The Presence of Net-impressed and Horizontally Corded Ware in Southern Manitoba: The Relationship between Rock Lake and Brainerd Ware

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Abstract

Net-impressed and horizontally corded pottery was first documented in southern Manitoba in the 1950s by Chris Vickers and Richard S. MacNeish. At that time, the net-impressed pottery was labeled Rock Lake net-impressed, while the horizontally corded pottery was labeled as Avery Corded ware. These two wares assigned to certain foci belonging to the original Manitoba chronology. The net-impressed pottery found in southwestern Manitoba, was included with the Rock Lake focus, a cultural manifestation created by Vickers, and subsequently built upon by MacNeish. In the southeastern portion of the province, MacNeish encountered similar net-impressed pottery but assigned it to the cultural manifestation known as the Nutimik focus, a designation later deemed unfounded. Horizontally corded pottery, although labeled, was never assigned to a cultural entity.

Alternatively, in Minnesota, net-impressed and horizontally corded pottery have been assigned to the Elk Lake culture and are known as Brainerd ware. This cultural manifestation has a long duration in the state, beginning ca. 3500 B.P. and lasting until approximately ca. A.D. 400, when the origins of the Avonlea horizon begin to appear.

This thesis re-examines the work of Vickers and MacNeish, in particular the Avery, United Church, Lockport and Cemetery Point sites, where net-impressed and horizontally corded pottery have been recovered. It is illustrated that there are strong similarities between the two styles of pottery found in southern Manitoba and Minnesota. These similarities include both metric and non-metric traits. As well, four types of Brainerd ware are identified: (1) net-impressed; (2) horizontally corded; (3) parallel-grooved; and (4) plain. These kinds of pottery become important when examining ware from the Avonlea horizon, particularly in regards to the presence of net-impressed, parallel-grooved, and plain pottery. The work of Vickers and MacNeish was incredibly important to the development of a culture history for southern Manitoba, their work and that of subsequent researchers, such as Joyes (1969, 1970) needs to be re-examined.

Acknowledgments

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I dedicate this work to the memory of my father – Brian David Norris who molded me into the man I am today.

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Chapter One

1.1 Introduction

Pottery recovered from archaeological sites serves as an important factor in defining particular cultural assemblages. The pottery wares are recognized as being characteristic of certain archaeological cultures which date to a recognized time span and are found throughout a specific geographical area. The presence of net-impressed pottery in Manitoba has been noted since the late 1950s (MacNeish and Capes 1958). It was initially labelled as "Rock Lake Net-Impressed", and assigned to the Nutimik focus, part of a cultural sequence in early southeastern Manitoba prehistory developed by MacNeish (1958). Alternatively, Chris Vickers, an avocational archaeologist, noted the presence of net-impressed pottery in the southwestern portion of Manitoba and assigned it to the Rock Lake focus (1948c; 1949; 1950). The geographical distribution of net-impressed pottery was thought to be limited to southern Manitoba. It was found in small quantities and since the late 1950s, sites containing net-impressed pottery have been uncommon discoveries. Compounding this limited sample has been the lack of any in-depth analysis concerning its presence and characteristics.

The issue concerning the identification of net-impressed pottery in Manitoba becomes even more complex when examining the research related to net-impressed pottery across the Northern Plains. Net-impressed pottery is found in southwestern Manitoba, across south-central Saskatchewan, and into eastern Alberta. As well, net-impressed pottery is found in central Minnesota, part of the Eastern Woodlands region (Figure 1.1). Much, if not all of the net-impressed pottery found across the northern region of the Plains has been identified as belonging to Avonlea since the archaeological materials associated with the net-impressed pottery include Avonlea projectile points. Conventionally, the term Avonlea refers to a distinctive projectile point and phase across the northern Plains. More recently, Walde and Meyer (2003:134) have analyzed the net-impressed pottery from the Canadian Plains and identify it as Rock Lake Net/Fabric-

Impressed ware. They also identify three other wares associated with Avonlea assemblages. These are: (1) Truman Parallel-Grooved ware, (2) Ethridge Cord-Roughened ware, and (3) Avonlea Plain ware (Walde and Meyer 2003:139-143). Of particular interest to this thesis is their discussion of Rock Lake Net/Fabric-Impressed ware.

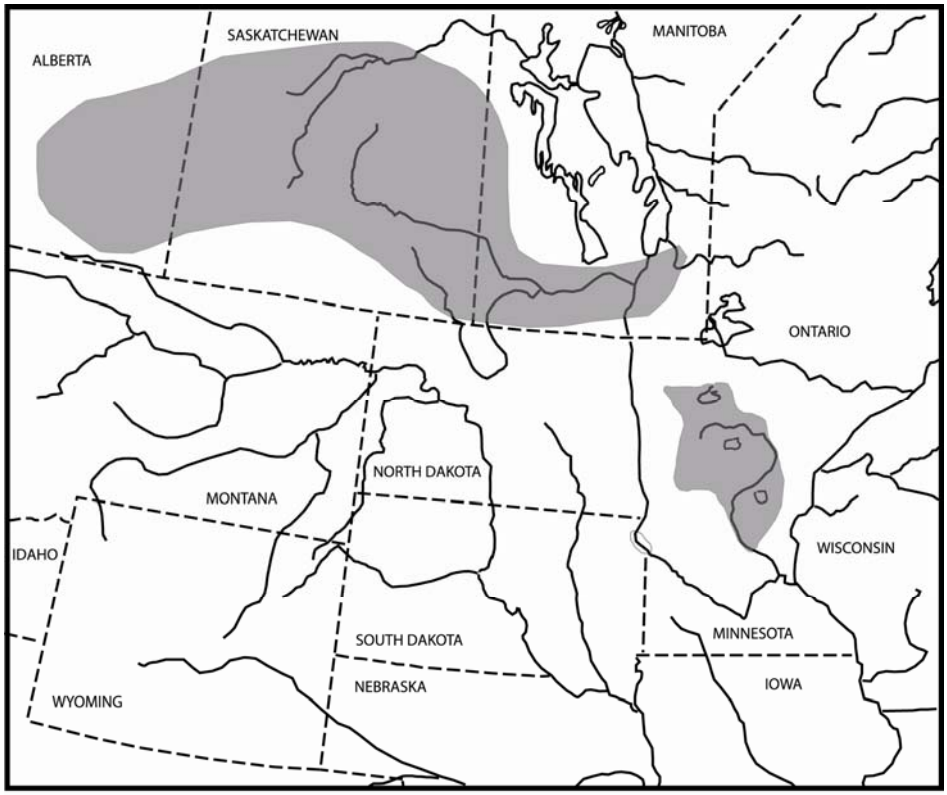


Figure 1.1 Generalized mid-continental distribution of net-impressed pottery.

Assemblages containing net-impressed pottery, referred to as Brainerd ware, in Minnesota have been thoroughly investigated since its first description in 1971 by Elden Johnson (Anfinson 1979; Birk 1979; Gibbon 1994; Gonsior 2003; Johnson 1971; Lugenbeal 1978, 1982; Morgan 1979; Neumann 1978, 1984; Thompson et al. 1994). Archaeologists in Minnesota have recovered Brainerd ware from over 150 sites. Information from the studies of Brainerd ware has been so extensive that the ware has been assigned to the Elk Lake culture, which is thought to have appeared approximately 3500 B.P. The culture peaked ca. 2300 B.P. and disappeared A.D. 400 (Hohman-Caine and Goltz 1995:124). Cultural characteristics, such as settlement patterns and associated

artifacts as well as origins, have also been identified in the Minnesota literature allowing archaeologists to fit Brainerd ware into a definitive cultural context within the state.

The identification and description of both Brainerd ware and Avonlea pottery postdate the study and classification of the net-impressed pottery recovered by Vickers (1948c; 1949; 1950) and MacNeish (1958). Since the observations made by Vickers (1948c; 1949; 1950) and MacNeish (1958) the nature of net-impressed pottery in Manitoba has not been contemplated in any detail. As well, investigations pertaining to the relationship of net-impressed pottery recovered in southern Manitoba to Brainerd ware in Minnesota and Avonlea have not been addressed. It is the main goal of this thesis to determine if the net-impressed pottery found in southern Manitoba by Vickers and MacNeish can be assigned as either Brainerd ware, Rock Lake Net/Fabric-Impressed ware associated with Avonlea or a completely different net-impressed ware altogether. A secondary goal of this thesis is to explore the relationship, in some detail, between the Elk Lake culture and the Avonlea horizons as explained by Meyer and Walde (n.d.; Walde and Meyer 2003).

1.2 Study Area

The study area in southern Manitoba is comprised of two ecoregions: (1) the Boreal Forest, and (2) the Grasslands (Figure 1.2). The study area also consists of the transition zone between these two ecoregions, commonly referred to as the Aspen Parkland. The grasslands of Manitoba are found in the southwest and south-central part of the province and consist of mixed and tall grass prairie. The Aspen Parkland is characterized by narrow strips of riverine gallery forests of hardwoods while upland areas are spotted with areas of marshes and patches of mixed-grass prairie. North of the Aspen Parkland is the Boreal Forest.

1.3 Overview of the Sites

A review of the early literature about archaeological excavations and surveys in Manitoba revealed four sites with net-impressed pottery reported by MacNeish (1958), MacNeish and Capes (1958), and Vickers (1948c; 1949; 1950). These sites are the

United Church site (DhLs-3), the Avery site (DhLs-1), the Lockport site (EaLf-1), and the Cemetery Point site (EaKv-1).

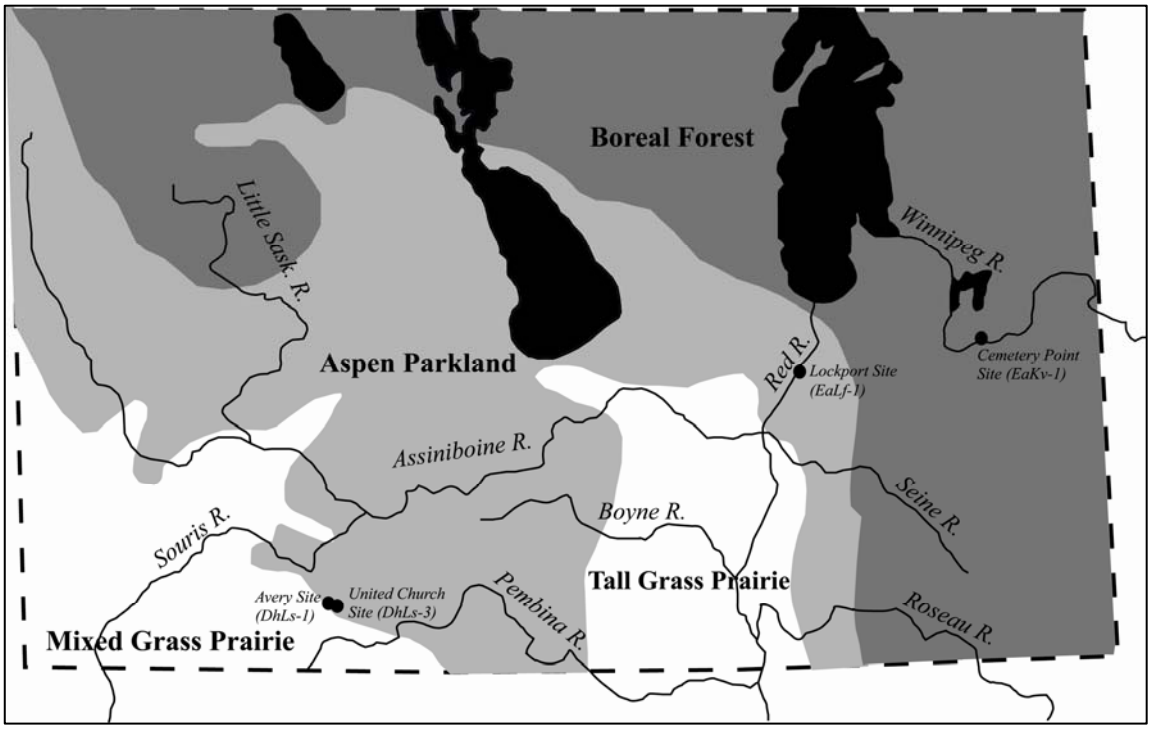


Figure 1.2 Map illustrating the ecoregions of southern Manitoba.

The Avery (Dhls-1) and United Church (DhLs-3) sites are located in the Tiger Hills region near Rock Lake on the Pembina River (Figure 1.3). They are found within a few kilometres of each other in the Aspen Parkland ecoregion. The United Church site is located on the northwestern end of Rock Lake. The site is situated upon a high river terrace approximately 76 metres from the edge of the lake. Similarly, the Avery site is found on a high terrace above the shore at the eastern end of Rock Lake.

The Lockport site (EaLf-1) is found directly south of Lake Winnipeg on the Red River immediately north of the Lockport Bridge (Figure 1.3). The site extends about 300 metres (1000 feet) north of the bridge and is on a terrace. The site has been known to archaeologists for many years with the first testing of the area done in 1879 by Rev. George Bryce (MacNeish 1958:13). The Cemetery Point site (EaKv-1) is located east of Lake Winnipeg on the Winnipeg River within the Boreal Forest ecoregion (Figure 1.3).

The site lies at the mouth of the Whiteshell River on Lake Nutimik approximately 4.5 metres above the level of the lake (MacNeish 1958:26).

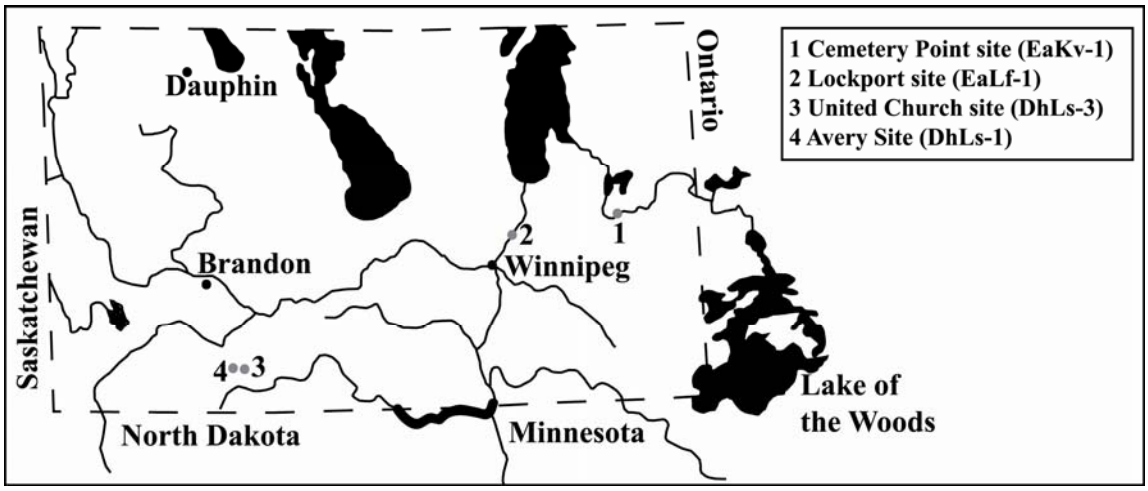


Figure 1.3 Map illustrating the distribution of sites in Manitoba.

These sites have been selected for analysis and comparison because they each contain net-impressed pottery with either limited or no association to Avonlea projectile points. They are also the first sites analysed by Vickers (1948c; 1949; 1950) and by MacNeish and Capes (1958), where the Rock Lake focus is defined. Vickers, MacNeish and Capes focused on describing the pottery recovered from each site and provided a count of the total number of sherds present. The small amount of net-impressed pottery evident in the assemblages led these early archaeologists to conclude that this was a minor ware in Manitoba. Since the analysis of these sites, there has not been an in depth study pertaining to the characteristics of the net-impressed pottery, its origins, or its cultural affiliations. Given that there have been over 150 sites with net-impressed pottery recorded since the 1950s in Minnesota, it was deemed important to revisit the work done in Manitoba by MacNeish (1958) and Vickers (1948c; 1949; 1950) in order to acquire a better understanding about the nature and distribution of net-impressed pottery.

1.4 Aims of the Study

The dichotomy between the archaeological research carried out in Manitoba and Minnesota has caused problems when examining the distribution of net-impressed

pottery. It is difficult to fully understand the origins and presence of net-impressed pottery within Manitoba, given the lack of research interest in this material. This lack of attention may stem from the different culture chronologies that have been developed for Manitoba. Vickers (1948c; 1949; 1950) and MacNeish (1958) set out to develop a culture chronology for southern Manitoba using the Midwestern Taxonomic System (M.T.S.) (McKern 1939). Subsequently, archaeologists building upon the early chronology began using terminology developed by Willey and Phillips (1958). The influence of W.J. Mayer-Oakes at the University of Manitoba was particularly important in the establishment of a chronology (Mayer-Oakes 1970). His students, such as Dennis Joyes (1969, 1970), employed the concept of cultural phase (Willey and Phillips 1958:22-24). They also introduced cultural phases such as Avonlea and Pelican Lake that were in the process of being defined elsewhere on the northern Plains. This ever shifting use of terms and development of new chronologies in Manitoba most likely contributed to the neglect of the early work done by Vickers (1948c; 1949; 1950) and MacNeish (1958).

Questions concerning the possible similarity of the pottery in Manitoba and Minnesota have not been thoroughly contemplated. As well, questions addressing the similarity between net-impressed potteries found by Vickers and MacNeish at the Cemetery Point (EaLv-1), Lockport (EaLf-1), United Church (DhLs-3), Avery (DhLs-1), and Paddock (DiLt-1) sites in Manitoba and the net-impressed pottery in Avonlea contexts have not been thoroughly considered. It is proposed in this thesis that the net-impressed pottery from Manitoba and Minnesota is similar and was made by peoples of the same culture. It is further postulated that this net-impressed pottery is continuously distributed from Minnesota into southern Manitoba as a part of the Elk Lake culture as identified by Hohman-Caine and Goltz (1995). It will also be illustrated in this thesis that the Avonlea culture developed out of the Elk Lake culture as it expanded onto the plains and people adopted a plains subsistence strategy. One of the strongest lines of evidence is the net-impressed pottery.

In the 1950s, MacNeish (1958) proposed that net-impressed pottery in Manitoba should be called “Rock Lake Net-Impressed”. The discovery of net-impressed pottery in Minnesota did not occur until the 1970s (Johnson 1971:53) and the pottery was labelled

"Brainerd Net-impressed". Should the thesis of this work be proven correct, then a brief discussion concerning proper nomenclature will be presented. If the thesis of this work is disproved, then an alternative label for the net-impressed pottery from Manitoba will be introduced. It is important to note that it is not the main focus of this work to change the already accepted nomenclature concerning net-impressed pottery, but rather to create consistency between the two areas.

To a lesser extent, factors such as the type of environment and the material culture associated with net-impressed pottery in both areas will be considered as arguments to support the idea that it was one cultural group making the net-impressed pottery. It will also affirm the continuity between the geographical distribution of this pottery in Canada and United States. A final goal of this work is to broaden the knowledge and understanding of net-impressed pottery in archaeological assemblages.

1.5 Overview of Following Chapters

Following this chapter will be a discussion of the study area where the five sites from Manitoba are located, as well as an environmental comparison between southern Manitoba and central Minnesota. Chapter three presents a background summary on the literature concerning net-impressed pottery from both Manitoba and Minnesota from the last 50 years. Chapter four states the methodological approach of the analysis. Chapter five presents the results of the analysis on net-impressed pottery from Manitoba sites. Chapter six will be a discussion of the results and their implications, focusing on present nomenclature and distribution of net-impressed pottery as well as the relationship between the Elk Lake culture and the Avonlea horizon.

Chapter Two
Environment of Study Area

2.1 Introduction

In pre-contact times, southern Manitoba consisted of a mix of grasslands and forest. The Cemetery Point site is located in an area that is predominately forest, which has changed little since deglaciation (Reeves 1970:1227). In contrast, the Lockport, Avery and United Church sites are located in what was once largely grassland, but today falls within the aspen parkland. These latter sites may be evidence of early adaptation to the grassland environment by people who utilized the forested areas of Minnesota, then moved out onto the northern Plains. A brief discussion concerning the geology of the sites as well as a topographic overview of southern Manitoba and of Minnesota is provided below. A summary of the major ecoregions in Manitoba and Minnesota is presented in order to understand how the past environment appeared during the occupation of the study area.

2.2 Environmental Overview

Manitoba is divided into four physiographic regions (Figure 2.1). Occurring in the northeast area of the province and bordering Hudson Bay are the Hudson Bay Lowlands. Being the largest of the physiographic regions, the Hudson Bay Lowlands consists of hummocky and gently undulating terrain. Adjacent to these lowlands and encompassing the majority of the province is the Precambrian Shield. This region is covered to a large extent by boreal forest as well as thousands of lakes and rivers (Corkery 1996:20). The Manitoba Lowlands, the flattest part of the province, are south and west of the Precambrian Shield. The Manitoba Lowlands formed on the bed of Glacial Lake Agassiz (Figure 2.2). This glacial lake has had a significant influence on the topography of southern Manitoba. Several periods of expansion and drainage caused numerous episodes of deposition of layers of sediment. As Glacial Lake Agassiz receded, it stabilized at several points, resulting in the formation of beach ridges.

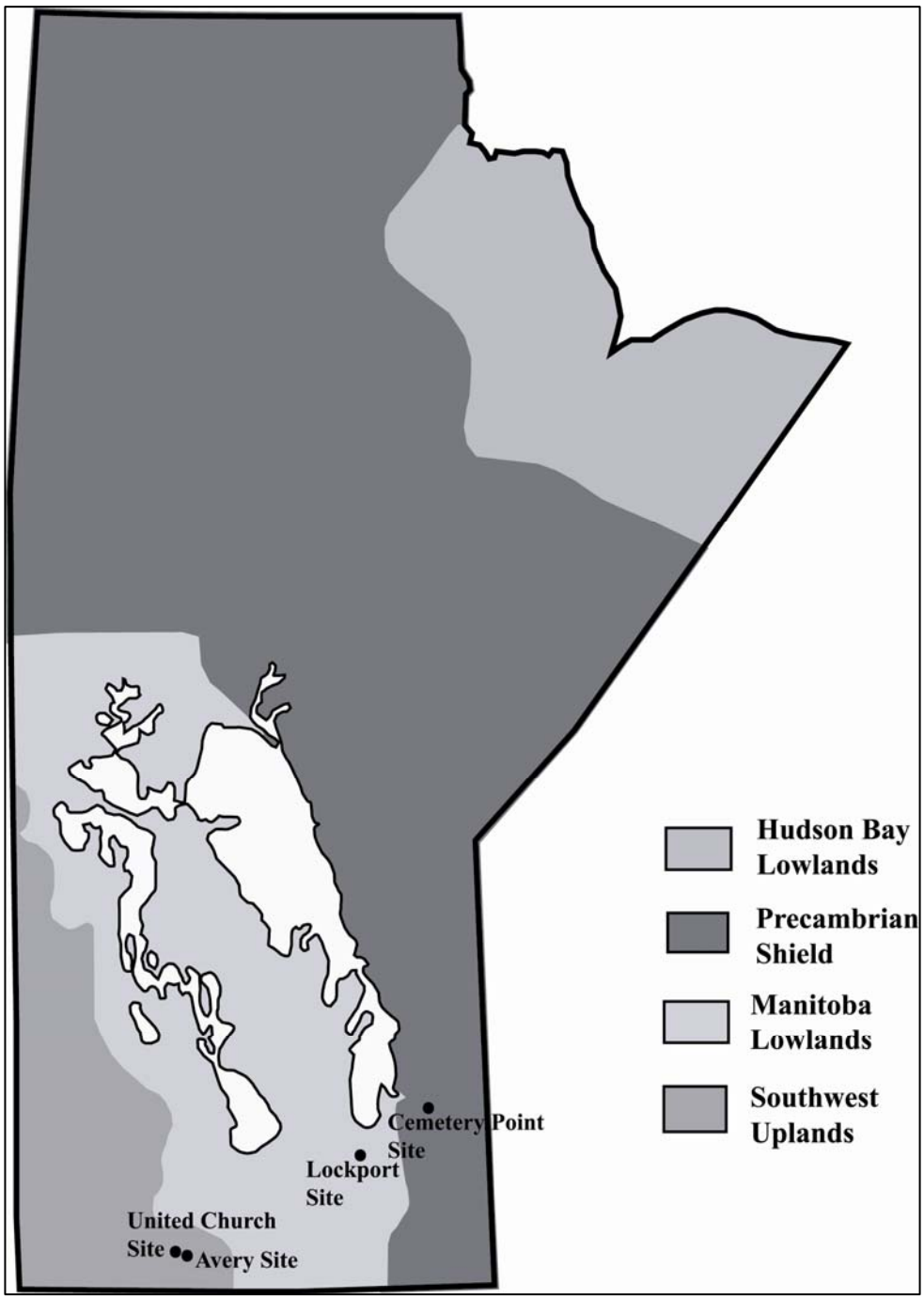


Figure 2.1 Physiographic regions of Manitoba (after Corkery 1996:21).

The fourth physiographic region is the Southwest Uplands. The eastern side of this region is marked by the Manitoba Escarpment, which consists of a series of uplands extending north and northwest from the Pembina Mountain near the international boundary. The latter uplands include the Riding, Duck and Porcupine mountains.

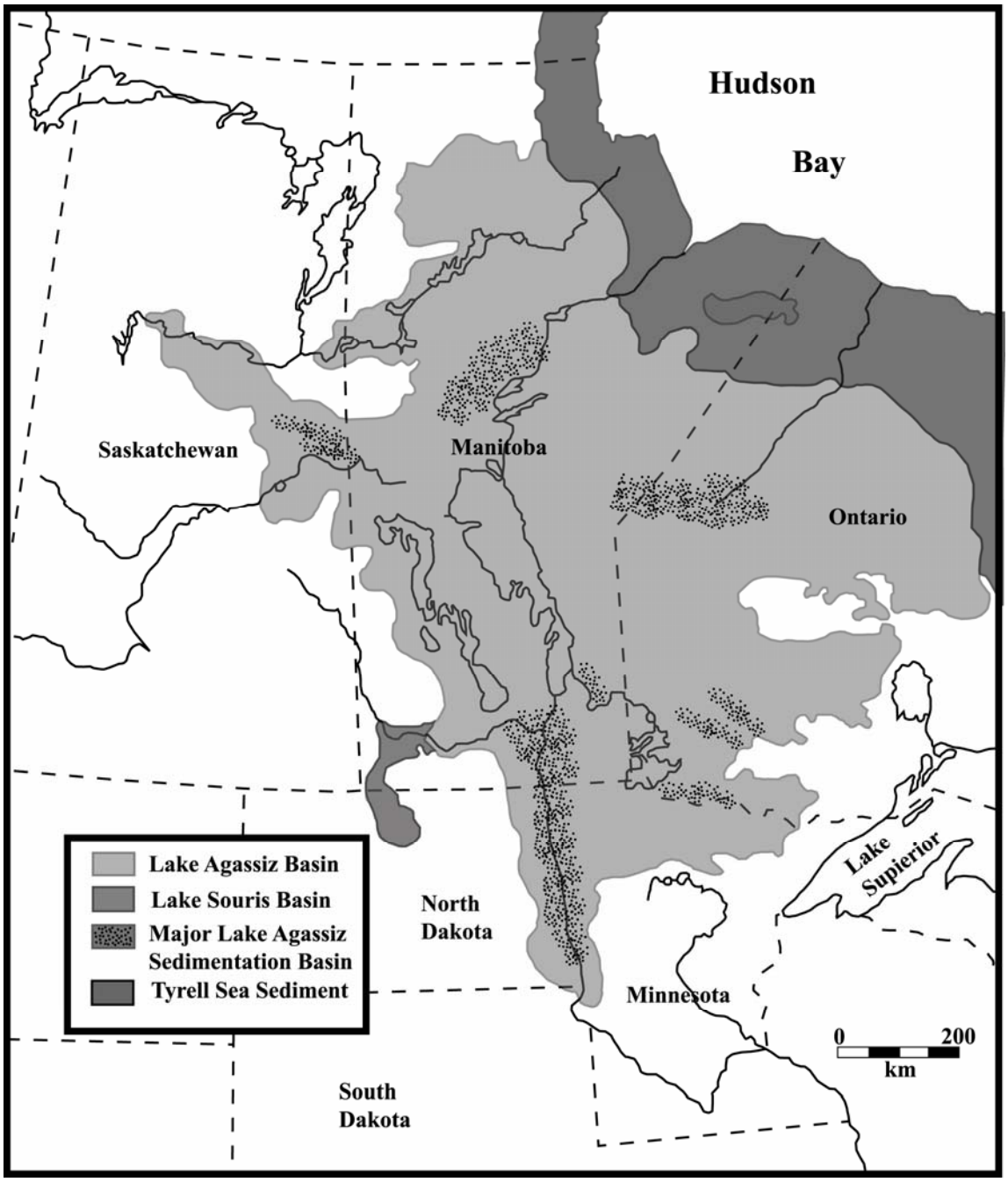


Figure 2.2 Location of Lake Agassiz and major sedimentation basin approximately 13 000 years ago (after Nielson 1981).

Broad valleys were created between these uplands by the flow channels of several pre-glacial rivers that were considerably larger in size than the modern misfit streams currently found between these areas. Along the eastern flanks of these ranges of hills are the higher strandlines of Glacial Lake Agassiz. Bedrock is exposed in certain

areas along the escarpment; however, throughout the plateau there are accumulated glacial deposits (Corkery 1996:21)

2.3 The Ecoregions of Manitoba

2.3.1 Manitoba Ecoregions

While the physiographic regions characterize the topography of Manitoba, the ecoregions are categorized by distinct ecological responses to climate, as expressed by the vegetation and reflected in the soils, wildlife and hydrology (Scott 1996:43). There are four distinct ecoregions in Manitoba: (1) the Arctic, (2) Subarctic, (3) Boreal and (4) Grasslands. Two of these ecoregions, the Boreal forest and the Grasslands, as well as the transitional zone between the two, the Aspen Parkland are germane to this thesis (Figure 2.3).

2.3.2 The Boreal Forest

Presently, the boreal forest encompasses an extremely large area of northern Canada. In Manitoba, it extends south past both Lake Winnipeg and Lake Winnipegosis and is immediately north of Lake of the Woods in Ontario. The Cemetery Point site is located in the boreal forest.

On poorly drained, flat land, the dominant vegetation consists of forest patches of black spruce (*Picea mariana)* and tamarack (*Larix laricina)* between intervening swamps and meadows (Rowe 1972:31). Other vegetation present in the boreal forest includes a mixture of both broadleaf deciduous hardwood and conifer forests. In addition to these species, which are considered typical boreal tree species, the Boreal Forest of southeastern Manitoba is also characterized by the presence of white pine (*Pinus strobes)* and red pine (*Pinus resinosa).* These tree species indicate that the forest cover is more characteristic of the boreal-broadleaf ecotone, which lies between the boreal forests to the north and the oak-beech-maple dominated temperate deciduous forests to the southeast (Scott 1996:50). In the southern portion of the boreal forest, trembling aspen (*Populus tremula)*, balsam poplar (*Populus balsamifera*), birch (*Betula papyrifera)* and occasionally bur oak (*Quercus macrocarpa)* remain important components, thus, this area is commonly referred to as the “northern mixed woods” or

simply “mixed woods” section (Scott 1996:50). To the north and east is a classic coniferous forest where balsam fir (*Abies balsamea*) thrives together with other species such as Jack Pine (*Pinus banksiana*), white spruce (*Picea glauca***)**, black spruce (*Picea mariana*) and tamarack (*Larix laricina*) (Scott 1996:50).

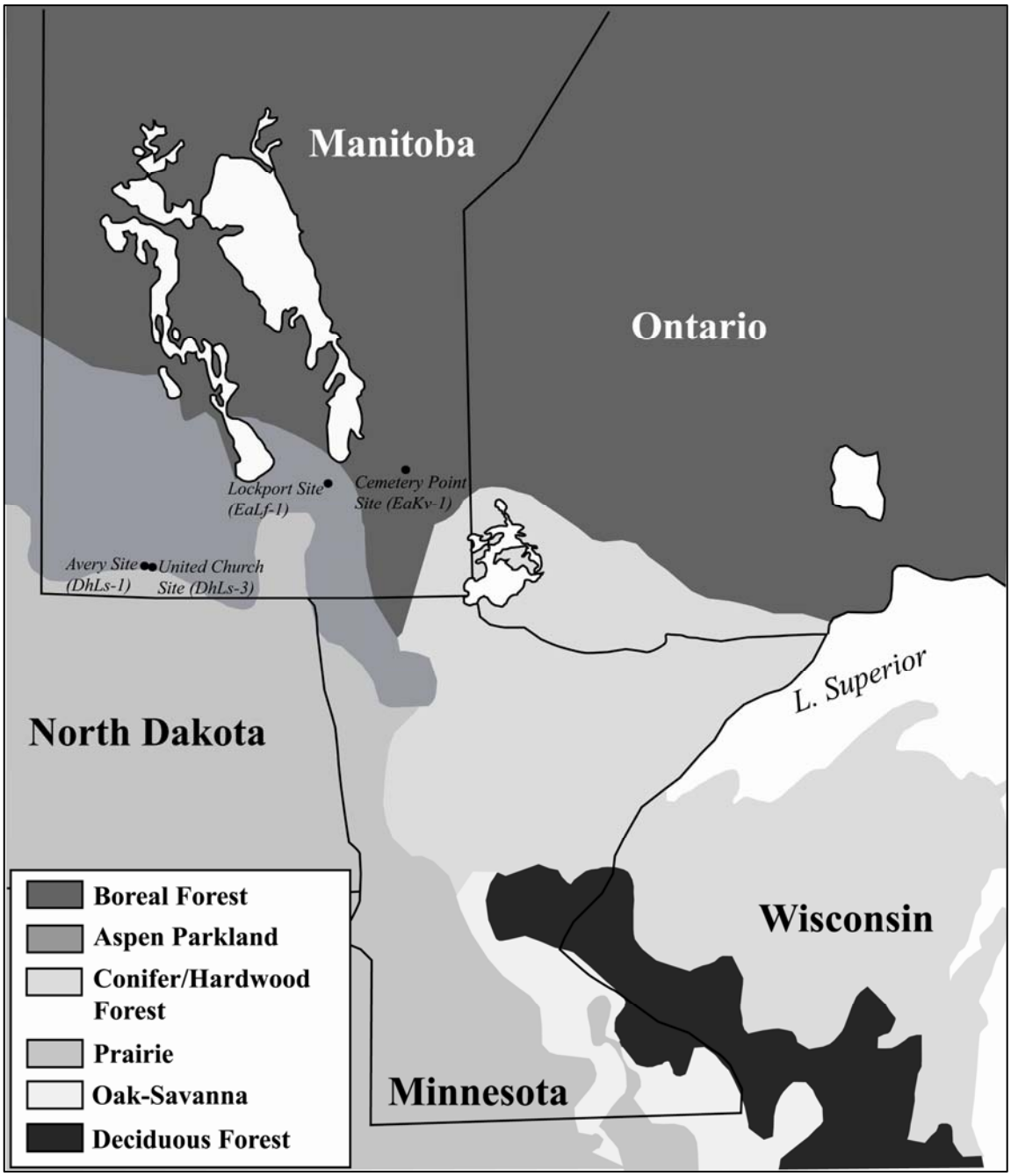


Figure 2.3 Map illustrating generalized extent of major ecoregions discussed in this study (simplified after Rowe 1972 and Küchler 1964).

The boreal forest ecoregion has a greater prevalence of poorly drained lowland bogs with black spruce-sphagnum communities. This vegetation has been disturbed less in the boreal ecozone yet ongoing forest fires and persistent logging offer a rich environment for diverse fauna such as the coyote (*Canis latrans*), black bear (*Ursus americanus*), fisher (*Martes pennanti*), lynx (*Lynx canadensis*), red fox (*Vulpes vulpes*), weasel (*Mustela frenata*), timber wolf (*Canis lupes*) and white tailed deer (*Odocoileus virginianus*). Moose (*Alces alces*), beaver (*Castor canadensis*), mink (*Mustela vison*), and muskrat (*Ondatra zibethicus*) populations are more common along the rivers, marshes and wet lowlands (Scott 1996:50).

2.3.3 The Aspen Parkland

Adjacent to the boreal forest in the south-central portion of Manitoba is the Aspen Parkland (Figure 2.3). The Avery, United Church and Lockport sites are presently located in this ecoregion. It is a transitional region between the boreal forest to the north and the grasslands to the south. The Aspen Parkland consists of a mixture of copses of poplars and oak forest as well as grassland, thereby sustaining abundant, diverse floral and faunal species.

Extending into this transitional zone, the deciduous element of the boreal forest forms closed forests meeting elements of the grasslands (Rowe 1972:34). In the southern portion of this transition zone, trembling aspen (*Populous tremuloides*) is the prevalent tree species, appearing as small groves of dense trees surrounding low wet depressions. Shrubs occur in the moist areas amid prairie grasslands, while bur oak (*Quercus macrocarpa*) and grassland communities occupy the drier locations. Presently, native vegetation includes pockets of sage and prairie grasses such as blue-grass (*Poa compressa*), couch-grass (*Agropyron repens*) and June grass (*Koeleria cristata*). Along rivers, areas with shallow dry soils, and south or west slopes, bur oak (*Quercus macrocarpa*) is sporadic, but conspicuous within the matrix of the dominant poplar vegetation (Rowe 1972:34).

On the western side of the Aspen Parkland, the topography varies from flat to undulating, which is influenced by the horizontally bedded Paleozoic limestones and Lake Agassiz deposits (Rowe 1972:34). The western boundary of the Aspen Parkland is

marked by the Manitoba Escarpment, which forms the dip slope of the Saskatchewan Plain. It slopes down to the east and is drained by the Souris, Assiniboine, and Pembina rivers (Smith et al. 1998:7-12). Vegetation prevalent along the borders of the forest included chokecherry (*Prunus virginiana*), pin cherry (*Prunus pensylvanica*), and hawthorn (*Crataegus monogyna*) in association with wild rose (*Rosa woodsii*), and snowberry (*Symphoricarpos occidentalis*).

The vegetation of the Aspen Parkland supports a variety of fauna both during the summer months and in the colder winter months. Wapiti (*Cervus elaphus*) dominate the Spruce Woods area, while pronghorn antelope (*Antilocapra americana*), although common in pre-agricultural times, are now quite rare. White-tailed deer (*Odocoileus virginianus*) are widespread along with mule deer (*Odocoileus hemionus*). Historically, bison (*Bison bison*) seasonally inhabited the aspen parkland. Other animals include coyote (*Canis latrans*), red fox (*Vulpes vulpes*), ground squirrel (*Tamiasciurus hudsonicus*), and cottontail rabbit (*Sylvilagus floridanus*) (Smith et al 1998:7-13).

In the wetland regions, muskrat (*Ondatra zibethica*) thrive on the vegetation while moose (*Alces alces*) can also be found in marsh areas. The red-winged blackbird (*Agelaius phoeniceus*) shares the wetlands with the Canada goose (*Branta canadensis*), sandhill crane (*Grus canadensis*) and killdeer (*Charadrius vociferous*). Loons (*Gavia immer*), pelicans (*Pelecanus erythrorhynchos*) and Great blue herons (*Ardea herodias*) feed off the smaller fish found in the lakes and rivers. Major fish species include the Northern pike (*Esox lucius*) and the white sucker (*Catostomus commersoni*) as well as small mouth bass (*Micropterus dolomieu*) and Trout-Perch (*Percopsis omiscomaycus*).

2.3.4 The Grasslands in Manitoba

The grassland ecoregion of southern Manitoba occupies a relatively small area when compared to the other ecoregions in the province (Figure 2.3). It is included in this discussion because of the dynamic nature of the environment.

Today, there are two communities of prairie grasses found in the region: (1) mixed-grass prairie, and (2) tall-grass prairie. The mixed-grass prairie has been greatly reduced in size due to the encroachment of the Aspen Parkland from the north. As a result it now occupies only a small portion of the southwest corner of the province. The

dominant grasses include needle and thread (or spear) grass (*Stipa comata*), northern wheat grass (*Elymus lanceolatus*), June grass (*Koeleria cristata*) and little bluestem (*Schizachyrium scoparium*) (Scott 1996:45). Groves of trees and shrubs are often found in the depressions such as the Pembina River valley, and around small lakes, along rivers and on sandy deltaic deposits (Scott 1996:45).

The topographically low central basin of former Glacial Lake Agassiz once supported lush grasslands, wetlands, and long narrow ravine forest. It also represented an extension of the tall-grass prairie, which stretched north from the Dakotas. Several factors such as poor drainage and fire have discouraged tree growth, except along river channels, thus producing marshlands within the grasslands. Presently, the marshlands have been drained and the land has been cultivated and transformed by agricultural expansion (Scott 1996:46).

It is important to note that the present day vegetation is by no means a representation of what thrived on the land during the occupation of the Avery and United Church sites. Climate change and human activities, such as agriculture, have drastically changed the landscape.

2.4 Historical Vegetation in Southern Manitoba

The environment has changed within the study area to some degree since the last ice age. Southern Manitoba would have been inundated by waters of Glacial Lake Agassiz until sometime after 9000 B.P. The Hypsithermal (ca. 8000 to 4000 B.P.) warming trend caused the southern forest region to retreat north into cooler climates, allowing the grasslands to expand into the southern portion of the province. At the climax of the Hypsithermal warming, the area east of the Manitoba Escarpment would have consisted of xeric grassland with a few brackish lakes generally deficient in freshwater (Last and Teller 1983). After this peak, as the climate became cooler, the forest vegetation would have moved south once again, occupying previously unforested land. The environment became stable around 3000-2500 B.P. with the southern forest border line established approximately where it is today (Ritchie 1983:167-168). Scott (1996:46) suggests that the parkland formed and became somewhat stable about the same time, then with agriculture settlement during the last 100 years it expanded south

onto the mixed-grass prairie. This expansion is evident when examining the prairie/parkland boundary mapped by Seaton in 1905 and again by Boivin in 1956 (Scott 1996:46) (Figure 2.4). These maps illustrate that before agriculture the Aspen Parkland occupied much less area than is the case today.

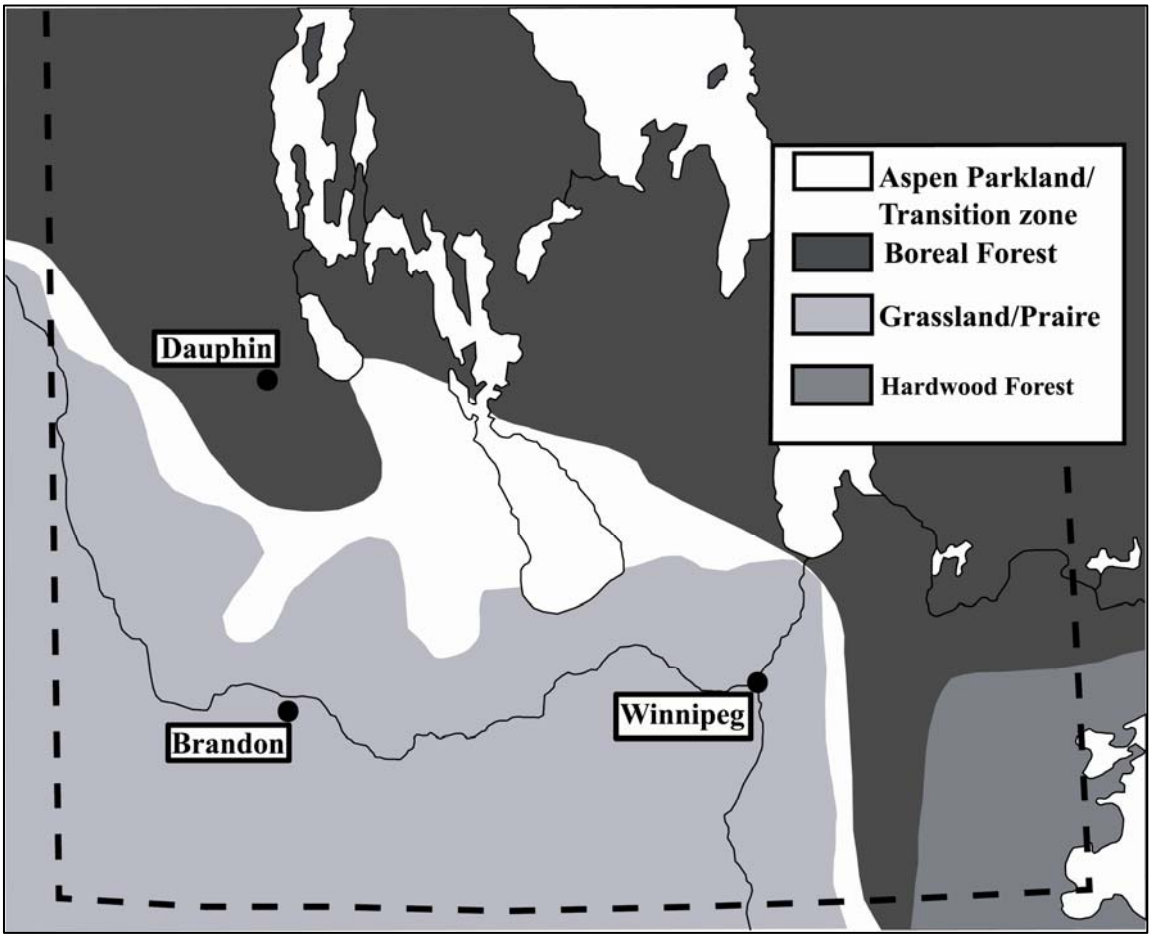


Figure 2.4 Map illustrating the boundaries of the Aspen Parkland ca. 1900 (cited in Scott 1996; after Seton 1905).

The modern environment is considerably different that what it was during the occupation of the four archaeological sites discussed in this thesis. Although the Lockport, Avery and united Church sites are within the Aspen Parkland, when they were occupied, they were in grassland environments.

2.5 Minnesota Environment

The physiographic regions of Minnesota have not been defined in the same manner as in Manitoba. Wright (1972) defined approximately 27 different regions. These regions range from till plains in the south to moraines and drumlins in the northern portion of the state (Wright 1972). Of particular interest to this study are the central and northern portions of Minnesota (Figure 2.5). This area encompasses the major distribution of Brainerd pottery (Anfinson 1979; Gibbon 1994; Hohman-Caine and Goltz 1995).

Figure 2.5 Distribution of Brainerd ware in Minnesota (after Anfinson 1979; Hohman-Caine and Goltz 1995).

According to Anfinson (1990: 139), Minnesota has three basic vegetation zones: (1) the prairie, (2) deciduous forest, and (3) a mixed coniferous-deciduous forest. These vegetation zones are each unique and exhibit their own characteristics. Presently, the prairie vegetation is strewn with lakes, and is much more biotically diverse than the

northern portion of the province, which is a mix of different tree associations that reflect variable topography, soils and climates (Anfinson 1990:139). Anfinson (1990) further segregates the three vegetation zones into nine major regions based on archaeological potential. The area of the densest distribution of Brainerd ware is found in two of the archaeological regions. These include the Central Coniferous Lakes region and the Central Deciduous Lakes region (Anfinson 1990:144).

The Central Deciduous Lake region includes central and east Minnesota. The landscape is a patchwork of moraines, till plains and outwash plains. Lakes are scattered throughout the area accompanied by an extensive river system which includes the Mississippi that flows through the eastern central region and the St. Croix River which forms the eastern boundary (Anfinson 1990:148).

The Central Coniferous Lake region incorporates much of what has been referred to as the Headwaters Lakes region. Similar to the Central Deciduous Lake region, this area is differentiated by vegetation and watersheds as well as topography. Lake plains, outwash plains and ground moraines dominate much of the landscape. Hilly terminal moraines dot the landscape in the central portion of the region. The western portion of the region is drained by rivers flowing into the Red River. The northeast portion is drained by the St. Louis River which empties into Lake Superior, while the southeast portion is drained by rivers that flow into the St. Croix River (Anfinson 1990:148).

Both the Central Coniferous Lake region and the Central Deciduous Lake region are dominated by eastern white and red pines (*Pinus strobes and Pinus resinous*), eastern hemlock (*Tsuga canadensis)* and yellow birch (*Betula alleghaniensis)*. Along the southern border are red oak (*Quercus rubra)*, sugar and red maples (*Acer saccharum and Acer rubrum)*, basswood (*Tilia americana*) and white elm (*Ulmus americana*) (Rowe 1972:11). This diverse forest environment provided ample resources for the subsistence of past peoples in the form of nuts and berries as well as faunal resources like woodland caribou (*Rangifer tarandus*), white-tailed deer (*Odocoileus virginianus*) and occasionally wapiti (*Cervus elaphus*)(Meyer and Hamilton 1994:99). However, similar to southern Manitoba, the environment of Minnesota has changed throughout the past as a result of climate and human intervention.

2.6 Historical Vegetation in Minnesota

Anfinson and Wright (1990), apply a model created by Bryson et. al (1965) in order to suggest that climatic changes had a considerable impact on the environment in Minnesota, thus influencing the use of the land by past peoples. These climatic changes manifested themselves world wide, were abrupt, but did not have the same impact in every region (Anfinson and Wright 1990:215).

During the Holocene period the position of the prairie and the forest border changed continually. Prairie began to appear in Minnesota approximately 9000 years ago. It advanced northwest further into the state reaching a maximum extent around 7000 years ago. As Glacial Lake Agassiz began to retreat, forest began to move south into the northwestern portion of the state. Approximately 5000 years ago, this forest and prairie began to intermix, and the area of greatest prairie advance was the comparatively level region of south-central Minnesota (Grimm 1985:12).

Hohman-Caine and Goltz (1995) suggest that during the Altithermal period (7000 to 3500 B.P.), there was considerable fluctuation of stream flow and lake levels over short periods of time (perhaps a few years to a few decades). The culture that produced Brainerd ware dates to a time when there was a stabilization of the hydrologic conditions just after the end of the Altithermal period approximately 3500 B.P. (Hohman-Caine and Goltz 1995:126). During this time, lake levels would have been much higher, characterized by permanent stream flows and stable lake basins. These conditions would have allowed the proliferation of aquatic resources such as fish, turtle, and water fowl (Hohman-Caine and Goltz 1995:126).

The movement of the mixed oak and pine forests west into central Minnesota, during this period, would have provided ideal habitats for ungulate populations such as elk (*Cervus elaphus*), moose (*Alces alces*) and even bison (*Bison bison*) (Hohman-Caine and Goltz 1995:127). Around 2700 B.P. the movement of white pine (*Pinus strobes)* was preceded by a short interval of mesic deciduous forests with red and jack Pine (*Pinus resinosa* and *Pinus banksiana*) entering the area approximately 1000 years ago (Wright 1972).

Anfinson (1990:148) suggests that during the Woodland period, the fauna of the Central Deciduous Lake region would have included white-tailed deer, small herds of

bison, and elk in the south and west. Beaver, bear and moose would have been found in the north and east part of the region. Wild rice would have grown throughout the region and acorns would have been an abundant resource. In the Central Coniferous Lake region, during the Woodland period, subsistence resources included deer, beaver, moose and black bear found near the numerous lakes and rivers, with wild rice also being an important part of the economy (Anfinson 1990:149).

2.7 Summary

The environment of Minnesota and Manitoba is characterized as rich and diverse, sustaining an assortment of flora and fauna. Pertinent to this discussion is the fact that the environment has undergone sometimes drastic changes. During the initial period when Brainerd ware was produced, the environment was different than it is today.

The forested region to the northeast where the Cemetery Point site is located has changed little throughout time, but the environment of the southern portions of Manitoba, has fluctuated dramatically. The grasslands in southwestern Manitoba once covered a much broader expanse than is seen in present times. Vegetation in the region where the Avery, United Church and Lockport sites are located would have had a much more extensive grassland element.

Chapter Three
Previous Research on Net-impressed Pottery

3.1 Introduction

Net-impressed pottery has been found in archaeological contexts for the last 50 years in Manitoba and Minnesota. It was first identified in the 1950s in southern Manitoba and has been recognized in a number of sites extending from central and northern Minnesota. Recently, evidence of net-impressed pottery has also been reported from sites in North Dakota, extending the distribution west, outside of Minnesota (Toom 2000, 2003; Jackson and Toom 2004).

Investigations pertaining to the presence, characteristics, and distribution of net-impressed pottery in Manitoba have been uncommon, mainly because there are only a few sites at which its presence has been documented. Of particular interest to this thesis are the early cultural sequences developed for Manitoba by Vickers (1948c; 1949; 1950) and MacNeish (1958) because they include the original classification schemes for the cultures which produced net-impressed pottery. Alternatively, in Minnesota, net-impressed pottery has been long acknowledged as a significant ware. Furthermore, extensive studies of the attributes, cultural affiliations, and temporal placement of net-impressed pottery in Minnesota have been completed since the early 1970s.

The investigations in North Dakota have revealed the presence of net-impressed pottery at four sites (Jackson and Toom 2004; Schneider and Kinney 1978; Toom 2000, 2003). Although the sites in North Dakota are not the main focus of this thesis, the presence of the net-impressed pottery at these sites does suggest that there is an even wider distribution than previously thought. The following chapter outlines several important contributions to the study of net-impressed pottery in Manitoba, and Minnesota, as well as North Dakota.

3.2 Manitoba Archaeology

The early temporal sequences for Manitoba were derived from the stratigraphic layers excavated at sites by Vickers (1948c; 1949; 1950) and MacNeish (1958). At that time chronometric dating had yet to be established. The ability to date cultural material was based in large part on the relative dating of diagnostic artifacts such as projectile points and pottery. Utilizing key attributes such as point form or surface treatment on vessels, Vickers (1948c; 1949; 1950) and MacNeish (1958) created stacked chronologies based on the information from several sites. A stacked chronology separates cultures purely on the basis of the recovered artifacts and places their relative age according to their occurrence in the stratigraphic profiles. It was on the basis of this work that the Rock Lake focus was defined.

3.2.1 Chris Vickers' Work

The importance of Vickers' work is demonstrated in the extensive body of data that he accumulated and the initial culture chronology he formulated (Table 3.1) (Syms 1980:1). In addition, his contribution to early archaeological thought in Manitoba is expressed in his professional reports and yearly reviews of archaeological work completed in the province, as well as his numerous newspaper articles, editorials and book reviews concerning archaeology (Syms 1980:1). His dedication to archaeology is also seen in the support he offered for the development of anthropology at the University of Manitoba (Syms 1980:1).

Paramount to this thesis is the identification of the Rock Lake focus, a series of similar archaeological materials recovered from several sites in southern Manitoba such as the Avery site, which Vickers identified in his chronology (Vickers 1948c:4). Subsequent excavations at the Kreiger, Paddock and Zeb Montroy sites produced additional evidence of the Rock Lake focus, thereby broadening his concept of this focus; however, net-impressed pottery was never mentioned. The Rock Lake focus was considered to be a part of the Rainy River aspect (Vickers 1949:10).

Vickers' (1948c; 1949) description of the Rock Lake focus is vague overall, but he does characterize the pottery as follows:

> [rims] are decorated with stamped line or roulette impression; wavy line impressions; shallow semi-circular punctates; incised lines and circular punctates. The decoration has been carried well down the body of the vessel, on a smooth surface. The body sherds are predominantly smooth (Vickers 1949:10).

This description of pottery associated with the Rock Lake focus bears a striking resemblance to Laurel pottery, which has been recovered from areas of the Boreal Forest.

Vickers (1949:10) described other characteristics of the Rock Lake focus:

> the projectile points are stemmed; knives crude except in isolated cases and some are rectangular. The retouched flakes are thin with delicate, well executed retouching. End scrapers are mostly flat and the majority are either triangular or trapezoidal in outline. Bone awls and bone and antler flaking tools are present; also cut elk and bison teeth and circular shell beads.

Vickers (1950) concluded that this focus was older than the Manitoba focus, which was found in the higher levels at the Avery site. He believed that the Rock Lake focus was produced by a group of people who migrated into southern Manitoba beginning approximately 1400 A.D., possibly originating from the south in Minnesota (Vickers 1950:15). Using the pottery and associated artifacts, Vickers (1950:15) concluded that by:

> …using the Avery site, with its double occupation, as the key site and base, we find our Rock Lake culture, following a migration from northern Minnesota, occupying this site, perhaps as late as 1500 A.D. spreading from there to the Montroy and Paddock sites, the culture finally disappears on the Kreiger site about 1760 A.D. (Vickers 1950:15).

Considering that Vickers had little scholarly background in archaeology and in the absence of any chronological dating methods, the work he completed was still the impetus for subsequent generations of archaeologists. Despite the inaccuracy of his suggested dates there is a fundamentally significant aspect of his work, lost on many subsequent archaeologists, namely the archaeological link between Minnesota and southern Manitoba. The importance of Vickers' work in the context of this thesis is not apparent in his writings since he does not mention net-impressed pottery nor are there any illustrations. However, a review of later work by Richard MacNeish indicates that

Vickers and MacNeish had personal communication concerning the matter, and as MacNeish and Capes pointed out, it was Vickers who assigned the net-impressed pottery to the Rock Lake focus (MacNeish and Capes 1958:150).

3.2.2 Richard MacNeish's Work

Richard "Scotty" MacNeish played a pivotal role in the early development of archaeology in Manitoba. Several sites were excavated in the late 1950s under the direction of MacNeish. He wrote comprehensive reports and created broad chronologies for southern Manitoba, building upon the earlier chronology formulated by Vickers (1948, 1949, 1950) (Table 3.2).

Table 3.1 Chronology developed by MacNeish compared to that of Vickers (after Syms 1977:66)

MacNeish Chronology			Comparable Vickers' Foci	Other Affiliated Foci
Foci	Estimated Dates	Ethnic Identity		
Selkirk Focus	A.D. 1350-1750	Cree		
Manitoba Focus	A.D. 1000-1350	Assiniboine	Manitoba Focus	Blackduck Focus (Minnesota) Melita Focus
Nutimik Focus	A.D. 500-1000		Rock Lake Focus	Malmo Focus (Minnesota)
Anderson Focus	500 B.C.-A.D. 500			
Larter Focus	1500 B.C.-500 B.C.			
Whiteshell Focus	3000 B.C.-1500 B.C.			

Table 3.2 Composite archaeological chronology for southern Manitoba by Vickers (1945, 1947, 1948a, 1948c, 1949, 1951a) (after Syms 1977:65).

Time Division	Aspect	Focus	Site	Estimated Date	Ethnic Identity	Comments
Historic Period (ca. 1670-1870)			E. St. Paul Grave	1850	Saulteaux?	
	Headwaters Lake	Manitoba	Snart	1768-1794	Assiniboine	
	Rainey River	Rock Lake	Kreiger	1760	Algonkian?	
Ceramic Period (ca. 1400-1760)	?	Pelican Lake	Lowton	1600-1650	?	Upper Missouri connections
	Headwaters Lake	Manitoba	Stott	1670	Assiniboine	
	Headwaters Lake	Manitoba	Avery #1	1600	Assiniboine	
	Headwaters Lake & Rainey River	Manitoba & Rock Lake	Rock Lake Mounds			Siouan?
	Headwaters Lake & Rainey River	Manitoba & Rock Lake	Calf Mountain			
	Rainey River	Rock Lake	Montroy	1620	?	Rock Lake focus earlier
	Rainey River	Rock Lake	Avery #2	1500	?	
	Red River	?	Sykes Mound		?	
	Red River	?	Mckay Mound		?	
Preceramic Period (prior to 1400 A.D.)	?	?	Lake Shore		?	
Unnamed Period (ca. 8000 B.C.)					?	Folsom and Yuma Points

3.2.2.1 The United Church Site (DhLs-3)

In 1958, MacNeish co-authored a report with Catherine Capes about the excavations at the United Church site (DhLs-3). The excavations provided insights into the stratigraphy of the site allowing the development of a more accurate cultural chronology for southern Manitoba archaeology. At this site, excavation followed 15 cm (6 inch) arbitrary levels or actual soil zones when they were discernable (MacNeish and Capes 1958:120). MacNeish and Capes (1958:141) recovered 101 net-impressed sherds from the top five levels, approximately equal to a depth of 75 cm (30 inches). The pottery was a minor ware at the United Church site (DhLs-3). MacNeish and Capes (1958:142) referred to the pottery as "Rock Lake Net-Impressed" and describe it as being "covered with net-impressions as if they were wrapped around the wet clay; perhaps paddled on. The net seems to have been made of cord about 1 mm thick, comprising more than one yarn wound counter-clockwise" (MacNeish and Capes 1958:142). The sherds ranged from 4 to 12 mm in thickness with an average thickness of 7.4 mm, and had a fine to medium temper of crushed quartz (MacNeish and Capes 1958:141).

While addressing the distribution of the pottery at the site, MacNeish and Capes (1958:142) noted that although net-impressed pottery was found over much of southern Manitoba, it was always a minor ware. At the United Church site (DhLs-3), these sherds were found in the first five levels, but recovered in higher number in levels 2 and 3 (Table 3.3).

Table 3.3 Distribution of pottery at the United Church site (after MacNeish and Capes 1958:148).

Type of Pottery	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6	Level 7
Winnipeg R. Fabric Impressed	X	X	X				
Manitoba Corded Ware	X	X	X				
Laurel Plain Ware	X	X	X	X	X		
Rock Lake Net-Impressed	X	X	X	X	X		
Avery Corded Ware	X	X	X	X	X		

*** No numbers were offered in the original chart**

MacNeish and Capes (1958:150) also suggested that the net-impressed sherds found at the United Church site (DhLs-3) were similar to those sherds found at the Avery (DhLs-

1) and Paddock Lake (DiLt-1) sites excavated by Vickers (1948c;1949; 1950). MacNeish and Capes (1958:150) further stated that it was Vickers who identified the materials, including the pottery, as belonging to the Rock Lake focus and suggested that these artifacts were related to the Nutimik focus of southeastern Manitoba as well to the Malmo focus of north-central Minnesota. It is interesting that once again, there is a link drawn between what is found in southern Manitoba and in northern Minnesota.

The major contribution made by MacNeish (1958) involves a volume published about his work at several sites within southeastern Manitoba. In this volume, MacNeish (1958) was able to broaden the interpretation of southern Manitoba archaeology. Of particular interest is the research that he completed at the Lockport site (EaLf-1) and the Cemetery Point site (EaKv-1).

3.2.2.2 MacNeish's Work at the Lockport Site (EaLf-1)

The Lockport site had been investigated since the early 1950s by several people, including Chris Vickers who "rescued a burial and associated material" from the site (MacNeish 1958:15). Excavations over the years, particularly during the 1987-88 field seasons, revealed important aspects of the Lockport site such as horticulture, and indicated extensive use throughout history. Catherine Flynn and A. Zoe Kogan (1991:36) noted that there are at least five distinct occupations identified, based on the presence of diagnostics, including ceramics.

Situated on the east bank of the Red River, the Lockport site occupies part of the lower and upper river terraces. In 1950, one trench oriented north-south was excavated on the edge of the river terrace approximately 120 m (394 ft.) north of the Lockport Bridge. This trench measured 4.5 m by 7.6 m (15 by 25 ft.) and was divided into fifteen 1.5 m (5 ft.) squares. The units were originally going to be excavated using 15 cm (6 inch) intervals, but it became apparent that the natural strata could be used. After the outer units were completed, the inner units were excavated with wall profiles being completed at the end of the excavation.

In 1953, two additional excavations occurred. First, an area was excavated approximately 13 m (43 ft.) east of the original block/trench excavation. Second, a salvage excavation took place approximately 42 m (138 ft.) north of the site. During the

1953 excavations, bell-shaped pits were exposed by the river, east of the main block (MacNeish 1958:18). These were later excavated and evidence of horticulture was uncovered in the form of hoes fashioned from bison scapulae, charred corn kernels and many fragments of charred corn plants (Buchner 1985).

The river offered good exposure of the site stratigraphy, which led MacNeish (1958:18) to develop a stratigraphic profile for the 1950 and 1953 excavations (Table 3.4). At 1.8 m (6ft) from the surface, MacNeish (1958:19) noted boulders and yellow clay. The boulders MacNeish labelled Zone I and the yellow clay he labelled Zone H. The yellow clay was overlain in some areas of the site with what MacNeish (1958:19) called a "burned floor", and he labelled it Zone G. Above the burned floor, MacNeish (1958) encountered brownish clay that was roughly 30 cm thick which was labelled Zone F. Zone E was a dark layer of "refuse" consisting of compacted bits of clay, sand and charcoal. MacNeish (1958) does not clarify what he means by using the term "refuse" and it is considered here to mean discarded cultural materials such as flakes, unidentified bone and possibly pottery fragments. Above this zone was a well defined stratum of sand labelled Zone D and this was capped by a layer of dark sandy "refuse" scattered with charcoal labelled Zone C.

Table 3.4 Lockport site stratigraphy and soil description (after MacNeish original field notes).

Level	Depth from Surface		Zone	Soil Content
	inches	cm		
1	0-6	0-15.2	A1	humus and refuse
2	6-12	15.2-30.4	A2	Dark refuse, sand
3 and 4	12-24	30.4-60.9	B	Sand and silt lenses
5	24-30	60.9-76.2	C	dark refuse, sand, clay
6	30-36	76.2-91.4	C, D, E	Dark refuse, sand, and clay Zone D is sand lens
7and 8	36-48	91.4-121.9	E	same as Zone A and C occasionally there is a sand lens between E and F
9 and 10	48-56	121.9-142.2	F	mottled grey clay and refuse
11	56-62	142.2-157.4	G	yellow river clay
			Floor 1	burned floor
12	62-68	157.4-172.7	H	yellow clay
			Floor 2	burned floor
13	68-84	172.7-213.3	I	yellow clay
14	84	213.3	J	river boulders set in clay

Zone B consisted of strata of burned rock and a series of lenses or layers of sand and silt and occasional layers of "refuse" (MacNeish 1958:19). Above Zone B was a dark, sandy-clay "refuse" layer overlain by humus which was labelled Zone A.

The cultural levels which accompany this geological profile begin with Zone A and end at Zone H. The first level coincides with Zone A, while levels 2, 3 and 4 come from Zone B. The upper part of Zone C was excavated as level 5, while level 6 encompassed the lower portion of Zone C, as well as Zone D, and the upper portion of E. Levels 7 and 8 include the lower portion of Zone E while levels 9 and 10 were in the brownish clay, which was 30 cm thick in Zone F. Zone G coincides with level 11 and Zone H with level 12. At the deepest point of the site, Zone I, no cultural materials were recovered and no levels were excavated.

The net-impressed pottery recovered from the Lockport site was associated with the Laurel Plain ware recovered from levels 7 and 8 (Zone E). MacNeish (1958:55) identifies the net-impressed pottery as an "aberrant" ware belonging to the Nutimik focus. This focus was newly created by MacNeish (1958:55), who classified it the second oldest pottery making culture in Manitoba aside from the Anderson focus. It is interesting to note that he assumed that since the surface finish of the pottery had net-impressions, the people were also using the nets to catch fish (MacNeish 1958:61). MacNeish (1958:63) described the net-impressions on the pottery as "finer string (about 1 mm in diameter) [which] was made by twisting two yarns counter clockwise (Z-twist) (see Hurley 1979:6). These cords were then knotted together (by cow hitch?) to form nets with a 2 to 5 mm mesh." In total only 78 sherds with net-impressions on them were recovered.

3.2.2.3 The Cemetery Point site (EaKv-1)

The Cemetery Point site is located on Lake Nutimik at the mouth of the Whiteshell River and is situated on a sandy ridge at the junction of the river and lake. MacNeish (1958:27) speculated that since the site faces west, it would have been somewhat protected from the harsh winter conditions.

Excavations at the site occurred in 1953. Six 1.5 m (5 ft) squares were placed approximately 9 m (30 ft) apart in a line paralleling the bank of the river. As well, four

test squares were placed 10 m (33 ft) back from the bank. These test holes were excavated using 15 cm (6 inch) arbitrary levels. It was discovered that the refuse was the deepest at the west end of the site. Upon this revelation, it was decided that a test trench measuring approximately 7.5 m (25 ft) in length would be placed between two of the western most test units, joining them (MacNeish 1958:27-28).

MacNeish (1958:28) noted that the stratigraphy was relatively simple. The entire site was overlain with humus (Zone A). Under the humus layer was Zone B, which consisted of a 30 cm thick layer of brown sand with lenses of dark blackish sand intermixed with white sand. Level 2 incorporated the upper part of Zone B, while level 3 included the lower part of the zone. It was in this zone that MacNeish (1958:28) discovered three conical pits, approximately 91 cm (3 ft.) in diameter and 30 cm (1 ft.) deep extended down into Zone C. This zone was 30 cm thick and consisted of dark stratum composed of sandy silt where levels 4 and 5 were excavated. A whitish brown layer was present underneath Zone C, and labelled Zone D. Level 6 came from the junction of Zones C and Zone D, while the stratum below 91 cm (3 ft.) was devoid of cultural remains (MacNeish 1958:27-28).

The net-impressed pottery was recovered from level 3 and MacNeish (1958:171) indicated that these sherds have a fine to medium paste, similar to that of the Laurel Plain ware. The exterior surface of the sherds "bears the impressions of a knotted net. The net is made of fine cords 0.5 to 1.5 mm in diameter that have been Z-twisted (counter clockwise)… …The cords seem to have been tied by either 'cow hitch' or 'reef hitch' knots" (MacNeish 1958:171). The time period of the pottery appears to be similar to that of Laurel Plain ware, occurring in levels 5 to 10 (upper level of Zone C to Zone F) at the Lockport site.

3.2.2.4 Discussion of MacNeish's Cultural Chronology

MacNeish (1958:73) attempted to sort out the relationship of the various foci that he recognized in southern Manitoba (Figure 3.1). The two earliest foci are the Whiteshell and the Larter foci, known only by the presence of stone tools (pottery is not present). These foci are followed by the Anderson focus, the first pottery making

culture. MacNeish (1958) estimated that this focus began approximately 500 B.C. and lasted to A.D. 500.

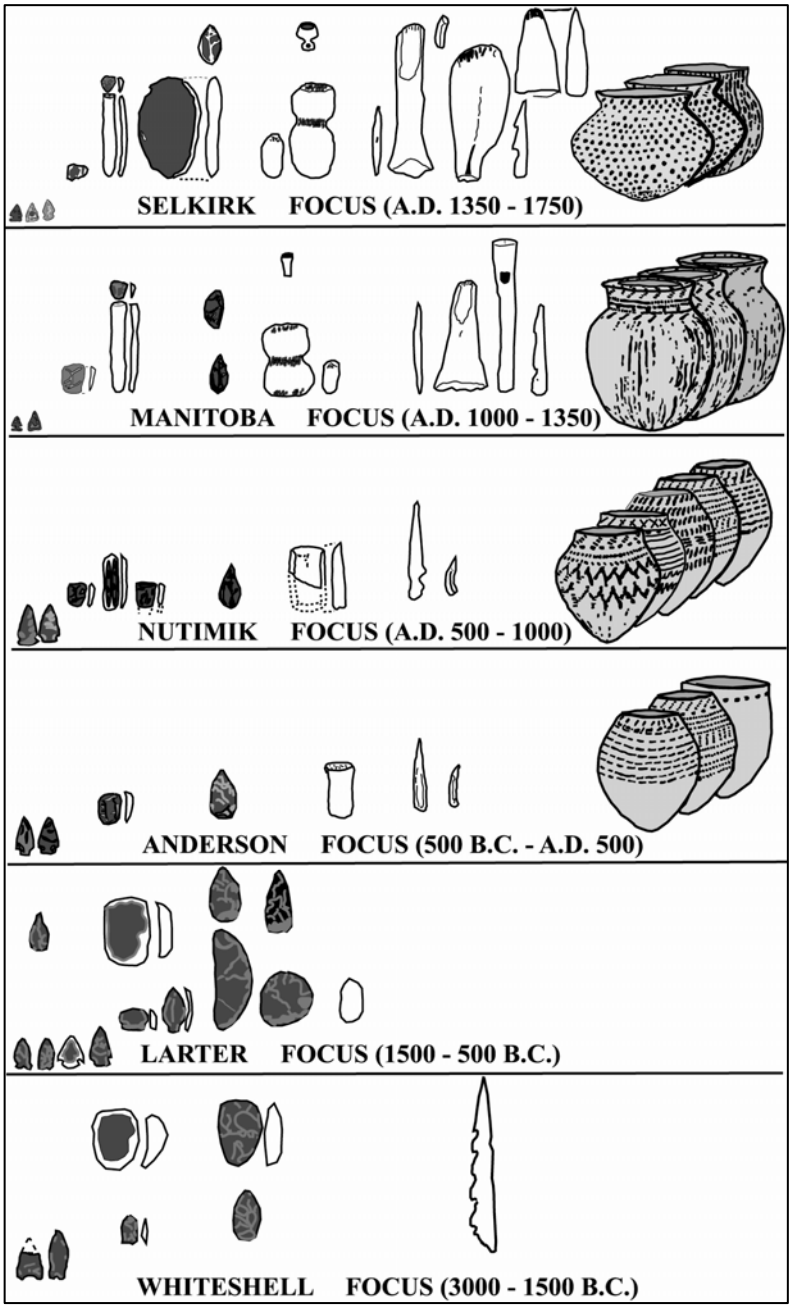


Figure 3.1 Culture chronology of southern Manitoba (after MacNeish 1958:72).

Similarities between the Anderson focus and the Larter focus include corner-notched projectile point styles. MacNeish (1958:73) does suggest that the differences out number the similarities between these two foci, but he feels that there was continuity

between the two foci. The Anderson focus is followed by the Nutimik focus, which he proposed to begin ca. A.D. 500 and continue to A.D. 1000. MacNeish (1958:73) considered that the Nutimik focus developed from the preceding Anderson focus, given the similarity of the decorative attributes present on the pottery.

MacNeish (1958:73) noted similar dentate and linear punctate stamp as well as plain and cord-wrapped paddled-edge decorated sherds. There were also small triangular plano-convex end-scrapers, corner-notched projectile points, and pointed beaver teeth associated with the Nutimik focus. The stratigraphic position of cultural materials at the Lockport site (Ealf-1) suggested to MacNeish (1958:73) that the Anderson focus was ancestral to the Nutimik focus. According to MacNeish (1958:76) this pottery is similar to that of the Rock Lake focus in southwestern Manitoba as well as to that of the Malmo focus of Minnesota.

The Malmo focus is characterized as a Middle Woodland ceramic making phase within the Milles Lacs aspect (Benchley et al. 1997:131). The pottery is described as grit-tempered with a smooth exterior surface, and a conoidal or sub-conoidal vessel shape with little decoration. If decoration does exist, then it appears as punctates and bosses, occasional incising and dentate stamping (Benchley et al. 1997:131). Unfortunately there is little information concerning the Malmo phase in Minnesota, so it is difficult to determine what relationship it has to other cultures in the region. The similarity of the pottery in Manitoba to the Malmo focus in the south suggested to MacNeish (1958:79) that there was a south to north diffusion of traits.

The importance of MacNeish's (1958) work was the creation of a detailed culture history for southern Manitoba. By building upon the chronology begun by Vickers (1948c; 1949; 1950), MacNeish (1958) was able to expand and elaborate Manitoba's prehistoric cultural sequence. With regard to the presence of net-impressed pottery in the province, MacNeish (1958) categorized the cultural materials recovered from the United Church site as belonging to the Rock Lake focus, while assigning the net-impressed pottery from the Lockport and Cemetery Point sites to a separate cultural entity, the Nutimik focus. Although there were similar artifacts associated with the Nutimik focus and the Rock Lake focus, MacNeish (1958) did not subsume the artifacts into one focus. According to MacNeish (1958:76), the Rock Lake, Nutimik and Malmo

foci “differ in a number of details, such as burial mounds, and distinctive associative traits in the Malmo focus, [and] the horizontally corded pottery of the Rock Lake focus…”

3.2.3 Anthony Buchner’s Excavations at the Cemetery Point site

In 1979, the Cemetery Point site was revisited by Anthony Buchner of the University of Winnipeg, in order to relocate the excavation units completed by MacNeish (1958). The goals of the project were fourfold: (1) to interpret the site stratigraphy; (2) to evaluate the Whiteshell focus as a viable archaeological construct; (3) analyze site fauna, with particular attention to the presence or absence of bison in the Archaic horizons; and (4) to determine whether the Nutimik focus, as described by MacNeish (1958) was an actual cultural entity or of no theoretical value whatsoever (Buchner 1980:5). The first and last of these goals are pertinent to this discussion. The first goal, understanding the site stratigraphy is paramount to describing the cultural sequence of the site, while determining if the Nutimik focus has theoretical value is important since MacNeish (1958) attributes the manufacture of net-impressed pottery to it.

Buchner (1980:9) notes that the stratigraphy varied in different locations at the site. The description offered by MacNeish (1958) only applies to the north end of the site where his work was concentrated. Buchner (1980) noted that deposition was shallower at the eastern portion of the site. None-the-less, the stratigraphy appeared quite complex compared to the description offered by MacNeish (1958). The 1979 excavations identified at least 5 components not previously recognized by MacNeish (1958) during his excavations. These included (1) Plano; (2) early Archaic or Logan Creek complex occupation; (3) Oxbow; (4) Pelican Lake; and (5) historic (Buchner 1980:19). No samples were submitted for radiometric dating.

The fourth objective concerning the validity of the Nutimik focus as a cultural entity within Manitoba was not achieved and this focus was not considered legitimate. Buchner (1980:20) noted that the majority of the pottery assigned to the Nutimik focus was Laurel material. This was evidence that MacNeish’s (1958) recognition of a cultural entity called the Nutimik focus did not have any standing. This produces a

problem since net-impressed pottery was recovered from the Cemetery Point site. Unfortunately Buchner (1980) does not indicate what pottery wares were recovered from the 1979 excavations. There is no evidence of additional net-impressed pottery nor any Avonlea projectile points recovered. However, the presence of net-impressed pottery and lack of Avonlea projectile points indicates that there may be a Brainerd occupation at the site, albeit a minor one.

3.2.4 Anthony Buchner's work at the Lockport site

As stated earlier, there have been excavations completed at the Lockport site since MacNeish's (1958) original work. In 1984 and 1985, excavations were undertaken to re-evaluate the Lockport stratigraphy (Buchner 1986:72). This reanalysis of the stratigraphic sequence also allowed radiocarbon dating of the strata identified by MacNeish (1958), and offers a solid chronological sequence for the site (Table 3.5). Bed H, the lowest bed at the site, was examined and found to extend below 2.0 m from the surface. This depth is beyond what MacNeish (1958) originally excavated.

Table 3.5 Summary of radiocarbon dates from the Lockport site (from Buchner 1986, 1988; Flynn and Kogan 1991).

Bed	Conventional Date B.P.	Lab Number	Year	Material
B	315 +/-235	S-2852	1986	Charcoal
*B/C	470 +/-270	S-2850	1986	Charcoal
D	620 +/-105	GX-10866	1984	Charcoal
#C-E	635 +/- 90	S-2849	1986	Charcoal
*E/F	1005 +/-280	S-2851	1986	Charcoal
*E/F	1095 +/-250	S-2853	1985	Charcoal
*E/F	1185 +/-255	S-2848	1986	Charcoal
*E/F	1185 +/-255	S-2854	1986	Charcoal
F	1410 +/-290	GX-10865	1984	Gelatine
*G/H	2315 +/- 85	GX-10864	1984	Gelatine
H	2515 +/-140	GX-10863	1984	Gelatine
*H/I	3300 +/-295	S-2847	1986	Charcoal

Radiocarbon dates sampled from bison vertebrae 180 to 200 cm below the surface yielded a date of 2315 +/-140 B.P. (GX-10863). A more recent date of 3300 +/-295 (S-2847) was obtained for Bed H (Buchner 1986:72). Artifacts from this bed are associated with the Larter (Pelican Lake) phase.

Bed G overlays Bed H and consists of a thin, discontinuous silt and sandy loam which serves as a boundary between the Archaic and Woodland components (Buchner 1986:72). Radiocarbon samples were taken from 150 to 165 cm below the surface and yielded a date of 2315 +/-85 B.P. (GX-10864) (Table 3.5). This date is thought to represent the termination of the Larter phase and the beginning of the Laurel occupation. Bed F, with a radiocarbon date of 1410 +/-290 B.P. (GX-10865) occurs between 100 and 150 cm below the surface. Laurel artifacts were restricted to this bed, which consisted of a clayey loam.

Beds C to E consist of a sandy loam separated by Bed D, a thin dark, clay loam unit that extends from 25 to 100 cm below the surface. At the interfaces of Beds C and D, a radiocarbon sample (GX-10866) yielded a date of 620 +/-105 B.P. (Table 3.5). Artifacts of the Late Woodland Blackduck phase were recovered from all three of these beds (Buchner 1986:73). Beds B and A consist of a clay and sandy loam. These beds contained artifacts from the Selkirk phase and a radiocarbon date of 315 +/-235 B.P. (S-2852) was obtained from Bed B (Buchner 1986:73).

Although the stratigraphic sequence has been updated, what is important to this discussion is the pottery recovered from these beds. Bed H, the oldest at the site, yielded pottery from the upper portion which consisted of a silty clay stratum. Buchner (1986) suggested that this layer contained evidence of a Larter/Pelican Lake occupation, but upon closer examination, Flynn and Kogan (1991:39) have reported the presence of net-impressed pottery. The base of Bed H was dated to 3300 +/-295 B.P. (S-2847) placing the latter occupation during the Early Woodland period.

3.4 Minnesota Archaeology

3.4.1 Elden Johnson's Work

Net-impressed pottery was first identified in Minnesota by Elden Johnson in 1971 (Figure 3.2). Johnson (1971:52) coined the term "Brainerd net-impressed" after encountering net-impressed pottery while excavating at the Gull Lake Dam site (21CA27). This work began in 1969 under the direction of Alan Kutchera and consisted of an examination of seven burial mounds located at the outlet of Gull Lake in central Minnesota (Johnson 1971:45). These mounds were associated with a larger set

of mounds. Of the mound group that was under investigation, portions of mounds 2, 5, 6, 7, 8a, 8b, 9, and 12 were actually excavated. Sherds with net-impressions were recovered from all of the mounds but rim sherds were only found in mounds 2, 8, 9, and 12 (Johnson 1971:53). The description of the net-impressed pottery offered by Johnson (1971:53) was based on one complete vessel, 6 individual rim sherds, and 127 body sherds.

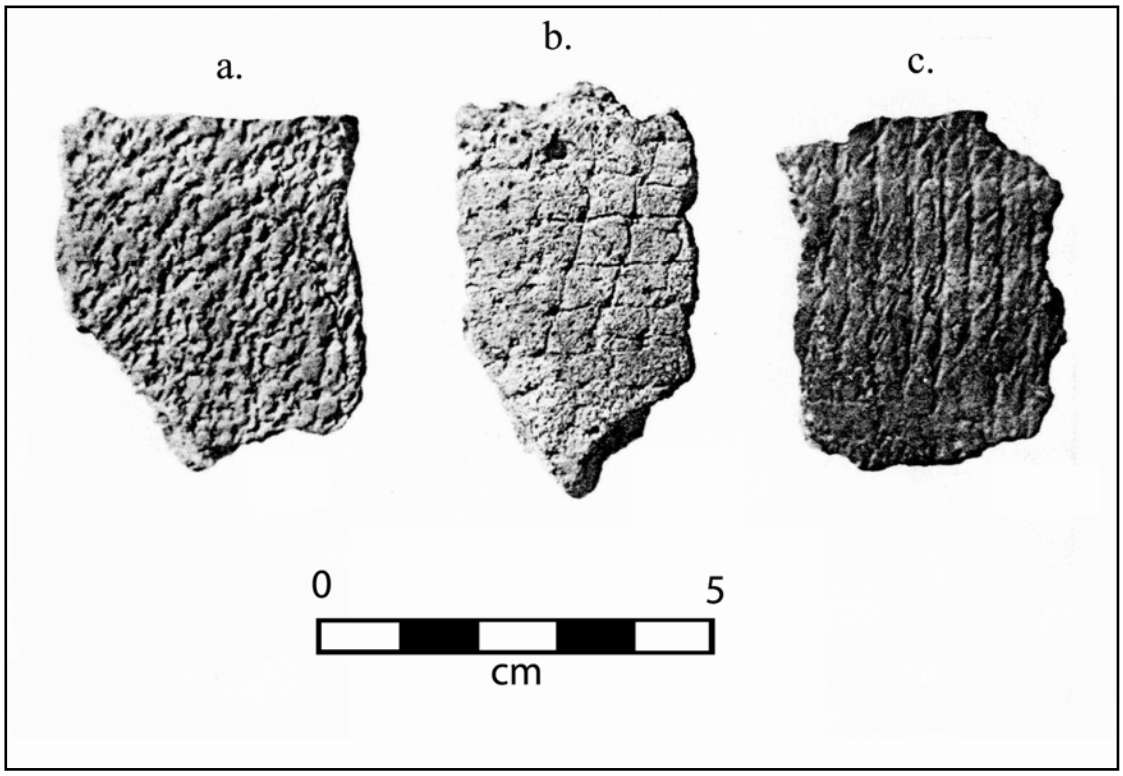


Figure 3.2 Body sherds illustrating three types of surface treatment from the Gull Lake Dam site in Minnesota: a) superimposed net-impressed; b) net-impressed, and c) fabric impressed (after Johnson 1971:65).

Johnson (1971) noted that Brainerd ware vessels have either a conoidal or sub-conoidal form, sometimes with a slightly rounded shoulder, straight rim, and rounded flat lip. The interior of the complete Gull Lake vessel was smooth with the exterior having a "faintly impressed cord-wrapped-dowel impression placed 1 and 2 cm below the lip of the vessel" (Johnson 1971:53). The upper section of this vessel has "paired right oblique cord-wrapped-dowel impressions spaced at 4 cm [which] extend from the shoulder to the lower encircling line of decoration" (Johnson 1971:53). Johnson further identified a clear net-impression on the body, while the upper portion of the vessel had a fabric marked appearance under the cord-wrapped-dowel impressions. The complete, but

small, vessel is 17 cm in height and 14.5 cm in diameter (Figure 3.3). It should be noted that decoration only appeared on the complete vessel and that none of the 6 rim sherds exhibited any decoration. Approximately half of the body sherds that were classified as net-impressed actually appeared to be fabric marked, but Johnson (1971) attributes this to "an effect of superimposing net-impressions and/or dragging the net over the surface of the vessel before firing" (Johnson 1971:53). Superimposing was also present on the complete vessel.

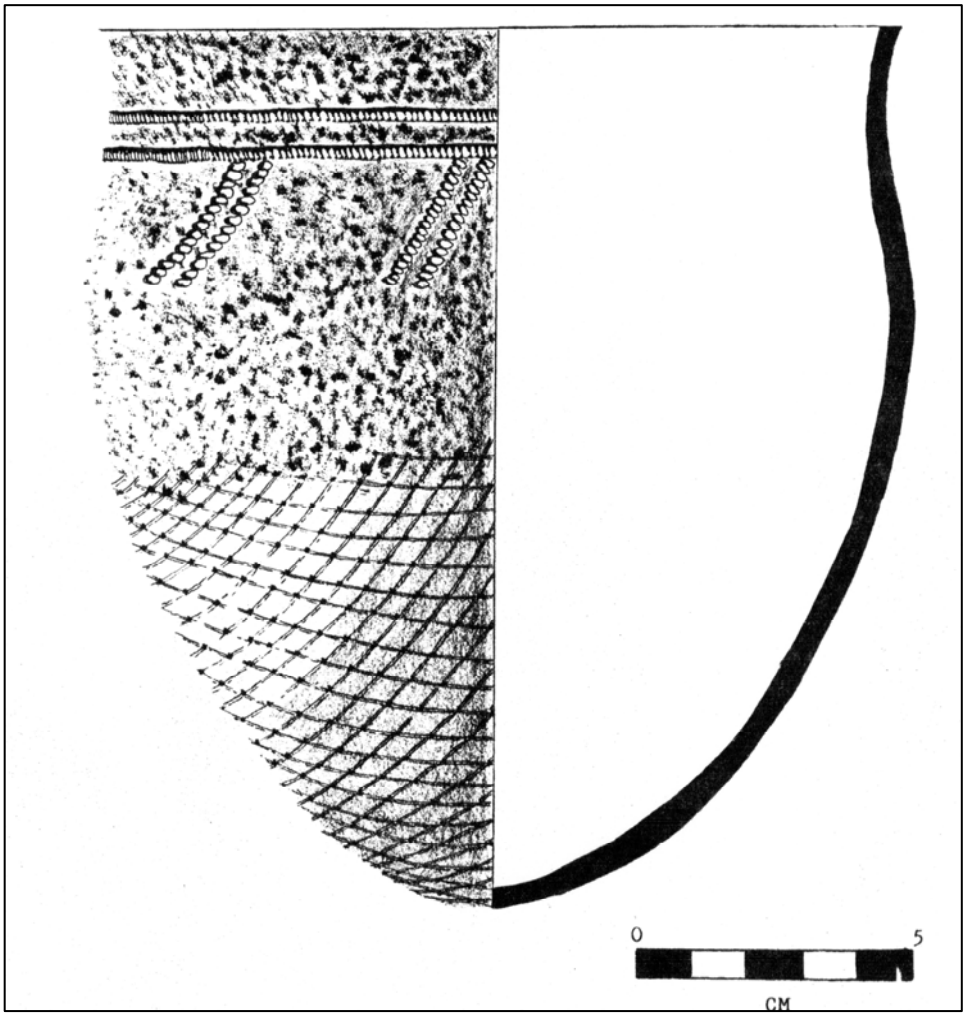


Figure 3.3 Illustration of vessel found at Gull Lake Dam site by Johnson in 1971 (after Lugenbeal 1978).

Johnson (1971:53) alluded to additional net-impressed pottery that was recovered from northern Minnesota but these sherds had been associated with the Blackduck focus and found in extremely small percentages. At the Gull Lake Dam site (21CA27),

Malmo focus pottery was found in the lower levels. This led Johnson (1971:61) to suggest that the earliest occupation of the site dated 800 B.C. to 200 A.D. based on radiocarbon dates from other Malmo focus mounds in central Minnesota. Above this occupation, Johnson (1971:61) noted the appearance of Brainerd net-impressed pottery associated with St. Croix stamped pottery. Since these two types of pottery were found above the Malmo focus pottery, Johnson (1971:61) suggested that people made Brainerd net-impressed pottery in the mound area from 500 to 900 A.D. The significance of Johnson's (1971) work is that he was the first to document the net-impressed pottery in Minnesota and assign a temporal time span to the pottery.

3.4.2 Edward Lugenbeal's Work

While studying Blackduck pottery in northern Minnesota, Edward Lugenbeal began to re-interpret an "undifferentiated Woodland ware" which Evans (1961) had previously identified. This "undifferentiated Woodland ware", according to Evans, occurred in Blackduck collections in Minnesota but resembled neither Blackduck nor Laurel wares. The new interpretation offered by Lugenbeal centered on the idea that this "undifferentiated Woodland ware" was actually Brainerd net-impressed ware (Lugenbeal 1978:47), as had been described by Johnson (1971). This conclusion resulted from the re-examination of 10 pottery collections from northern Minnesota, which consisted of "315 rims representing 195 vessels, 60 decorated body sherds, and 2301 undecorated body sherds" (Lugenbeal 1978:47) (Table 3.5).

Table 3.6 Brainerd ware in northern Minnesota (after Lugenbeal 1978: 52).

Sites	Rims	Vessels	Decorated Body Sherds	Undecorated Body Sherds
Shocker	96	68	19	433
White Oak Point	73	52	12	908
Hill Point	91	38	17	665
Osufsen Mound	23	15	10	74
Mud Lake	13	6	0	37
McKinstry Mound 2	10	6	0	171
Round Lake	5	5	0	1
Mitchell Dam	1	1	1	8
Scott	1	1	0	3
Leech River (Mud Lake)	1	1	0	0
Waskish	1	1	0	0
Totals	**315**	**194**	**59**	**2300**

Because two-thirds of the sample from the collections conformed to the description of Brainerd net-impressed provided by Johnson (1971:53) a few years earlier, Lugenbeal (1978) adopted this nomenclature. Lugenbeal (1978:47) stated that pottery identifications completed by Wilford (1955:136) and Evans (1961:34-35), who both studied Blackduck pottery in Minnesota, erroneously assigned net-impressed pottery to Blackduck ware. The pottery was incorrectly identified because "the superimposed net-impressions on some Brainerd net-impressed vessels can be easily misinterpreted as fabric impressions" (Lugenbeal 1978:47). Furthermore, Lugenbeal (1978:47) noted distinctive corded sherds associated with the pottery. These sherds differ from Blackduck sherds in three ways:

> "(1) the cord marks are usually oriented horizontally or obliquely instead of vertically in relationship to the rim; (2) the cord tends to be finer; (3) the twist of the cord is usually opposite that of Blackduck cord (z-twist instead of s-twist); and (4) the cord impressions are not the result of paddling [Lugenbeal 1978:47].

The relationship between the horizontally corded sherds and net-impressed sherds was not immediately obvious, but Lugenbeal (1978) offered some lines of evidence in this regard. The first piece of evidence was the fact that both types, the horizontally corded and net-impressed pottery, occur together in archaeological sites found throughout northern Minnesota that contain one or more Brainerd ware vessel. Another piece of evidence was the method of manufacture. The techniques employed in constructing both the net-impressed and horizontally corded were similar, both being constructed by coiling without paddling. Also Lugenbeal (1978:48) noted that the vessel shapes of both types were similar, including conoidal basal forms. Decorative attributes found on both net-impressed and horizontally corded were the same and also occurred in the same places, and approximately in the same frequencies.

Finally the strongest piece of evidence that Lugenbeal (1978:48) produced related to the stratigraphic position of the wares. Where stratigraphy was clear at sites, net-impressed and horizontally-corded sherds occurred in the same levels. Lugenbeal (1978:51) also concluded that stratigraphically Brainerd ware was contemporaneous with Laurel ware in the Rainy River and Manitoba regions, and that in central

Minnesota, Brainerd ware had a greater antiquity than Blackduck and Sandy Lake wares.

The research completed by Lugenbeal (1978) is significant to the study of net-impressed pottery for several reasons. First, by distinguishing two kinds of Brainerd ware, he explained the recognized traits of Brainerd ware, beyond the description of net-impressed pottery offered by Johnson in 1971. Lugenbeal (1978) commented that Brainerd horizontally corded ware was readily distinguished from Blackduck fabric impressed pottery and that, therefore, older collections may need to be re-examined and re-classified. The second important aspect of Lugenbeal's (1978) work is the identification of Brainerd pottery as a ware. This elevated the status of net-impressed pottery within Minnesota, placing it at the same level as Laurel ware or Blackduck ware. Although Lugenbeal (1978) did not suggest a cultural affiliation, separating Brainerd ware into two types and distinguishing the pottery as a ware enabled Minnesota archaeologists to determine whether net-impressed or horizontally-corded pottery from other sites fit the description of Brainerd ware.

As well, Lugenbeal (1978) contemplated the temporal aspect of Brainerd ware. The examination of the 11 collections from Minnesota indicated that Brainerd ware was contemporaneous with Laurel and older than both Blackduck and Sandy Lake; however, an actual radiometric date was not offered by Lugenbeal (1978). While re-examining pottery from the White Oak Point site (21IT1) in northern Minnesota, Lugenbeal (1982) revisited the collection excavated by Wilford in 1940 and 1954. Although the main focus of the article is a discussion of the Blackduck and Sandy Lake wares, Lugenbeal (1982:8) does allude to the presence of Brainerd ware at the site. He (1982:19) suggested that "Brainerd ware resembles 'middle woodland' ceramics in rim profiles and vessel shape." By identifying Brainerd ware as a Middle Woodland ware, Lugenbeal (1982) modified Johnson's (1971:44) earlier notion that the temporal span of the net-impressed pottery was 600 to 800 A.D., increasing the apparent antiquity of the ware.

3.4.3 Thomas Neumann's Work

Concurrent with Lugenbeal's (1978; 1982) work, Neumann (1978; 1984) addressed the classification of net-impressed pottery in Minnesota and proposed that the nature of the pottery was much more complex than had been previously thought. Disagreeing with the classification of net-impressed pottery as a single type, Neumann's 1976 work divided net-impressed pottery into two types: (1) single net-impressed and (2) multiple net-impressed. These types of net-impressions were evident at the Gull Lake Dam site (21CA37) and the Langer site (21CA58).

Neumann (1978; 1984) argued that single net-impressed was a treatment that resulted in the single impression of a net upon the surface of a smooth, pre-fired vessel. In this type of surface treatment, the strands connecting the knots can clearly be discerned. This type of treatment was characteristic of the Gull Lake net-impressed vessels identified by Neumann (1984). Neumann (1984) identified multiple net-impressed as treatment resulting from several impressions of a net over the same surface of the smooth pre-fired vessel. These several impressions often resemble fabric roughening and are characteristic only of the upper portions of Brainerd net-impressed vessels (Johnson 1971).

Although Neumann's (1984) argument was not accepted by other Minnesota archaeologists, the Gull Lake vessel that he described from the Langer site is of particular interest. The parallel-grooving or "thong-wrapped paddling" that appears on the upper portions of the vessel is reminiscent of some Avonlea pottery (Johnson 1988; Quigg 1988; Smith et al. 1988; Tratebas et al. 1988). Neumann (1984:50) describes the surface treatment as a washboard or corrugated appearance of single stamped impressions which are seen as produced by a paddle having parallel, evenly spaced ridges running across the working surface (Figure 3.4).

Therefore, Neumann (1976) has described a vessel with a hybrid of characteristics, net impression and parallel-grooving. The net-impressions are characteristic of Brainerd ware and the parallel-grooving is characteristic of certain Avonlea pottery. The significance of this co-occurrence goes unnoticed by Neumann (1976; 1984), but is addressed later on by Gonsior (2004).

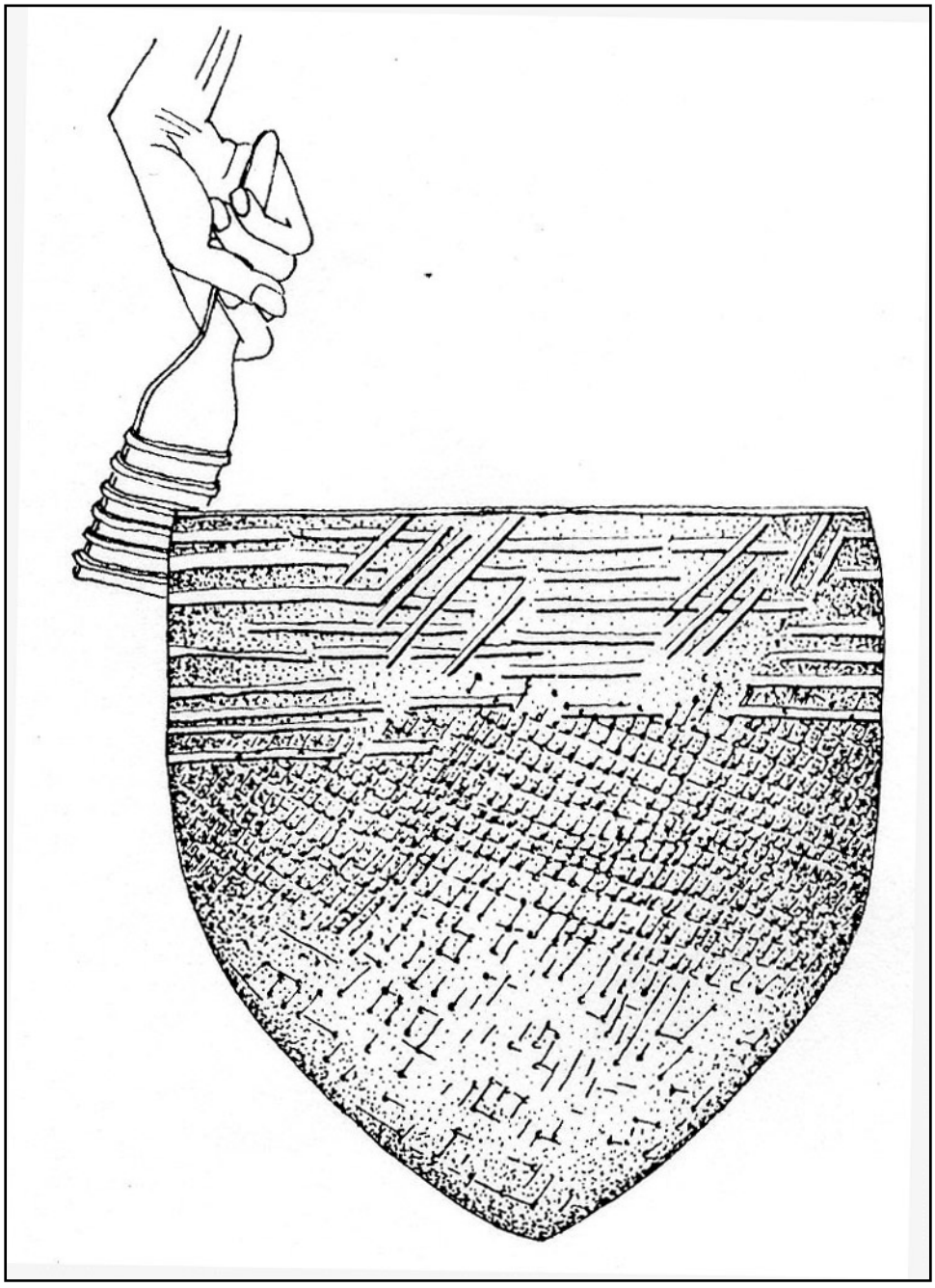


Figure 3.4 Depiction of the thong-wrapped paddle technique on the Gull Lake vessel (after Neumann 1984:57).

3.4.4 The Work of Christy Hohman-Caine and Grant Goltz

In 1995, Christy Hohman-Caine and Grant Goltz summarized the problems concerning the nature of Brainerd ware. They stressed that the most prevalent problems were the lack of a definitive description of the culture that Brainerd ware was a part of, and the lack of an adequate time frame assigned to the pottery. By re-evaluating earlier

archaeological research, Hohman-Caine and Goltz (1995:123) provided an important contribution pertaining to the spatial distribution, attributes and time span of Brainerd ware, as well as the associated tools and subsistence economy.

By mapping the spatial distribution of Brainerd ware, the authors showed that the sites with net-impressed pottery are typically present in central Minnesota (Figure 3.5).

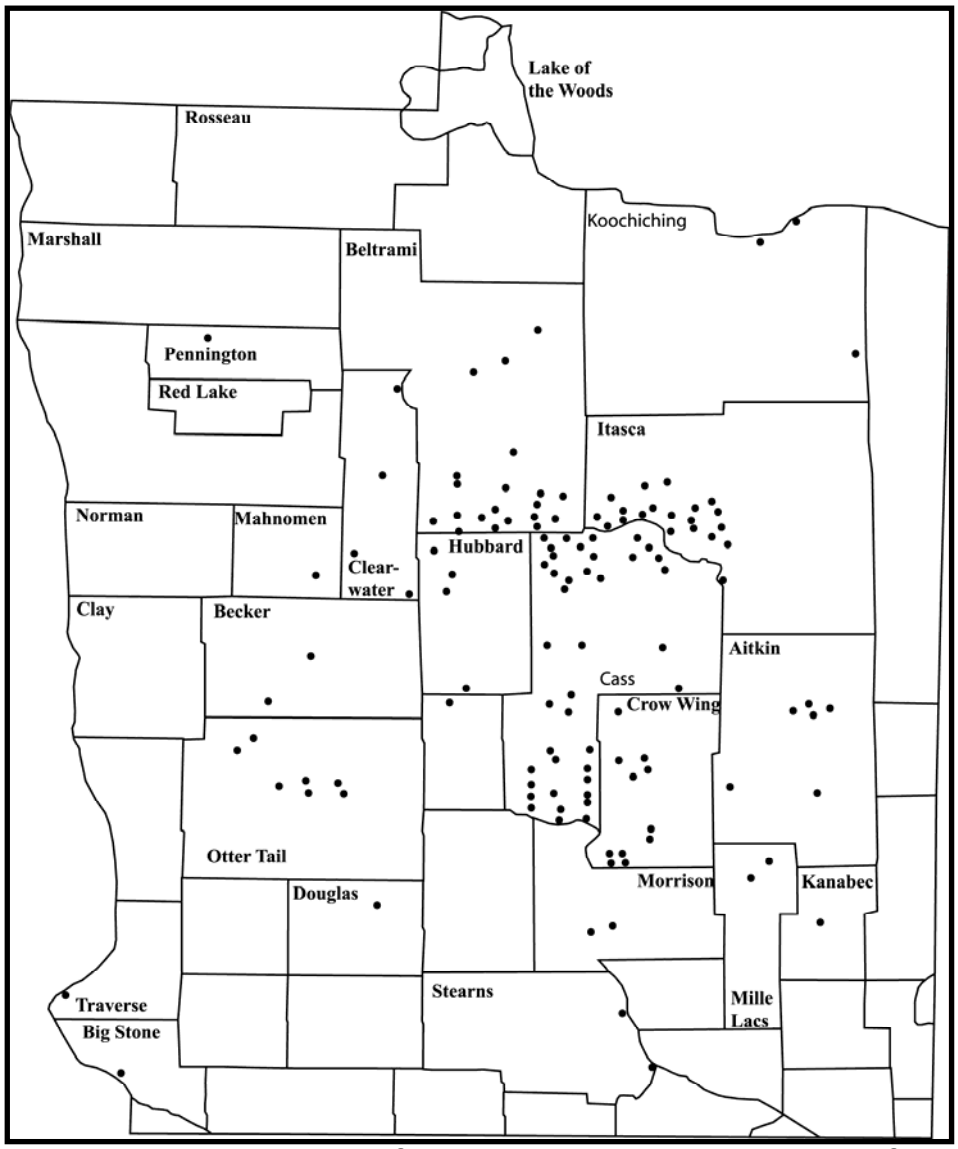


Figure 3.5 Known distribution of Brainerd ceramics in Minnesota (after Hohman-Caine and Goltz 1995:113).

These sites are located mainly within a conifer/hardwood forest; however, some sites are found within a Maple/Basswood forest (Hohman-Caine and Goltz 1995:126).

The authors also considered the attributes of Brainerd ware, particularly focusing on body form, hardness, thickness, colour, surface treatment, method of manufacture, and decoration. These attributes do not differ to any great extent from the previous descriptions offered by Lugenbeal (1978, 1982) and Johnson (1971). However, Hohman-Caine and Goltz (1995:120) conclude that there are five decorative varieties of Brainerd ware in Minnesota. These varieties are: (1) Plain Variety; (2) Cord-wrapped object stamped variety; (3) Angled stamped variety; (4) Incised variety; and (5) Reed stamped variety.

As part of their work on Brainerd ware, Hohman-Caine and Goltz (1995:120) identified some of the stone tools associated with Brainerd ware. A prevailing problem inherent with identifying the cultural traits associated with Brainerd ware was the lack of excavated stratified sites in Minnesota. The majority of sites that have Brainerd ware in the assemblages generally consist of mixed cultural components. Some of the projectile points which have been found associated with Brainerd ware include: Oxbow, Duncan, Hanna, Pelican Lake, and other atlatl dart points. Hohman-Caine and Goltz (1995:122) noted that "With the exception of one small arrow-sized point from LaSalle Creek and the large Hanna point from Shingobee Island, all of the points associated with Brainerd ware on these sites are medium-sized, ranging from 24-45 mm in length, and of styles attributed by many researchers to a Late Archaic or possibly Initial Woodland context." The association of these Archaic point types produces a major issue in terms of cultural chronologies. It is accepted in North American archaeology, that within the Archaic period there is no evidence of pottery. Hohman-Caine and Goltz's (1995) implication that Archaic points are found in association with Brainerd ware can only be explained by the apparent lack of stratigraphy and mixing of cultural components at the Minnesota sites sampled.

Lugenbeal (1978, 1982) proposed a Middle Woodland affiliation for Brainerd ware, but the dates offered by Hohman-Caine and Goltz (1995) suggest an even greater antiquity for the ware. They consider 18 radiometric dates from nine different sites in north and central Minnesota (Table 3.7). Combining the dates with environmental factors, Hohman-Caine and Goltz (1995:125) suggest Brainerd ware began about 3500 B.P.

During this time, "this cultural manifestation was focused on the then present prairie-woodland ecotone which would likely have existed throughout the known distribution of Brainerd ware sites" (Hohman-Caine and Goltz 1995:125-126). The cultural entity with which Brainerd ware was associated would have thrived and as Hohman-Caine and Goltz (1995:126) suggest the, "cultural peak about 2700 B.P. coincides closely with the return of the white pine forests to the western edge of the region."

Table 3.7 Radiocarbon dates of Brainerd ware (after Hohman-Caine and Goltz 1995:124).

Lab No.	Site	Conventional Date B.P.	Material	Investigators
Beta 43516	Kitchie bay	2480+/-90	wood charcoal	Caine & Goltz (np)
Beta 70373	North Twin Lake	2455+/-50	ceramic residue	Navarre 1994
Beta 71671[a]	LaSalle Creek	3180+/-60	ceramic residue	Kluth & Kluth 1994
Beta 76189[a]	LaSalle Creek	3000+/-60	ceramic residue	Caine & Goltz 1995
Beta 76190	LaSalle Creek	2280+/-60	ceramic residue	Caine & Goltz 1995
Beta 75658	Roosevelt Narrows	2610+/-60	ceramic residue	Justin 1995
Beta 75659	Roosevelt Narrows	2850+/-60	ceramic residue	Justin 1995
Beta 76658	Roosevelt Narrows	2710+/-60	ceramic residue	Justin 1995
Beta 76659	Roosevelt Narrows	2480+/-60	ceramic residue	Justin 1995
Beta 76687	Roosevelt Narrows	2090+/-60	ceramic residue	Justin 1995
NA 1[b]	Cass Lake I	2550+/-60	ceramic residue	Kluth & Thompson 1995
NA 1[b]	Cass Lake I	2600+/-60	ceramic residue	Kluth & Thompson 1995
NA	Ogema-Geshik	1890+/-60[c]	ceramic residue	Kluth 1996
Beta 92827	Felknor	1870+/-40	ceramic residue	Caine & Goltz (np)
Beta 79570[d]	Blueberry Lake	2930+/-50	ceramic residue	Bailey & Johnson 1995
Beta 79571[d]	Blueberry Lake	2940+/-80	ceramic residue	Bailey & Johnson 1995
[e]	Blueberry Lake	2933+/-47	ceramic residue	Bailey & Johnson 1995
NA	Third River Bor. Pit	2320+/-60	ceramic residue	Mulholland 1996
NA	Third River Bor. Pit	1700+/-70	wood charcoal	Mulholland 1996

NA: Data not available
(np): Not published
[a] Appear to date same vessel
[b] Appear to date same vessel
[c] Standard deviation assumed, data not available
[d] Split sample, same vessel
[e] Average of Beta 79570 and Beta 79571

As the climate warmed and dense forests returned to the area, there was a decline of this cultural manifestation around 2300 B.P. and eventual disappearance by the second or third century A.D. (Hohman-Caine and Goltz 1995:126).

The significance of this work is seen in the synthesis of the literature concerning Brainerd ware in Minnesota. The authors outlined five varieties of decorative features, two kinds of surface features, a time frame for the occurrence of the pottery, and avoided using the ceramic name as synonymous with the culture. They included Brainerd ware as part of the artifact assemblage of the Elk Lake culture (Hohman-Caine and Goltz 1995:127).

3.4.5 LeRoy Gonsior's Work

Using the pottery from the Lake Carlos State Park Beach site (21DL2), Gonsior noted that there are similar exterior finish evident on both terminal Brainerd and Avonlea ware from the plains. These attributes include parallel-grooving which is present on some Avonlea pottery (Gonsior 2003:20). The parallel-grooving is similar to the horizontal cording identified on Brainerd ware by Lugenbeal (1978) and Hohman-Caine and Goltz (1995). The difference is that Gonsior (2003:20) identifies a "smoothed-over-parallel-grooved" appearance. "Some parallel-grooved vessels may have combinations of decoration such as parallel-grooved with smooth or horizontally corded portions. This may represent a transitional phase" (Gonsior 2003:20).

There have been several cultural resource studies carried out on the Lake Carlos State Park Beach site by the Minnesota State Park Cultural Resource Program (MSPCRMP) in which over 1300 pottery sherds have been recovered (Table 3.8). The Lake Carlos State Park Beach site (21DL2) has been identified as a multicomponent habitation site with mixed Woodland and Plains Village components (Gonsior 2003:17). Of particular interest to both Gonsior's (2003:20) study and to this thesis, is the evidence that this site may represent a terminal Brainerd ware site and the beginnings of the Avonlea culture. Three vessels were identified from the Lake Carlos State Park Beach site.

Table 3.8 Investigations and pottery recovery from the Lake Carlos State Park Beach site (after Gonsior 2003:18).

Lake Carlos State Park Investigations	Net-Impressed (Rim)	Horizontally-Corded (Rim)	Parallel-Grooved (Rim)	Indeterminate Smoothed Over	Total

1963: University of Minnesota, lower campground		6			6
1982: MSPCRMP, lower campground electrification	2	1 (1)			3
1992: MSPCRMP, campground boat access parking lot	101		1		102
1996: MSPCRMP, muti-use building data recovery		670 (18)	21 (4)	529 (5)	1220
Total number of sherds	**103**	**677**	**22**	**529**	**1331**

The first vessel has a distinct horizontally-corded (S-twist) surface finish and has been decorated with small punctates around the rim exterior (Gonsior 2003:18). This falls into the Hohman-Caine and Goltz (1995) Reed Stamped variety. The second vessel is an undecorated horizontally corded vessel which would fall under the Plain Variety of the Hohman-Caine and Goltz classification (Gonsior 2003:19). The final vessel "is a parallel-grooved (horizontally applied) vessel assigned in this study to the terminal Brainerd ceramic sequence, but also fits the definition of Avonlea ceramics…" (Gonsior 2003:20). He also notes that some of the sherds associated with this vessel seem to have a smoothed-over parallel-grooved exterior which fits the description of Avonlea parallel-grooved pottery offered by Johnson (1988). The appearance of the parallel-grooving could indicate a relationship of this Brainerd ware to Avonlea pottery.

Radiocarbon dates further support this claim (Table 3.9). Gonsior (2003:21) notes that temporally, the Lake Carlos State Park Beach site falls closer to the Late Woodland time frame given the two dates, 1980 +/- 50 B.P. and 1880 +/- 50 B.P. These dates are quite early for the Late Woodland period. Initially the Woodland Period was divided into three stages, the Early Woodland (1000 B.C. to 100 B.C.), Middle Woodland (200 B.C. to A.D. 300) and Late Woodland (A.D. 300 to European contact), with each division consisting of certain criteria used to identify each stage (Griffin 1970:1). Since the Eastern Woodlands represent a large area from the eastern portion of the United States and Canada stretching to just in the western border of Ontario and

Minnesota, there is a range of dates which represent the three woodland stages.

Although the stages have remained, recent work has redefined the time frames associated with the stages. Anfinson originally suggested that in Minnesota the Early Woodland spans from roughly 500 B.C. to 100 A.D., the Middle Woodland from ca. A.D. 100 to A.D. 900, and the Late Woodland period from ca. A.D. 900 to A.D. 1700 (Anfinson 1979). However, in a more recent discussion of the Plains Woodland, Johnson and Johnson (1998:223) suggest that the Middle Woodland in Michigan, Minnesota and Ontario begins about 400 B.C. and lasts until A.D. 1000. The Late Woodland begins around A.D. 950 and lasts until proto-historic times in Ontario (Johnson and Johnson 1998:223). The dates offered by Gonsior (2003:23) suggest a late Middle woodland occurrence, possibly at the very beginning of the shift between early and late woodland. None-the-less, the presence of parallel-grooving at a site with Brainerd ware does suggest some type of affiliation between the two wares.

Table 3.9 Selected Radiocarbon dates outlining the temporal span of Brainerd ware pottery in Minnesota (after Gonsior 2003:21).

Site	Conventional Date B.P.
La Salle Creek (21HU26)	3180 +/- 60 3000 +/- 60
Blueberry Lake (21WD6)	2940 +/- 80 2933 +/- 44 2930 +/- 50
Roosevelt Narrows (21CA184)	2850 +/- 60 2710 +/- 60 2610 +/- 60 2480 +/- 60 2090 +/- 60
Cass Lake I (21IC352)	2600 +/- 60 2550 +/- 60
North Twin Lake (21MH5)	2455 +/- 50
Third River Borrow (21IC176)	2320 +/- 60
Midway (21BL137)	2100 +/- 40
Lake Carlos State Park Beach (21DL2)	1980 +/- 50 1880 +/- 50
Ogema-Geshik (21IC12)	1890 +/- 60
Felknor (21CA188)	1870 +/- 40

3.5 North Dakota Archaeology

Excavations at the Evans site in northwestern North Dakota revealed a multicomponent site yielding a large amount of pottery, lithics and faunal remains (Schneider and Kinney 1978). In their re-assessment of the Avonlea horizon and the types of pottery associated with the different phases, Meyer and Walde (n.d.) discuss the likely presence of both net-impressed and cord-roughened pottery at this site. Schneider and Kinney (1978:10) describe the 245 potsherds as representing five vessels. The fifth vessel, they describe as having small punctates "randomly placed over the surface" (Schneider and Kinney 1978:10). These small punctates could be a fabric impression (possibly bunched up net) (Meyer and Walde n.d.). Another sherd is described by Schneider and Kinney (1978:10) as being cord-roughened, with impressions extending from the lower left to the upper right. This description is similar to that of Hohman-Caine and Goltz (1995:118) of Brainerd horizontally corded. This evidence suggests that the original geographical distribution of Brainerd ware, offered by Minnesota archaeologists may in fact be too limited.

Three additional examples of net-impressed pottery from North Dakota are presented by more research completed by Dennis Toom (2000; 2003, Jackson and Toom 2004). Two of the sites are from the region surrounding Devils Lake in northeastern North Dakota. The first site, the Horner-Kane site (32RY77) is divided into two areas, the north site area and the south site area. There was no evidence of Brainerd ware in recoveries from the south site area, however Brainerd horizontally corded ware was recovered in the northern portion of the site (Toom 2000:5.57). Three rims sherds were found and described as having a straight rim profile with square or rounded lips. The thickness of the sherds ranged from 4.8 mm to 7.0 mm (Toom 2000:5.59).

The second site, the Bivouac site (32RY189) is also found near the shores of Devils Lake. Both types of surface treatment, net-impressed and horizontally corded Brainerd ware, were recovered from this site in addition to horizontally simple stamped, plain and unrecognized finishes (Jackson and Toom 2004:7.15-7.17). Eleven of 12 vessels were identified as Brainerd ware with five of the vessels identified as horizontally corded, three as net-impressed (Figure 3.6) and three as plain (Jackson and Toom 2004:7.15). Dates from both of these sites place the occupation around 1360 +/-

30 B.P. (OS-33550) and 1910 +/-50 B.P. (UCR-3200) which falls within the Middle Woodland period and coincides with the Middle Plains period of North Dakota (Jackson and Toom 2004:2.11).

The final site, the Kirschenman-III site (32SN247) lies south of Devils Lake along the James River. This site yielded one Brainerd horizontally corded rim sherd, described as having a straight profile with a round lip form (Toom 2003:6.22). The thickness of the sherd measured 4.6 mm at its maximum. A total of 10 dates were obtained from samples at the site and the average date for the associated Brainerd sherd was 1163 +/-26 B.P.

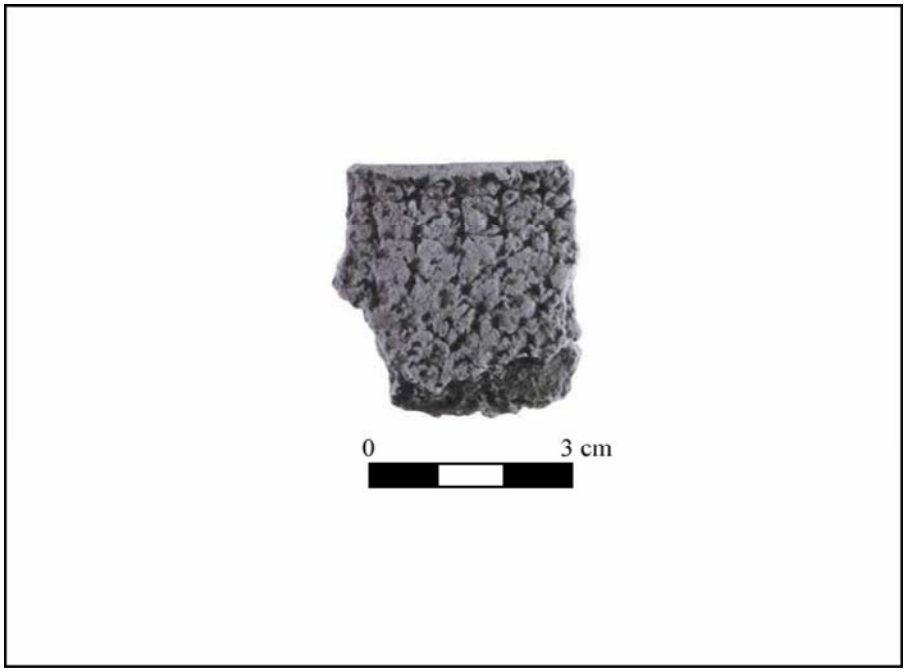


Figure 3.6 Example of net-impressed rim sherds from the Bivouac site (32RY189) in North Dakota (after Jackson and Toom 2004:7.13).

The presence of net-impressed and horizontally corded Brainerd ware in North Dakota should come as no surprise. As Toom (2003:6.22) points out, it is possible to extend the distribution of Brainerd ware west from central Minnesota. Johnson (1973) offered a description of pottery from the Slinger Mounds sites (21NR1) in the Red River valley that is similar to Brainerd Horizontally corded ware. The pottery that Johnson (1973) wrote of is associated with the Arvilla complex in the Red River Valley. It is no stretch then to broaden the distribution of Brainerd ware from central Minnesota, west to

the Red River valley, to the four sites found in the James River Valley in North Dakota (Toom 2003:6.22) and to the Evans site in northwestern North Dakota.

3.6 Summary

The main purpose of this chapter is to introduce the procession of archaeological research involving net-impressed pottery from Manitoba, Minnesota and (briefly) North Dakota. In Minnesota, there are a considerably higher number of sites with net-impressed pottery compared to southern Manitoba and (even less so) in North Dakota.

As a result, there is an imbalance between these areas in regards to information concerning the presence, attributes, time frame and cultural affiliations of net-impressed pottery. Beginning with Johnson (1971) in Minnesota, we see the initial description of the pottery as well as the designation of Brainerd net-impressed. After this, Lugenbeal (1978, 1982) classified the pottery first described by Johnson (1971) as a ware, maintaining the term Brainerd, and identifying two types. The first is the net-impressed type described by Johnson (1971), the second is the horizontally corded type. Subsequently, Hohman-Caine and Goltz (1995) summarized the information accumulated on Brainerd ware and assigned it to the Elk Lake culture. Through the use of radiocarbon dates, Hohman-Caine and Goltz (1995) determined that the Brainerd ware may originate in the Early Woodland period and span the Middle Woodland, terminating just before the Late Woodland. The research Gonsior (2003) completed is important to the study of Brainerd ware since he proposed that terminal Brainerd leads into the Avonlea horizon. This is important to archaeology in Canada where Avonlea sites are more common. On the basis of his study of the pottery from the White Oak site in Minnesota, Lugenbeal (1982) also suggested that there is a link between the two.

The suggestion that there is a link between Brainerd ware and Avonlea pottery is not new. When analyzing the Garratt site materials in Saskatchewan, Grace Morgan (1979:205) suggested that Avonlea was not an *in situ* development as previously suggested by Reeves (1970:171), but rather originated from the east, most likely in Minnesota and was taken west onto the plains.

In Manitoba, sites with net-impressed pottery are rare, but research by key individuals has resulted in some pivotal observations. Vickers (1948c; 1949; 1950)

assigned it to the Rock Lake focus and was the first archaeologist to speculate about the origins of net-impressed pottery. MacNeish (1958) expanded Vickers' (1948c; 1949; 1950) earlier ideas by incorporating data from eastern Manitoba. He ascribed the net-impressed pottery that was recovered from the Lockport and Cemetery Point sites to the Nutimik focus, and proposed that there was a similarity to the Rock Lake focus to the west (in the Tiger Hills region), as well as a link to the Malmo focus in Minnesota (MacNeish 1958).

Information from Toom (2000, 2003, Jackson and Toom 2004) also expands the geographical distribution of Brainerd ware west to the Devils Lake area of North Dakota. Like Manitoba, sites with Brainerd ware are rare, but with evidence of both net-impressed and horizontally corded types, the argument that Brainerd ware has a larger geographical distribution is strengthened.

This information is important to the arguments that will be presented in later chapters, more specifically, in regards to statements concerning the similarity of net-impressed pottery in Manitoba and Minnesota archaeological sites. Furthermore, the earlier ideas of Vickers (1948c; 1949; 1950) and MacNeish (1958) will be explored in greater detail. By addressing ideas about links between Manitoba and Minnesota assemblages, arguments pertaining to the appropriate nomenclature of net-impressed pottery will be formulated.

Chapter Four
Discussion of Brainerd ware and Avonlea Pottery Attributes

4.1 Introduction

This chapter serves to define the pottery attributes considered for this thesis, as taken from Brainerd ware and Avonlea pottery. Anfinson (1979:219) notes that an attribute is the smallest unit of analysis in most ceramic investigations representing natural (e.g. hardness) or intuitive (e.g. motif) classes of features. Similarly Rice (1987:472) defines an attribute as "a feature or characteristic of style, form or technology of an artifact that forms the basis for analysis, as in classification; also called a variable." Technological and stylistic attributes are recorded in this chapter. These attributes include (1) vessel shape; (2) lip profile; (3) rim profile; (4) temper; (5) surface finish (including strand thickness, knot size and mesh size); (6) twist of the cordage used in the surface finish; (7) method of manufacture (coiled or paddled); (8) decoration.

A description and explanation of each attribute is provided. Furthermore, the attributes evident on Brainerd ware and for Avonlea pottery are presented so as to build a comparative database with which to compare the pottery assemblages from the United Church, Lockport, Cemetery Point and Avery sites.

4.2 Vessel Shape, Lip and Rim Profile

Rice (1987: 480) defines the profile of the vessel as the outline or form of the vessel that shows the wall thickness and details of the lip, rim and base configurations. The rim is defined as the part of the vessel between the lip or margin and the side wall or neck of a vessel. The lip and rim can be used interchangeably especially if there is no discernable change between the lip and neck or wall (Rice 1987:481). According to Anfinson (1979: 221), the profile is known as the form and is defined as the shape of the vessel in cross section and can include vessel form (conoidal, sub-conoidal, or globular), lip form (flattened, rounded, pointed, exterior bevelled or interior bevelled) and rim form

(straight, everted, inverted, S-shaped, or rolled). The lip of the vessel is the boundary of the vessel opening, or the top of the rim (Anfinson 1979:222).

For the most part, net-impressed pottery sherds found in Minnesota and Manitoba are small and broken and the entire vessel profile is based on semi-reconstructed vessels. These reconstructions often alleviate the situation, but in most cases the vessel profile, rim and lip profiles are assessed individually.

4.2.1 Brainerd Vessel shape, lip and rim profiles

Brainerd ware vessel profiles are characterized as rounded conoidal or sub-conoidal (Hohman-Caine and Goltz 1995:119; Johnson 1971:52; Lugenbeal 1976:48) (Figure 4.1).

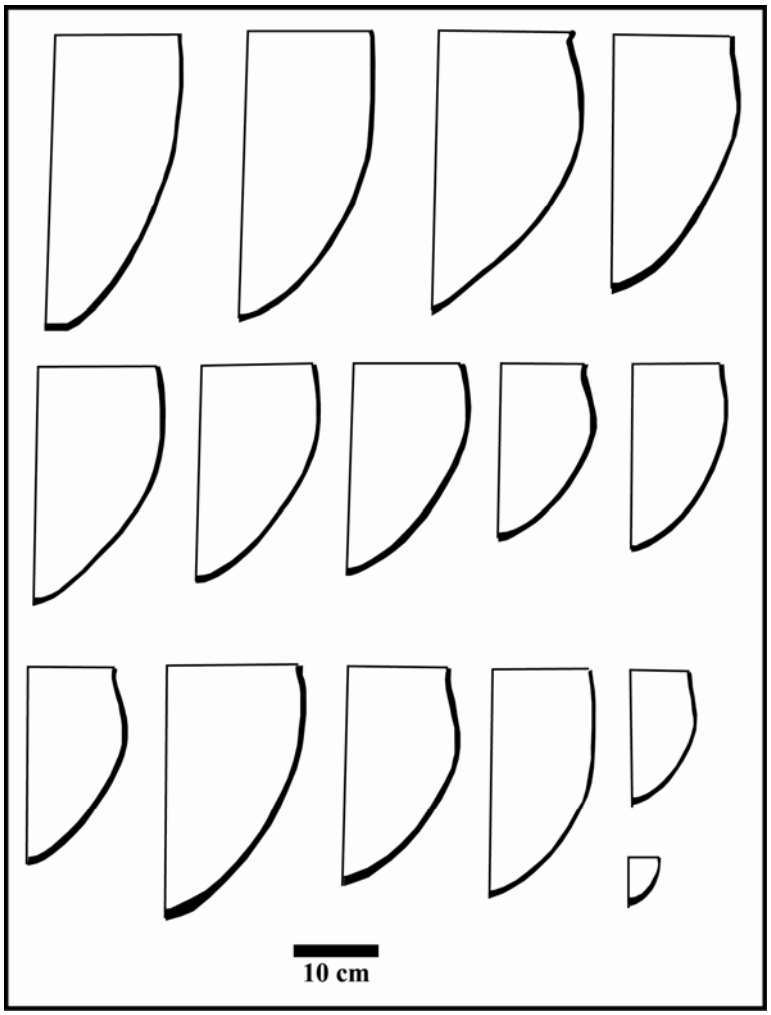


Figure 4.1 Comparison of Brainerd vessel profiles (after Hohman-Caine and Goltz 1995:118).

Johnson (1971:52) originally described Brainerd net-impressed vessels as having flat lips with straight rim profiles. Subsequently, Lugenbeal (1976:48) noted that lip-rim profiles are either slightly in-curved, straight, or very slightly flared (see Figure 4.2).

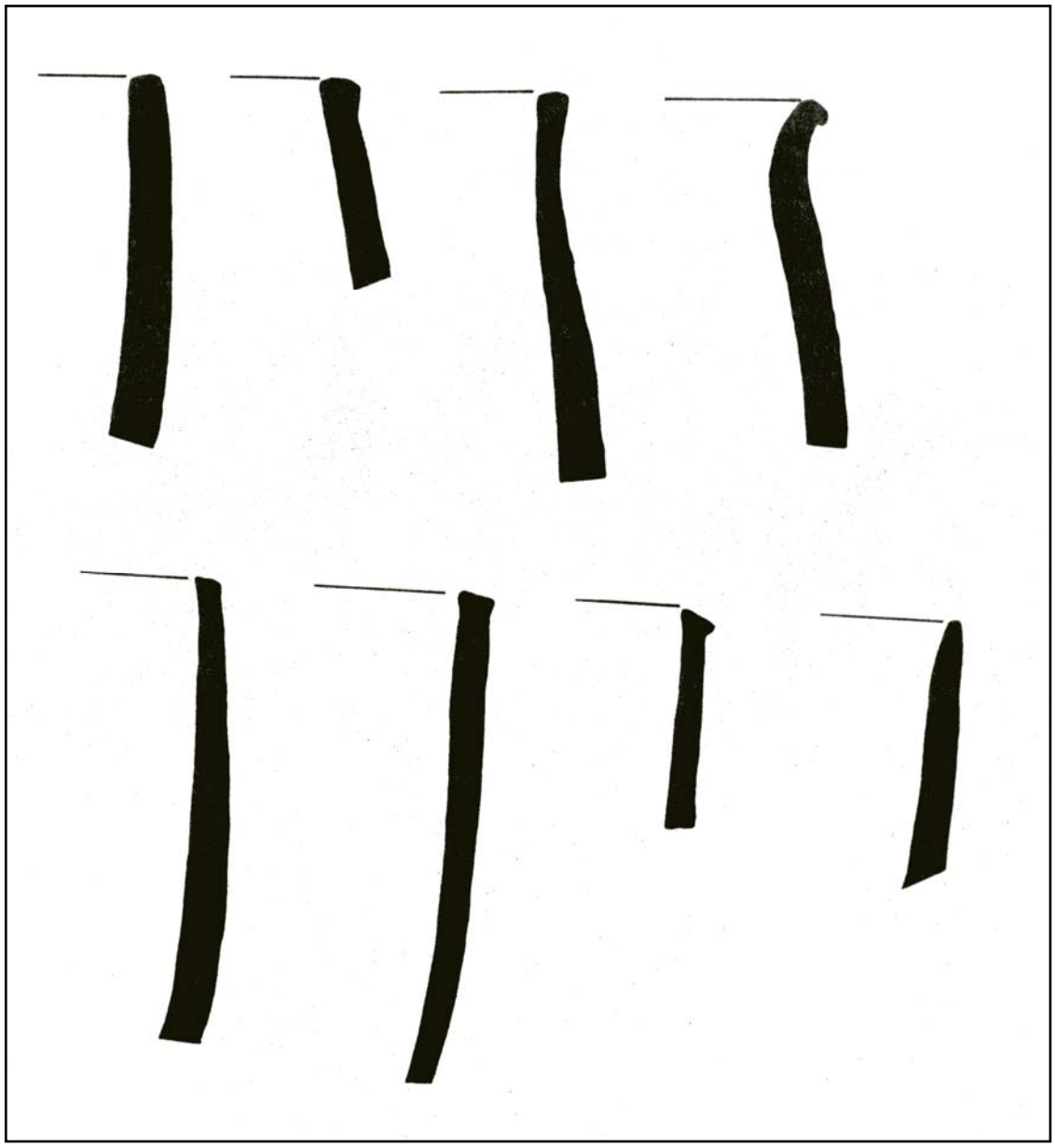


Figure 4.2 Representation of Brainerd lip and rim profiles (after Lugenbeal 1978:49).

Hohman-Caine and Goltz (1995:119) add to these earlier descriptions by stating that "lips are generally flat to convex and may be out-sloping, but rarely in-sloping. A slightly folded over edge is sometimes present on the exterior."

The thickness of Brainerd ware vessels is variable but falls into a somewhat standard range. Rim thickness is typically between 5 and 7 mm, with a range from 3.5 to 8 mm (Hohman-Caine and Goltz 1995:115; Johnson 1971:52). Hohman-Caine and Goltz (1995:115) also suggest that the body of most vessels ranges from 6 to 8 mm thick, with a variation of 4 to 9 mm and the bases are noticeably thicker, ranging from 8 mm to well over 10 mm. Gonsior (2003:20) mentions that a parallel-grooved terminal Brainerd vessel recovered from the Lake Carlos State Park Beach site had a straight rim profile and flat lips with the lip being thinner than the body, ranging from 3.5 to 5.5 mm in thickness. Directly below the lip, the sherd thickness ranged from 4.5 to 6.6 mm. Other body sherds in the collection analyzed by Gonsior (2003) ranged from 4.7 mm to 5.9 mm in thickness, indicating that earlier Brainerd vessels have thinner walls.

4.2.2 Avonlea Vessel Shape, Lip and Rim Profiles

The shape of Avonlea vessels is a conoidal form with either a rounded or pointed base (Dyck 1983; Johnson 1988; Walde and Meyer 2003). Byrne (1973:714) notes that some Avonlea vessels have a "bag" shape; while Landals et al. (2004) mention that other vessels have pointed bases.

The rim profiles of Avonlea vessels can either be vertical or turned slightly outward, as described by Ann Johnson (1988:137). "The lip maybe flattened or rounded. On some vessels, there maybe a slight constriction (neck) at the base of the rim" (Johnson 1988:137). Similarly, Landals et al. (2004:108) notes that net-impressed Avonlea vessels recovered from the Miniota site have flat lips that slanted towards the interior of the vessel. Morgan (1979:362) notes that the wall thickness of Avonlea pottery is quite uniform, approximately 8 mm near the rim, but thickening gradually towards the base. Morgan (1979:348) further states that the net-impressed pottery found at the Garratt site (the lips of ten vessels were analyzed) had rounded, flattened and pointed lips (Figure 4.3). Rims were insloping and straight. At the Garratt site, net-impressed sherds ranged from 3.9 to 9.6 mm (mean of 6.4 mm) in thickness, while the few parallel-grooved sherds recovered ranged from 6 to 8 mm (mean of 7 mm) in thickness.

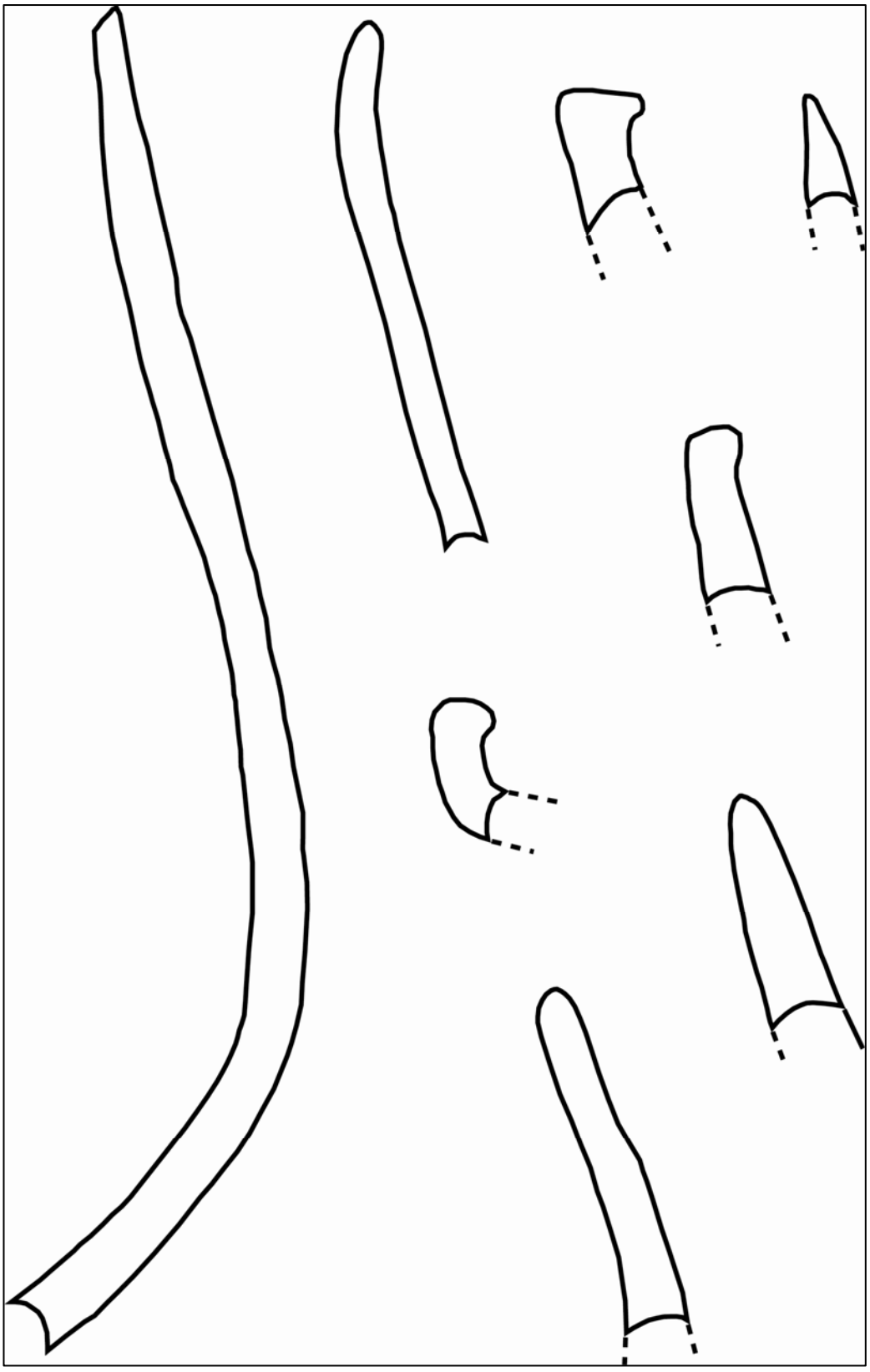


Figure 4.3 Rim profiles from level 6, the Avonlea component at the Garratt site (after Morgan 1979:348).

4.3 Temper

Temper is a material (mineral or organic) that is added to the clay to prevent shrinkage, facilitate drying and improve the working or firing properties (Anfinson 1979:224; Rice 1987:483). Temper also refers to the action of adding a material to the clay, to modify it, treating the clay in some way so that it can be properly manipulated (Rice 1987:407). For this thesis, temper is used as a noun.

4.3.1 Brainerd Ware

A common temper found in net-impressed pottery assemblages from Minnesota is grit (small particles of rock, usually eroded, decayed granite) (Anfinson 1979). Johnson (1971:53) initially noted that Brainerd net-impressed vessels have fine sand, which appeared quite sparse. Anfinson (1979:45) agreed with this description adding that in addition to the fine sand is a medium to coarse crushed granite. Hohman-Caine and Goltz (1995:115) mentioned in their study that a distinctive feature of Brainerd ware is the nature of the clay body since "it can be described as somewhat porous and frequently sandy in appearance."

4.3.2 Avonlea Pottery

Avonlea pottery exhibits temper consisting of crushed granite measuring up to 5 mm in diameter occurring in large amounts. Sand grains may be observed in the paste, but Johnson (1988:138) noted that the inclusion of the sand grains did not appear to be significant and may be an accidental admixture while the paste is being prepared. Morgan (1979) did observe that sherds recovered from the Garrett site had temper which was coarse (0.5 to 1.5mm in diameter) particles of quartz and/or feldspar (crushed granite).

4.4 Surface Finish

Surface finish in this analysis is classified as being different than decoration, although many archaeologists confuse the two attributes. For this thesis, surface finish of a vessel refers to the way in which the exterior and interior of the vessel have been

completed. Anfinson (1979:224) suggests that surface treatment is categorized by either the absence or presence of impressions on the surface.

4.4.1 Brainerd Surface Finish

Johnson (1971) first noted that Brainerd ware had a net-impression on the surface of the vessel. Upon further examination of the sherds, he stated that approximately 50% of the net-impressed sherds appeared to be fabric rather than net-impressed, but suggested that this was the result of superimposed net-impressions or dragging a net over the vessel's surface while still plastic (Johnson 1971:53) (Figure 4.5).

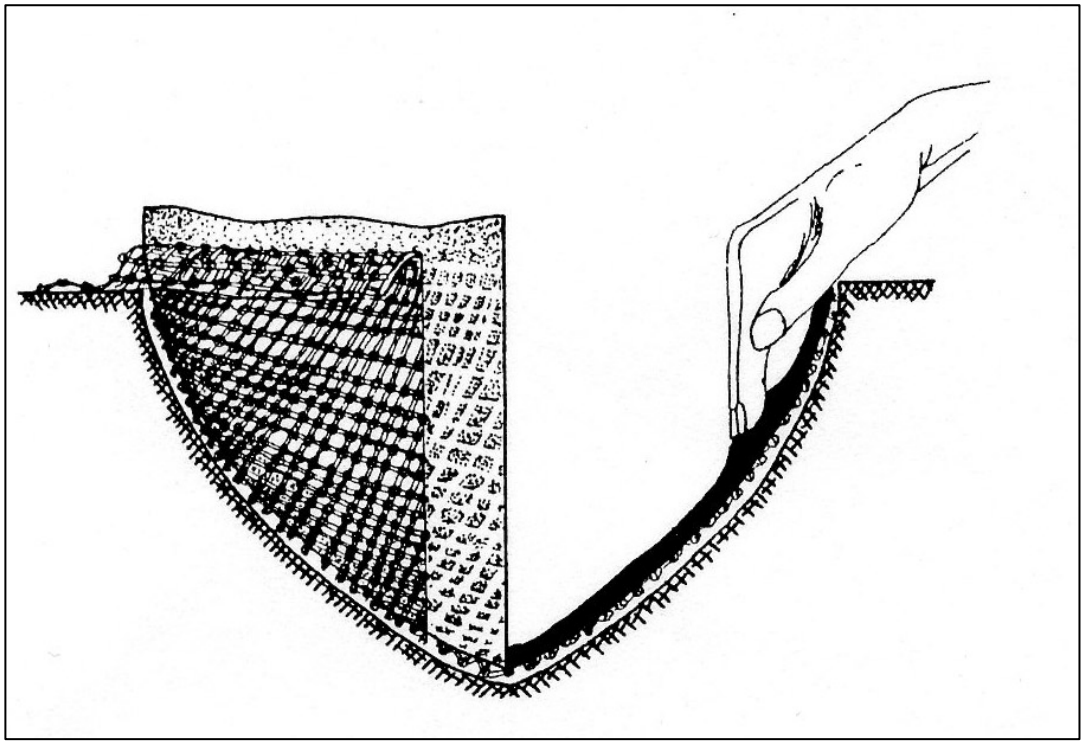


Figure 4.4 Illustration of superimposed net-impressions (after Neumann 1984:57).

Hohman-Caine and Goltz (1995:116) in a later study summarize the characteristics of net-impressing in their re-assessment of Brainerd ware. The size of the mesh measured around 6 mm, but the range of sizes varied between 5 and 6.5 mm. Knot size is close to 2 mm across the transverse axis with a range of 1.75 to 3 mm. The cord appeared to be composed of fine fibres, most likely nettle.

Lugenbeal (1978) also noted that there were sherds with horizontally-corded impressions found in association with net-impressed vessels. These cord marks are of a

fine thread and the twist of the cord is a Z-twist rather than an S-twist, which is found on later Blackduck vessels (Lugenbeal 1978: 47). Hurley (1979:6) discusses the difference in clockwise and counter-clock wise twisting of the cord used in pre-contact pottery. The most important aspect of the twisting of the cord is that intrasite and intersite comparisons can be made, and different cultural groupings can be recognized. In this case, Brainerd ware, a Middle Woodland pottery uses a Z-twist cord (counter-clockwise twist), whereas Blackduck pottery from the Late Woodland uses a S-twist cord (clock-wise twist) for the surface treatment.

Hohman-Caine and Goltz (1995:118) note that the orientation of the cord impressions is usually horizontal, but has been observed to slope roughly 5^{o} to 15^{o} to the right. Analysis of the application of the cords reveals that the impressions were produced by rolling a cord-wrapped-object over a smooth vessel surface. Frequent double impressions suggest a back and forth rolling action or overlapping. The cord is once again noted as a Z-twist and tends to be irregular in diameter, indicating a looser twist. The diameter of the cord ranges between 0.5 mm and 1.75 mm and appears to have been made of a coarser material, such as basswood or a similar hardwood bark. Hohman-Caine and Goltz (1995:116) also concur with the assessments offered by both Johnson (1971) and Lugenbeal (1978) and note that on rare occasions, smoothing occurs on sherds which results in almost total obliteration of the net-impressions.

A final surface treatment that may be attributed to late/terminal Brainerd is parallel-grooving as identified by Gonsior in 2004. Although parallel-grooved pottery is best known from Avonlea assemblages, it was found in association with Brainerd horizontally corded sherds at the Lake Carlos State Park Beach site (21Dl2) (Gonsior 2003). The parallel-grooved sherds included 4 rim sherds from one vessel. Analysis of the curvature of the neck sherds indicated that the vessel had a neck constriction (Gonsior 2003:20). Some of the sherds recovered exhibited a combination of horizontally corded and parallel-grooving decorations suggesting that they might be some type of transitional vessel between the Elk Lake culture and Avonlea (Gonsior 2003:20). This link will be examined in a later chapter.

4.4.2 Avonlea Surface Treatment

At the Miniota site (EaMg-12) in Manitoba, net-impressions were evident on the Avonlea pottery (Landals et al. 2004). Landals et al. (2004:107) noted that the net-impressions appear superimposed, suggesting that the net was bunched during application. Morgan (1979:348) also mentions that many of the sherds recovered from the Garratt site had been smoothed, thus obliterating the net-impressions on them. Dyck (1983:123) identifies three types of surface treatment present on Avonlea pottery: (1) net-impressed, (2) spiral-channelled, and (3) a smooth version of the first two types. Johnson (1988:137) outlines two distinct types of surface treatment; net-impressed and parallel-grooved, the latter of which is analogous to the spiral-channelled type identified by Dyck (1983). Klimko and Hanna (1988:29) recovered three vessels from the Avonlea type site, one of which was fabric impressed and the other two were paddled with either grooved paddle or a thong-wrapped paddle, thus producing horizontal grooving on the surface.

In southwestern Alberta, Quigg (1988) recorded the presence of pottery with knotted-cord impressions at an Avonlea bison kill site. At the Fantasy site in northern Montana, Tratebas et al. (1988:94) mentions the presence of parallel-grooved surface treatments on two vessels. In the southern edge of the mixed wood forest of Saskatchewan, Meyer et al. (1988:41) recognized that Avonlea pottery assemblages are dominated by textile-impressions produced by a net. Plain exteriors are also present, although rare.

Walde and Meyer (2003:139) identify three main types of surface treatments evident in Avonlea pottery assemblages. The first is net-impressed, which they call "Rock Lake Net/Fabric impressed". The name derives from the work that Vickers and MacNeish completed in the 1950s in southern Manitoba and encompasses the observations made by Byrne (1973:355). Meyer and Walde (n.d.) state that the use of the term fabric/net is appropriate since it is sometimes difficult to determine if a net or fabric was involved to form the surface treatment. Sherds exhibiting this type of surface treatment have been recovered from Manitoba (Landals et al. 2004), Saskatchewan (Hanna 1983; Meyer et al. 1988; Morgan 1979) and Alberta (Byrne 1973; Quigg 1988).

Meyer and Walde (n.d.) suggest that sites with net/fabric impressed pottery found in association with Timber Ridge Side-Notched points be assigned to the Lebret phase.

The second type of surface treatment identified by Walde and Meyer (2003:140) is what they call "Truman Ware". The name derives from the Truman Mounds where the parallel-grooved pottery was first documented by Robert Neuman in 1957 and 1958. In her analysis, Johnson (1988:137) observes that the parallel-grooving found on Avonlea vessels is characterized by equidistant linear lines and intervening troughs which encircle the vessel. Grooves are approximately 5 mm wide, with the width of any groove constant and the ridges between the grooves the same or slightly narrower. Parallel-grooved pottery has a southerly, grassland distribution, being found in south-central Saskatchewan, west to south-central Alberta, and south to the lower Yellowstone River (Meyer and Walde: n.d.).

The third type of surface treatment that Walde and Meyer (2003:141) characterize as Avonlea is what they call "Ethridge cord-roughened ware". First identified by Waldo Wedel in 1951, this type was further described by Alice Kehoe (1959). Kehoe (1959:240) described the surface treatment as having an impression of a cord-wrapped paddle. The cords ranged in thickness between 0.5 to 3.0 mm thick. These cord-wrapped impressions encompassed the entire vessel exterior. Vessels and sherds of this type pottery have been recovered in Alberta (Byrne 1973) and Montana (Quigg 1988).

Finally, there is one type of Avonlea pottery which shows up sporadically across the plains. The surfaces of these sherds are smoothed with no decoration, and the distribution is as broad as the fabric/net-impressed type (Meyer and Walde n.d.). Walde and Meyer (2003:143) identify this type as Avonlea Plain ware and suggest that its presence is sometimes evidence of the interaction between peoples of the Avonlea and Laurel cultures. More usually, they propose that, "…occasional plain-surface vessels appear to be an integral part of Avonlea assemblages" (Meyer and Walde n.d.).

4.5 Method of Manufacture

The method of manufacture refers to how the vessel was constructed. There are several ways to construct vessels including (1) pinching and/or drawing, (2) slab

modeling, (3) molding, (4) casting, (5) coiling and (6) throwing (Rice 1987:124). In regards to Avonlea and Brainerd pottery, the coiling method is of particular interest. Anfinson (1979:219) notes that coiling is a manufacturing method where the wall of the vessel is built up by superimposed rolls of clay. "Coiled vessels generally have a more uniform thickness and use less clay than vessels built by paddle and anvil or straight modeling technique" (Anfinson 1979:217). Rice (1987:127) notes that "coiling may refer to any of the three variants; ring building, segmental coiling, or spiral coiling."

4.5.1 Brainerd Ware

Although it is difficult to determine which variant of coiling was used to construct Brainerd ware, it is generally accepted by Anfinson (1979), Johnson (1971), Hohman-Caine and Goltz (1995), and Lugenbeal (1978, 1982) that coiling was the method of manufacture employed in constructing Brainerd ware. Hohman-Caine and Goltz (1995:118) suggest that observed evidence indicates that net-impressed vessels were constructed using coiling, but then further shaped and thinned while contained in a net bag for support. Lifting and repositioning of the vessel within the bag would produce the superimposed net-impressions on the upper portion of the vessel. The impact of this on the lower portion of the vessel would have been minimal, thus resulting in more frequent single net-impressions (Hohman-Caine and Goltz 1995:118). The result of this type of manufacture is that the vessels, when broken, tend to break along the lines of the coils thus producing "coil breaks," an identifiable trait when the pottery is examined.

4.5.2 Avonlea Pottery

Johnson (1988:138) notes that the method of manufacture of Avonlea pottery is still poorly understood, but does suggest that coiling is a possibility. Landals et al. (2004:107) during her analysis of the Miniota vessel suggested it was constructed in three stages. The base of the vessel appears to have been formed by coiling, then smoothed and placed into either a pit or a basin in the ground. The body of the vessel lacked any visible coil undulations and it was assumed to have been manufactured through slab construction. The shoulder and neck portion was most likely constructed in the same manner and before the clay dried it was placed in a net.

Morgan (1979:350) noted that sherds from the Garratt site displayed a distinct line of separation which follows an oblique plane of contact. This oblique line of contact on some sherds ran both horizontal and vertical which suggested that the vessels were constructed using a "piece building" technique as described by Shepard (1954:394). This method of construction involves modeling the vessel base from a single piece of clay, then adding overlapping patches of clay to increase the height of the vessel. This union of patches creates an oblique plane of contact both on horizontal and vertical plane according to Morgan (1979:351). The result of this type of manufacture produces a layered appearance when examining broken sherds. The layers indicate successive pieces of clay have been added. Sherds of a vessel produced in this manner do not display coil breaks.

4.6 Decoration

Decoration describes a purposeful application or displacement of the medium by the potter. Given that clay is a plastic medium, there is virtually no limit to the creation of motifs. Rice (1987) refers to decoration as a surface enhancement and identifies different means by which the potter can modify the vessel. Surface penetration and displacement are techniques where embellishments are cut away or impressed onto the surface of the clay. "They may either remove or displace the clay depending on how dry it is" (Rice 1987:144). Rye (1981:89-92) notes that there are several ways in which a potter may remove clay from a vessel. Cutting techniques include combing, incising, perforating, and piercing. Displacement techniques include impressing and rouletting. For the purposes of this thesis, both types of techniques are considered.

4.6.1 Brainerd Ware

Brainerd ware has been described (Johnson 1971:52) as lightly decorated compared to later Woodland vessels. However, although lip decoration is not present, the complete vessel from the Gull Lake Dam site was fairly elaborately decorated. Decoration included a pair of faintly impressed horizontal cord-wrapped object impressed lines placed 1.5 to 2 cm below the lip of the vessel. Accompanying this decoration were paired right oblique cord-wrapped object impressions spaced at 4 cm

intervals, which extended from the latter encircling line of decoration down to the shoulder (see Figure 3.3). Johnson (1971:53) also observed that the rim interior had single right oblique cord-wrapped dowel impressions measuring 0.5 to 1 cm in length, and spaced at 0.5 cm intervals around the interior of the pot.

During his re-examination of vessels from 10 archaeological sites in Minnesota, Lugenbeal (1978) documented that the same decorative attributes appear on both net-impressed and horizontally corded vessels (Table 4.1). "Not only do the same decorative attributes occur on both kinds of vessels but they occur in the same locations and in approximately the same frequencies" (Lugenbeal 1978:48).

In their re-assessment of Brainerd ware attributes, Hohman-Caine and Goltz (1995:120) propose that there are at least five decorative varieties. These include (1) Plain variety; (2) Cord-wrapped object stamped variety; (3) Angled stamp variety; (4) Incised variety; and (5) Reed stamped variety. The plain variety, as the name suggests, lacks decoration and is either net-impressed or horizontally-corded. The net-impressed vessels are most commonly of this variety. The Cord-Wrapped Object (CWO) stamping appears on the exterior surface of the vessel in the form of oblique, horizontal, or vertical stamps or in some combination. Decoration on the interior or lip is rare. This type of decoration occurs more commonly on the Horizontally Corded types (Hohman-Caine and Goltz 1995:120). The Angled stamp variety appears as a horizontal row of vertically oriented angled stamps (also known as punctates) on the exterior of the vessel. The stamp is usually made by using a square object, but rounded punctates have been observed. Interior or lip decoration, such as incised lines may be present as well. This variety shows no trend between the net-impressed and horizontally corded (Hohman-Caine and Goltz 1995:120).

The Incised variety exhibits oblique or vertical incised lines on the exterior of the vessel. Earlier studies illustrate that this variety seems to be more common on the net-impressed vessels (Hohman-Caine and Goltz 1995:120). The Reed stamped variety exhibits circular stamps made with a hollow circular object, most likely a reed, on the vessel exterior. The arrangement of the stamps occurs horizontally, vertically or in oblique rows and "seems to be confined to the horizontally corded type" (Hohman-Caine and Goltz 1995:120). Hohman-Caine and Goltz (1995) note that other decorative

attributes that occur on Brainerd ware, but in low frequencies. Unfortunately, they do not state the attributes, or in what frequencies they occur, nor do they offer any images of the five decorative varieties.

Table 4.1 Comparison of attributes profiles of Brainerd net-impressed and Brainerd Horizontally Corded vessels from 10 Minnesota sites (After Lugenbeal 1978:53).

Decorative Attribute	Net-Impressed	Horizontally Corded
Interior Decoration	(n=107)	(n=76)
Undecorated	92.5%	85.6%
Cord-wrapped-stick	0.9%	7.9%
Incised or linear stamp	0.9%	1.0%
Notched	0.9%	3.0%
Punctated	2.8%	0.0%
Miscellaneous	1.9%	3.0%
Lip Decoration	(n=107)	(n=76)
Smooth plain	72.0%	68.4%
Unsmooth plain	7.5%	13.2%
Nicked	6.5%	1.3%
Incised or linear stamp	11.2%	5.3%
Cord-wrapped-stick	1.9%	5.3%
Punctated	0.9%	2.6%
Miscellaneous	0.0%	4.0%
Exterior Rim Decoration	(n=107)	(n=76)
Undecorated	52.3%	50.0%
Smooth	1.9%	4.0%
Circ. Punctates	3.7%	2.6%
Angled or non-circ. Punctates	14.0%	14.5%
Incised or linear stamp	19.6%	15.8%
Cord-wrapped-stick	8.4%	13.2%

4.6.2 Avonlea Decoration

Morgan (1979:353-361) identified several different types of decoration on the pottery recovered from the Garratt site. The first vessel, which had a net-impressed surface treatment, had a band of vertically elongated punctates parallel to each other encircling the rim. The second vessel, which was also net-impressed, had two horizontal parallel incised lines encircling the rim. Below these lines, a single horizontal row of vertically elongated punctates were evident. Vessels three, four, five and six were all

net-impressed, but lacked decoration. Vessel nine had a parallel-grooved surface finish but no decoration. Morgan (1979) classified the other two vessels from the Garratt site as Laurel pottery, but these have been recently re-classified as Avonlea Plain ware (Meyer and Walde n.d.).

The Miniota vessel described by Landals et al. (2004: 108) exhibits a type of decoration much like the first vessel analyzed by Morgan (1979). The difference being, the Miniota vessel exhibits two rows of square punctates beneath the rim on the neck of the vessel. This decoration is similar to the Brainerd ware Angle Stamped variety identified by Hohman-Caine and Goltz (1995:120). Other types of decorations found at the Miniota site include round hollow punctates, keyhole punctates, and round pointed punctates (Landals et al. 2004:109). The "round hollow punctates" are similar to the Brainerd Reed Stamped variety identified by Hohman-Caine and Goltz (1995:120). At the Avonlea type site, Klimko and Hanna (1988:28) recovered three vessels. Two of the vessels exhibited cord-wrapped object impressions on the lip of the vessels. In southwestern Alberta, Quigg (1988:76) recovered pottery in an Avonlea component at the Many Fingers site. Similar to the vessel described by Landals et al. (2004) this vessel was also decorated with round, pointed punctates.

4.7 Summary

This chapter outlines the key attributes associated with Brainerd ware and Avonlea pottery in order to establish criteria with which to compare the pottery recovered from the Lockport, Cemetery Point, Avery and United Church sites.

Brainerd ware appears to have been made by coiling. However, the method of manufacture of Avonlea pottery is more of a mystery. A survey of the literature shows that not enough information has been obtained from Avonlea pottery to determine a concrete method of manufacture.

Avonlea vessels appear to have three shapes: (1) simple, elongated conoidal; (2) simple deep bowl; and (3) globular with a constricted neck. Brainerd vessels appear to be mainly conoidal, lacking the deep bowl and globular forms.

The surface finish of Brainerd and Avonlea vessels is complex. Brainerd ware has either a net-impressed surface or a rare combination of net-impressions on the lower

portion and parallel-grooving on the upper portion of the vessel. There are also horizontally-corded vessels. Avonlea vessels can have a net-impressed surface, a parallel-grooved surface or a cord-roughened surface. Avonlea vessels with a net-impressed surface have sparse decoration, which appears as punctates along the rim of the vessel either in single or multiple rows. Parallel-grooved vessels rarely have decoration and those that do have cord-wrapped tool impressions or a row of punctates. Brainerd ware exhibits five decorative varieties: Plain, Reed stamped, Cord-Wrapped object, Angled stamp, and Incised. Some of the varieties are similar to Avonlea, which have been recovered on the Canadian Plains and adjacent parkland.

Chapter Five
Pottery from the Lockport, United Church, Avery and Cemetery Point Sites

5.1 Introduction

This chapter presents the non-metric and metric attributes recorded for the rim and body sherds recovered from the Lockport (EaLf-1), United Church (DhLs-3), Cemetery Point (EaKv-1) and Avery (DhLs-1) sites. The total sample from the four sites consists of 396 horizontally corded body sherds, 11 horizontally corded rim sherds, 136 net-impressed body sherds and 4 net-impressed rim sherds for a grand total of 445 pottery sherds. Attributes, as discussed in Chapter 4, are presented in descriptive and tabular form. The results are organized according to site and the stratigraphic level from which the sherds were recovered. This chapter serves to identify the attributes from the pottery associated with each site and forms the foundation for the discussion in Chapter Six.

5.2 The Lockport Site

Aside from MacNeish (1958), Lugenbeal (1976:492) tabulated only net-impressed ware and Laurel ware at the Lockport site. Although noting that cord marked sherds are present, Lugenbeal (1976) does not indicate if any of the sherds are Brainerd horizontally corded. It is the opinion of the author that if indeed there were Brainerd horizontally corded sherds at the Lockport site, they would have initially been identified by MacNeish as Avery corded ware or by Lugenbeal as Brainerd horizontally corded. Upon examination of the sherds at the Lockport site for this study, there were no horizontally corded sherds observed.

In his analysis of the Lockport site pottery, Lugenbeal (1976:488) notes the presence of 2 Brainerd net-impressed rim sherds. This study ascertained that there were in fact 4 net-impressed rim sherds from levels 3, 5, and 10. Lugenbeal (1976:492) also only noted the presence of two Brainerd net-impressed body sherds, while the pottery examination for this study found 30 body sherds, a number closer to the initial count made by MacNeish (1958:171) of 58 sherds.

5.2.1 Net-Impressed Rim Sherds

MacNeish (1958:171) originally noted one net-impressed rim sherd recovered from the Lockport site. Unfortunately, he did not state which level the rim sherd came from. During this analysis, six net-impressed rim sherds are identified from the Lockport site. These six net-impressed sherds represent four vessels. Attributes for the six sherds are summarized in Tables 5.1 and 5.2 (Figure 5.1).

5.2.1.1 Lockport Level Three (30.4 to 60.9 cm below the surface)

Vessel one: This vessel has a straight rim profile (Figure 5.1, A). The exterior surface treatment is superimposed net-impressions (Table 5.1) and the interior of the sherd is smooth. The lip is flat and there is a small edge on the interior of the lip (Table 5.2). The paste is fine, well consolidated with a temper of medium, crushed granite. Temper particles range from 1.0 mm to 3.0 mm in diameter. This vessel is represented by sherd X-A-901 (Appendix A; Plate I).

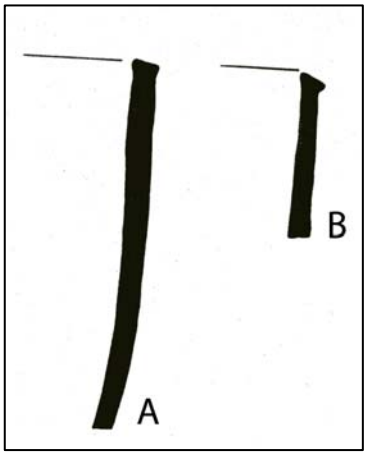


Figure 5.1 Rim profiles of the four vessels at the Lockport site (exterior to the right).

Table 5.1 Surface treatment attributes of rim sherds from the Lockport site.

Sherd	Level	Surface	Knot Size (mm)	Strand Size (mm)	Mesh Size (mm)
X-A 901	Level 3	SI	2.0	0.8	4.8
X-A 950a	Level 5	SI	n/a	n/a	n/a
X-A 950c	Level 5	NI	2.1	n/a	n/a
X-A 932	Level 10	SI	1.8	na	na

*SI-superimposed net-impressed surface/NI-distinctive net-impressed surface

Table 5.2 Profile attributes of rims sherds from the Lockport site.

Sherd	Rim Profile	Lip Form	Rim Thickness (mm)	Lip Thickness (mm)	Vessel
X-A 901	straight	flat, slightly rounded	5.5	8.6	1
X-A 950a	straight	rounded	6.8	5.9	2
X-A 950c	straight	rounded	na	5.7	3
X-A 932	straight	rounded/exterior bevel	n/a	Min7.9 Max 9.7	4

*Rim thickness is the measurement taken 25 mm below the lip.

5.2.1.2 Lockport Level Five

Vessel two: This vessel has net-impressions that are superimposed, obscuring the strand size, mesh size and knot size (Table 5.1). The lip is slightly rounded, with the very top of the lip slightly flattened and lacking decoration (Table 5.2) (Figure 5.1, A). The layered paste is generously tempered with medium grit, which appears to be crushed granite. Temper particle size ranges from 1.5 mm to 3.0 mm in diameter. This vessel is represented by sherd X-A-950a (Appendix A, Plate I), which is associated with the top of Zone C, a dark sandy layer scattered with charcoal.

Vessel three: The exterior and interior of this vessel has been smoothed, thus strand size and mesh size are not discernable (Table 5.1). There are faint impressions of knots, which measure 2.1 mm in thickness. The rim profile is straight with a rounded lip (Table 5.2) (Figure 5.1, A), but the sherd is too small to obtain a measurement 25mm below the lip. The paste is fine, and well consolidated with temper that is a medium sized grit, consisting of crushed granite with particle sizes ranging from 0.5 to 2.0 mm in diameter. This vessel is represented by sherd X-A-950c (Table 5.2) (Appendix A, Plate I), which was recovered from Level 5 and is associated with the top of Zone C, a dark sandy layer scattered with charcoal.

5.2.1.3 Lockport Level Ten (121.9 to 142.2 cm below the surface)

Vessel four: This vessel has a straight rim profile and an interior bevel with a rounded lip measuring 5.6 mm thick (Figure 5.1, B). The exterior of the sherd has net-impressions, with a knot size of 1.8 mm (Table 5.1). The bevel is 9.7 mm wide and bears vertical cord wrapped tool impressions. Below this, the sherd measures 7.9 mm thick. The paste is compact, well consolidated with a fine temper of sand which has a particle size ranging from 0.5 mm to 1.0 mm. This vessel is represented by sherd X-A-932 (Table 5.2) (Appendix A, Plate I), which was recovered from Level 10, associated with Zone F which consisted of brownish clay.

5.2.2 The Lockport Site Body Sherds

As a result of his analysis of the Lockport site, MacNeish (1958:171) stated that there were 58 sherds with net-impressions. This study revealed only 30 body sherds with net-impressions on their exterior surfaces (Appendix A, Plate II). MacNeish further noted that the net-impressed sherds came from levels 5 to 10 (MacNeish 1958:171). Upon closer examination of the collection, it is evident that net-impressed sherds were recovered from levels 2 and 4 as well as from levels 5 through 10. These levels correlate with Zone A and the bottom of Zone B of the geological stratum to the bottom of Zone F (MacNeish 1958:19-20). MacNeish (1958:142) also mentioned that the paste was the same as that of the Laurel ware found at the site. This temper consists of quartzite, mica, small pebbles, and sand. The particle size of the temper ranges from 0.5 mm to 6.0 mm with the average size being around 2.0 mm. The temper appears in medium amounts with about 50 pieces appearing in a cubic centimetre (MacNeish and Capes 1958:142).

5.2.2.1 Lockport Level 2 (15.2 to 30.4 cm below surface)

Level 2 consisted of a dark clayey layer with refuse, overlain with humus and is associated with Zone A. Two net-impressed sherds were recovered from this level, X-A 898a and X-A 898l. Both sherds have a fine compact, layered paste with sand as the temper. Superimposed net-impressions appear on the exterior surfaces of both sherds. Metric attributes were only obtained from X-A 898a because the surface of X-A 898l

had been smoothed over, thus obliterating knot, strand and mesh impressions. The knot size for sherd X-A-898a measures 2.0 mm, strand size 0.7 mm, and mesh size measures 6.1 mm thick. The thickness of X-A-898a is 6.2 mm, while sherd X-A 898l measures 4.6 mm thick.

5.2.2.2 Lockport Level 4 (30.4 to 60.9 cm below surface):

Level 4 consisted of layers of sand and silt scattered with refuse. It correlates with Zone B of the geological strata observed by MacNeish (1958:19-20). This level represents a series of flood deposits, suggesting a long period of time between the layers (MacNeish 1958:19-21).

Only one sherd came from this level, X-A 800b. This sherd measures 4.8 mm in thickness. It has a compact paste with sand as temper. The particle size of the temper averages 2.0 mm in diameter. The surface treatment consists of net-impressions that have been partially smoothed over. The sizes of the knots are 2.7 mm in thickness. Strand size is 0.9 mm in thickness and the mesh size is 3.3 mm.

5.2.2.3 Lockport Level 5 (60.9 to 76.2 cm below surface):

Level 5 is associated with the top of Zone C, which consisted of sandy dark refuse intermixed with a sandy, clay layer. Six sherds were recovered from this level, including two rim sherds that are conjoined (discussed in section 5.2.1.2) and four body sherds (X-A 907, X-A 1061, X-A 2342a, and X-A 2342b).

Sherd X-A 907 has superimposed net-impressions on the exterior surface. The remaining three sherds (X-A 1061, X-A 2342a and X-A 2342b) have distinctive net-impressions on the exterior; however, each sherd has been smoothed over at some point during manufacture which obliterated some of the strand and mesh impressions. Despite being smoothed, knot size could be measured on all four sherds. X-A-907 has a knot size that is 2.0 mm in diameter. Sherds X-A-1061 and X-A-2342a have a knot sizes that measure 2.5 mm in diameter, while sherd X-A-2342b has a knot size that is 2.2 mm in diameter. Sherd X-A-1061 has a strand size that is 0.8 mm thick and is the only sherd where strand size could be measured. The average thickness of the sherds is 6.5 mm. Mesh sizes were only recordable on three of the four sherds. X-A-907 has a mesh size

that measures 5.3 mm, sherd X-A-1061 has a mesh size that measures 6.2 mm, and sherd X-A-2342b has a mesh size that measures 6.0 m across the transverse. Each of the body sherds has a fine, compact paste with fine sand and crushed granite as temper. The average size of the temper particles is 2.0 mm in diameter.

5.2.2.4 Lockport Level 6 (76.2 to 91.4 cm below surface):

Level six is associated with the bottom of Zone C, encompasses all of Zone D and includes the top of Zone E. These layers have dark refuse, sand, and clay (MacNeish 1958:20). Zone D is described by MacNeish (1958:19) as consisting of a lens of sand. Three net-impressed body sherds were recovered from this level.

All three sherds have superimposed net-impressions on the surface. Knot size was only observable on sherd X-A-1064j, and measured 2.2 mm thick. The average thickness of the three sherds is 7.5 mm. Knot size was obscured on the other two body sherds and could not be measured (X-A 1094a and X-A 1094b). In addition, the strand size and mesh size are not recorded because the extent of the superimposed impressions on the surface of the sherds prevented accurate measurement. Sherd X-A 1064j has sand combined with fine crushed granite mixed with a compact paste. Sherd X-A 1094a and sherd X-A 1094b have temper consisting of coarse grit with large pieces of crushed granite mixed in the paste.

5.2.2.5 Lockport Level 7 (91.4 – 121.9 cm below the surface):

This level is associated with the top of Zone E, which consists of dark refuse, sand and clay (MacNeish 1958:20). Five sherds were recovered from this level.

One sherd (X-A 842l) has clear, distinct net-impressions on the surface and is an excellent example of a net-impressed sherd with some smoothing evident over the exterior (Appendix A, Plate III). This sherd has a coil break, thus the vessel was likely to have been manufactured by coiling. The remaining sherds have a superimposed net-impressed surface treatment, thus obscuring knot, strand and mesh impressions. Knot size was only recordable on two of the five sherds. X-A-842l has knot impressions that measure 2.2 mm thick, while sherd X-A-2316a has knot impressions that measure 2.5 mm thick. Sherds X-A 2316a and X-A2316e have a grit tempered, compact paste that

differs in colour to the rest of the sherds. The interior surface of the sherds is black while the exterior is a salmon pink.

5.2.2.6 Lockport Level 8 (91.4 – 121.9 cm below the surface)

This level is associated with the bottom of Zone E and has the same depth as level 7 (MacNeish 1958:20). The two levels were originally combined by MacNeish (1958); however exact provenience of the levels was never made clear. Two sherds were recovered from this level. Both sherds have grit temper consisting of large pieces of crushed granite mixed in a compact paste. The knot size for sherd X-A-1028b measures 1.8 mm thick, while knot size impressions on sherd X-A-1028f measures 2.5 mm thick. Mesh size was only observed on sherd X-A-1028f and measures 4.3 mm thick.

5.2.2.7 Lockport Aberrant Sherds

Thirteen sherds included in the Lockport collection are not associated with any cultural or geological level at the site. None-the-less, these sherds are included in this discussion because they exhibit net-impressions (Table 5.3). Two sherds were labeled as EaLf-1: 2a; therefore this designation was kept for this study. Of the 13 sherds, only five had superimposed net-impressions, while the remaining eight had clear, observable net-impressions on the exterior. Average knot size measures 2.1 mm thick, while average strand size measures 0.7 mm, and the average mesh size measures 5.4 mm across the transverse. Nine of the sherds had sand as the tempering agent, white the remaining four had grit temper. The paste was well consolidated and compact for all of the sherds.

Table 5.3 Attributes of aberrant net-impressed sherds from the Lockport site.

Sherd	Level	Thickness	Temper/Paste	Surface	Knot Size	Strand Size	Mesh Size
EaLf-1: 2a	unknown	9.5	sand, compact	SI	n/a	n/a	n/a
EaLf-1: 2a	unknown	5.7	sand, compact	SI	2.4	n/a	n/a
EaLf-1: 4	unknown	6.3	sand, compact	SI	n/a	n/a	n/a
EaLf-1: 9b	unknown	5.9	sand, compact	NI	2.4	0.7	5.1
EaLf-1: 9b	unknown	7.8	sand, compact	SI	2.8	0.6	6.0
EaLf-1: 9b	unknown	8.3	sand, compact	NI	2.3	0.8	5.8
EaLf-1: 10a	unknown	7.8	sand, compact	NI	2.3	0.8	4.0

EaLf-1: 10b	unknown	4.5	sand, compact	SI	2.3	0.7	3.6
X-A-1135a	Pit 1	6.2	sand, compact	NI	2.3	n/a	5.7
X-A-1135b	Pit 1	6	grit, compact	NI	2.5	n/a	n/a
X-A-2236a	unknown	6.5	grit, compact	SI	2.6	n/a	6.1
X-A-2236b	unknown	6.6	grit, compact	NI	2.4	n/a	n/a
X-A-2236c	unknown	7.9	grit, compact	NI	2.0	0.8	6.6

*SI-superimposed net-impressed surface/NI-distinctive net-impressed surface
**All measurements in millimetres

Two body sherds (X-A 1135a, X-A 1135b) were found in a pit feature (Pit One), which was excavated along with the test units at the Lockport site (Table 5.8). MacNeish (1958:20) interpreted the pit feature as initially being used for food storage. He further speculated that the storage pit was likely lined with bark while the lower section of the pit was filled with refuse, burned and then covered over with additional refuse. According to MacNeish (1958: 20), the various sand lenses of Pit One suggest that refuse was not created through continuous occupation, but instead resulted from re-use during a series of seasonal occupations.

The two sherds recovered from Pit One have distinctive net-impressions on the exterior surface but these impressions are partially obscured by smoothing as a result of the manufacturing process. Strand and mesh sizes are unobtainable. The paste is compact. It includes fine to medium sand temper mixed with crushed granite. The sherds have an average thickness of 6.0 mm. The average knot size is 2.4 mm.

5.3 United Church Site Net-impressed sherds

MacNeish and Capes (1958:141) originally noted in their article pertaining to the analysis of net-impressed pottery recovered from the United Church site that the sample consisted of 101 sherds. During this study, only 75 net-impressed sherds are evident in the collection (Appendix A, Plate IV). Unfortunately, there are no rim sherds associated with the United Church site that have net-impressions. MacNeish and Capes (1958:141) also mention that net-impressed sherds at the United Church site have temper consisting of quartz ranging in size from 0.5 mm to 1.5 mm, averaging 0.8 mm. During the analysis of the following sherds, MacNeish and Capes (1958) initial assessment of the temper proved to be accurate.

5.3.1 United Church Site Level 1 (0 – 15.2 cm below the surface)

This level is represented by 10 sherds (Table 5.4). The thickest sherd measures 10.0 mm (X-A 2510) while the thinnest sherd measures 5.3 mm (X-A 2605a). The average thickness is 6.7 mm. Sixty percent of the sherds (X-A 2743a, X-A 2743b, X-A 2803b, X-A 2570, X-A 2572, and X-A 2605a) have superimposed net-impressions on the surface, thus creating difficulty when attempting to measure strand and mesh size. The average knot size is 2.0 mm in thickness across the transverse. Strand size was measurable on only two sherds (X-A 2743a and X-A 2605a). Sherd X-A 2743 has a strand size of 0.5 mm, while sherd X-A 2605a has a strand size of 0.7 mm. Mesh is obliterated, and thus could not be recorded.

Four sherds (X-A 2510, X-A 2572, X-A 2605b and X-A 2639) have visible net-impressions. The knot size average is 2.1 mm in thickness. Strand size for two of the sherds is not measurable. Sherd X-A 2510 has strand size measuring 0.9 mm in thickness. Sherd X-A 2605b has a strand size of 1 mm in thickness. The mesh size is measurable for three out of the four sherds. The average mesh size is 5.6 mm in thickness. All 10 sherds have well consolidated paste with sand temper mixed with crushed granite.

Table 5.4 Attributes taken from level 1 net-impressed sherds.

Sherd	Level	Thickness	Temper/Paste	Surface	Knot Size	Strand Size	Mesh Size
X-A-2743a	Level 1	7.1	sand/compact	SI	1.5	0.5	n/a
X-A-2743b	Level 1	6.7	sand/compact	SI	1.5	n/a	n/a
X-A-2803b	Level 1	6.0	sand/compact	SI	1.3	n/a	n/a
X-A-2510	Level 1	10.1	sand/compact	NI	2.0	0.9	6.0
X-A-2570	Level 1	7.3	sand/compact	SI	2.5	1.0	5.0
X-A-2572a	Level 1	5.7	sand/compact	NI	2.1	n/a	6.5
X-A-2572b	Level 1	4.9	sand/compact	SI	3.0	n/a	n/a
X-A-2605a	Level 1	5.4	sand/compact	SI	3.0	0.7	n/a
X-A-2605b	Level 1	7.2	sand/compact	NI	2.0	1.0	4.0
X-A-2639	Level 1	6.3	sand/compact	NI	2.0	n/a	n/a

***** Measurements recorded in millimetres

****** SI – Superimposed net-impressed/ NI – clear Net-impressed

5.3.2 United Church Site Level 2 (15.2 to 30.4 cm below the surface)

Thirty-eight net-impressed sherds were recovered from this level (Table 5.5). The thickest sherd measures 8.4 mm in thickness and the thinnest is 4.8 mm thick. The average thickness of the sherds from level 2 is 6.6 mm. All of the body sherds have compact paste with fine sand and fine to medium crushed granite as a temper. Fifteen of the sherds have superimposed net-impressions on the surface. These sherds measure an average of 6.6 mm in thickness. All but two of the sherds (X-A 2641b and 2641g) could be measured for knot, strand and mesh thickness. Average knot thickness measures 2.1 mm.

The remaining 24 sherds have distinct net-impressions on the surface. All of these sherds have a compact paste with fine sand mixed with fine crushed granite as temper. The knot size is obtainable for all sherds except two. The average size of the knot measures 2.0 mm in thickness across the transverse. Strand size averages 0.8 mm in thickness, while the size of the mesh averages 5.7 mm in thickness.

Table 5.5 Attributes taken from net-impressed sherds found in level 2.

Sherd	Level	Thickness	Temper/Paste	Surface	Knot	Strand	Mesh
X-A-2690a	Level 2	5.8	sand/compact	SI	1.8	n/a	n/a
X-A-2690b	Level 2	7.9	sand/compact	SI	1.8	n/a	n/a
X-A-2723a	Level 2	6.8	sand/compact	SI	2	n/a	4.3
X-A-2723b	Level 2	7.4	and/compact	NI	n/a	n/a	n/a
X-A-2747a	Level 2	4.5	sand/compact	NI	1.5	n/a	4.8
X-A-2747b	Level 2	6.1	sand/compact	NI	2	n/a	6
X-A-2747c	Level 2	7.1	sand, compact	NI	1.1	0.7	3.3
X-A-2747d	Level 2	6.1	sand, compact	NI	1.1	n/a	n/a
X-A-2747e	Level 2	6.2	sand, compact	NI	0.7	n/a	5.4
X-A-2780a	Level 2	8.4	sand, compact	SI	2.2	0.7	n/a
X-A-2780b	Level 2	6.5	sand/compact	NI	2.2	n/a	n/a
X-A-2780c	Level 2	7.2	sand, compact	NI	2.4	n/a	n/a
X-A-2516a	Level 2	7.3	sand, compact	SI	2.5	n/a	n/a
X-A-2516b	Level 2	7	sand, compact	SI	2.5	n/a	n/a
X-A-2549a	Level 2	6.1	sand, compact	NI	2.7	0.7	5.2
X-A-2549b	Level 2	6.3	sand, compact	NI	n/a	n/a	n/a
X-A-2549c	Level 2	4.8	sand, compact	NI	2.5	0.9	6.3
X-A-2575a	Level 2	6.1	sand, compact	SI	2.4	1	6
X-A-2575b	Level 2	7.3	sand, compact	SI	2	n/a	6
X-A-2575c	Level 2	5.7	sand, compact	NI	2.2	n/a	n/a
X-A-2611a	Level 2	6.2	sand, compact	SI	2.5	n/a	n/a
X-A-2611b	Level 2	5.8	sand, compact	NI	2.2	n/a	n/a
X-A-2611c	Level 2	5.5	sand, compact	NI	2.4	0.7	n/a
X-A-2611d	Level 2	5.8	sand, compact	SI	2.5	0.6	n/a

Sherd	Level	Thickness	Temper/Paste	Surface	Knot	Strand	Mesh
X-A-2611e	Level 2	8	sand, compact	SI	2	n/a	n/a
X-A-2611f	Level 2	6.9	sand, compact	NI	1.6	n/a	n/a
X-A-2611g	Level 2	8.4	sand, compact	SI	2.2	0.7	4.6
X-A-2611h	Level 2	6.5	sand, compact	NI	1.9	n/a	n/a
X-A-2611i	Level 2	6.4	sand, compact	SI	1.8	n/a	n/a
X-A-2641a	Level 2	5.4	sand, compact	NI	1.3	n/a	n/a
X-A-2641b	Level 2	8.7	sand, compact	SI	n/a	n/a	n/a
X-A-2641c	Level 2	6.4	sand, compact	NI	2	0.9	n/a
X-A-2641d	Level 2	6.3	sand, compact	NI	1.7	n/a	5.8
X-A-2641e	Level 2	7.1	sand, compact	NI	2	0.7	6
X-A-2641f	Level 2	7.2	sand, compact	NI	2.1	n/a	6.4
X-A-2641g	Level 2	6.6	sand, compact	SI	n/a	n/a	n/a
X-A-2641h	Level 2	7.2	sand, compact	NI	3.2	1	6.8
X-A-2641i	Level 2	6.1	sand, compact	NI	2.3	1	7.3

* Measurement recorded in millimetres
** SI – superimposed net-impressions/NI – clear net-impressions

5.3.3 United Church site Level 3 (30.4 to 60.9 cm below the surface)

There are 26 net-impressed sherds recovered from this level (Table 5.6). The thinnest of these sherds measures 5.0 mm in thickness while the thickest measures 12.4 mm. This latter sherd most likely represents the base of a vessel. The average thickness of all the sherds recovered from level three is 8.6 mm. Twenty-four of the sherds have a compact paste with fine sand mixed with fine, crushed granite as temper. Sherd X-A 2522b (which measures 12.4 mm in thickness) and sherd X-A 2649e (which measures 8.6 mm in thickness) have a less compact paste with sand and crushed granite as temper. The particle size of these two sherds averages 3.0 mm in diameter. Ten of the sherds have a superimposed net-impressed surface with the remaining 16 having a distinctive net-impressed surface treatment.

Of the 10 sherds with superimposed net-impressions, the average knot size measures 2.0 mm in thickness across the transverse. The average mesh size is 5.6 mm thick. The strand size could not be measured due to the degree of dragging evident across the exterior surface. The 16 sherds with visible net-impressions have an average knot size of 1.7 mm in thickness. Average strand size measures 0.7 mm in thickness and the average mesh size measures 5.8 mm in thickness.

Table 5.6 Attributes taken from net-impressed sherds found in level 3 of the United Church site.

Sherd	Level	Thickness	Paste/Temper	Surface	Knot	Strand	Mesh
X-A-2667	Level 3	5.1	sand, compact	SI	2.2	n/a	n/a
X-A-2698	Level 3	6.1	sand, compact	SI	2	n/a	3.6
X-A-2729	Level 3	6.3	sand, compact	NI	1.5	0.5	4.5
X-A-2755a	Level 3	5.9	sand, compact	NI	1.9	0.5	8.5
X-A-2755b	Level 3	5	sand, compact	NI	1.4	0.7	4.9
X-A-2755c	Level 3	6.5	sand, compact	NI	1.3	0.8	4.5
X-A-2755d	Level 3	5.7	sand, compact	NI	1	0.8	4.1
X-A-2755e	Level 3	9	sand, compact	NI	0.9	n/a	n/a
X-A-2755f	Level 3	8.7	sand, compact	NI	n/a	1	n/a
X-A-2787a	Level 3	6.7	sand, compact	NI	2.3	0.8	5.6
X-A-2787b	Level 3	5.3	sand, compact	NI	1.9	n/a	n/a
X-A-2787c	Level 3	6.1	sand, compact	SI	2.3	n/a	n/a
X-A-2522a	Level 3	8	sand, compact	NI	1.7	n/a	n/a
X-A-2522b	Level 3	12.4	sand/grit	SI	2.4	n/a	n/a
X-A-2554	Level 3	6.4	sand, compact	SI	2	0.6	6.3
X-A-2618a	Level 3	5.4	sand, compact	NI	2.1	0.9	6.7
X-A-2618b	Level 3	5.6	sand, compact	SI	2.1	n/a	n/a
X-A-2649a	Level 3	7.1	sand, compact	SI	1.8	0.7	4.8
X-A-2649b	Level 3	6.1	sand, compact	NI	1.7	n/a	n/a
X-A-2649c	Level 3	5.8	sand, compact	SI	1.5	n/a	n/a
X-A-2649d	Level 3	6.1	sand, compact	NI	2.2	0.8	7.1
X-A-2649e	Level 3	8.7	sand/grit	NI	1.7	0.8	5.6
X-A-2649f	Level 3	6	sand, compact	SI	2	0.7	7.2
X-A-2649g	Level 3	6.7	sand, compact	SI	2.5	n/a	6.1
X-A-2649h	Level 3	6.6	sand, compact	NI	2	n/a	6.7
X-A-2649i	Level 3	5.6	sand, compact	NI	2	n/a	n/a

* Measurements recorded in millimetres
** SI – Superimposed net-impressions/ NI – clear net-impressions

5.3.4 United Church site Levels 6 and 7 (72.6 to 101.6 cm below the surface)

There was only one net-impressed sherd that came from levels 6 and 7 of the United Church site, which were combined by MacNeish and Capes (1958). It is unclear as to why the levels were combined, but catalogue sheets show that a sherd came from these two levels. According to MacNeish and Capes (1958:148), no pottery came from level 6 or level 7. It is most likely that this sherd came from level 6 as opposed to level 7 because in the field notes, MacNeish comments on the fact that pottery comes from levels 1 through 5 then fades into a pre-pottery occupation in level 6 (MacNeish 1958:5).

The sherd (X-A 2800) is 6.8 mm in thickness with a well consolidated paste. Temper is sand with particle size averaging 2.0 mm in diameter. The surface has net-

impressions that have been smoothed over, making the measuring of strand, knot and mesh size impossible.

5.3.5 The United Church Horizontally Corded Sherds

Included in this analysis of the United Church site is a new ware MacNeish and Capes (1958:137) encountered during their excavations and subsequently labelled Avery Corded ware. This ware bears a striking resemblance to Brainerd Horizontally corded ware from Minnesota. The assemblage of Avery Corded ware consisted of 377 sherds recovered from levels one through five, but the majority of the sherds came from levels 3, 4, and 5. These latter levels were considered to be the deepest parts of the site according to MacNeish and Capes (1958:137). There are 169 horizontally corded body sherds and 11 rim sherds from levels 3, 4, and 5. The similarity of the Avery Corded ware to Brainerd horizontally corded prompted a closer examination by the author.

MacNeish and Capes (1958:146) identified two sherds with a grooved paddle impression. These grit-tempered sherds were from level 3, and were unlike any of the other sherds at the site. Although these sherds are not identified in the catalogue, the description indicates a resemblance to Avonlea parallel-grooved pottery.

5.3.6 Horizontally Corded Rim Sherds

MacNeish and Capes (1958:138) originally noted that there were ten varieties of rim forms that show up in 16 rim sherds. However, upon closer examination, this study found that there were seven rim forms evident at the United Church site (Table 5.7)(Figure 5.2). Decoration originally described by MacNeish and Capes (1958:138) included interior punctates with a conical implement causing exterior nodes (bosses) on the exterior, with some of the lips marked with cord impressions, rims washed in red ochre and a rim sherd that had incisions, with no regular pattern, by a sharp instrument criss-crossing the cord impressions. Geographical relationships identified for this type of pottery included the Lockport Corded ware in southeast Manitoba as well as similarities to cord marked wares of the Malmo Focus in south-central Minnesota (MacNeish and Capes 1958:139).

Table 5.7 Attributes of rim sherds from the United Church site.

Sherd	Level	Lip Thickness	Rim Thickness	Rim Profile	Lip Profile	Strand Thickness	Vessel
X-A 2619b	3	7.2	9.3	straight	rounded	0.8	1
X-A 2652a	4	8.4	na	straight	slightly rounded	1	2
X-A 2703	4	8	exfoliated	straight	flat	1.1	3
X-A 2818	4	6.9	na	straight	flat	1	2
X-A 2734a	4	6.4	7.4	straight	flat	1	4
X-A 2795a	5	8.5	8.7	straight	rounded	1.4	5
X-A 2795d	5	6.6	na	straight	flat	1	2
X-A 2824	5	8.5	8.8	curves out	rounded	1.6	6
X-A 2534h	5	6.6	9	straight	rounded	1.7	1
X-A 2629	5	11.4	9.2	straight	rounded	1.6	6
X-A 2761	5	12	na	straight	flat	1.5	7

*All measurements taken in millimetres
** Rim thickness is a measurement taken 25mm below the lip

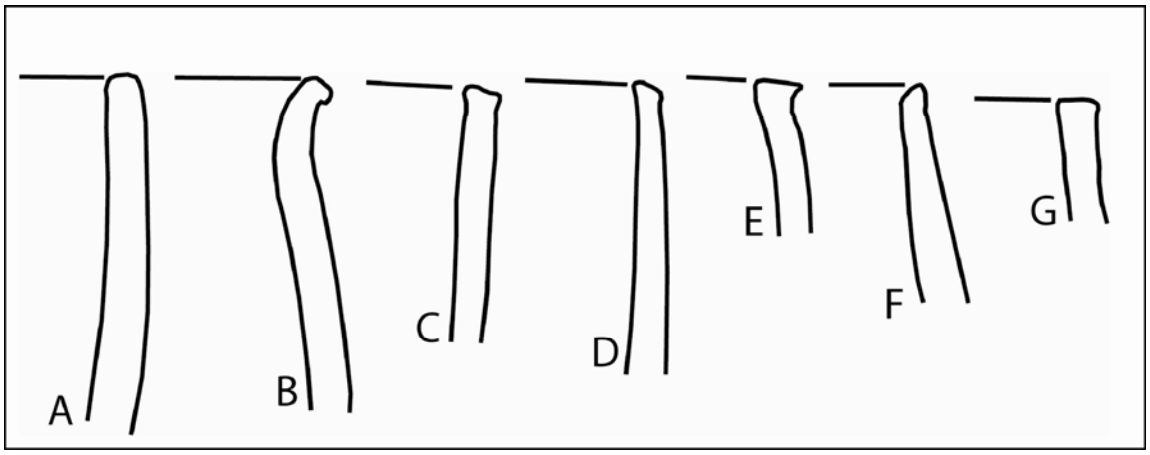


Figure 5.2 Rim forms from vessels found at the United Church site from this study.

5.3.6.1 United Church Level 3 (30.4 to 45.7 cm below the surface)

Vessel One: This vessel has horizontal corded markings that have been smoothed over, obliterating most of the surface treatment. The rim profile is straight, with a rounded lip (Figure 5.2, A). Cord thickness measures 0.8 mm in thickness and the surface is approximately 85% smoothed over. The paste is compact, well consolidated with a coarse temper of crushed granite. Particle size measures 1.8 mm in diameter. The lip measures 7.2 mm thick, whereas 25 mm below the lip it is 9.8 mm thick. This vessel is represented by sherd X-A-2619b from level three and specimen X-A-2534h from level 5 (Table 5.7) (Appendix A, Plate V).

5.3.6.2 United Church Level 4 (45.7 to 61 cm below the surface)

Four rim sherds recovered from level 4 represent three vessels.

Vessel two: This vessel has a straight rim profile and a lip that is flat (Figure 5.2, G). Cord-impressed lines appear evenly spaced across the lip at a right angle to the lip. The exterior surfaces of the sherds are decorated with horizontally placed circular bosses. The sherds bear a horizontal row of bosses located 12.8 mm below the lip edge. Cord thickness is 1.0 mm and the paste consists of sand, is compact and well consolidated. This vessel is represented by two sherds, X-A-2652a, X-A-2818, (Table 5.7) (Appendix A, Plate VI) from this level and one (X-A-2795a) from level five.

Vessel three: The rim of this vessel has a lip thickness of 8.0 mm. The lip is flat, with faint cord impressions across the surface, varying around 1.3 mm apart (Figure 5.2, G). The rim profile is straight, with the majority of the exterior surface of the sherd missing. Despite this, some impressions of cords remain and measure 1.0 mm in thickness. Situated 28.8 mm below the lip is evidence of two bosses on the interior, one paired with the remnant of a punctate, 27 mm below the lip. The paste is well consolidated and the temper is a mixture of sand and coarse grit. The particles measure 2.0 mm in diameter. This vessel is represented by sherd X-A-2703 (Table 5.7) (Appendix A, Plate VII).

Vessel four: This vessel has a straight rim profile with a lip thickness of 6.4 mm. The lip is flat, as well as smooth and slants towards the exterior (Figure 5.2, D). Two exterior bosses are evident with the remnant of a third 14.9 mm below the lip. The paste is compact and well consolidated and the temper is sand. Cord impressions on the exterior of the sherd measure 1.0 mm in thickness. This vessel is represented by sherd X-A-2734a (Table 5.7).

5.3.6.3 United Church Level 5 (61 to 76.2 cm below the surface)

Six rim sherds representing five vessels (Table 5.7) were recovered from level 5.

Vessel five: This vessel has a lip that is 8.5 mm in thickness. Measurement 25 mm below the lip surface is 8.7 mm thick. The rim profile is straight; with the lip being slightly rounded (Figure 5.2, C). Strand thickness on the exterior surface of the sherd measures 1.4 mm. The temper is sand with a paste that is well consolidated and

compact. Decoration on the surface of the sherd includes vertical incising, while across the lip there are parallel cord impressions, varying around 3 mm apart. This vessel is represented by sherd X-A-2795a (Appendix A, Plate IX).

Vessel six: This vessel has a lip thickness of 11.4 mm. The clay has been pushed over the exterior edge, rounding out the lip (Figure 5.2, B). On the outer corner of the lip there are evenly spaced vertical cord impressions. The exterior of both sherds have horizontal cording that slopes roughly 15^0 to the left and the strand thickness is 1.6 mm. Twenty-five millimetres below the lip, the sherd measures 9.2 mm in thickness. There is no other decoration on the surface of the sherd. The temper is sand, compact and well consolidated. Particles were smaller than 1.0 mm and thus could not be seen or measured. This vessel is represented by sherds X-A-2629 and sherd X-A-2824 (Appendix A, Plate X).

Vessel seven: This vessel has a lip thickness of 12 mm. As with X-A 2629, the clay has been flattened and folded over the outer edge of the lip (Figure 5.2, E). Cord impressions decorate the lip, but in a more oblique orientation compared to the other two vessels. There is the remnant of an interior punctate around 16.4 mm below the lip. This may be part of a row that produced exterior bosses. The outer surface of the sherd has horizontal cord markings measuring 1.5 mm in thickness. The temper is sand, and the paste is well consolidated and compact. This vessel is represented by sherd X-A-2761 (Appendix A, Plate XI).

Specimen X-A 2534h has been assigned to vessel one in level three. It has a lip thickness of 6.6 mm and a measurement of 9.0 mm 25 millimetres below the lip. The lip is rounded and smooth and the rim profile is straight (Figure 5.2, A). The exterior surface of the sherd has horizontal cord markings measuring 1.7 mm in thickness. The temper is sand that is well consolidated and compact (Appendix A, Plate V).

A sixth rim sherd (X-A 2795d) is assigned to vessel number two (Appendix A, Plate VI). It measures 6.6 mm at the lip. The rim profile is straight (Figure 5.2, F), with the lip being flattened and having evenly spaced incised lines across it. The surface of the sherd has horizontally oriented cord marks with strands measuring 1.0 mm in

thickness. The temper is a mixture of sand and grit, and the paste is well consolidated and compact. Particle size of the grit averages 1.5 mm in diameter.

5.3.7 United Church Horizontally Corded Body Sherds

The description of the Avery Corded ware offered by MacNeish and Capes (1958:138) is quite similar to the descriptions of Brainerd horizontally corded ware by Minnesota archaeologists. The ware is manufactured by coiling, with a temper of crushed rock (mainly quartz) ranging in size from 0.5 mm to 4.0 mm. In one cubic centimetre, 100 pieces of temper were counted making 8% of the paste (MacNeish and Capes 1958:137). The sherds range in thickness between 5.0 mm to 8.0 mm, with an average of 5.7 mm. The exterior finish consists of horizontal cord impressions. The cord, made of more than one strand of yarn, ranges from 1.0 mm to 2.0 mm in thickness, with a Z-twist (counter-clockwise). Decoration is present on the rim in the form of a row of horizontal bosses on the exterior. Some lips have cord impressions or incised lines along their surfaces (MacNeish and Capes 1958:138).

5.3.7.1 United Church Level 3 (30.4 to 45.7 cm below the surface)

From level 3 there were 101 body sherds that had horizontal markings on their exterior surfaces (Table 5.8) (Appendix A, Plate XII). The thinnest sherd is 3.8 mm thick (X-A 2667), while the thickest sherd is 13.3 mm in thick (X-A 2522c). Average thickness of all of the sherds is 8.3 mm. Orientation of the cording was predominately parallel, but 8% of the sherds have cords present in a criss-crossed "x" orientation, or as overlapping impressions. This criss-crossed orientation is evidence of the back and forth rolling action of a cord-wrapped dowel.

Thickness of the cord used on these sherds averaged 1.3 mm, with the thickest cord measuring 1.8 mm (X-A 2522b) and the thinnest cord on several sherds measuring 0.5 mm in thickness. The cord used for marking the surface is consistent with MacNeish and Capes' (1958:137) description, namely the cord has a Z-twist. The orientations of the cords slope at approximately 15^0 down in relation to the rim of the vessel. This is consistent with the description offered by Hohman-Caine and Goltz (1995:118) of horizontally-corded Brainerd ware.

The temper consists mainly of sand with some grit. In cases where sherds have only sand temper (46% of 101 sherds), the paste was well consolidated. Grit was used as temper in 34% of 101 sherds. The grit consists of crushed granite (particles of feldspar, quartz and mica). The average particle size measures 2.3 mm with a range between 1.0 mm and 4.7 mm in diameter. The paste is less consolidated and is not as compact, with some layers. A small percentage of sherds (10% of 101) have either sand mixed with grit. Eleven percent of the sherds are too small to analyze.

Table 5.8 Attributes of horizontally corded sherds from level 3 at the United Church site.

Sherd	Thickness	Strand Thickness	Temper/Paste	Particle Size
2522a	8.2	1.4	sand/well consolidated, layered	1.4
2522b	8.5	1.8	sand/well consolidated, layered	n/a
2522c	13.3	1.3	sand/well consolidated, layered	1.8
2522d	7.2	1	sand/well consolidated, layered	n/a
2522e	5.5	0.8	sand/well consolidated, layered	1.2
2522f	exfoliated	0.5	sand/well consolidated	1
2522g	10.1	0.9	sand/well consolidated	n/a
2522h	8.6	1	sand/well consolidated	1.8
2522i	9	1.4	Grit/medium crumbly layered	3
2522j	8.8	1.2	sand/well consolidated	2
2554a	11	1.1	sand/well consolidated	1
2554b	8.4	1.2	Grit/layered	2.1
2554c	6.7	0.9	sand/well consolidated	1.2
2582a	8.7	0.9	sand/ layered	1.3
2582c	exfoliated	1.4	sand/well consolidated	n/a
2582d	5.6	1	sand/ well consolidated	1.2
2618a	11.1	1.1	Grit/layered	1.5
2618b	9.4	1.4	Grit-sand/well consolidated	1.9
2618c	10.3-5.6	n/a	coarse grit/layered	3.1
2618d	9.7	1.7	sand/well consolidated	2.1
2618e	11.5	1.3	Grit/layered	2.1
2618f	9	n/a	grit/layered	2.6
2618g	9.7	1	sand/ well consolidated	n/a
2618h	7.2	1.3	grit/layered	2.3
2618i	9.0-11.1	1.4	grit-sand/layered	2.6
2618j	6.1	1.3	sand/well consolidated	n/a
2618k	9.8-10.8	1.2	sand/well consolidated	n/a
2618l	9.1-6.6	1.3	grit-sand/well consolidated	1.9
2618m	8.3	1	sand/well consolidated	n/a
2618n	8.9	1.6	grit/ layered	3.2
2618o	8.8	1.4	sand/well consolidated	n/a
2618p	exfoliated	1.2	grit layered	1.8
2649a	8.8	1.3	sand/well consolidated	n/a
2649b	8.4	1.1	grit/layered	1.4

Sherd	Thickness	Strand Thickness	Temper/Paste	Particle Size
2649c	exfoliated	1.2	grit/layered	11
2649d	7.9	1.5	sand/well consolidated	n/a
2649e	11.8	n/a	coarse grit	2.8
2649f	7	1.1	coarse grit	1.8
2649g	5.3	1	sand/well consolidated	n/a
2649h	exfoliated	1.6	sand-grit/layered	1.6
2649i	5.7	1	sand/well consolidated	n/a
2649j	11.4	1	grit/layered	2.3
2649k	9.5	1.1	grit/well consolidated	4.4-2.1
2649l	7.4	1.1	sand/well consolidated	n/a
2649m	exfoliated	1	sand/well consolidated	1.5
2649n	7.3	1.3	grit/well consolidated	2.1
2649o	7.4	1.2	sand/well consolidated	n/a
2649p	9.7	0.9	grit/well consolidated	1.9
2649q	9	1.6	grit/well consolidated	3.7-1.7
2649r	7.8	n/a	grit/well consolidated	2.8
2649s	12	1.5	grit/layered	1.75
2649t	6.8	1.2	sand/well consolidated	n/a
2649u	exfoliated	Na	too small	too small
2649v	exfoliated	Na	too small	too small
2649w	exfoliated	Na	too small	too small
2649x	exfoliated	Na	too small	too small
2649y	exfoliated	Na	too small	too small
2649z	exfoliated	Na	too small	too small
2649aa	exfoliated	Na	too small	too small
2649ab	exfoliated	Na	too small	too small
2649ac	exfoliated	Na	too small	too small
2649ad	exfoliated	Na	too small	too small
2649ae	exfoliated	Na	too small	too small
2667a	8.8	1.3	sand/well consolidated	n/a
2667b	3.8	1	sand/well consolidated	n/a
2667c	5.8-3.5	1.3	sand/well consolidated	n/a
2667d	4.8	1	sand/well consolidated	n/a
2755a	6.8	1.3	sand/well consolidated	n/a
2755b	10.1	1	Grit/layered	2.2
2755c	9.3	1.5	grit/well consolidated	1.7
2755d	5.2-8.6	n/a	grit/well consolidated	1.6
2755e	8	1.6	grit/coarse paste layered	2.5
2755f	7.6-8.7	1.7	grit/layered	2.8
2755g	6	1	sand/well consolidated	n/a
2755h	9.5	1.5	sand/well consolidated	n/a
2729a	exfoliated	1	sand/well consolidated	n/a
2729b	6	1.4	sand/well consolidated	n/a
2729c	exfoliated	1	sand/well consolidated	n/a
2729d	exfoliated	1.3	coarse grit/well consolidated	3.2
2729e	7.6	1.3	grit-coarse/layered	3.1
2787a	8.1	1	sand/grit layered	2.3
2787b	8.3	1.3	grit/ layered	3.4
2787c	7.8	1.2	sand/well consolidated	n/a

Sherd	Thickness	Strand Thickness	Temper/Paste	Particle Size
2787d	8.3	1.2	sand/well consolidated	n/a
2787e	7	1.2	sand/well consolidated	n/a
2787f	8.3	1.2	sand/well consolidated	n/a
2787g	8.8	1.3	sand/grit, well consolidated	2.6
2816a	8.9	1	sand/well consolidated	n/a
2816b	10.6	1.6	sand/well consolidated	n/a
2816c	9.9	1	sand/grit layered	1.9
2816d	6.7	1	sand/grit layered	1.5
2816e	exfoliated	1.6	sand/grit well consolidated	1.4
2816f	7.1	1	sand/grit well consolidated	2.2
2816g	6.2	1.6	sand/well consolidated	n/a
2816h	8.6	1.4	sand/grit well consolidated	2
2698a	7.6	1.3	sand with grit/compact layered	2.5
2698b	6	1	sand/well consolidated	n/a
2698c	10.9	1.2	sand/grit well consolidated	n/a
2698d	6.6	1	sand/well consolidated	n/a
2698e	7.7	1.2	sand/layered	n/a
2553a	10.7	1.3	sand/grit layered coarse paste	3.5

***** n/a refers to the fact that there were no noticeable particles to measure

5.3.7.2 United Church Level 4 (45.7 to 61 cm below the surface)

There are a total of 36 horizontally corded body sherds from level 4 (Table 5.9). The average thickness of these sherds is 8.3 mm, with the thickest sherd measuring 12.8 mm (X-A 2737c) and the thinnest sherd measuring 3.6 mm (X-A 2590h). The thickness of the strands ranges between 1.7 mm (X-A 2791j) and 0.9 mm on several sherds, with an average of 1.2 mm. Seventeen of the sherds have sand as a temper with a compact, well consolidated paste. Thirteen of the sherds have a mixture of sand and grit as temper with a compact paste and an average particle size that was 1.9 mm in diameter. Five of the sherds have a temper that is predominately coarse grit which has an average particle size of 2.2 mm in diameter.

Table 5.9 Surface attributes taken from horizontally corded body sherds from level 4 of the United Church site.

Sherd	Thickness	Strand thickness	Temper/Paste	Particle size
2529a	6.1	1.3	sand/well consolidated	Na
2529d	7.2	1	sand/layered	Na
2590a	7.4	1.5	sand/grit well consolidated	1.5
2590b	6.9	1.4	sand/grit well consolidated	1.7
2590c	5	1	sand - well consolidated	1.2
2590c	6.2	1	sand - well consolidated	Na
2590h	3.6	1	sand - layered	Na
2624a	8.5	1.2	sand - well consolidated	Na

Sherd	Thickness	Strand thickness	Temper/Paste	Particle size
2624b	9.8	1.5	course grit - layered	2.2
2624c	Exfoliated	0.9	course grit - layered	2.3
2653a	8.7	1	sand - well consolidated	Na
2653b	10.1	1	sand - well consolidated	Na
2653c	12.5	1.4	sand - well consolidated	Na
2653d	exfoliated	1.1	grit/sand - well consolidated	2
2653e	8.8	1.2	grit/sand - well consolidated	1.6
2737a	9.4	1	sand - well consolidated	Na
2737b	9.2	1.2	grit/sand - layered	2.5
2737c	12.8	1	course grit - layered	1.8
2737d	6.9	1.6	sand - well consolidated	Na
2791a	8.6	1.6	course grit - layered	1.8
2791b	8.9	1.6	sand - well consolidated	Na
2791c	7.7	1.2	course grit/sand - layered	1.4
2791d	9.4	1.2	course grit/sand - layered	2
2791e	11.1	1.2	course grit - layered	3
2791f	10.7	1.6	course grit/sand - layered	1.6
2791g	8.7	1.3	course grit/sand - layered	2.2
2791h	6.4	1.2	course grit/sand - layered	1.8
2791i	9	1.2	grit/sand - layered	2.3
2791j	7.7	1.7	grit/sand - layered	1.8
2821a	10.2	1.2	sand - well consolidated	Na
2821b	9.5	1.1	sand and grit	Na
2821c	8.4	1.1	sand - well consolidated	Na
2821d	exfoliated	1	sand - well consolidated	Na
2671e	8.3	1.4	sand/grit - layered	1.5
2671f	5.6	1.6	sand - well consolidated	Na
2671g	8.1	1.1	sand/course grit - layered	3

***** n/a refers to the fact that there were no noticeable particles to measure
**All measurements in millimetres

5.3.7.3 United Church Level 5 (61 to 76.2 cm below the surface)

In level five there were a total of 22 body sherds with a horizontally corded surface (Table 5.10) (Appendix A, Plate XIII). The average thickness of the sherds measures 8.8 mm with the thickest sherd (X-A 2794d) measuring 11.7 mm and the thinnest sherd (X-A 2794k) measuring 5.6 mm in thickness. The average strand measures 1.3 mm in thickness. Eleven of the 22 sherds have a sand temper with a compact, layered paste. The remaining sherds have a mixture of sand and grit temper with a compact paste. Average particle size of the grit temper measures 2.0 mm in diameter.

Table 5.10 Attributes taken from body sherds in level 5 at the United Church site.

Sherd	Thickness	Strand Thickness	Temper/Paste	Particle Size
2533a	exfoliated	1	sand - well consolidated	Na
2533c	exfoliated	1.5	sand/grit - layered	1.8
2595a	6.3	1.4	sand - well consolidated	Na
2628c	11	1.2	sand/bit of grit – layered	1.5
2739a	9.6	1.3	sand - well consolidated	Na
2739b	7.1	1.3	sand - well consolidated	Na
2739c	7.6	1.7	sand/grit – layered	2.1
2739d	10.7	1.1	sand - well consolidated	Na
2739e	exfoliated	1.5	sand/grit – layered	1.7
2794a	9.2	1.5	sand/course grit - layered	2.8
2794b	8.5	1.6	sand/course grit - layered	3.1
2794c	8.9-11.0	1	sand - well consolidated	Na
2794d	11.7	1.2	course grit/sand - layered	2.1
2794e	7.4	1.6	sand - well consolidated	Na
2794f	6.9	1.7	sand/grit - well consolidated	1.5
2794g	7.7	1.6	course grit/sand – layered	na
2794h	8	1.4	sand – layered	Na
2794i	11.2	1.6	course grit/sand – layered	2.3
2794j	9.1	1.2	grit/sand – layered	1.6
2794k	5.6	1.2	sand - well consolidated	Na
2658 (level 8)	9.8	1.2	sand – layered	Na
2682 (level 8)	9.4	1	sand – layered	Na

***** n/a refers to the fact that there were no noticeable particles to measure
**All measurements in millimetres

5.4 The Avery Site

Work at the Avery site was initiated by Chris Vickers. This involved a series of collections and excavations occurring in the mid 1940s. This work was in turn the basis of Joyes' (1969) masters' thesis. Logistics in acquiring the actual pottery collection for this study were difficult and in the end, only five boxes from the Vickers' collection were obtained from the University of Manitoba. These five boxes appear to have been removed from the larger collection analyzed by Joyes in 1969 and contained written labels that identified the sherds that were net-impressed. There is no provenience attached to the sherds, nor does information pertaining to how they were excavated appear to exist with the collection. Despite this lack of provenience, the Avery site is of particular interest to this study since sherds having net-impressions, horizontally corded and other sherds that are parallel-grooved were recovered. The horizontally corded sherds were labelled as Avery Corded ware, but upon closer examination, bear a striking

resemblance to Brainerd horizontally corded as well as parallel-grooved categorized as Truman Plain Rim ware (Joyes 1969:126) (Plate XVII).

Reference is made to the Besant phase at the Avery site as having Avery Corded ware (Joyes 1969:222). Joyes (1969:124) describes this surface finish as being made with a "cord-wrapped paddle wound with cords varying from 0.5 mm to 1.5 mm in width"(Plate XVIII). The cords, composed of more than one strand, are tightly twisted in either a clockwise (S-twist) or counter clockwise (Z-twist) fashion. These cord impressions were oriented either vertically or horizontally on the sherds. These sherds, notes Joyes (1969:123) have coil breaks, suggesting that the method of manufacture was coiling. This description of Avery corded ware at the Avery site is quite similar to the description of Brainerd horizontally corded.

Joyes (1969) analysed the majority of artifacts recovered from the Avery site. Although he does not mention net-impressed pottery, it appears that he subsumed the net-impressed pottery under a broader classification of fabric-impressed surface treatment. This is apparent in his discussion of the culture sequence at the Avery site. For instance, in his assessment of the Avonlea phase at the Avery site, Joyes (1969:226) notes that his examination of sherds from the Garratt site in Saskatchewan resulted in the identification of fabric-impressed sherds from a conoidal vessel. In fact, the Garratt site Avonlea sherds are net-impressed (Morgan 1979). It is apparent that Joyes simply included net-impressed pottery in his discussion of fabric-impressed sherds.

5.4.1 The Avery Site Collection

The loaned collection of Avery site pottery includes 223 horizontally-corded sherds and 35 net-impressed sherds. Among the horizontally corded pieces, 70 sherds were numbered. The rest had no identification. One box had "Avery #41 48E 10S Level 3 D-52" written on it while the other box had "D-52" written on it. Considering that 48E 10S was the designation of an excavation unit dug by Vickers, it is safe to assume that these sherds came from level 3 of that unit. In the box that had only "D-52" written on it, there is a sherd that has "Avery site Aug. 26/45". Despite the general lack of provenience information there is sufficient evidence to indicate that all the sherds in the 5 boxes were recovered from the Avery site.

There is no stratigraphic information associated with these sherds, and as Joyes (1969:22) points out there is no stratigraphy to the site, other than the natural A and B horizons. The levels were dug in 5 cm arbitrary levels to a depth of 42 cm and the matrix was sifted through ¼ inch wire mesh. Regardless of the lack of stratigraphic information, it is the presence of the net-impressed and horizontally-corded sherds at the Avery site that is of the greatest interest to this study.

5.4.2 Avery Net-Impressed Sherds

The box labelled "D-52" contained 35 net-impressed sherds. The average thickness of the sherds measures 6.1 mm, while average knot thickness measures 1.8 mm and mesh size averages 4.8 mm. The strand size measures 1.0 mm in thickness, in cases where it was evident on the surface of the sherd. All 35 sherds had a sand tempered paste that is compact and well consolidated, indicating that the method of manufacture was possibly by paddle and anvil. Particle size is not visible, thus it was not measured. Since none of the sherds were labelled, numbers were assigned arbitrarily by the author (Appendix A, Plate XIV) (Table 5.11).

Table 5.11 Attributes from net-impressed pottery recovered from the Avery site.

Sherd	Thickness	Temper/Paste	Surface	Knot	Strand	Mesh
1	exfoliated	sand/compact	SI	2	Na	na
2	5.2	sand/compact	SI	1.7	1	4.3
3	5.3	sand/compact	SI	1.3	Na	na
4	5.4	sand/compact	SI	2.3	Na	na
5	6.5	sand/compact	SI	1.3	1	3.5
6	7.3	sand/compact	SI	2	1	5.9
7	5.6	sand/compact	SI	2	Na	na
8	6.5	sand/compact	SI	1.8	Na	na
9	6	sand/compact	SI	1.7	Na	na
10	6	sand/compact	SI	1.7	1	3.4
11	7.7	sand/compact	SI	2	Na	na
12	6.9	sand/compact	SI	1.7	Na	na
13	5	sand/compact	SI	2	Na	na
14	7.7	sand/compact	SI	2.1	1	4.9
15	6.2	sand/compact	SI	2	1	5.3
16	5.7	sand/compact	SI	1.8	Na	na
17	6	sand/compact	SI	1.8	1	3.9
18	6.1	sand/compact	SI	2.1	Na	na
19	7.3	sand/compact	SI	2.3	Na	na
20	6	sand/compact	SI	1.7	Na	na
21	6.3	sand/compact	SI	1.3	Na	na

Sherd	Thickness	Temper/Paste	Surface	Knot	Strand	Mesh
22	6.2	sand/compact	SI	2	Na	na
23	6.3	sand/compact	SI	na	Na	na
24	5.4	sand/compact	SI	1.6	Na	na
25	6.2	sand/compact	SI	1.6	1	5.8
26	5.8	sand/compact	SI	1.8	1	5.9
27	6.2	sand/compact	SI	2	na	na
28	5	sand/compact	SI	1.3	na	na
29	5.5	sand/compact	SI	1.6	na	na
30	7.5	sand/compact	SI	1.6	na	na
31	7.3	sand/compact	SI	2.1	na	na
32	7.3	sand/compact	SI	1.6	na	na
33	5.1	sand/compact	SI	1.3	na	na
34	6.2	sand/compact	SI	2.4	1	5.1
35	3.5	sand/compact	SI	na	na	na

* SI – superimposed net-impressions
**All measurements in millimetres

5.4.3 Avery Corded Body Sherds

As stated earlier, there were 226 body sherds designated as Avery Corded (Appendix A, Plate XV) (Table 5.12, 5.13 and 5.14). In the box labelled Avery #41 48W/10S there are 138 body sherds. Among the labelled sherds in box D52, there are 70 body sherds, while the unlabelled sherds from box D52 total 18.

The body sherds have an average thickness of 7.7 mm with the thickest sherd measuring12.6 mm and the thinnest sherd measuring 4.8 mm in thickness. One hundred percent of the sherds have a horizontal cord-marked surface. The average strand thickness measures 1.3 mm in diameter and on 45 of the sherds there is apparent smoothing of the surface. Eleven of the sherds have horizontal cording similar to parallel-grooving. One sherd, labelled 1290, has a row of 6 punctates that were oriented in a vertical line in relation to the horizontal cording (Appendix A, Plate XVI).

Another sherd, labelled 3777, has a hole through the entire sherd, while a sherd labelled 1619 also has evidence of a punctate. Three sherds (one has label 41-17, the other two are not labelled) have traces of red ochre on the surface. The paste contains sand temper with a mixture of grit. The grit consists of crushed granite with particle size ranging from barely visible to 3.0 mm in diameter. Of the 244 body sherds analyzed, 63 have a visible mixture of grit and sand, while the remaining 181 of the sherds have sand

as the temper. The paste is in most cases compact. Joyes (1969:123) noted that the rim sherds exhibited coil breaks, suggesting that coiling was the method of manufacture.

Table 5.12 Attributes of sherds provenienced as "Avery #41 48W 10S level 3".

Sherd	Thickness	Strand thickness	Temper/Paste	Particle size
1	exfoliated	1.5	sand - layered, well consolidated	na
2	exfoliated	1.3	sand - layered, well consolidated	na
3	exfoliated	1.2	sand/grit - layered	1.3
4	10.7	1	sand/grit - layered, well consolidated	1.2
5	8	1.3	sand - layered, well consolidated	na
6	6.2	1.3	sand - layered, well consolidated	na
7	5	1.7	sand - layered, well consolidated	na
8	7	1.3	sand - layered, well consolidated	na
9	5.4	1.9	sand - layered, well consolidated	na
10	8.4	1.8	sand/grit - layered	1
11	7.3	1.4	sand/grit – layered	1.7
12	4.6	1	sand - layered, well consolidated	na
13	7	1.3	sand - layered, well consolidated	na
14	6.5	1	sand - layered, well consolidated	na
15	8.2	1	sand - layered, well consolidated	na
16	8.6	1.4	sand - layered, well consolidated	na
17	8.2	1.5	sand - layered, well consolidated	na
18	7.2	1	sand - layered, well consolidated	na
19	8.4	1.1	sand - layered, well consolidated	na
20	8	1.2	sand - layered, well consolidated	na
21	8.6	1	sand/grit - layered	1.3
22	7	1	sand - layered, well consolidated	na
23	7	1.2	sand - layered, well consolidated	na
24	6.1	1	sand - layered, well consolidated	na
25	6.6	1.1	sand - layered, well consolidated	na
26	8.5	1	sand - layered, well consolidated	na
27	10.3	1.5	sand - layered, well consolidated	na
28	7.3	1	sand - layered, well consolidated	na
29	6.2	1	sand - layered, well consolidated	na
30	7.1	1.2	sand - layered, well consolidated	na
31	7.7	1.5	sand - layered, well consolidated	na
32	7.2	1	sand/grit - layered	1.3
33	8.7	1.3	sand - layered, well consolidated	na
34	9.6	1.3	sand - layered, well consolidated	na
35	9.6	1.2	sand - layered, well consolidated	na
36	6.6	1.2	sand/grit - layered	1.2
37	9.4	1.5	sand - layered, well consolidated	na
38	5.6	1.6	sand - layered, well consolidated	na
39	9.8	1	sand - layered, well consolidated	na
40	5.7	1	sand - layered, well consolidated	na
41	8.3	1.2	sand - layered, well consolidated	na
42	7.7	1.4	sand - layered, well consolidated	na
43	8.8	1.2	sand - layered, well consolidated	na
44	7.8	1.2	sand - layered, well consolidated	na
45	7.4	1.3	sand/grit - layered	1.3

Sherd	Thickness	Strand thickness	Temper/Paste	Particle size
46	6.4	1.4	sand - layered, well consolidated	na
47	6.3	1.2	sand - layered, well consolidated	na
48	5	1.4	sand - layered, well consolidated	na
49	8.3	1.2	sand - layered, well consolidated	na
50	9.3	1.3	sand - layered, well consolidated	na
51	8.3	1.2	sand - layered, well consolidated	na
52	7.5	1.2	sand - layered, well consolidated	na
53	8.4	1	sand - layered, well consolidated	na
54	6.1	1	sand - layered, well consolidated	na
55	7.1	1.7	sand - layered, well consolidated	na
56	6.4	2.1	sand - layered, well consolidated	na
57	6.5	1.1	sand - layered, well consolidated	na
58	8.2	1.1	sand /grit - layered	2
59	8.9	1.5	sand - layered, well consolidated	na
60	6.4	1.2	sand - layered, well consolidated	na
61	8.7	1.2	sand - layered, well consolidated	na
62	4.8	1.4	sand - layered, well consolidated	na
63	5.9	1	sand - layered, well consolidated	na
64	7.8	1	sand - layered, well consolidated	na
65	6.4	1.2	sand - layered, well consolidated	na
66	7.1	1.5	sand - layered, well consolidated	na
67	7	1	sand - layered, well consolidated	na
68	6.5	1	sand - layered, well consolidated	na
69	8.2	1.5	sand/grit - layered	2.6
70	8.1	1.3	sand - layered, well consolidated	na
71	7.1	1	sand - layered, well consolidated	na
72	7	1.1	sand - layered, well consolidated	na
73	6.9	1.3	sand - layered, well consolidated	na
74	5.9	1.8	sand - layered, well consolidated	na
75	6.9	1.1	sand - layered, well consolidated	na
76	8.8	1	sand - layered, well consolidated	na
77	7	1	sand/grit - layered	1.5
78	8.1	1	sand - layered, well consolidated	na
79	7	1.1	sand - layered, well consolidated	na
80	6.3	1.5	sand - layered, well consolidated	na
81	6.8	1.7	sand/grit - layered	1.1
82	8.4	1.2	sand/grit - layered	1.2
83	6	1.4	sand - layered, well consolidated	na
84	9.9	1.7	sand - layered, well consolidated	na
85	6.5	1.4	sand - layered, well consolidated	na
86	7.7	1.3	sand - layered, well consolidated	na
87	6.8	1.4	sand - layered, well consolidated	na
88	8.6	1.1	sand - layered, well consolidated	na
89	8	1.3	sand - layered, well consolidated	na
90	5.8	1	sand - layered, well consolidated	na
91	6.9	1.2	sand - layered, well consolidated	na
92	11.2	1	sand - layered, well consolidated	na
93	5.3	1.6	sand - layered, well consolidated	na
94	6.4	1.4	sand - layered, well consolidated	na

Sherd	Thickness	Strand thickness	Temper/Paste	Particle size
95	7	1	sand - layered, well consolidated	na
96	10.3	1	sand/grit - layered	1.6
97	6.7	1	sand - layered, well consolidated	na
98	9.8	1.6	sand - layered, well consolidated	na
99	9.1	1.6	sand - layered, well consolidated	na
100	8.4	1.1	sand/grit - layered	1.1
101	4.8	1.2	sand - layered, well consolidated	na
102	8.6	1.1	sand/grit - layered	1.9
103	8.6	1.2	sand - layered, well consolidated	na
104	6	1.5	sand - layered, well consolidated	na
105	6.2	1.3	sand - layered, well consolidated	na
106	7.2	1.4	sand - layered, well consolidated	na
107	5.8	1	sand - layered, well consolidated	na
108	8.3	1.6	sand/grit - layered	2.3
109	6.7	1.6	sand - layered, well consolidated	na
110	9.6	1.2	sand/grit - layered	2
111	8.7	1	sand - layered, well consolidated	na
112	5.8	1.2	sand - layered, well consolidated	na
113	7.3	1.8	sand - layered, well consolidated	na
114	7.8	1.4	sand - layered, well consolidated	na
115	7.7	1.3	sand	na
116	9.3	1	sand - layered, well consolidated	na
117	6.9	1.3	sand - layered, well consolidated	na
118	7	1.4	sand - layered, well consolidated	na
119	5.9	1.6	sand - layered, well consolidated	na
120	8.3	1.3	sand/grit - layered	1.9
121	7.4	1.1	sand - layered, well consolidated	na
122	6.4	1	sand/grit - layered	1
123	6	1.3	sand - layered, well consolidated	na
124	6.5	1.3	sand - layered, well consolidated	na
125	6.9	1.1	sand - layered, well consolidated	na
126	7.2	1.4	sand - layered, well consolidated	na
127	8	1.3	sand/grit - layered	1.1
128	8.8	1.7	sand - layered, well consolidated	na
129	7.2	1.1	sand - layered, well consolidated	na
130	8.4	1.2	sand - layered, well consolidated	na
131	6.8	1.1	sand - layered, well consolidated	na
132	6.8	1.2	sand - layered, well consolidated	na
133	7.5	1.7	sand/grit - layered	1
134	8.6	1.1	sand - layered, well consolidated	na
135	6.9	1.4	sand - layered, well consolidated	na
136	6.9	1	sand/grit - layered	1.3
137	6.9	1.2	sand - layered, well consolidated	na
138	8.5	1.1	sand - layered, well consolidated	na

*na – refers to the fact that particle size was not visible

Table 5.13 Attributes of labelled body sherds Avery site box "D-52".

Sherd	Thickness	Strand thickness	Temper/Paste	Particle size
4180	11	1.5	sand - layered, well consolidated	na
3708	7.9-9.5	1.6	sand - layered, well consolidated	na
1591	11.2	1.3	sand - layered, well consolidated	na
4338	10.4	1.4	sand - layered, well consolidated	na
1589	7.6	1.5	sand - layered, well consolidated	na
2367	6.6	1.4	sand - layered, well consolidated	na
1290	7.2	1.5	sand - layered, well consolidated	na
1323	10	1.3	sand - layered, well consolidated	na
1284	9.6	1.5	sand - layered, well consolidated	na
640	5.8	1.3	sand - layered, well consolidated	na
3734	7.2	1.1	sand - layered, well consolidated	na
905	8.2	1.5	sand - layered, well consolidated	na
4361	Exfoliated	1.2	sand - layered, well consolidated	na
41-31	7.2	1	Sand/grit – layered	1.6
1618	8.2	1.3	sand - layered, well consolidated	na
1593	11.1	1.2	sand - layered, well consolidated	na
4308	10.4	1.3	sand - layered, well consolidated	na
1332	11.3	1.5	sand/grit - layered	1.8
4355	9.5	1	sand/grit - layered	2.3
888	10.4	1	sand/grit - layered	2
695	6.2	2	sand - layered, well consolidated	na
1184	8.3	1.5	sand - layered, well consolidated	na
1273	9.2	1.1	sand/grit - layered	1.5
2365	7.2	1.3	sand - layered, well consolidated	na
4181	9.6	1.2	sand - layered, well consolidated	na
41-17	9.9	1.3	sand - layered, well consolidated	na
41-18	7.5	1.7	sand - layered, well consolidated	na
4339	9.8	1.1	sand - layered, well consolidated	na
1244	9.7	1.3	sand/grit - layered	1.3
1270	9	1.5	sand/grit - layered	2.1
1344	8	1.4	sand - layered, well consolidated	na
4307	12.6	1	sand - layered, well consolidated	na
629	9.2	1.3	sand - layered, well consolidated	na
1333	8.5	1.3	sand - layered, well consolidated	na
642	9.8	1	sand/grit - layered	2.5
3066	9.7	1.3	sand - layered, well consolidated	na
727	5.8	1.5	sand/grit - layered	2
41-44	9.6	1.1	sand - layered, well consolidated	na
625	9.9	1.3	sand/grit - layered	2.2
1279	8.6	1.3	sand - layered, well consolidated	na
630	7.9-12.7	1.3	sand - layered, well consolidated	na
4331	7.2	1.4	sand - layered, well consolidated	na
1311	9.5	1.3	sand - layered, well consolidated	na
2627	7.9-9.5	1.4	sand - layered, well consolidated	na
4154	8.5	1.9	sand/grit - layered	1.5
1289	5.2	1	sand - layered, well consolidated	na
719	7.6	2.1	sand - layered, well consolidated	na
702	6.3	1.2	sand - layered, well consolidated	na

Sherd	Thickness	Strand thickness	Temper/Paste	Particle size
41-15	7.7	1	sand - layered, well consolidated	na
3970	7.8	1.4	sand - layered, well consolidated	na
3777	5.3-7.4	1.5	sand - layered, well consolidated	na
41-54a	7.2	1	sand - layered, well consolidated	na
1619	Exfoliated	1.1	sand - layered, well consolidated	na
643	8.8	1.1	sand - layered, well consolidated	na
673	6.9	2	sand - layered, well consolidated	na
2362	8.5	1	sand - layered, well consolidated	na
762	9.4	1.8	sand - layered, well consolidated	na
1309	9.6	1	sand/grit - layered	1.5
41-54b	6	1	sand/grit - layered	1.6
41-40a	7	1	sand - layered, well consolidated	na
41-40b	6.6	1.4	sand - layered, well consolidated	na
1245	7.2	1.4	sand - layered, well consolidated	na
41-39	8.2	1.5	Sand – layered, well consolidated	na
3959	7.8	1.4	sand/grit - layered	1.5
3795	5	1.6	sand - layered, well consolidated	na
1321	5.9	1.8	sand - layered, well consolidated	na
1860	5	1.1	sand - layered, well consolidated	na
4667	9.1	2	sand - layered, well consolidated	na
41-24	9.7	1	sand/grit - layered	1.5
4738	8.3	1.4	sand - layered, well consolidated	na

*na – refers to the fact that particle size was not visible.
**All measurements in millimetres

Table 5.14 Attributes of sherds with no label, Avery site box "D-52".

Sherd	Thickness	Strand thickness	Temper/Paste	Particle size
1	7.5	1	sand/grit - layered	1
2	7.4	1.1	sand/grit - layered	2.4
3	11.6	1	sand/grit - layered, well consolidated	2.5
4	8	1	sand/grit - layered, well consolidated	na
5	7	1.9	sand - layered, well consolidated	na
6	8	1	sand - layered, well consolidated	na
7	5.2	1.5	sand - layered, well consolidated	na
8	8.6	1.5	sand - layered, well consolidated	na
9	6.9	1	sand - layered, well consolidated	na
10	8	1.5	sand - layered, well consolidated	na
11	5.6	1	sand/grit - layered	1.3
12	5.7	1.5	sand/grit - layered, quartzite	na
13	5.2	1.3	sand - layered, well consolidated	na
14	7.9	1.4	sand - layered, well consolidated	na
15	8.8	1.6	sand - layered, well consolidated	na
16	7.2	1.1	sand - layered, well consolidated	na
17	7.6	1.2	sand - layered, well consolidated	na
18	7.6	1.2	sand - layered, well consolidated	na

*na – refers to the fact that particle size was not visible.
**All measurements in millimetres

5.5 The Cemetery Point Site

MacNeish (1958) does not elaborate on the number of sherds recovered from the Cemetery Point site. Close examination of the pottery from this site did not result in the identification of any sherds that had net-impressions on them. Instead, information concerning net-impressed pottery from the Cemetery Point site comes from Lugenbeal (1978). Lugenbeal (1978:51) noted that there were eight sherds recovered from the Cemetery Point site that had net-impressions on the surface. The distribution of these sherds paralleled the distribution of Laurel sherds identified at Lockport site. The sherds occurred in the lowest three levels of the site. Other than this description offered by Lugenbeal (1978), no additional information was found concerning net-impressed pottery and the Cemetery Point site.

5.6 Summary

This chapter summarizes the attributes of the pottery sherds found at the Lockport, United Church, Cemetery Point and Avery sties. At the Lockport and Cemetery Point sites, the analysis was limited to net-impressed sherds. This is due to the fact that no horizontally corded sherds were recovered. At the United Church and Avery site, analysis included attributes of both net-impressed and horizontally corded sherds. Interpretation of these attributes and their significance will be discussed in the following chapter.

Chapter Six
Interpretation of Data

6.1 Introduction

This chapter serves to compile and synthesize the information presented in the previous five chapters of this thesis. At the heart of the research question is the issue of whether or not the pottery assemblages recovered from the Lockport, United Church, Avery and Cemetery Point sites contain Brainerd ware or Avonlea pottery.

Brainerd ware is part of assemblages of the Elk Lake culture, which is centered in north-central Minnesota (Hohman-Caine and Goltz 1995). Diagnostic artifacts that have been found in association with Brainerd ware in Minnesota include projectile points considered to be from a Late Archaic or possibly Early Woodland context (Hohman-Caine and Goltz 1995:122). In their assessment of Brainerd ware dates, Hohman-Caine and Goltz (1995:124) suggest that the manufacture of Brainerd ware occurred between 3180 +/-60 B.P. and 1700 +/-70 B.P., beginning in the Early Woodland and disappearing in the late Middle Woodland period.

Avonlea pottery, on the other hand, has a spatial distribution that is positioned farther to the north and west, extending from western Manitoba through central and southern Saskatchewan, into eastern Alberta and south into Montana (Walde 2006a:191). Meyer and Walde (n.d.) have recognized the Avonlea horizon as characterized by four pottery wares (Walde and Meyer 2003; Walde 2006a:191). Pertinent to this discussion is Rock Lake Net/Fabric Impressed ware identified by Walde and Meyer (2003:139). It is found throughout a large area that extends from western most Manitoba through central Saskatchewan and southern Alberta (Landals et al. 2004; Morgan 1979; Walde and Meyer 2003:139; Walde 2006a).

This chapter will consider the pottery and associated artifacts as well as radiocarbon dates from the Lockport, Avery, United Church and Cemetery Point sites in southern Manitoba. At the Avery and United Church sites, the net-impressed pottery was called Rock Lake ware and associated with the Rock Lake focus by Vickers (1948c, 1949, 1950) and MacNeish (1958). At the Cemetery Point and Lockport site, MacNeish (1958) noted the similarities of the net-impressed pottery to the Rock Lake ware in the west, but did not label the pottery. He merely assigned it to the Nutimik focus. These terms have been abandoned within Manitoba archaeology, with Buchner (1980) deeming the Nutimik focus a non-cultural entity, and the Rock Lake focus being abandoned in favour of terminology adapted from the plains to the west.

Therefore, it is necessary to determine if the pottery found at each of these sites meets the criteria outlined by the Minnesota archaeologists, most notably Hohman-Caine and Goltz (1995), for Brainerd ware, or whether the pottery is an Avonlea ware. These are the only two cultural entities within the study area associated with net-impressed pottery. The attributes recorded from the pottery examined in this study will be compared to those attributes described by Hohman-Caine and Goltz (1995) for Brainerd ware. If it is ascertained that the attributes of the pottery assemblages recovered from Canadian archaeological sites are not coincident with those of the American assemblages, then it will be assumed that the collections are in fact associated with the Avonlea horizon and should be referred to as Rock Lake fabric/net-impressed ware as outlined by Meyer and Walde (n.d.) and Walde and Meyer (2003).

6.2 The Cemetery Point site

None of the net-impressed pottery reported to be present at the Cemetery Point site by MacNeish (1958) was found in the collections housed at either the University of Manitoba or the National Museum of Civilization in Ottawa. Information pertaining to this site, however, was acquired from the previous studies of the pottery completed by Edward Lugenbeal (1978:51). He described the net-impressed pottery as having the same stratigraphic position as the Laurel ware. The descriptions of the pottery offered by MacNeish (1958) and Lugenbeal (1976; 1978) indicate that the net-impressed pottery

that MacNeish (1958) assigned to the Nutimik focus, which is also found at the Lockport site, is similar to Brainerd ware.

Since Lugenbeal (1978:51) notes that net-impressed pottery was associated with Laurel ware in the same stratigraphic position (the lower three levels of the site), it is possible that the Brainerd ware at this site is a result of intercultural contacts. Nothing more can be extrapolated from the information concerning net-impressed pottery from the Cemetery Point site.

6.3 The Lockport site

A total of 36 net-impressed pottery sherds were recovered from levels 3 and 5 through 10 at the Lockport site. After analysing the body sherds, it is determined that the attributes meet the criteria for Brainerd ware as set out by Hohman-Caine and Goltz (1995). In their assessment of Brainerd ware in Minnesota, Hohman-Caine and Goltz (1995:117) observed that the knot size ranged in diameter from 1.75 mm to 3.0 mm across the transverse axis. At the Lockport site, when observed in this study, knot size ranged in diameter between 1.8 mm to 3.0 mm across the transverse axis. In most cases, the surface of the sherds had been smoothed over, thereby obscuring the actual size of the knot.

Hohman-Caine and Goltz (1995:116) also measured the mesh size of the net-impressions found on Brainerd ware. They observed that the mesh size was typically 6.0 mm, with a common range between 5.0 mm and 6.5 mm. Occasionally, they observed a range between 3.5 mm and 7.0 mm. At the Lockport site, the average mesh size measured 5.1 mm. The mesh sizes ranged from as small as 3.3 mm to as large as 7.2 mm. These measurements also fall within the parameters set out by Hohman-Caine and Goltz (1995:116) for Brainerd ware.

Strand size was another attribute that Hohman-Caine and Goltz (1995) recorded. They observed that the cordage used in the construction of the vessels was almost always Z-twist and was typically 0.6 mm in diameter; however a range of 0.5 mm to 0.8 mm was observed. At the Lockport site, cordage was originally described by MacNeish (1958:171) as being Z-twist (counter-clockwise) and ranging from 0.5 mm to 1.0 mm in diameter. When observed for this study, the strand size from pottery at the Lockport site

was found to average around 0.8 mm with a range of sizes from 0.6 mm to 1.0 mm and exhibiting a Z-twist to the cordage. These measurements fall within the range observed by Hohman-Caine and Goltz (1995) for Brainerd ware.

Rim sherds were also recovered from levels 3 and from 5 through 10 at the Lockport site. Analysis of the rim sherds suggests that they too are similar to Brainerd ware rim sherds in Minnesota. Johnson (1971:52) originally described Brainerd ware rim sherds as having a smooth lip surface. Johnson (1971:52-53) also noted that the rims are straight in profile, with flat lips. The exterior of the rim of one vessel has short, right oblique cord-wrapped dowel impressions, and the interior also has cord-wrapped dowel impressions (Johnson 1971:52-53). Lugenbeal (1978:48) concurred with Johnson's (1971) original description, and added that lip-rim profiles were either slightly in-curved, straight, or very slightly flared. Hohman-Caine and Goltz (1995:119) supplement these descriptions made by Johnson (1971) and Lugenbeal (1978) by noting that lips often had a slightly folded over edge on the exterior. Rim profiles were typically slightly in-sloping as well and often had a slight outward flare near the lip.

At the Lockport site, the rim profiles are straight. The lip form is either flat or slightly rounded and smooth. Four of the six rims have a folded over edge on the exterior. There is no decoration present on the exterior of the sherds. Five of the six sherds have superimposed net-impressions while one sherd has clear net-impressions on the surface. These attributes fall into the descriptions of Brainerd ware made by the Minnesota archaeologists (Hohman-Caine and Goltz 1995; Johnson 1971; Lugenbeal 1978). Based on these attributes, it is determined that the net-impressed pottery found at the Lockport site is Brainerd ware.

6.4 The United Church Site

MacNeish and Capes (1958) recovered net-impressed pottery from several levels at this site. As well, they (1958) excavated a horizontally corded type of pottery which they labelled as Avery Corded ware. These two types of pottery were recovered from the lower five levels of the site, which reached a depth of 75 cm (30 inches). MacNeish and Capes (1958:146) also describe two aberrant sherds encountered in level 3 at the United Church site. These two sherds were described as having grit temper and a

groove like paddle impression that was unlike that of any other of the sherds recovered from the levels.

This analysis determined that once again the pottery from the United Church site fits the criteria set out by Minnesota archaeologists for Brainerd ware. In contrast to the Lockport site, the United Church site has both the net-impressed and horizontally corded types of Brainerd ware.

The United Church site has a total of 75 net-impressed sherds. These net-impressed sherds have a knot size ranging between 1.0 mm and 3.0 mm. Although these measurements are slightly smaller than those obtained by Hohman-Caine and Goltz (1995) for Brainerd ware, the smoothing of a large portion of the sherds obscured the actual knot size. Strand size was also affected by the smoothing; however, on those sherds where strand size could be measured, the size range fell between 0.5 mm and 1.0 mm. This range is comparable to the sizes determined by Hohman-Caine and Goltz (1995). Mesh size of Brainerd ware can vary between 3.5 mm and 7.0 mm. At the United Church site, the mesh size ranges between 3.4 mm to 7.1 mm. This again falls within the sizes determined by Hohman-Caine and Goltz (1995). It is concluded then, that based on these metric attributes the net-impressed pottery from the United Church site is Brainerd ware.

Hohman-Caine and Goltz (1995:118) analyzed and described several attributes characteristic of Brainerd horizontally corded ware. They found that horizontally corded ware had cord impressions both on the exterior surface as well as the lip surfaces of vessels. The orientation of the cord was almost always horizontal, but occasionally sloped 5^{o} to 15^{o} downward to the right while a left slope was less common. Hohman-Caine and Goltz (1995:118) also noted that exterior smoothing was less common on the horizontally corded ware compared to net-impressed sherds. The cord impressions appear to have been created by rolling a cord-wrapped object over the smooth vessel surface. The frequent double impressions suggested to Hohman-Caine and Goltz (1995:118) that a back and forth rolling action was used to impress the vessels. Lugenbeal (1978:47) originally noted that the cord tended to be finer, with an opposite twist to that of Blackduck cord, which has an S-twist. The spacing of the cord is typically 1.5 mm to 3.0 mm with a range of 1.0 mm to 5.0 mm. The diameter of the

cord has been observed to be as small as 0.5 mm and as large as 1.75 mm (Hohman-Caine and Goltz 1995:118). Hohman-Caine and Goltz (1995:118) also noted that the cord is coarser than that used on net-impressed vessels.

At the United Church site, the horizontally corded sherds fit the description of Brainerd horizontally corded ware. A total of 159 horizontally corded sherds and 11 rim sherds were analyzed for this study. These sherds came from levels 3, 4, and 5 of the site. The average strand size measured on these sherds is 1.4 mm with a range of 1.0 mm to 2.1 mm. This range fits what Hohman-Caine and Goltz (1995) observed on Brainerd horizontally corded ware. The twist of the cordage is Z-twist, the same as Brainerd horizontally corded ware and as originally observed by MacNeish and Capes (1958:138). MacNeish and Capes (1958:139) also noted that spacing between the cordage measured between 1.0 mm and 8.0 mm. Alternatively Hohman-Caine and Goltz (1995) observed that the spacing between the cords on horizontally corded Brainerd ware ranged between 1.0 mm to 5.0 mm. Despite the spacing between the cordage on the United Church pottery, it is an acceptable range and is considered to be consistent with Brainerd horizontally-corded ware.

Based on the metric attributes observed in this study, it is determined that the horizontally corded pottery (originally termed Avery Corded ware) falls within the criteria set out for Brainerd horizontally corded ware.

6.5 The Avery site

The Avery site collection was divided and stored at several locations. Logistical issues prevented the entire sample from being examined for this thesis. Unfortunately, there were no field or catalogue records associated with the Avery site pottery examined in this study. Supplemental information concerning the pottery at the Avery site, other than the analysis completed on these sherds, is taken from Joyes' (1969) Master's thesis on the Avery site.

Evident at the Avery site are net-impressed, horizontally corded and parallel-grooved pottery. A portion of the pottery sample was collected by Chris Vickers in the mid 1950s. Another portion of the pottery was excavated by the University of Manitoba in the late 1960s. It was determined during these 1960s excavations that the Avery site

had no clear stratigraphy and so the excavation units were dug in 5 cm arbitrary levels (Joyes 1969:22). In his analysis of the Avery site materials, Joyes (1969:122) noted the presence of Avery corded ware and Truman Plain Rim ware.

The net-impressed pottery at the Avery site once again coincides with Brainerd ware attributes identified by Hohman-Caine and Goltz (1995). A total of 35 body sherds were measured during the present study. While all of the sherds have superimposed net-impressions, it was still possible to measure knot, mesh and strand sizes on the majority of the sherds. The average knot size measures 1.8 mm with a range between 1.3 mm and 2.3 mm across the transverse. Mesh size observed on the Avery site pottery averages 4.8 mm with a range between 3.4 mm and 5.9 mm. The strand size averages around 1.0 mm in diameter. Similar to the assemblages from the Cemetery Point, Lockport and United Church sites, the net-impressed pottery observed at the Avery site falls into the criteria outlined by Hohman-Caine and Goltz (1995) and should be considered as Brainerd ware.

The number of horizontally corded sherds (n=223) recovered from this site is much larger than the number of net-impressed sherds (n=35). It should be reiterated here that the collection analysed for this thesis was by no means complete.

The cordage of the horizontally corded sherds has a Z-twist. Several sherds have multiple impressions on their surface, evidence of the back and forth rolling motion of a cord-wrapped object. The average strand thickness measures 1.3 mm in diameter with a range between 1.0 mm and 2.1 mm. Several sherds have cord thicknesses that measure beyond the 1.75 mm that Hohman-Caine and Goltz (1995) recorded.

In his assessment of the Avery site potsherds, Joyes (1969:110) identified a cord-wrapped paddle impressed surface treatment evident on some of the body sherds. This surface treatment consisted of two strands of cord twisted either clockwise (S-twist) or counter clockwise (Z-twist) which were oriented either parallel or vertical to the observed coil breaks. This surface treatment was the second highest type collected from the site, giving a total of 20% of the assemblage (Joyes 1969:114). Unfortunately, it is not possible to confirm if the sample analysed for this thesis is, in any way a part of the same sample that Joyes examined in 1969.

The original description of Avery Corded ware comes from the pottery recovered from the United Church site by MacNeish and Capes (1958:137). Based on 31 rims sherds, attributes included straight to slightly out-flaring rims with flat or rounded lips with an overhang edge on the exterior. Thickness of the rims ranged between 4.0 mm and 8.0 mm, while thickness below the lip ranged between 6.0 mm and 10 mm. Coil breaks were observed on 4.1% of the sherds. Joyes (1969:124) observed that the cords ranged from 0.5 mm to 1.5 mm in diameter and were woven with an S-twist (clockwise), but on sherds analysed in this study, the twist of the cord was predominately Z-twist. The fact that Joyes (1969:124) observed an S-twist on the sherds also contradicts the findings of MacNeish and Capes (1958:138). Their observations of the United Church potsherds also indicate that the twist of Avery corded ware is predominately Z-twist.

Decoration of the Avery corded ware is rare; however, some sherds have a row of elongated punctates made by a sharp implement pointed upwards and placed along the rim. At the Avery site, Joyes (1969:124) observed a sherd that was decorated along the surface of the lip with a series of impressions produced by a scallop form implement. Joyes (1969:124) also offered the description of a partially reconstructed vessel found in the Melita locality of southwestern Manitoba. It was decorated with a row of bosses around the rim exterior, with a series of vertical incisions which cut along the obliquely corded surface. Comparisons of the Avery Corded ware were also made to sherds found in North Dakota in an attempt to determine spatial distribution (Joyes 1969:125).

Although in the sample obtained from the University of Manitoba for this study, there were no parallel-grooved sherds observed, Joyes (1969:126) recovered 16 rim sherds and 184 body sherds. The body sherds were described as being impressed with a grooved or thong-wrapped paddle creating a series of shallow grooves. There is no decoration present on any of the sherds, but the lips, in some cases, were flattened with the grooved or thong-wrapped paddle (Joyes 1969:129). This was also observed during this study on horizontally corded rim sherds from the United Church site. Commenting on spatial distribution, Joyes (1969:129) observed that the parallel-grooved pottery recovered from the Avery site, is identical to that recovered from the Truman Mound site in central South Dakota.

6.5.1 A Note on Terminology

It is determined then, based on metric analysis of the sample of horizontally corded pottery sherds found at the Avery site, and the original descriptions offered by MacNeish and Capes (1958) that the pottery that they termed Avery ware is the same as that which has been called Brainerd horizontally corded ware. It is proposed that the designation, "Avery ware", should be abandoned in favour of "Brainerd horizontally corded". This is because the latter term is well established in the archaeological literature. By proposing this new designation for the pottery in place of a traditional term, it is perpetuating a situation whereby the original Manitoba taxonomy is abandoned for other terms which have origins elsewhere, in this case from Minnesota. This practice has been a problem in Manitoba archaeology.

6.6 A Note on Manitoba Chronologies

The first archaeologist to establish a culture history chronology for Manitoba sites was Chris Vickers (1948c; 1949; 1950). His chronology incorporated sites from southwestern Manitoba. Later, MacNeish (1958) discussed the relationships between the cultures he developed and those identified by Vickers (1948c; 1949; 1950). MacNeish (1958) then formulated a cultural chronology for southeastern Manitoba.

The classification system employed by Vickers (1948c; 1949; 1950) and MacNeish (1958a; 1958b) had its roots in the Midwestern Taxonomic system published by McKern in 1939. McKern (1939:303) considered that in classifying archaeological units, one has to disregard the temporal and geographical distribution of artifacts and focus on the cultural aspects alone. Temporal and geographical assignment of the cultures will follow as the evidence builds. McKern (1939:308-310) outlined a hierarchical framework based on five archaeological units, *focus, aspect, phase, pattern,* and *base,* which in turn were used to categorize archaeological cultures.

The term *focus* is described as a cultural identity which encompasses similar cultural traits that re-occur either at one archaeological site or at different archaeological sites. If two *foci* are found to have similar cultural traits, when compared to each other, then these *foci* may be classed under the same *aspect,* the second archaeological unit. As an example of this McKern (1939:308) explains that a similar re-occurring

decorative pattern on pottery would serve to determine an *aspect* of similar *foci*, but the actual patterns employed on the potteries would serve to differentiate one *foci* from another. The term *phase* is used when there are similarly occurring aspects which can be grouped together on a more generalized level. McKern (1939:309) explains that decorative patterns may identify *foci,* and the details of these patterns determine *aspects.* The similar technique for ceramic ornamentation would be an indication of the particular *phase*. The *phase* may be characterized by a general burial practice, general pottery attributes, or general house-type features (McKern 1939:309). When several *phases* display complex, broadly general traits when compared to each other, there is said to be a *pattern.* This is the fourth archaeological unit. The re-occurring traits found in the *phases* suggest that there is some relation between them, and so they can be compared.

McKern (1939:309) compares two types of patterns; (1) the Mississippi pattern, and (2) the Woodland pattern, in terms of subsistence. The Mississippi pattern is characterized as having a pottery ware that is medium to fine in texture, largely shell-tempered and is characterized by incised, trailed or modeled decoration and exhibits a variety of shapes (McKern 1939:309). The stone tools include triangular chipped-stone projectile points, ungrooved axes and a relative importance of bone, antler, and shell. The Woodland pattern is described as pottery ware characteristically grit-tempered, granular in structure, with intaglio surface ornamentation effected on soft unfired paste by means of cords and/or other indenting tools, and a prevailing sub-conoidal shape. The stone tools are characterized as stemmed or notched chipped projectile points and cutting implements, and grooved axes (McKern 1939:309).

The most general of the taxonomic divisions is the term *base.* A *base* is the most broadly generally linked traits between two patterns, such as the Mississippi pattern and the Woodland pattern. In this example, both employ a nomadic hunting pattern which can be compared, and thus the term *base* is used to categorize the two.

This particular method of defining culture and creating culture chronologies invariably changed in the 1970s with the introduction of processual methods of archaeology, which abandoned the descriptive techniques for more scientific methods of describing culture.

The cultural sequences set up by Vickers (1948c; 1949; 1950) and MacNeish (1958) were based on artifact description and classification. In addition, importance was given to the definition of archaeological cultures and their position within the stacked chronology (Syms 1977:66). There was little study of other aspects of the culture, such as subsistence. While Vickers was concerned with the chronology of the south-central and southwest portion of the province, MacNeish placed more emphasis on the eastern part of southern Manitoba.

In 1970, Mayer-Oakes introduced a new taxonomic scheme based on the work of Willey and Phillips (1958). In this scheme, compared to McKern (1939), Willey and Phillips (1958:11) introduce "culture-historical integration" as the primary task of archaeology on the descriptive level of organization. In addressing the cultural sequence in southern Manitoba, Mayer-Oakes (1970:52) replaced the term *foci*, commonly used by Vickers (1948c; 1949; 1950) and MacNeish (1958), with the term *phase*, which he stated as being "used to signify the archaeologist's interpretation that all things belonging to a given phase 'belong together' in a cultural sense. Most often this entity is based on material cultural typological similarities." As well, the cultural names that Vickers (1948c; 1949; 1950) and MacNeish (1958) used in their chronologies began to disappear as a result of information taken from regions adjacent to southern Manitoba. For example, Mayer-Oakes (1970) combined what MacNeish (1958) had called the Anderson and Nutimik foci into what is now known as the Laurel phase (Syms 1977:68). In his work on the Avery site in the early 1970s, Joyes also disregarded the earlier cultural classifications of Vickers and MacNeish, using instead terminology from the west such as Avonlea and Besant.

As a result, the older Manitoba scheme was abandoned. By adopting Mayer-Oakes' approach archaeologists were led away from studying aspects of the Rock Lake focus. This thesis is no exception. While keeping with tradition, the author maintains that net-impressed pottery found in the Canadian parklands should retain the name "Rock Lake" rather than Brainerd net-impressed due to subtle differences in the surface treatment, method of manufacture, and decoration. However, the abandonment of Avery Corded ware as labelled by MacNeish and Capes (1958:131) for the adoption of Brainerd horizontally corded ware creates a situation that in science is rarely practiced

but in archaeology seems to be commonly carried out. In the sciences, such as biology, when a new species is discovered, the first name given is the name that has priority. Archaeologists, on the other hand, seem to focus on the culture from a regional perspective. People often identify and label one type of item recovered from one context without acknowledging earlier research which may have already named the artifact or even archaeological entity. The result is that the same material culture may be referred to by different names in neighbouring areas. An excellent example is in this case where Avery Corded ware has been shown to be synonymous with Brainerd horizontally corded in surface treatment, method of manufacture, and decoration. This situation can produce confusion when describing or trying to identify patterns in past human cultures, particularly when one term is better known by the archaeological community.

It is unfortunate that the chronologies originally created by Vickers and MacNeish have been neglected, however, it is believed that by synchronizing the terms of some of the Manitoba pottery outlined in this thesis with Minnesota taxonomy, a better understanding of broad cultural connections can be achieved.

6.7 Implications for Avonlea

This work has led to a number of observations regarding the Elk Lake culture and its influence on the Canadian plains. First, Brainerd ware has been identified at four Manitoba sites. Second, there are four kinds of Brainerd ware: (1) net-impressed; (2) horizontally corded; (3) parallel-grooved; and (4) plain. The final implication is that three of the four pottery wares associated with the Avonlea horizon have their origins in the Eastern Woodlands.

This synthesis of the data recorded on the pottery recovered from the Cemetery Point, Lockport, United Church, and Avery sites, has led to the determination that the net-impressed and horizontally corded sherds are Brainerd ware. This finding poses a problem, thus requiring additional factors to be addressed. A survey of the literature indicates that, although Brainerd ware has previously been documented in the north (Lugenbeal 1976; 1978), its presence has been minor on the Canadian plains or parkland regions. Net-impressed pottery has been recovered from several sites in Canada but generally has been identified as being associated with the Avonlea horizon based on the

presence of the Avonlea projectile point, as described by Kehoe and McCorquodale (1961). In order to understand why the pottery found at the four sites can not be associated with the Avonlea horizon, it is necessary to re-examine the socio-cultural and subsistence practices traditionally associated with Avonlea.

The Avonlea horizon appears in the Canadian parklands and grasslands ca. A.D. 100 and lasts through to approximately A.D. 800 -1000 (Walde 2006a:296). At the Miniota site, a date of 1850 +/- 50 B.P., one of the earliest Avonlea dates recorded on the Northern Plains, was obtained from bone collagen (Landals et al. 2004:58). This date suggest that the appearance of the Avonlea horizon on the Northern Plains begins around the terminal Middle Woodland period.

The subsistence economy of the Avonlea culture included a predominant reliance on bison. This is evident by examining many of the sites across the Northern Plains, such as the Gull Lake site in Saskatchewan (Kehoe 1973), the Head-Smashed-In site in Alberta and the Miniota (Landals et al. 2003) site in Manitoba. Walde et al. (1995:23) suggest it is very likely that the peoples of the Avonlea culture moved in concert with migrating plains bison. This reliance on bison hunting would have had a significant impact on the social structure of hunter-gatherers traversing the plains. Recently, Walde (2006a) suggests that influence from the Eastern Woodlands and encroachments from neighbouring/related societies forced peoples on the plains, such as those belonging to the Avonlea culture, to adopt elements of tribal socio-political organization (Walde 2006a:306). This would have allowed for greater cooperation in communal bison hunting, enabling people to increase their food production capabilities while reinforcing their tribal structure (Walde 2006a: 295).

Most notable of the Avonlea horizon is the distinctive projectile point. The projectile point is well executed, with broad shallow, parallel flakes, which extend from the edge of the blade to the midpoint of the tool. Small, shallow notches are placed extremely low on the blade, and the edges of the blade are triangular, regular in shape and sometimes exhibit fine seriation (Kehoe and McCorquodale 1961:184).

Often associated with the projectile points are types of the pottery outlined by Meyer and Walde (n.d.) and Walde and Meyer (2003). Germaine to the study of this thesis is the presence of Rock Lake Fabric/Net-Impressed, Truman Parallel-Grooved

ware and the Plain variety associated with Avonlea horizons on the Canadian Plains. A survey of the literature indicates that there is no in-depth study of the metric attributes except for thickness being recorded, for Rock Lake Fabric/Net-impressed ware on the Northern Plains. The knot, strand and mesh sizes seem to be obliterated during construction and the surface of the pottery is generally described as superimposed (see chapter 4) and quite similar to fabric impressed. This description is in contrast to the net-impressed pottery that is considered Brainerd ware. The surface treatment of net-impressed Brainerd ware is such that strand, knot and mesh attributes can be recorded and are often observable to the unaided human eye. It is this type of pottery that is present at the Avery, Lockport, United Church and Cemetery Point sites, thus strengthening the argument that it is Brainerd ware.

Another type of surface finish that is characteristic of the Avonlea horizon is the Truman Parallel-Grooved ware. As outlined in chapter 4, Johnson (1988:137) observes that the parallel-grooving found on Avonlea vessels is characterized by equidistant linear lines and intervening troughs that encircle the vessel. Grooves are approximately 5 mm wide, with the width of any groove constant and the ridges between the grooves the same or slightly narrower. Meyer and Walde (n.d.) identify components which contain both Avonlea projectile points and Truman Parallel-grooved ware as belonging to the Sjovold phase of the Avonlea horizon. However, parallel-grooved pottery is also found in contexts that do not contain Avonlea projectile points. For example, Speidel (1996) discusses the recovery and reconstruction of a semi-conoidal vessel with a parallel-grooved surface finish from the Forks site in Manitoba. Decoration on the vessel consisted of two lines of horizontal punctates made with a rectangular instrument (Speidel 1996:79). This decorative attribute is also known as the Angled Stamp Variety identified on both net-impressed and horizontally corded Brainerd vessels by Hohman-Caine and Goltz (1995:120). Although this vessel and the assemblage were not analyzed in this study, this vessel as well as parallel-grooved pottery from the Avery site most likely represent Elk Lake occupations at these sites.

6.7.1 Evidence of Elk Lake Occupations in Manitoba

Identifying pottery from the Lockport, United Church, Avery and Cemetery Point sites as Brainerd ware, offers insight into the Elk Lake culture. Having produced a synthesis of Brainerd ware in Minnesota, Hohman-Caine and Goltz (1995) assigned it to a definable cultural manifestation that existed in central Minnesota during the Middle Woodland period. This study reveals that the cultural manifestation – Elk Lake culture- may have encompassed a larger area than previously thought (Figure 6.1). Furthermore, the age of the Elk Lake culture may be different than previously thought.

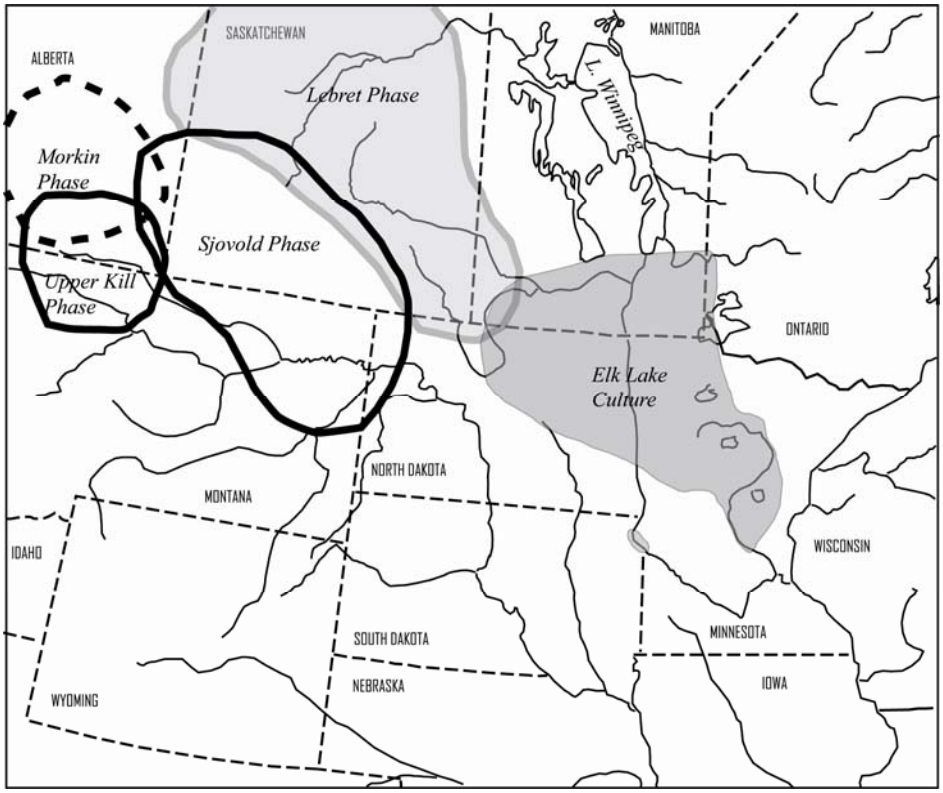
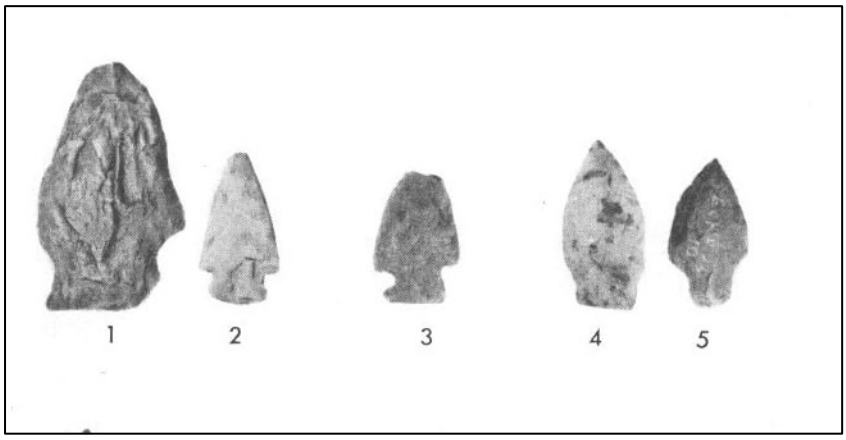


Figure 6.1 Distribution of Brainerd ware in relation to the four phases of the Avonlea horizon (adapted from Meyer and Walde n.d.; Walde and Meyer 2003).

As outlined in chapter three, Hohman-Caine and Goltz (1995:122) have summarized traits which define the cultural manifestation named the Elk Lake culture. These traits include a tool assemblage that is uniquely varied with projectile point styles that have been attributed to the Late Archaic or Initial Woodland context. Attributes of Brainerd ware include two kinds of surface treatment - net-impressed and horizontally corded - coupled with five different decorative treatments (see Chapter Three, Section

3.4.4). Associated with these points and pottery are radiometric dates which extend from 3180 +/-60 B.P. to 1700 +/-70 B.P. (Hohman-Caine and Goltz 1995:124). The early dates place the Elk Lake culture in the Early Woodland context, but there is controversy surrounding this assignment.

In a summary of the geochronology of the Lockport site presented by Buchner (1988), the base of Bed H dated to 3300 +/-295 B.P., the middle to 2515 B.P. and the top to 2315 B.P. Flynn and Kogan (1991:39) surmised that the net-impressed pottery recovered from this bed was similar to Avonlea or Brainerd ware, but needed more analysis. This thesis confirms the assessment originally made by Flynn and Kogan (1991:39) that the pottery is indeed Brainerd ware. Furthermore, the projectile points recovered from the Lockport site during MacNeish's excavations and associated with Bed H were not characteristic of Avonlea (Figure 6.2).



1-3 Anderson Corner-notched; 4,5 Lockport Stemmed

***No scale was used in original photograph*.**

Figure 6.2 Examples of projectile points found at the Lockport and Cemetery Point sites associated with net-impressed pottery (MacNeish 1958:95).

MacNeish (1958) labelled these points as Anderson corner-notched and Lockport stemmed, dart points indicative of the Late Archaic. These projectile points are characteristic of what is found at Brainerd sites in north-central Minnesota (Hohman-Caine and Goltz 1995). Although this association of Late Archaic points and pottery might be the result of collapsed stratigraphy, one can not ignore the early dates from both Minnesota and Manitoba. These early dates, even if erroneous do raise question as to the early appearance of pottery and might suggest, with further research, that the

current time slices for the Early, Middle and Late Woodlands needs to be re-examined. Regardless, the early dates and associated projectile points, coupled with the metric attributes taken from the actual pottery from the Lockport site are strong evidence that there is an Elk Lake occupation at the Lockport site.

The Cemetery Point site, which relies on stratigraphic rather than radiometric dating, indicates that the net-impressed pottery is associated with Laurel ware at the site. The Laurel culture is thought to have lasted 1400 years, beginning ca. 2100 +/-165 B.P. and lasting until ca. 680 +/-55 B.P., encompassing an area from the shores of Lake Superior through north-central Manitoba into northern Saskatchewan (Reid and Rajnovich 1991). This association is based on the presence of net-impressed pottery from the three deepest levels of the site (levels 4, 5, and 6). Points such as the McKean lanceolate, Sturgeon triangular and Nutimik concave were associated with these levels. Sturgeon triangular projectile points are large biface knives while the Nutimik concave point is similar to the McKean lanceolate. As has been observed, MacNeish (1958:22) noted that the Anderson corner-notched point was found in geological beds G and H, the deepest stratum at the Lockport site.

The United Church site also relies on stratigraphic association rather than radiometric dating to determine artifact association and antiquity of the artifacts. Similar to the Cemetery Point site, there were Late Archaic/Early Woodland points, such as McKean Lanceolate, Hanna and Anderson Corner-notched dart points found in the lower levels of the site (MacNeish and Capes (1958:120-123). These points are associated with the net-impressed and Brainerd horizontally corded ware recovered from the site. Although there is no radiometric date, the pottery was found in association with Laurel ware, much like what was found at the Cemetery Point site. This information, coupled with the metric data obtained from the examination of the pottery in this study, is strong evidence that Elk Lake cultural assemblages are present at these three sites.

The environment of these sites also falls into the criteria set out by Hohman-Caine and Goltz (1995:125) for the Elk Lake culture. In their assessment of the environmental context of the known distribution of Brainerd pottery, Hohman-Caine and Goltz (1995:125) note that Brainerd ware appears approximately 3500 B.P. in a prairie-woodland ecotone. This ecotone would have stabilized following the impact of the

Altithermal which was characterized by extended droughts that produced fluctuations in stream and lake water levels (Hohman-Caine and Goltz 1995:126). Dependable long term precipitation patterns developed conducive to permanent full stream flows and stable lake basins. The overall result would have been stable fish, turtle, and aquatic mammal resources. The forested sections would have consisted of the oak/pine forest intermixed with oak savannah. This vegetation would have provided ideal habitats for elk and bison, which is evidenced by remains at many Elk Lake sites (Hohman-Caine and Goltz 1995:127).

Historically, as outlined in Chapter Two, southern Manitoba was a mix of grasslands and patches of forested areas. This environment would have been similar in some ways to the mixed forests and savannah to the south in Minnesota. Therefore, adapting to the landscape by people of the Elk Lake culture would not have been as difficult as entering into new territory with unfamiliar resources.

6.7.2 An Avonlea Connection

Despite the absence of Avonlea points in assemblages at the Lockport, United Church Cemetery Point and Avery sites, there is mounting evidence that a connection does exist between the Elk Lake culture and the Avonlea horizon, especially when examining the pottery. In addressing the presence of net-impressed pottery at the Garratt site in southern Saskatchewan, Grace Morgan (1979) suggested that the net-impressed sherds were similar to those found in Minnesota and Manitoba. Morgan (1979:209) proposed that the origins of Avonlea were in the east, representing "population movement and displacement from the upper Mississippi Valley into the northern Plains."

Further evidence can be seen in the work of Neumann (1978; 1984). Suggesting that there may be two types of net-impressed pottery in Minnesota, Neumann (1978; 1984) used a net-impressed vessel found at the Langer site (21CA58) in Minnesota as an example. Neumann proposed that the net-impressions on this vessel as well as other sherds from this site differed from those originally found by Johnson (1971) at the Gull Lake Dam site (21CA37). In his description, Neumann (1978; 1982) also noted that there are net impressions on the bottom portion of the vessel and a parallel-grooved

surface treatment on the upper portion of the vessel. This description had escaped the notice of other archaeologists, with the exception of Gonsior (2003) and Hohman-Caine and Goltz (1995), who merely mention the presence of the vessel. It may be a transitional vessel exhibiting both Brainerd and Avonlea attributes.

Citing both Morlan (1988) and Morgan (1979), Hohman-Caine and Goltz (1995:124) acknowledge that the termination of the Elk Lake culture and the production of Brainerd ware coincide with the appearance of the Avonlea horizon which, in their opinion produced similar pottery. Other evidence comes from the work of Gonsior (2003), who examined pottery from both the Lake Carlos Park Beach site (21DL2) and the Hockert site (21DL53) in west-central Minnesota. Three vessels found in association with one another yielded three different types of surface treatment at both sites: (1) horizontally corded, (2) net-impressed, and (3) parallel-grooved (Gonsior 2003:24). The presence of parallel-grooved pottery in a Brainerd occupation led Gonsior (2003:20) to postulate an Avonlea affiliation. Gonsior (2003:23) subsequently acknowledged the works of Morgan (1979) and Hohman-Caine and Goltz (1995) concerning the origins of the Avonlea Horizon. The predominant idea stemming from these archaeologists (Hohman-Caine and Goltz 1995; Gonsior 2003; Morgan 1979) is that peoples of the Avonlea horizon moved from the Upper Mississippi Valley, migrating northwest along the prairie border, and subsequently spreading into Saskatchewan, Alberta and Montana.

Perhaps the strongest evidence for a link between the Elk Lake culture and the Avonlea horizon is the similarities between the potteries. In examining Brainerd ware from Minnesota, North Dakota, and Manitoba there appear to be four types: (1) net-impressed, (2) horizontally corded, (3) parallel-grooved and, (4) plain ware. The net-impressed seems to have the greatest antiquity, coupled with the horizontally corded type. As Lugenbeal (1978) noted, these two types appear together in roughly the same frequency at sites in central Minnesota. These types have the oldest dart points associated with them. The parallel-grooved pottery is not common in Brainerd components, but as noted above, has been found in a few sites in Minnesota. As well, parallel-grooved pottery from the Avery site and the Forks site (Speidel 1996) in Manitoba is very likely from Brainerd contexts.

The Plain type seems to have a general distribution and is the rarest, showing up in both Minnesota and Manitoba, it could be an influence of the Laurel culture. When examining the work of Meyer and Walde (n.d.; Walde and Meyer 2003), it is apparent that three of the four types of Brainerd ware, net-impressed, parallel-grooved and plain, show up in the Avonlea horizon. Taking into account the antiquity of Brainerd ware, it would seem that three of the four wares that appear in the Avonlea horizon; (1) net-impressed, (2) parallel-grooved and, (3) plain, originated from Brainerd ware in the Elk Lake culture. These types of pottery provide the strongest evidence for a link between the Elk Lake culture and the Avonlea horizon, and suggest that there is an eastern origin for the pottery associated with the Avonlea horizon.

The Avery site and to a lesser degree, the United Church site, are possible examples of the link between the Elk Lake culture and the Avonlea horizon. The presence of net-impressed, parallel-grooved and plain pottery, and similar characteristics such as rim sherds with folded over lips, suggests a direct relationship. It could be that the Avery and United Church sites also represent transitions between the Avonlea horizon and the Elk Lake culture, much like the Langer, Lake Carlos State Park Beach and Hockert sites in Minnesota as described by Gonsior (2003).

This evidence indicates that the Elk Lake culture had a more northerly extent than Minnesota archaeologists presently believe. It also suggests that there was movement of either people or ideas from Minnesota, north into Manitoba as well as west into North Dakota along the prairie border and then north and northwest into Saskatchewan. The Miniota site is possible evidence of this migration, displacement of people or diffusion of ideas. Landals et al. (2003) note the presence at the Miniota site of net-impressed vessels with round, hollow punctates that fit the description of the Reed Stamped variety of net-impressed Brainerd ware (Hohman-Caine and Goltz 1995). However, the fact that there are Avonlea projectile points associated with the pottery indicates an Avonlea affiliation for the Miniota occupation.

6.8 Conclusion

This thesis serves to interpret the cultural significance of net-impressed and horizontally corded pottery recovered from the Lockport, Cemetery Point, Avery and

United Church sites in southern Manitoba and determine the identification of the pottery as either Brainerd ware or as an Avonlea ware. Based on the pottery attributes examined in this thesis, it is concluded that there is Brainerd ware at the Lockport, Avery, Cemetery Point and United Church sites. However, the nature of the components is unclear. At the Lockport and Cemetery Points sites, only net-impressed pottery was found. This could be an indication of trade, where the Laurel cultural groups (contemporaneous with the Elk Lake culture) at these sites, were receiving the pottery in exchange for other items. At the United Church and Avery sites, there is a larger amount of pottery and more types represented. Net-impressed, parallel-grooved and horizontally corded are all found in association with each other. This suggests that these sites were occupied for some time, possibly during a seasonal gathering when a mixing of peoples occurred.

The fact that three of the four kinds of Brainerd ware (net-impressed, parallel-grooved and plain) occur in Avonlea assemblages is solid evidence to support the claim that this pottery is derived from the Elk Lake culture. In short, the pottery of the Avonlea horizon (net-impressed, parallel-grooved, and plain) had an Eastern Woodlands origin, and moved north and west following the prairie border, and out onto the plains of Saskatchewan, Alberta and Montana.

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Appendix A

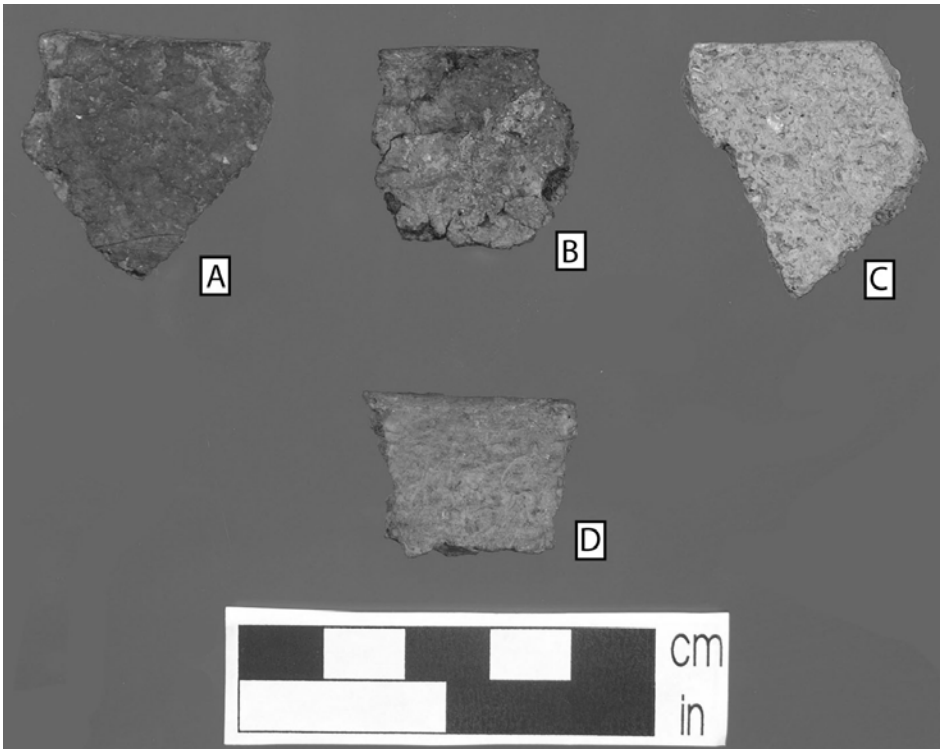

Plate I. Net-Impressed Rim sherds from the Lockport site (A=X-A-901, B=X-A-950c, C=950a, D=X-A-932).

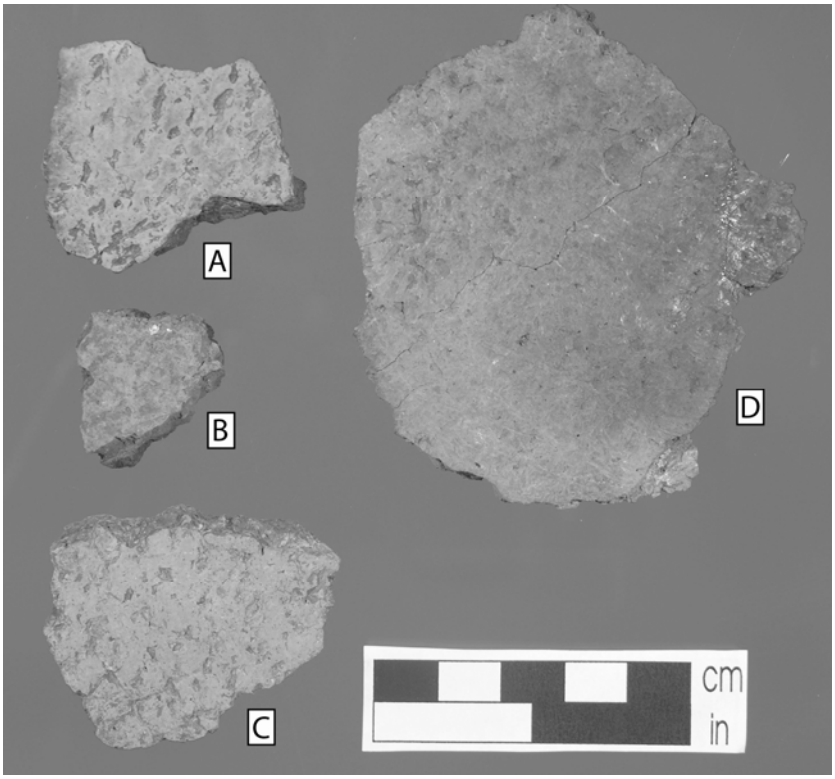

Plate II. Examples of net-impressed body sherds found at the Lockport site (A=X-A-898a, B=X-A-2316e, C=X-A-842l, D=X-A-1135).

Plate III. Close up of X-A-842l from Level 7 at the Lockport site.

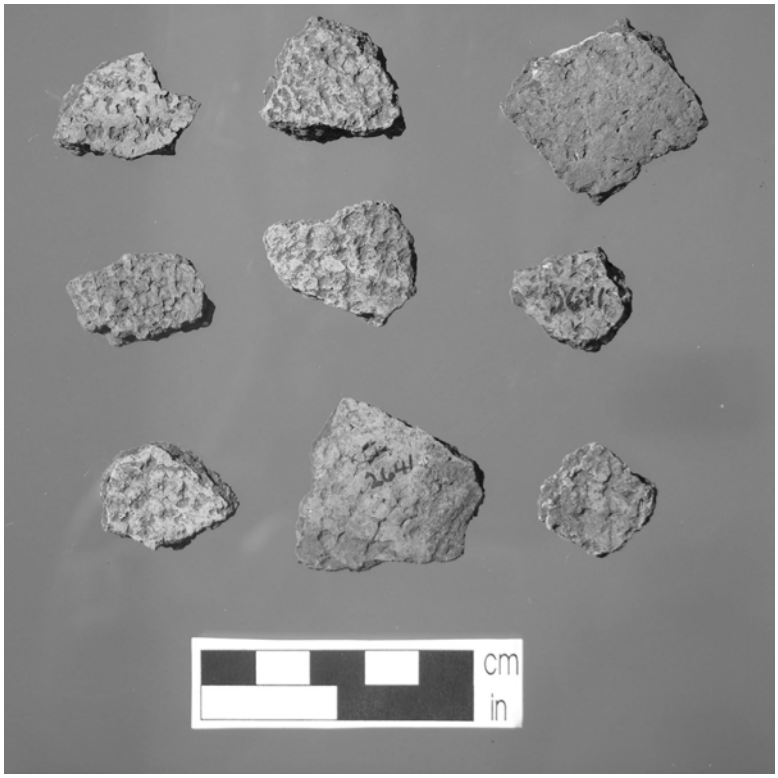

Plate IV. Net-impressed sherds from the United Church site (A=X-A-2641h, B=X-A-2611c, C=X-A-2787a, D=X-A-2575a, E=X-A-2641e, F=X-A-2649e).

Plate V. Sherd X-A-2619b from level 3, and sherd X-A-2534h from level 5, representing vessel one from the United Church site.

Plate VI. Sherds X-A-2652a, X-A-2818, and X-A-2795d representing vessel two from level 4 of the United Church site.

Plate VII. Sherd X-A-2703 representing vessel three from level 4 of the United Church site.

Plate VIII. Sherd X-A-2734a representing vessel four from level 4 of the United Church site.

Plate IX. Sherd X-A-2795a representing vessel five from level 5 of the United Church site.

Plate X. Sherds X-A-2629 and X-A-2824 representing vessel 6 from the United Church site.

Plate XI. Sherd X-A-2761 representing vessel seven from the United Church site.

Plate XII. Horizontally corded body sherds from level three of the United Church site.

Plate XIII. Horizontally corded body sherds from level four and five of the United Church site.

Plate XIV. Net-impressed sherds from the Avery site.

Plate XV. Horizontally corded sherds from the Avery site.

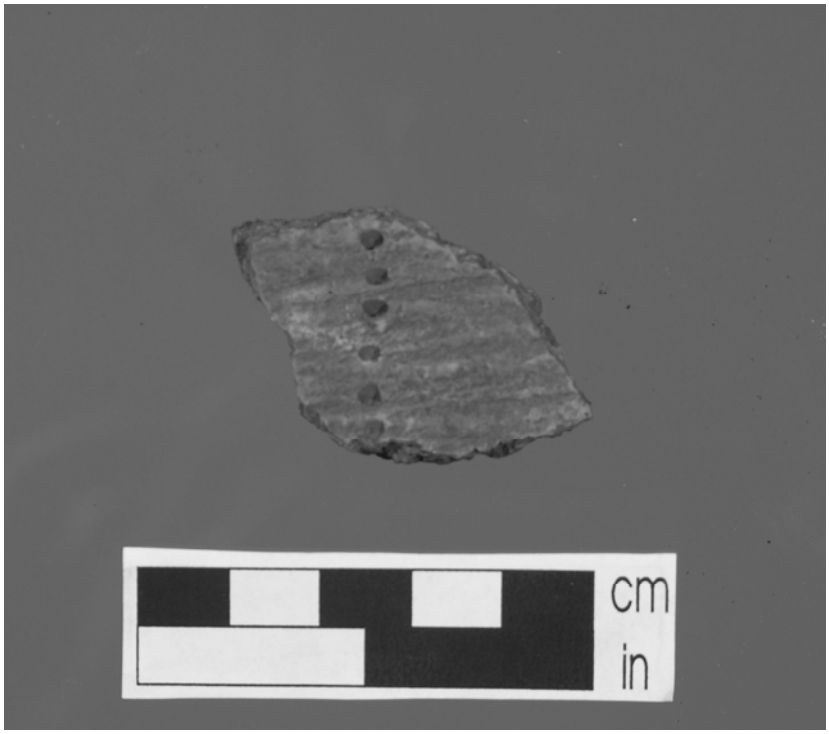

Plate XVI. Sherd 1290, with six vertical punctates on horizontal cording from the Avery site.

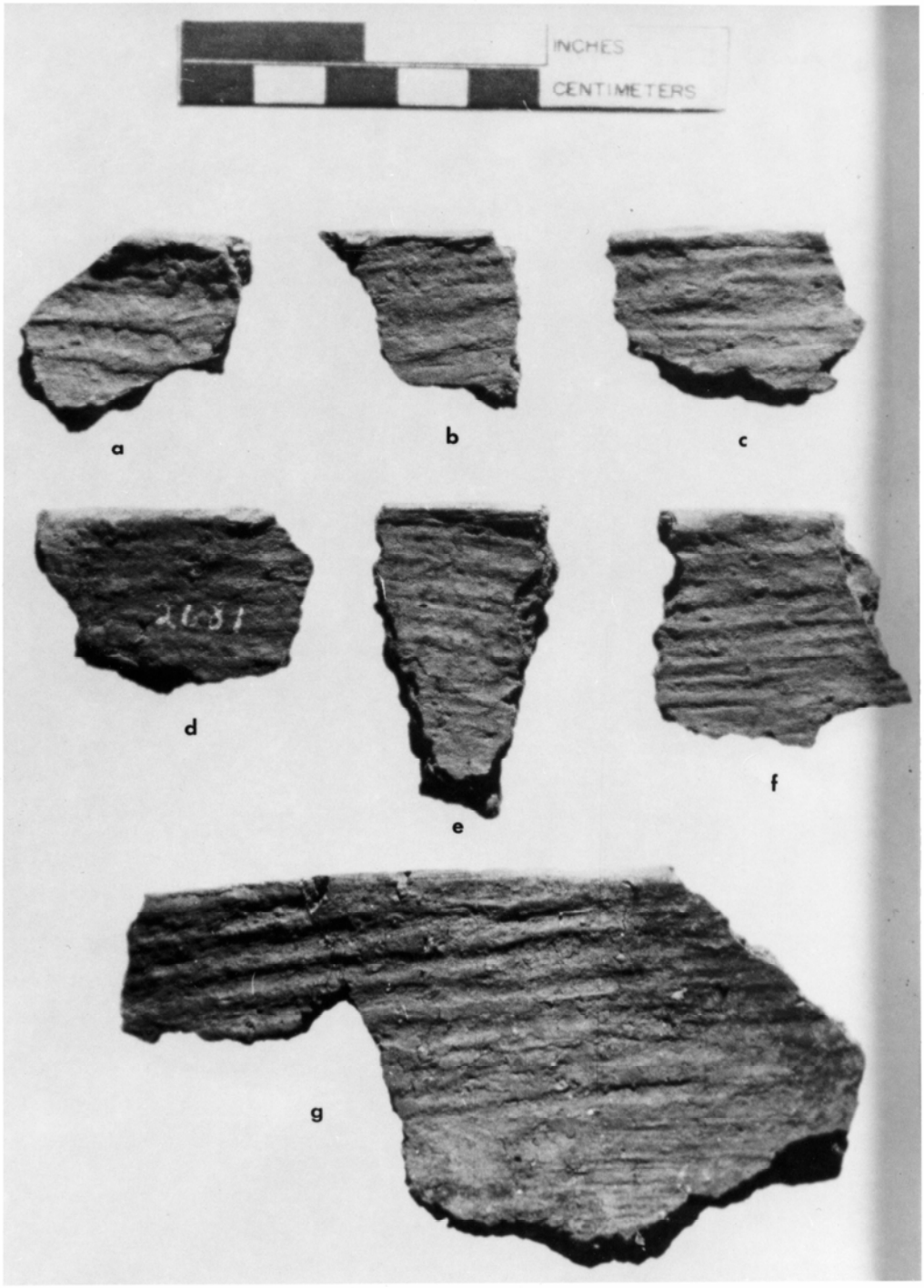

Plate XVII. Photo of Truman Plain Rim ware from the Avery site (after Joyes 1969: Plate 22). After Walde and Meyer 2003 (Meyer and Walde: in press) sherds reclassified as Truman Parallel-Grooved.

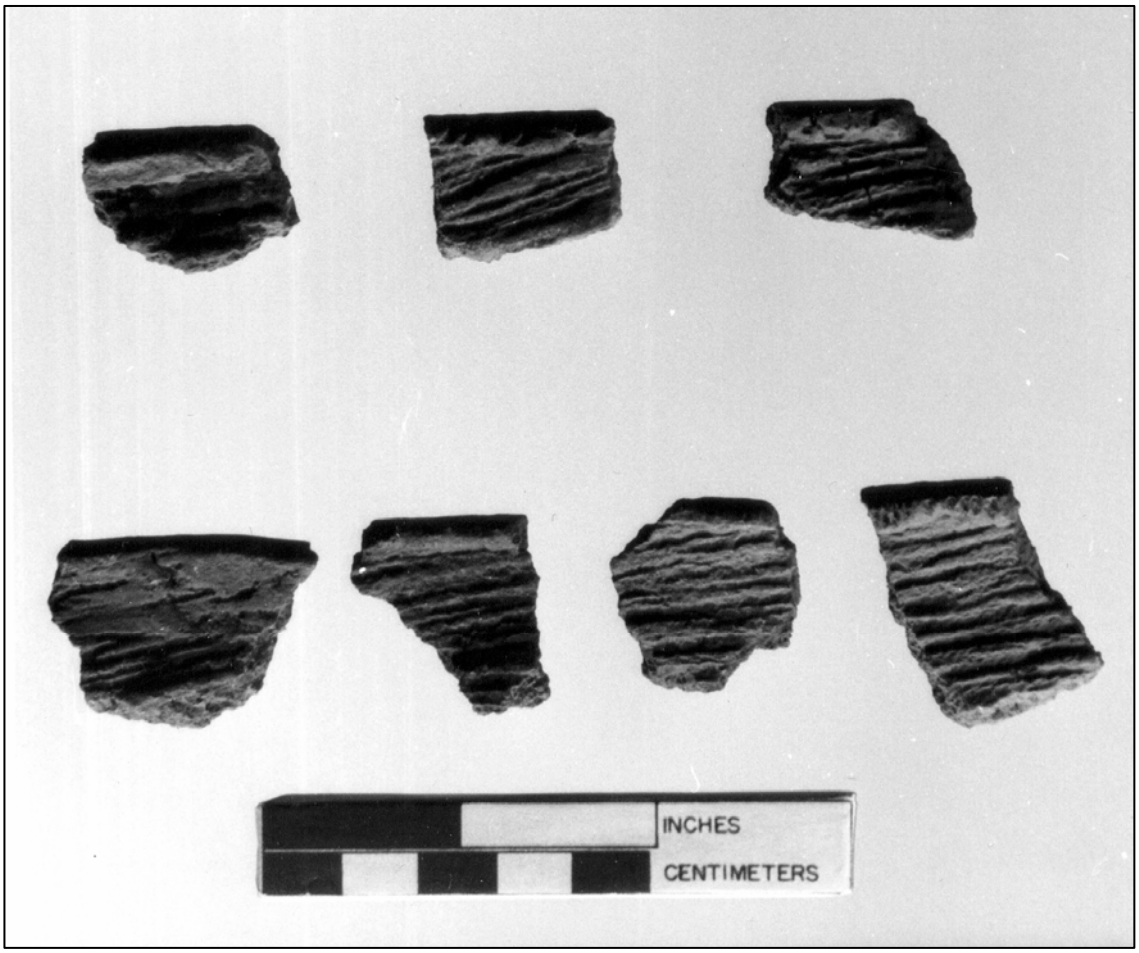

Plate XVIII. Photo of Avery Corded ware rim sherds from the Avery site (after Joyes 1969: Plate 21).