 E103, with a northing of 114.75 and an easting of 103.25, which puts this flake in the northwest quadrant. The flake was found in the screen during the excavation which makes the coordinates estimated. This flake was found in level B which indicated that the cultural group responsible for this flake was an unknown paleo-eskimo group. This flake is 7.78 mm in length, 10.45 mm in width, 1.66 mm thick, and weighs less than 0.01 grams. It appears to be in fair condition but has visible chips which indicates the flake is broken and missing more of its body. The cross-section of this piece is plano-convex which means that one side is curved and the other is a straight line. This flake is transparent with a white sheer coloring, with a unique aspect of grey speckles throughout the piece. This is common amongst this material and can mean that there is oxidation occurring and changing the color of the impurities within the artifact. Since we can see the chipping marks on the flake, we can determine that this piece was more than likely flaked off during the tool-making process and was immediately discarded.

The fifth artifact found is another Ramah chert flake located in unit N 113 E101, with a northing of 113.75 and an easting of 101.75 which places this flake in the northeast quadrant. The flake was found in the screen test which makes the exact coordinates estimated. This flake was found in level C which makes the cultural group that was most likely responsible the Maritime archaic. The flake is 21.1 mm in length, 25.13 mm in width, 7.13 mm thick, and weighs 2.5 grams. This is the largest Ramah
chert flake found in the excavation process and was more than likely one of the first flakes hit off during the tool-making process because of its size. This flake is also unique because of its dark brown and dark green color scheme. This is not typical of Ramah chert in the area and indicates a possible cultural significance regarding Ramah chert as a whole and not towards one specific color scheme. This flake also had the cortex present which can help us determine the amount of weathering and the extent of manufacturing done on the artifact. This flake also had a bulb of percussion present, so it is likely that the material was being struck to create a tool and this piece was struck very hard and chipped off, creating a bulb of percussion in the process.

The sixth artifact found is another small Ramah chert flake with a northing of 120.25 and an easting of 96.75 which places this artifact in the southeast quadrant. This flake was also found during the screen test which makes the exact coordinates estimated. This flake was found in level C which makes the cultural group most likely responsible for its creation the Maritime Archaic. The flake is 12.43 mm in length, 8.68 mm in width, 2.87 mm thick, and weighs less than .01 grams. The flake has chips which indicates that this flake was broken during the manufacturing process and immediately discarded. The chipped pieces make the flake's cross-section irregular. The color scheme of this flake is also unique with the colors ranging from dark green to dark grey. There are also white speckles found throughout the piece which can indicate impurities throughout the material or possible oxidation.

The last Ramah chert artifact found is another flake found in unit N 113 E 101. The northing is 113.25 and the easting is 101.25, which places this flake in the southwest quadrant. This flake was also found in the screen which makes the
coordinates an estimate. This flake was found in level C which makes the cultural group most likely responsible for this flake the Maritime Archaic. The flake has an irregular cross-section and is in fair condition but has pieces broken off. This most likely happened during the manufacturing of a tool and the flake came off and was immediately discarded. This flake was transparent with a very light grey speckles throughout the piece. This could be oxidation within the artifact or impurities from other materials when the Ramah chert was being formed.

**Synopsis of Results**

There were three artifacts found that were more than likely created by the Paleo-Eskimo groups prominent in the area. These flakes were all found in the same unit which could indicate that they were from the same manufacturing process and were all discarded at the same time. They also had all the same characteristics which further indicates they were all flaked off the same core. These could have been used to make a variety of tools such as blades, scrapers, or other similar items. If the flakes did all come from the same tool, then that could indicate significant cultural meaning behind the use of that specific type of tool.

The other four Ramah chert flakes found were more than likely created and used by the Maritime Archaic. Two of these flakes were found in the same quadrant but they had different physical characteristics. This can indicate that the Ramah chert found in this unit was culturally significant regardless of the color scheme and was used for the same project. The other two Ramah flakes that were found were in two different units and had very different characteristics, one being a brown flake and the other being a
translucent projectile point. The projectile point is very significant because it gives us a sense of what tools were made up for Ramah Chert and possible uses, they could have had. In both units, the amount of Ramah chert signifies at least some cultural significance because of the lack of chert-rich quarries in the surrounding areas.
Chapter 6

Possible Cultural Significant of Ramah Chert

These artifacts give us a sense of when this material was used, what it was used for, why it was discarded, and the possible cultural significance it could have had during this time period. Diving deeper into this analysis can tell us why this material was used sparsely and why it was found miles away from the nearest Ramah Chert quarries.

The earliest findings of cultures using Ramah chert stem from the maritime archaic. As previously mentioned, the maritime archaic are known for their ties to marine life and had cultural relationships with these marine animals. The main artifact that gives us an idea of cultural significance is the projectile point found within level C. This point could have been crafted to hunt marine animals for certain cultural practices and then discarded once the point broke. It could have also been used to pry something open and then discarded when both tips broke. The time it took to craft the point along with the time it took to trade to obtain this material increases the significance the point had towards the maritime archaic. The other flakes found in this level were not similar in characteristics indicating that there could have been several instances over time where Ramah was used.

The flakes found from the paleo-Eskimo groups are all very similar in nature and found in the same area. This indicates that there might be very few instances where Ramah is used which can further fuel the idea that Ramah has cultural significance. Further excavation is needed to fully understand the extent of Ramah used from this time period.
One of the main factors that increase the cultural significance is the pure distance between the Ramah chert artifacts found and the nearest chert quarry. Obtaining this material would begin with discussing trade on known routes along the eastern coast and then waiting long periods of time for the material to become available. If the cultural group did not want to wait or participate in trade, they could have traveled down to the nearest quarry to mine the material themselves, but regardless of the method, this effort alone signifies the intense cultural significance this material has. Another reason this material could be seen as culturally significant is because the material itself is very durable, so despite the rarity, it could have been used for tool use for cultural practices and disposed of once it broke. This could explain why the Maritime archaic had several different colors of Ramah chert. The durability would account for the need of extensive trade that it would take to obtain the material, and the extra time it would take to shape the material to a point or other tool type.
Ramah chert is a silica-based substance that is found typically in marine environments in ocean beds because of the sediment deposits which create the material. This substance has varying characteristics, but common ones are a sugary texture and some type of transparency. The quarry-rich areas are extremely sparse and many of the cultural groups were not near these areas. However, regardless of distance, almost every site from previous excavations have had some type of Ramah chert present. Which can lead us to believe that there was some significance surrounding the material.

Focusing on the artifacts found from the excavation site in Newfoundland, Canada the pieces give us some context on the possible cultural significance Ramah chert had throughout the cultural groups inhabiting this area. The seven artifacts discussed have indicated that there is Ramah chert present in both levels C and B, spanning several different cultural eras. This can be inferred that even the presence of the material suggests some type of cultural significance because of the great distances needed to travel in order to obtain this material.
Works Cited


