The Gillett Grove site (13CY2):
a postcontact Oneota village in the Little Sioux Valley

by

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CHAPTER 1: INTRODUCTION

Introduction

European contact played a dramatic role in changing the lifestyles and culture of many native groups in North America. People not only were affected by new types of material culture, but often everyday life was altered completely. While these changes occurred in a relatively short time span, transitional periods occurred, and not all peoples were affected at the same rate. Subsistence practices changed for some groups especially with the introduction of the horse, and as a result, many groups switched from horticulture to bison hunting (Holder 1970). New items introduced were being incorporated into the everyday life, and over time, metal tools replaced traditional lithic tools. The acculturation process can be seen in the material culture record, and we have good ideas in some instances of what was occurring based on historic accounts. The prehistoric archaeological record is often difficult to interpret, and although the historic and ethnographic records offer a good reference for analogies, they cannot be relied on alone. The post-contact period is often plagued with a lack of specific written references to sites or groups in the period of time under study. However, the post-contact period in the midwest represents the beginning of acculturation of Native Americans, and the archaeology of this time is important. Understanding the transitions that were occurring is not simply recording the number of European items present in an assemblage, but lies in the

understanding of related socio-cultural activities associated with these assemblages that are changing as well.

An analysis and comparison of post-contact sites in northwest Iowa can be made in order to assess the impact of European trade items on the Oneota lifeway. Such an analysis may include the comparison of metal items replacing traditional tools as well as ornamental items and modification of traditional artifact forms, for example, historic elbow and T-shaped catlinite pipes replacing earlier red pipestone disc pipes or glass beads replacing traditional quillwork. Also, evidence for horses and guns is important to examine because of their dramatic influence on Plains culture groups historically. Sites of interest include the Gillett Grove site (13CY2) and the Milford site (13DK1) which are post-contact sites located along the Little Sioux River in northwest Iowa. The focus of this research is the material culture from Gillett Grove. The evidence for acculturation and effects of the cultural practices is addressed in this study. Additionally, comparisons are made with prehistoric sites in the area to provide baseline data on traditional Oneota lifeways prior to contact. Previous research (Fishel 1995; Harvey 1979; Henning 1961) at prehistoric sites such as Dixon (13WD8), Correctionville (13WD6), and Bastian (13CK28) is a part of this research. Post-contact sites following Gillett Grove regionally, such as Blood Run (13LO2) and possibly Harriman/Burr Oak (13CY1), are examined as well.

The study of these pre and post-contact sites should reflect some evidence of change in cultural practices with the introduction of European goods. The

Milford site has been the subject of extensive research (Anderson 1994; Tiffany 1996; Tiffany and Anderson 1993). Milford research has involved models of subsistence practices as well as ceramic change. Since Milford and Gillett Grove are both similar in location and time, one might expect similar findings at Gillett Grove.

This research has four primary objectives. 1) Document local surface collections from the Gillett Grove village, in particular the Parker Barglof collection. This collection has only been studied in passing by other archaeologists, and further systematic analysis is needed. This extant collection is the largest known from the Gillett Grove site. 2) Use the results of a random representative surface survey conducted at the Gillett Grove site for quantitative applications to calculate the potential amount of European trade items relative to the amount recovered and reported from previous test excavations. The survey data can be used to determine if there are material culture clusters on the site and if there is more than one component represented by the spatial distribution of material culture. 3) Classify and analyze the excavated material cultural assemblage from Gillett Grove in order to infer any affiliation with historic tribal groups that could be represented at the site. 4) Examine the placement of the Gillett Grove village within the established taxonomic systems used for Oneota archaeology regionally.

For this thesis, an analysis of the material culture recovered from the Gillett Grove site from the 1996-1998 field seasons is used to assess these research

goals. Additionally, the analysis and inventory of the Barglof collection, Gross collection and the Sanford Museum collection from the Gillett Grove site supplement the field school data. While many other field collections and personal collections exist from site, a comprehensive analysis of such collections is not possible at this time.

Accomplishing these research goals required an extensive amount of work since the summer of 1998. During summer of 1998, I spent four weeks working at the Gillett Grove site acting as the crew chief for the Iowa Lakeside Laboratory field. Additionally, several weeks were spent simultaneously studying the Parker Barglof collection. The remainder of 1998 was spent analyzing the material excavated that summer. During 1999, collections from the 1996 and 1997 field season at Gillett Grove were obtained and analyzed throughout the year. Additionally, collections from the Sanford Museum were studied in 1999 as well as revisits to site and Parker Barglof collection.

Significance Of Study

The Gillett Grove site is one of only a few post-contact Oneota sites located in northwest Iowa (Harvey 1979; Tiffany and Anderson 1993). Additionally, northwest Iowa has had only a minimal amount of research conducted on Oneota complexes in comparison to other midwestern Oneota complexes. The Gillett Grove research expands the current knowledge of Oneota archaeology in northwest Iowa as well as the proto-historic and historic time period within the

Oneota tradition.

This research provides an opportunity to explore previously studied Oneota sites within the Little Sioux Valley. Valley systems containing several distinct Oneota complexes such as the Little Sioux have been defined by some as regional continuities because of the presumed extended time depth of similar material culture involved that is believed to represent a particular historic tribal group known to have been in the region at the time of contact (Hall 1962; Henning 1970; Mott 1938; M. Wedel 1963). One of the research goals is to evaluate the current Oneota taxonomic system particularly in northwest Iowa. Examining the occupational history and sequence of Gillett Grove as reflected in the material culture from the site may suggest whether such continuity exists, and thus, afford a better understanding of the Oneota cultural development in the Little Sioux Valley. It has been suggested that these group continuities represent ancestors to particular Chiwere or Dhegihan groups from each region examined. However, the continuity concept does not always work because at numerous points in time, especially during the proto-historic/post-contact times, groups traveled to and from various regions (Harvey 1979). The Ioway are an example of one of these migrating groups during the time Gillett Grove is thought to be occupied (M. Wedel 1986). Such direct correspondence of known tribal groups to prehistoric local or regional sequences is difficult to impossible to model and verify archaeologically. Regardless, it may be possible to determine if Gillett Grove was occupied by a migrating group such as the Ioway that were

known to have moved into this part of Iowa around ca. A.D. 1700 (M. Wedel 1986). Another singular problem with the group continuity concept is the use of historic tribal names and groupings that may have had little or no meaning to the peoples under study at that time, and which represent very recent regrouping of earlier tribal forms. Both phenomena reflect the fluid political structures which are the hallmark of Chiwere-Winnebago peoples (Gibbon 1995; Hall 1993).

The information gained from the analysis of post-contact Oneota material culture from Gillett Grove expands upon what is known of European influence regionally during this time. The material culture recovered from excavations as well as personal collections is essential to understanding the effects of the introduction of Europeans goods had on native life. Comparisons can then be made among other proto-historic sites in the northwest Iowa as well as other parts of the midwest. From these comparisons it may be possible to show that different villages were undergoing the same types of transformations as European goods made their way onto the Prairie-Plains. The archaeological record will provide a basis for understanding the early effects of acculturation on the native groups located in northwest Iowa at this time based on models from the ethnographic record.

Summary

This research is an attempt to develop a better understanding of several archaeological questions which have plagued Oneota research in northwest Iowa

because of the lack of substantive base-line data. A goal of this thesis is to present a comprehensive summary of information on the Gillett Grove site based on the material culture recovered. Another goal is the establishment of a chronology for Gillett Grove and to evaluate its current taxonomic placement. By use of ethnohistoric and historic records, correlating the archaeological data from Gillett Grove with other Oneota sites, a more reasonable picture of the post-contact Oneota village is possible. Finally, this research examines the acculturation processes that occurred and measures the impacts of these processes on Native Americans through European trade goods. In order to understand the changes occurring regionally, the prehistoric record of local Oneota groups must be investigated, which can be compared to the post-contact sites and ethnohistoric and ethnographic records. Determining if group continuity exists in the Little Sioux Valley is important in evaluating the cultural affiliation of the Gillett Grove site. The utilization of data from previous investigations from several prehistoric as well as post-contact sites allows for examination of the transitions that occurred. The use of this information will be helpful in evaluating the accounts depicted in the ethnographic and historic records as well.

Plan of Presentation

This research is organized in the following order. Chapter 2 presents an overview of the Oneota tradition. This chapter provides a detailed look at the

Oneota culture in Iowa and examines the research conducted in northwest Iowa. Chapter 3 focuses on the Gillett Grove site and provides an historical overview of all the research conducted by archaeologists including the Iowa Lakeside Laboratory field schools at Gillett Grove over the past 3 years. Chapter 4 is an in depth analysis of the Parker Barglof collection from the Gillett Grove site. Chapter 5 is an analysis of the material cultural from the excavations and systematic survey of Gillett Grove. Chapter 6 discusses of Gillett Grove within the northwest Iowa Oneota complex and the European influence seen in this area of the Prairie-Plains region. Chapter 7 provides a summary and conclusion of the research at Gillett Grove and suggestions for future research.

CHAPTER 2: ONEOTA TRADITION

The Oneota tradition covers a vast geographic area generally corresponding to the Prairie Peninsula of the upper midwest. Sites can be found in several midwestern states ranging from Wisconsin to Nebraska and Minnesota to Missouri (Harvey 1979) (Figure 2.1). The temporal range for Oneota varies within each region, but in general Oneota is thought to range from A.D. 1000-1700 (Green 1995). In northwest Iowa the Oneota occupation begins with an initial date of A.D. 1200 and continues into the Historic period (Fishel 1995; Harvey 1979). The Oneota tradition represents semi-sedentary cultures relying on a combination of maize agriculture and a diversified hunting-gathering subsistence. However, the Oneota tradition is best characterized by its shell-tempered ceramics, thus the culture is often referred to as a ceramic culture (Hall 1962; Henning 1970; M. Wedel 1959). Based on the archaeological and ethnohistorical records, the Oneota are probably ancestral to several historic native cultures which primarily include Dhegihan and Chiwere-Winnebago speaking peoples of the Prairie-Plains, such as the Ioway, Oto, Missouri, Kansa, Osage, and Omaha (Hall 1962; Harvey 1979; Henning 1970; Mott 1938).

The Oneota tradition was first described by early Iowa archaeological researchers, Ellison Orr (1914) and Charles R. Keyes (1927). Orr (1914:231-239) named the Oneota culture based on several observations including the frequent

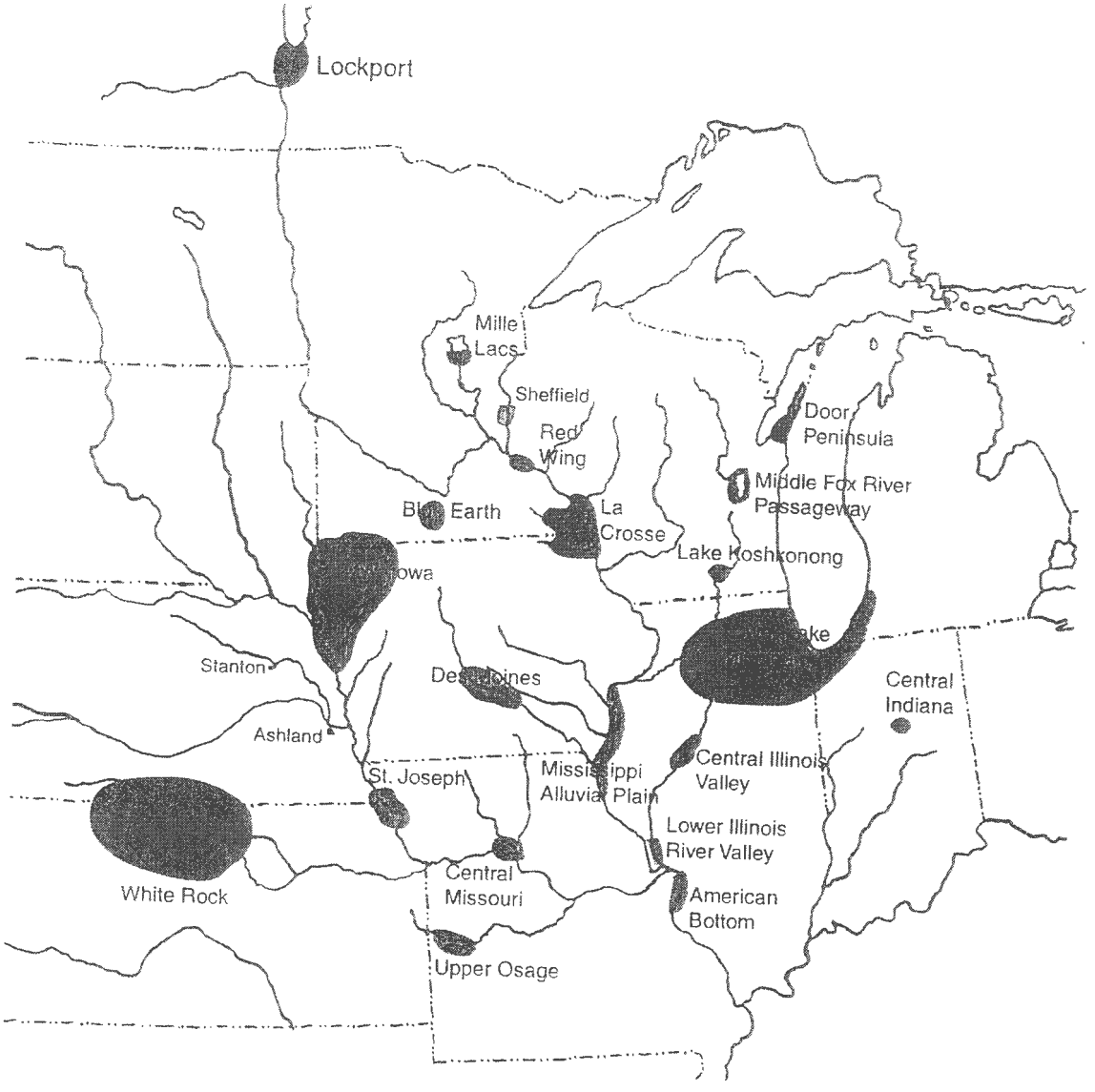


Figure 2.1. Map of the geographic distribution of the Oneota tradition (Hollinger and Benn 1998. Reproduced with permission of the Wisconsin Archeological Society)

occurrence of shell-tempered pottery on northeast Iowa sites along the Oneota or Upper Iowa River. Keyes recorded observations on village sites across the State of Iowa, and conducted some of the earliest archaeological investigations of Oneota sites in Iowa (Keyes 1927, 1934). In terms of Iowa archaeology and its beginnings, Keyes was an authority on Iowa archaeology during the 1920-1950's, conducting statewide research for the first time on a professional level (Anderson 1975:73; Gradwohl 1978:35). Keyes played an important role in the long-debated origin of the Oneota tradition. Increased interest about Oneota origins and who the Oneota represented continued with research by Griffin (1937) who speculated that certain Oneota manifestations were the archaeological remains of Chiwere Siouan speakers. Additional archaeological investigations and documentary analysis made by Mildred Mott linked Oneota manifestations in Iowa with ancestral Chiwere-Winnebago Siouan speakers such as the Ioway and Oto (Mott 1938). Mott used the direct historical approach (Strong 1935) to provide evidence for historical groups represented by archaeological manifestations. These early studies focused primarily on ceramics in association with European trade goods since pottery was the defining characteristic of Oneota archaeology.

Originally, Oneota was thought to be associated with (Middle) Mississippian culture. Griffin (1937, 1943) believed Oneota culture was derived from earlier Mississippian communities in the Upper Mississippi Valley. Hall (1962) expressed similar views on Oneota origins suggesting their roots lay with

Mississippian societies. These studies centered on possible migration models to explain the rapid and vast distribution of Oneota materials across the midwest. The primary reasoning for the Oneota migration models and Mississippian association with Cahokia and regional Mississippian communities was the presence of shell-tempered pottery and maize in Mississippian and Oneota sites. Cahokia was seen as a catalyst for the spread of maize agriculture. Additionally, shell-tempered pottery was considered a Mississippian trait that logically explained Oneota use of shell-tempered pottery even though Oneota and Mississippian pottery forms are different. Until the use of radiocarbon dating became practical in archaeological research, few questioned the migration model.

An alternative Oneota origin model was postulated by Ford and Willey (1941) who argued that Oneota developed from regional Late Woodland groups in the Upper Mississippi Valley who became acculturated to Mississippian lifeways. An update of the Ford and Willey model was also proposed by Stoltman (1986). Others have argued that based on early radiocarbon dates, Oneota peoples had their roots in local Woodland populations before the influence Middle Mississippian culture. In this model, shell tempering predated both Oneota and Mississippian use of the tempering medium (Gibbon 1974; Hall 1962; Overstreet 1981). Benn (1995) has explored this theory further by examining evidence for Oneota traits with regard to ceramic decoration in the material culture of Late Woodland populations. Additionally, Hall (1997:152-153) explored differences in ritual and ceremonial interaction between Oneota and

Mississippian peoples, providing indirect evidence of a non-Mississippian origin for Oneota people.

No doubt archaeologists will continue to debate Oneota origins. The two basic models still accepted today are; 1) Oneota origin is the result of Mississippian expansion and diffusion, and 2) Oneota is seen as a result of contact and acculturation of local Woodland period populations to Mississippian lifeways. The second model is favored in this thesis for several reasons. The Oneota tradition, as previously mentioned, is vast and extends over the Plains Peninsula and eastern Plains regions. For a Mississippian society to rapidly migrate and expand to occupy such a large area seems unlikely. While archaeological evidence supports Oneota group migration, there is a lack of Mississippian interaction at every Oneota manifestation, and no evidence for Mississippian cultures expanding over the entire Prairie Peninsula. Additionally, radiocarbon dating suggests that the Oneota are contemporaneous with Mississippian populations. Adaptability of Oneota populations is apparent with sites located on lower terraces and uplands of major and minor stream systems (Tiffany 1982), while Mississippian communities are usually found only in association with large flood plains of major river systems like the Mississippi. This information combined with Oneota material culture and subsistence and settlement practices seen in resident Late Woodland populations favors the in situ acculturation model for Oneota development.

Oneota sites vary considerably from region to region. Village sites range

in area from 6.1 hectares (15 acres) like Gillett Grove (13CY2) to 36.4 hectares (90 acres) like the Dixon site (13WD8) (Fishel 1995). The larger sites, however, do not always represent a single occupation. In many instances village sites are multi-component, representing resettlement of an area over time. Site reuse and mixing of components create many problems for archaeologists studying these larger sites. Careful consideration has to be made when analyzing materials from Oneota sites. The components may be surficial or mixed either from village use or as a result of modern farming practices. Other types of Oneota sites include burial mounds, cemeteries and smaller camps or farmsteads. Some Oneota village sites have been reported with associated earthen enclosures these include Pottery Circle (13AM19), McKinney (13LA1), Blood Run (13LO2), and possibly the Gillett Grove (13CY2) and Milford (13DK1) sites (Harvey 1979; Keyes n.d.). The enclosures are recorded at McKinney (13LA1) and Pottery Circle (13AM19) are probably associated with earlier prehistoric Hopewellian activities. Common features at Oneota village sites are storage or refuse pits and occasional evidence for oval bark lodges (Fishel 1995, 1999; Harvey 1979; McKusick 1973). The storage pits can be scattered across a site in several contexts such as interior and exterior pits around structures. The size and shape vary to some extent, bell-shaped pits are common as well as basin-shaped pits.

As mentioned, Oneota ceramics are the most diagnostic feature of the Oneota tradition, and typically shell-tempered globular shaped vessels are found. Size ranges from miniature vessels or small "pinch pots" to extremely large

cauldron-like vessels. Vessel decoration can be found on the lip, the interior rim and upper shoulder of the vessel. Interior lip and shoulder decoration techniques involve the use of trailing and punctuates in several highly stylized geometric patterns. Chevron patterns of two main motifs commonly appear on the shoulders of Oneota vessels. Vessel surface treatment also includes smoothing over the entire exterior surface prior to decoration.

Other artifacts common to the Oneota tradition include a range of bone, chipped and ground stone tools, copper items, and European trade goods on post-contact Oneota sites. Bone tool assemblages can include bison scapula hoes, deer mandible sickles, awls, needles and rib rasps. Stone tools include small un-notched triangular points, end scrapers, drills, bifaces, engraving tools, knives, manos and metates, and grooved mauls. Pipestone objects include pipes, pendants and tablets. Occasionally, pipestone beads occur. Common European trade materials are glass beads, copper and brass cauldrons, iron knives, hoes and axes, guns and accessories, and Jesuit rings.

Oneota architecture has had limited research in comparison to other aspects of Oneota archaeology. Houses are difficult to detect because the living surfaces of Oneota sites have often been obliterated by modern agricultural practices. The primary evidence of former structures in archaeological record are post molds, which can be hard to detect (Henning 1998a:347). In western Iowa Oneota sites, only a few house outlines have been uncovered in archaeological investigations. The most recently excavated houses in western Iowa are oval-

shaped from Dixon (13WD8) in 1994 (Fishel 1995, 1999). Houses can be oval to square in shape and range in size from a single family units to larger, multiple family unit structures. Other forms such as long houses were recorded from excavations at the Grant Site (13AM201) (McKusick 1971, 1973) and from Oneota sites in the Chicago area (Bluhm and Liss 1961). Several excavated houses at 13AM201 varied from 18 m to 27 m (60 to 90 feet) long and 7.6 m (25 feet) wide (McKusick 1973:14). McKusick (1973) noted the variation in other known Oneota structures and compared with them with the ethnographic and historic record of several Siouan groups in the midwest. Groups such as the Ioway, Oto, Missouri, and Omaha lived in bark lodges historically (Fletcher and La Flesche 1911; Skinner 1926), but their houses often changed in form or size.

Several reasons have been noted for Oneota house size variation. Some researchers believe the variation in house size and form represents seasonal differences between summer and winter housing (Birk and Johnson 1992; McKusick 1973). Hollinger (1995:144) has explored the evolution of Oneota houses based on 99 house structures from 32 Oneota sites. Hollinger believes changes in house size reflect changes in Oneota residence patterns.

Oneota settlement patterns and subsistence strategies have been extensively analyzed. Several earlier Oneota settlement studies (Gallagher and Stevenson 1982; Michalik 1982; Tiffany 1982) used site catchment methods and systematic stratified survey methods (Dobbs 1984; Dobbs and Shane 1982; Overstreet 1978) from different regions, to analyze site location in relation to the

surrounding environment and potential resources. These studies showed that Oneota sites are usually located in areas of maximum density and diversity of resources. Other factors aside from environmental and subsistence factors such as trade and territorially seem to have played a role in village locations (Tiffany 1982:13). Additionally, these studies showed the possibility that seasonality may have been a factor in site location (Michalik 1982:31; Tiffany 1982:13).

Although possible, subsistence may not be the sole reason for settlement location. Subsistence studies have focused on the varied resources found on Oneota sites and the changes seen in those resources in the archaeological record. A premise of Oneota development is that the adoption of maize agriculture regionally created culture change allowing for population growth and cultural complexity (Hart 1990: 569). While maize agriculture may help explain the early development of Oneota culture; other changes in Oneota subsistence patterns have been attributed to climatic change. In the latter model, Oneota peoples altered subsistence strategies by increasing communal hunting (in most cases taking up bison hunting) as a result of population expansion and climate change (Gibbon 1972). Hart (1990) supports the climatic theory stating that a lack of intensive agricultural production is reflected by the shift in climatic conditions. Regardless of whether climatic conditions were responsible for subsistence changes, bison hunting may have become more popular and efficient for some Oneota groups close to the large Plains herds. As one looks at historic native groups, bison hunting became very popular with the introduction of the horse

and the gun; several maize agricultural groups on the Prairie-Plains became Plains bison hunters (Holder 1970). Maize agriculture did contribute to the changes seen in Oneota populations, and a shift to communal bison hunts did play a role in Oneota subsistence. Recent research (Fishel 1999) has looked at bison hunting adaptation in the mixed economy of western Iowa Oneota emphasizing the importance bison hunting.

Oneota population studies on diet and health have been limited. Glenn (1974) conducted a craniometric analysis looking for possible origins of Oneota peoples based on physical attributes. While physical anthropology approaches have changed, the study is one of the few comprehensive works on skeletal material of Oneota populations. Recent studies by Steadman (1998) focused on several populations in the central Illinois Valley. This research examined regional and interregional biocultural relationships, specifically population genetics, between Late Woodland, Mississippian and Oneota (Bold Counselor Phase) populations. This research showed that Bold Counselor Phase populations were morphologically distinct from the local Mississippian population, and that the Oneota population was an intrusion to the central Illinois Valley (Steadman 1998:306).

Oneota Taxonomy

The current system used for Oneota taxonomic classification is based upon the work of Willey and Phillips (1958; Henning 1998b). An application of the

horizon concept for the Oneota tradition was developed by Hall (1962) and further additions were made by Overstreet (1978). This system defines four Oneota horizons: Emergent, Developmental, Classic, and Historic. Each horizon actually reflects a different time period, and is marked by differences seen in ceramic attributes and domestic architecture (Overstreet 1995). In theory, the sites in each Oneota local or regional sequence are supposed to be associated with one of these horizons. This model relies on local sequences with similar continuities regionally for application. Willey and Phillips (1958:33) define a horizon as contemporaneous units over a large geographic area represented and linked by specific traits seen in an assemblage. While Oneota archaeologists have attempted to employ the horizon concept to the archaeology, these applications of the horizon concept are incorrect according to the original definition. Taxonomically, Oneota horizons are actually periods of time and not horizons with regard to how Oneota archaeologists have defined and used them (Tiffany 1998). The defined horizons are also based on the uncritical use of uncalibrated radiocarbon dates which can lead to interpretative problems. The following sections of this thesis, however, present how archaeologists use horizons as they define them in Oneota archaeology.

Emergent Horizon

The Emergent horizon refers to the earliest manifestations of the Oneota culture as distinguished from its presumed antecedents. The Emergent horizon is the weakest defined unit from a chronological prospective. Overstreet

(1995:36) dates this horizon from A.D. 900 until approximately A.D. 1050 (uncalibrated). However, Henning (1995:69) does not specify a beginning date, but defines its termination at A.D. 1000 (uncalibrated). Assemblages are composed of small triangular points, abraders, and occasional end scrapers. Architectural structures are in the form of small rectangular, semi-subterranean pit houses (Hall 1962). Emergent sites are documented primarily in Minnesota, Michigan and Wisconsin, and include the Carcajou Point (Hall 1962), and Crab Apple Point sites (Spector 1975). However, Henning (1995:69) contends that other components from this horizon exist in such places as the Blue Earth locality in southwestern Minnesota and Little Sioux Valley. Fishel (1999) notes that no known Emergent Oneota sites have been found in Iowa; he questions the validity of the Emergent horizon as currently used due to the border-line attributes used for its definition. The earliest Oneota sites attributed to the Emergent Horizon, such as Carcajou Point and Diamond Bluff, have house structures and some pottery design forms similar to the Stirling phase (A.D. 1100 to A.D. 1200) at Cahokia (Hall 1962; Rodell 1991). The calibrated dates from these sites correspond to the Stirling phase as well. This evidence supports Mississippian contact with Oneota groups after the Emergent Horizon. There is no archaeological evidence of Oneota before Stirling phase, which means Emergent Oneota groups did not exist.

Developmental Horizon

The Developmental Horizon is similar to the Emergent Horizon with some slight differences. The chronology for this horizon has been established from A.D. 1150 to 1350 (uncalibrated) (Overstreet 1995:44) and A.D. 1000 to 1350 (uncalibrated) (Henning 1995:69). Significant attributes for this horizon include ceramics with loop handles (Hall 1962:107), and decorated pottery with punctate-bordered chevrons on the vessel shoulder and tool impressions on the vessel lip (Boszhardt 1989:85). The punctate-bordered chevron design on the Oneota vessel shoulders is probably the main defining factor of the Developmental Horizon. House structures consist mostly of small oval-shaped buildings as opposed to square houses of the Emergent horizon (Overstreet 1995). Additionally, the Developmental horizon extends over a much larger geographic area. Subsistence continues to reflect a mixed economy of maize agriculture and local resource exploitation.

The Developmental horizon represents the first Oneota occupations in Iowa. As a result of research over the years associated with this horizon, several phases have been defined in Iowa. These are the Burlington phase in southeast Iowa (Alex 1978; Slattery 1975 et al.; Tiffany 1979a), the Moingona phase in central Iowa (Benn 1991; De Vore 1990; Gradwohl 1967; Moffat et al. 1990; Osborn 1982), and the Correctionville phase in northwest Iowa (Harvey 1979; Henning 1961, 1970).

Classic Horizon

The Classic Horizon represents a time encompassing the largest geographic distribution of Oneota peoples. Additionally, populations are thought to be larger and living in specific areas for a greater period of time (Overstreet 1995). Cultigens continue to play a significant role in subsistence with possible increased demand for maize and other crops (Henning 1995; Overstreet 1978, 1995). This horizon has been dated from A.D. 1350 -1650 (uncorrected) (Henning 1995; Overstreet 1995). The pottery continues to have a high percentage of decorated shoulders with trailed lines, of varying widths, bordered by punctates (Overstreet 1995). In the La Crosse area tool impressions on the top rather than the side of the lip occur (Boszhardt 1994). Strap handles extending to the exterior lip of the vessel are common as well and are an archaeological marker for this horizon (Hall 1962). Other changes during this time include a increased frequency of pattern tools such as end scrapers, knives and biface tools. These tool differences perhaps reflect the idea that bison hunting became increasing important in the Oneota economy as proposed by Gibbon (1972).

Evidence for aboriginal trade in raw materials and finished tools from several geographic locations begin to appear on Oneota sites at this time. These include catlinite disc pipes, copper, marine shell, and bison scapula hoes. These items may or may not appear on all Classic sites, but do appear in components at various times during the Classic Horizon (Boszhardt 1994; Overstreet 1995).

Historic Horizon

The Historic Horizon is associated with Oneota sites which post date A.D. 1650 (Henning 1995; Overstreet 1995). This time is marked by many changes to Oneota life ways. During this time European trade items appear. European goods are an important criteria for defining the Historic Horizon. Additionally, pottery designs change to punctate-filled chevrons separated by parallel lines. Overstreet (1995) characterizes the horizon as having smaller settlements with a decrease in population among Oneota groups. The most important factor from studies of proto-historic/post-contact sites is the linkage of these Oneota groups to historic tribes. Many researchers have tied the Ioway (Mott 1938; M. Wedel 1959), Winnebago (Mott 1938; Overstreet 1978, 1995), Missouri (Chapman 1959), Omaha (Henning 1970; Mott 1938; M. Wedel 1981), Kansa (Henning 1970; Chapman 1959), and Osage (Chapman 1959) to post-contact Oneota sites regionally. Future research may be able to expand and further support some of these direct historic links.

Discussion

From the Oneota horizon system group continuities have been defined. Each of these continuities are believed to represent a local or regional evolutionary record of Oneota peoples (Henning 1995:71). Additionally, some archaeologists believe these continuities are spatially discrete units which, in theory, can be conceptualized as ethnic groups within the Oneota tradition

(Hollinger and Benn 1998:3). As the Oneota tradition evolves, these ethnic groups within the tradition parallel each other with the similar changes in material culture and adaptation (Henning 1995).

Group continuities have only been defined in a few regions. Henning (1970) has proposed a group continuity for the Missouri tribe in the lower Missouri Valley from approximately A.D. 1350 to the historic times at the Utz (23SA2) site. In eastern Wisconsin, Overstreet (1992) has defined a group continuity connecting the archaeological manifestations in this area with the historic Winnebago. In the La Crosse locality of southwestern Wisconsin, Boszhardt (1994) has argued for a unaffiliated prehistoric group continuity. Henning (1995, 1998a) feels that other continuities exist, but have yet to be well defined, especially in Iowa.

Although some group continuities have been defined, most Oneota complexes cannot be so categorized. One reason is the simple fact that not all geographic localities containing Oneota materials will reflect long term occupation in the locality where they are fixed. This is important when discussing Iowa Oneota. Second, not all prehistoric group movement can be traced with the data from the archaeological record. This is particularly important as we look at northwestern Iowa Oneota phases. Fishel (1999) has proposed new phases for the Little Sioux Valley sites, but some sites were occupied for long periods of time such as Dixon (13WD8). Fishel (1999) contends that the settlement of Dixon was during the Developmental horizon and

continued into the Classic horizon. The problem, however, one cannot necessarily define what part of the site is from which horizon.

Other factors include the importance of bison hunting and communal hunts great distances away from main settlement areas. Fishel (1999) contends that groups in the western Iowa were traveling westward for bison. A local continuity is lost if differing groups frequently move in and out of a locality. Issues of increased bison hunting, rapid relocation, and dislocation for prehistoric Oneota peoples have had little investigation with the exception of western Iowa Oneota research. There are many questions raised with the group continuity concept: Where is the evidence for Oneota bison hunts? Where did eastern Oneota populations travel to hunt bison? Did smaller Oneota groups coalesce into larger units like historic tribes such as the Ioway (M. Wedel 1976) (similar to proto-historic Pawnee: see Roper 1992:363-364)? These questions cannot be answered with archaeological data and call to question the whole application of the group continuity concept.

The Oneota tradition spreads and increases in a time-space continuum. This expansion cannot be systematically organized by the horizon concept as used by Oneota archaeologists. The expansion of the Oneota tradition also means an increase of diversity. For each region there is more than likely different influential factors such as environment and neighboring groups that would had an effect on a local Oneota population. M. Wedel (1981, 1986) was able to show numerous migrations within a very short time period (50 years) of

historic groups such as the Ioway, Oto and Omaha.

The proto-historic/post-contact archaeological representation of at least the Ioway is thought to be the Orr focus (Henning 1961; M. Wedel 1959). The definition of Orr phase (Henning 1970) is not the same as the Orr focus. The general ceramic traits associated with the Orr phase occur on several sites in different Oneota localities regionally. The hope of defining a continuity in an area is lost with migrating "Orr phase" groups that move across the Prairie-Plains. Additionally, regional sites are labeled Orr phase, but cannot be demonstrably related to the Ioway.

The fur industry, bison hunting, and introduced European good played a role in the lifeways of Chiwere-Siouan speakers. Modern "tribes" appeared regionally by definition from Europeans during early contacts. Such tribes have little or no definite ethnicity in the archaeological record as the group continuity concept implies. The evolutionary terminology in the present Oneota taxonomic system perhaps is not appropriate; multiple Oneota populations settled in several regions through time and not because of systematic region-wide evolutionary progression. Additionally, these group identities could change as the political systems, migration, bison hunting and exchange systems developed regionally.

An alternate system, based on Willey and Phillips (1958), has been proposed by Tiffany (1997) that perhaps represents a better model. Tiffany proposes that instead of the system that uses evolutionary horizons in a way

Willey and Phillips (1958) never intended, perhaps a more appropriate method is to organize Oneota tradition looking at Oneota in blocks of time (Tiffany 1997). The temporal model is made up of three periods (Early, Middle and Late). Each period is defined by markers such as changes seen in the ceramic attributes and key artifacts such as the appearance of disc pipes. These periods do not rely on the idea of unilineal evolution or inferred cultural continuity and development among disparate regions as the Hall horizon model suggests (Tiffany 1997). Tiffany's model does not rely on group continuities, which can be tested independently based on other premises. This model may be more appropriate for research than the traditional model proposed by Hall. Change to long-standing systems such as the one used for Oneota taxonomy, however, are a difficult sell to archaeology, many are reluctant to adopt new systems, and few have changed to Tiffany's system. The traditional taxonomic system will continue to plague Oneota studies with each symposium or publication on Oneota archaeology that does not address resolution of these taxonomic issues.

Oneota In Northwest Iowa

Oneota studies in northwest Iowa began in the late 1880's (Anderson 1975; Harvey 1979; Henning 1961). Later excavations centered around several sites. Henning conducted excavations at the Correctionville site (13WD6) funded by the Northwest Chapter of the Iowa Archeological Society (Henning 1961). Additionally, Henning conducted a ceramic analysis from the Correctionville

site as well as the Dixon site (13WD8) and compared his results with other Oneota ceramics from other Iowa localities (Henning 1961). Further investigations were conducted at the Dixon site and the Blood Run (13LO2) site as a part of Amy Harvey's dissertation research at the University of Wisconsin-Madison on the Oneota tradition in northwestern Iowa (Harvey 1979). In 1978, a field school at Milford (13DK1) conducted investigations through cooperative efforts by The University of Iowa and the Iowa Archeological Society (Spargo 1984). Most recently archaeological field school investigations have been conducted at the Gillett Grove site (13CY2).

There are 13 defined Oneota sites in northwest Iowa which are restricted to four locations. These are Blood Run (13LO2) and three portions in the Little Sioux Valley (Figure 2.2). Other sites have been recorded as "Oneota" in northwest Iowa, but Fishel (1999) contends that they have not been identified or described in any way, hence, they should not be considered Oneota until verified. Systematic surveys of river systems in northwest Iowa has not been done.

Several dates have been obtained from sites in the area. The initial Oneota occupation of northwest Iowa dates near A.D. 1300 (Fishel 1995, 1999; Harvey 1979), and continues until the early A.D. 1700's. Several village sites of varying size comprise the Oneota occupation of this region. Studies have emphasized ceramics analyses, but over the years, further work on lithics and faunal remains have occurred. One area where archaeological investigations have yielded very little data is with the architecture associated with these

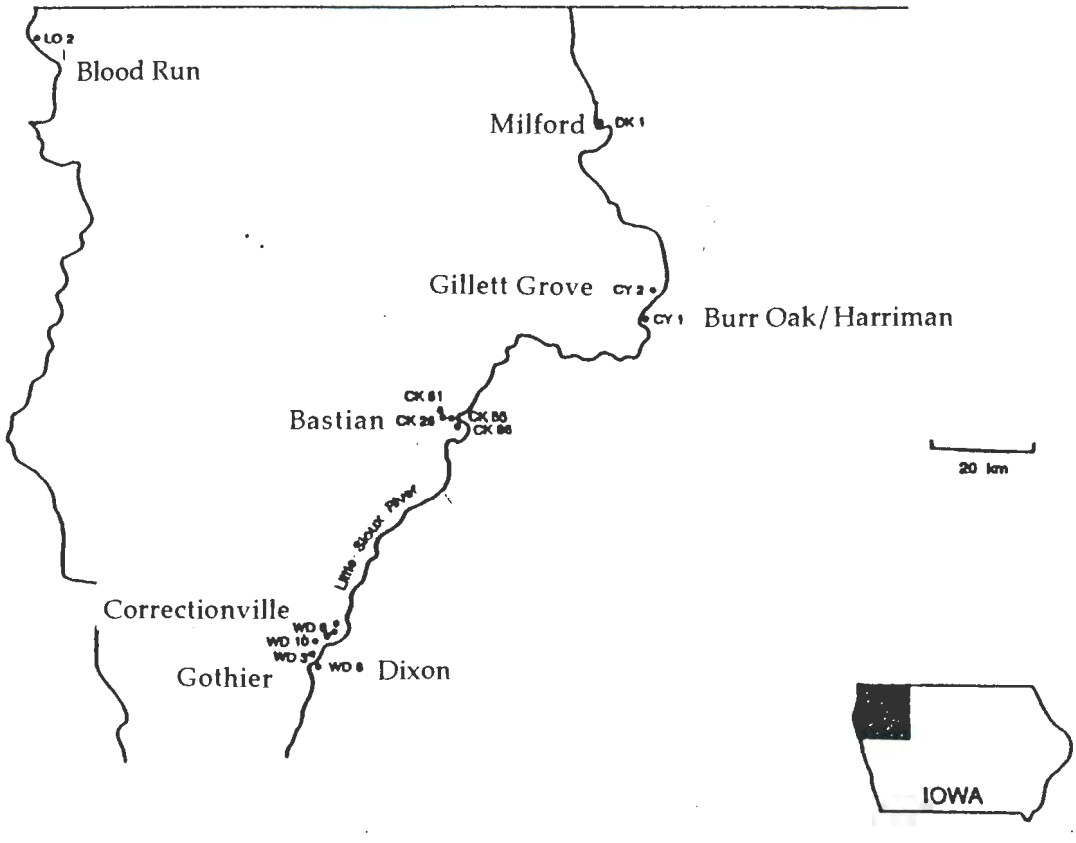


Figure 2.2. Oneota sites in northwest Iowa (modified from Lensink 1993:195)

western Iowa manifestations. One house was defined by Harvey (1979:63) at the Dixon site, and portions of four houses were excavated at Dixon by Fishel (1995) in 1994.

Investigations

Collective research from the past twenty years (Fishel 1995, 1999; Harvey 1979; Henning 1998a; Tiffany 1979b) has examined the complexities of Oneota archaeology in northwest Iowa from four localities. Recent publications (Fishel 1999; Henning 1998a) have proposed additional phases for this region. Willey and Phillips (1958:22) define a phase as an unique archaeological unit entity, that is spatially limited to specifically a locality or region over a brief period of time. The following is an attempt to summarize and to evaluate these phases.

Correctionville Phase/Correctionville Locality

The Correctionville-Blue Earth phase was originally defined by Henning (1961) and included Oneota sites located all along the Little Sioux Valley except for upper valley sites that contained European trade items. Henning (1970:152-153) also included Oneota sites from Minnesota as well as Iowa based on a comparison of artifact assemblages from both localities. Many archaeologists also commented on the similarities of both regions, but questioned linking these Correctionville and Blue Earth sites into one phase (Gibbon 1983; Harvey 1979). These two site clusters are now separately defined as the Correctionville and Blue Earth phases (Gibbon 1983; Henning 1998a). Oneota populations living in

the Blue Earth region are postulated to be the origin for western Iowa Oneota populations, specifically the Correctionville phase (Fishel 1999; Henning 1999).

The Correctionville phase is best defined of the regional phases and refers to the Oneota sites located along the Little Sioux River near the towns of Correctionville, Anthon and Oto. Sites that comprise the Correctionville phase include Gothier (13WD3), Dixon (13WD8), Anthon (13WD10) and Correctionville (13WD6) (Fishel 1999; Henning 1998a). A diagnostic trait of the Correctionville phase is Correctionville Trailed pottery. Correctionville Trailed can be described as globular jars with highly flared rims usually with either two strap or two loop handles. Lip decoration on these vessels consists of tool-impressions and trailed lines which occur on the rim interior; shoulder decoration has elements of horizontal and vertical trailed lines, occasional chevron usage and bordering punctuates (Fishel 1999: 63-74; Henning 1961:10-17). The highly flared rims in particular are a common attribute of Correctionville pottery. Correctionville phase material culture is consistent with other Classic horizon Oneota sites across the Prairie-Plains producing an assortment of lithic tools (end scrapers, un-notched triangular points, drills, knives), plant processing tools such as manos and metates, bison scapula hoes, bone awls and catlinite pipes.

Fishel's recent work at the Dixon site was part of a cultural resource management project to access flood damage to the site. A detailed report (Fishel 1995) was published as a result the field work which contained a comprehensive

investigation of observed features and collected materials from Dixon. This has lead to a more recent publication (Fishel 1999) which also includes a synopsis of western Iowa Oneota.

Fishel (1999) suggests a division of the Correctionville phase into two units. These are the Early Correctionville Phase (A.D. 1300 to A.D. 1375) and the Late Correctionville Phase (A.D. 1375 to A.D. 1500). This proposal is based on additional excavation and analyses of material from the Dixon site (Fishel 1995). Fishel (1999) defines the Early Correctionville phase as what has already been described as "Correctionville phase" by archaeologists. The diagnostic ceramic traits include inter-lip notching, strap handles up to the lip, and nested chevrons with punctate borders on the vessel shoulders. In the Late Correctionville phase, the ceramic attributes are the same as Early Correctionville phase pottery with the additions of interior trailing on the lip, lip-top notching, and increased usage of chevrons composed of diagonal lines on the vessel shoulders. Additionally, catlinite items occur in the form of elbow and disc pipes (Fishel 1999). Fishel (1999) correlated the ceramic traits of lip-top notching, vertical finger trailing and opposed diagonal line motifs, with other Oneota sites in the La Crosse region and southeastern Iowa (Boszhardt 1994; Tiffany 1997). Based on this correlation and calibrated radiocarbon dates from features, Fishel (1999) dates ceramic traits of the Late Correctionville phase from A.D. 1375 to A.D. 1500.

The Dixon, Gothier, Correctionville and Anthon sites are multi-component; each site was used on more than one occasion over the 200 year span

of the Early and Late Correctionville phases. Definition of multiple components in a site within a limited time frame using primarily ceramic traits and worked pipestone can be problematic. While the proposed Correctionville phases are based on comparative data, the general lifeways of the Oneota remain the same during the occupation of the area in the Early and Late Correctionville phases.

Cherokee Phase/ Bastian Locality

The Cherokee phase (A.D. 1450-1500) has been defined by Fishel (1999), and includes Bastian (13CK28), 13CK55, 13CK81 and 13CK86 sites located north of Cherokee. The type site for this phase is Bastian which is well-known as the probable origin of at least 11 catlinite tablets with anthropomorphic figures, animal and other decorative motifs incised on them (Beals 1965; Bray 1963). Although this site is well-known, very little research has ever been conducted at Bastian or other Cherokee phase sites. However, 13CK86 had multiple surveys conducted during the mid 1980's. The site is located .6 km southeast of Bastian, and is a multi-component site with ceramics representing Woodland, Mill Creek and Oneota cultures (Walker et al. 1986).

A systematic survey of Bastian was conducted to determine site parameters as well as a surface sample for analysis (Tiffany 1979b). During road and house construction on the site in the mid-1970's, six storage features were excavated by members of the Northwest Chapter of the Iowa Archeological Society. An artifact sample was recovered, and soil samples were collected (Hoge 1976). End scrapers, knives, rim sherds, handles, body sherds, ground stone tools,

and bison scapula hoes were recovered and are presently curated at the Sanford Museum. This is the extent of field work conducted at Bastian. As a result Bastian is seen as a series of non-contemporary settlements encompassed in a 30.36 hectare (75 acre) area (Tiffany 1979b:22). Based on one radiocarbon assay, Bastian (calibrated) dates to A.D. 1425 and A.D. 1550 (Boszhardt et al. 1995).

The Cherokee phase is centered around the Bastian site and includes a few smaller outlier sites in the immediate vicinity. The primary difference seen in the Cherokee phase assemblage is the presence of the catlinite tablets and ceramic decoration. Cherokee phase pottery has chevrons of vertical and diagonal trailed lines on the vessel shoulders and instead of chevrons with punctate borders (Harvey 1979; Tiffany 1979b). Strap handles are present, but extend to the exterior lip-rim juncture. Tiffany (1979a) reports similarities between the Bastian ceramic motifs with decorative motifs seen on Kelley phase sites in southeastern Iowa.

Iowa Lakes Phase/Okoboji Phase

The Iowa Lakes phase (Fishel 1999) and Okoboji phase (Henning 1998b) are two different names for the same phenomenon. This phase refers to sites located on the upper Little Sioux Valley near the "Great Lakes" of Iowa. The phase is defined by the presence of European trade goods in association Oneota material culture on large village sites. The sites are classified as proto-historic/post-contact period in age. Fishel (1999) has tentatively dated this phase from A.D. 1690 to A.D. 1702. This is primarily based on ethnohistoric sources (M. Wedel 1981, 1986) that document the Ioway and Oto residing in this area at that time

and European trade goods found in these sites. Sites assemblages are seen close in time to Orr phase sites and include Allamakee Trailed-like pottery (Tiffany 1996). Sites included in this phase are Milford (13DK1), Gillett Grove (13CY2) and Harriman/Burr Oak (13CY1), additionally, Fishel (1999) adds Kirchner (13CY14) to this phase. The latter site, Kirchner, will be of lesser concern for this presentation because recent surface investigations by the 1999 Iowa Lakeside Laboratories field school reported no diagnostic Oneota artifacts (Charles K. Benton personal communication, 2000).

In 1993, Tiffany and Anderson (1993) published the results of research that took place in 1978 at the Milford site (13DK1). The Milford site is located on an upland area that is adjacent to the Little Sioux River west of modern town of Milford, Iowa. The Little Sioux River has created a horseshoe-shaped upland area. Site parameters have not been discussed in great detail, but the site is quite extensive with material culture found over a 65 hectare (160 acres) (Tiffany and Anderson 1993). The report concluded that subsistence activities at Milford reflect heavy exploitation of local resources, with an emphasis on bison hunting and agriculture (Tiffany and Anderson 1993:303). Further analysis of the European trade items was conducted by Anderson (1994), confirming that Milford was a single component site dating to around the same period as documented Ioway and Oto groups were residing in the area. Trade items recovered from Milford include brass and copper fragments, glass beads, Jesuit rings, an Apostle spoon fragment, iron fishhooks, trade axes, gun barrels, knives,

gun parts and gunflints (Anderson 1994). While it is significant that trade items have been recovered from the site, Tiffany and Anderson (1993:303) contend that there was no direct contact with French traders at Milford. Tiffany (1996) conducted a ceramic analysis from the Milford site presenting the first detailed report of the ceramics for post-contact Oneota sites in northwest Iowa. The results of this investigation concluded that the ceramic assemblage from Milford is similar to what has been defined as Allamakee Trailed in northeast Iowa and southeast Minnesota (Tiffany 1996:69). A key attribute to Allamakee Trailed pottery for late prehistoric Oneota sites is the use of the punctate-filled chevron motif, but this trait is best seen as a horizon style marker for late period Oneota sites everywhere and not exclusively as a feature of Allamakee Trailed (Tiffany 1996; Tiffany and Anderson 1993).

Since 1995, Michael Shott, John Doershuk and Joseph Tiffany have conducted excavations at the Gillett Grove site as a part of archaeological field schools affiliated with the Iowa Lakeside Laboratory (Shott and Doershuk 1996). These findings have confirmed that Gillett Grove has a post-contact Oneota component and possibly a prehistoric component as well. The field school at the Iowa Lakeside Laboratory continues each summer. The data from the recent field school investigations at Gillett Grove (1998) provide the basis for this thesis.

The Harriman/Burr Oak site (13CY1) is a site that has two names and was mistakenly believed to be two different sites in the past. This site is referred to in the literature by both names (Fishel 1999; Harvey 1979; Henning 1961, 1970;

Tiffany 1996), and in each reference using either "Harriman" or "Burr Oak" or both. Site 13CY1 is located on an upland area south of Gillett Grove along the Little Sioux River. No archaeological excavations have ever been conducted at Burr Oak although many archaeologists over the years have located the site and discussed surface collections from it (Henning 1961). Numerous surface collections have been made from the 13CY1. Surface collections from Burr Oak at the Sanford Museum and the Parker Barglof collection will be discussed later. European trade items such as glass beads have been recovered from 13CY1 suggesting the presence of a post-contact component.

Blood Run (13LO2) Locality

The Blood Run locality is a site area minimally estimated from a core 243 hectares (600 acres) to 486 hectares (1200 acres), a portion of which is now a National Historic Landmark (Harvey 1979; Henning 1998a, Schermer 1987). Currently, 324 hectares (800 acres) of the site are being preserved in Iowa. The site also extends across the Big Sioux River into South Dakota. Blood Run has had a long history of archaeological investigations. In the late 1880's, F.W. Pettigrew excavated several mounds and mapped several other features at Blood Run. Descriptions of these features were included with Pettigrew's work, and he provides the first descriptive information on this site (Pettigrew 1901). Some of the mapping information is quite detailed, giving feature dimensions which is the only information available for excavated and now destroyed mounds (Lueck et. al. 1995). Additional excavations were conducted by Fredrick Starr during the

late 1880's. Four more mounds were excavated as part of Starr's work (Starr 1887). Many other people contributed to surveying this area, and most of the work was concerned with identifying mounds, earthen enclosures, and stone circles. A survey conducted by Cyrus Thomas (1891) estimated 275 mounds and several stone circles present in the Blood Run site area. In the 1930's Charles Keyes and Ellison Orr with the State Historical Society conducted further excavations. Orr excavated several mounds, and mapped portions of the site (Orr 1963). In the mid 1980's salvage excavations took place at the Blood Run site. Several cache pits and a single mound were excavated as crews raced against the threats of an expanding gravel quarrying operation (Benn 1988; Schermer 1987). Today, Blood Run is still under the threat of expanding gravel quarrying. While a significant amount of work has been done at Blood Run, very little has been published or extensively researched.

The research conducted at Blood Run over the years has provided some very interesting information. The site is of interest because it may represent a place where several historic groups may have resided at one time. Some have suggested that the historic Oneota material culture represents Omaha-Ponca, Ioway and Oto encampments (Henning 1970; M. Wedel 1974, 1976, 1981). Other ethnographic information supports this possibility. Omaha-Ponca oral history indicates that these groups all resided together at one time in this area (Fletcher and La Flesche 1911). Others have noted the Omaha occupation of the area and have attempted to link archaeological features at Blood Run with the historical

cultural record. Thiessen (1999) has discussed the presence of a historically documented enclosure at Blood Run. Thiessen (1999) compared this enclosure with other earthen enclosures in southwestern Minnesota as well as the ethnohistorical record which places the Omaha-Ponca at Blood Run. Thiessen (1998) reports four other earthen enclosures at other locations (Niobrara, Wynot, Hartinton and Ponca) in Nebraska which were documented as Omaha or Ponca in historical accounts. This ethnographic research can perhaps add to what is known about the post-contact sites such as Blood Run in the midwest.

Discussion

The recently proposed northwest Iowa phases have been long over due, but are not without question. Much re-definement of the Correctionville phase has occurred (Fishel 1999), however, its application to the archaeological record may be difficult. The definition of Early and Late Correctionville phases are primarily based on stylistic variation in the pottery, which is found mixed on these multi-component sites.

The Cherokee phase is the least known and least tested at this time. Oneota phases are primarily defined by ceramic attributes, and in the case of the Cherokee phase, we have an undefined type of limited variation. Researchers (Fishel 1999; Harvey 1979; Henning 1961, 1970; Tiffany 1979b) have acknowledged a key of difference in the shoulder decoration on Bastian pottery and the presence of strap handles attached to the exterior rim. These ceramic features in

combination with traits such as catlinite tablets probably from Bastian, and one radiocarbon date provide the definition for the Cherokee phase.

The Iowa Lakes phase or Okoboji phase is problematic because two names have been assigned to the same material culture in the same area. This can be both confusing and annoying for researchers. Further, the names really do not reflect the phase geographically. The archaeological sites in question all are located in the Little Sioux Valley, not around lakes. Secondly, one must evaluate whether these sites constitute the definition of a phase. One of the problems seen initially is that only two sites have been tested, but as this research will show, there are some important distinctions between Milford and Gillett Grove which probably reflect temporal variation. These two sites are also 35 km apart. Additionally, these post-contact sites represent very brief periods of time when very rapid cultural changes were occurring. Assigning a phase to sites that are very close to the historical record becomes problematic. Currently, the only trait linking these sites is the presence of European trade goods.

Western Iowa Oneota sites have not been intensively surveyed or tested. What is known about western Iowa Oneota is based in some cases on investigations that the Northwest Chapter of the Iowa Archeological Society did forty years ago. A more extensive survey of the Little Sioux Valley will probably produce additional sites, especially on the upper portion of the Little Sioux River, that may support a better or new phase designation. Additionally, investigating previously recorded "Oneota" sites outside the confines of the

Little Sioux River might contribute important information as well.

The importance of additional sites may help assess western Iowa Oneota-Plains interactions. If western Iowa groups were conducting communal hunts on the Plains for bison, the nature of the interaction taking place between these transient groups and resident populations should be examined. In particular, sites such as those located in the White Rock region in south-central Nebraska and north-central Kansas, the Leary site in southeastern Nebraska and other unreported sites could play an important role in understanding population movements by western Iowa Oneota groups. Oneota sites further west can range in size from 6.1 hectares (15 acres) such as Fanning, in northeastern Kansas, to 40.5 hectares (100 acres) at Leary (W. Wedel 1961:117). These manifestations west of the Missouri River contain assemblages similar to those found in Iowa. The White Rock phase has catlinite disc pipes, but also has evidence for Plains village influences seen in the ceramic assemblage (Ritterbush 1999). The presence of disc pipes suggests that Oneota interaction and influence is quite extensive, however.

Dhegihan and Chiwere Siouan Linguistic and Cultural Relations

Cultural and linguistic investigations are often separated in archaeological research. Linguistic research, however, is a key factor in understanding cultural changes in any study area. This is no different for the Prairie-Plains region of the United States. The Plains area, historically, had 33 defined languages (Hollow and Parks 1980). The ethnographic research on the Plains dates back only to the

late 1800's with the formation of the Bureau of American Ethnology in 1878 (Hollow and Parks 1980). The only previous information that is available from the Plains is from missionary sources and French and Euro-American explorers, which date back to the late 1600's.

The Chiwere Siouan speakers are comprised of the Ioway, Oto and Missouri. The Dhegihan Siouan speakers are comprised of several groups including the Omaha-Ponca, Osage, Kansa and Quapaw. This research will only focus on the Omaha, Ioway and Oto. The Ponca were, until very recent historical times, part of the Omaha, and Omaha-Ponca will be considered as one entity. Additionally, an interest lies in the shared geographic space between these tribes in northwest Iowa historically, thus, the Omaha, Ioway and Oto are specifically studied here. The Ioway and Oto may also be treated as one entity because of their strong historical ties (Foster 1994; M. Wedel 1981). The Ioway and Oto are said to have frequently dwelled together and over the years, marriages between the two groups took place contributing to the transformations and similarity of their shared language dialects. By examining these three groups an understanding of the cultural and linguistic relationships can be reviewed which will be useful for the archaeological research to follow.

The Ioway are a Chiwere Siouan-speaking group that occupied what is now the State of Iowa for hundreds of years (M. Wedel 1986). Oral traditions of the Ioway speak of belonging to a larger cultural group that contained tribes such as the Oto, Missouri and Winnebago (Skinner 1926; Radin 1923; M. Wedel 1986).

Linguistic research supports oral tradition that Winnebago was the original language from which Chiwere derived. Today, these related tribes are often referred to as Chiwere-Winnebago speakers. The ethnohistory of the Ioway is interesting because it documents the movement and migration of the Ioway in the 17th and 18th centuries. M. Wedel's (1974, 1986) ethnohistoric research has led to the reconstruction of the tribe's village locations based upon journals and maps created by the French explorers Perrote and Le Sueur. For example, by A.D. 1700 the Ioway were said to be living together with the Oto and Omaha in area near the Big Sioux River (e.g. the Blood Run Site, 13LO2) in northwestern Iowa (M. Wedel 1986). This observation can be confirmed with additional ethnographic and ethnohistoric work with the Oto and Omaha.

The Oto are another Chiwere Siouan-speaking group who have an oral tradition of being united with Ioway at one time when both groups were living in the Wisconsin-Green Bay area. The Oto later broke away and migrated southward with the Missouri for sometime before separating from them as well (Chapman 1974). During the 17th century they migrated at times, visiting the Ioway villages along the Upper Iowa River, and the oral traditions also speak of living in the same vicinity with the Ioway and Omaha (Chapman 1974; M. Wedel 1981).

The Omaha are a Dhegihan Siouan-speaking group that resided in an area of what is now northwest Iowa and bordering states (Fletcher and La Flesche 1911; O'Shea and Ludwickson 1992). The oral tradition of the Omaha tells of

them belonging to a larger nation of peoples that included other Dhegihan speakers. The Omaha are said to have broke away from the larger group near the vicinity of the Des Moines River while traveling along the Mississippi River. From there they migrated to the northwest following the Des Moines Valley to its source, which would lead them into present-day northwest Iowa and southwestern Minnesota (Fletcher and La Flesche 1911:36, 72). Later, they lived with the Ioway and Oto. These oral histories have been confirmed in part using the ethnohistorical record by Wedel (1981) and O'Shea and Ludwickson (1992), who used maps and descriptions made by several explorers such as Perrote and Le Sueur as well as the archaeological investigations (Harvey 1979) to pinpoint one site the Omaha describe as Blood Run (13LO2).

Ethnohistory can be defined as a method, which uses historic documents prepared by non-native people to examine the changes seen in a culture since the time of European contact (Axtell 1979:2, 1981:4; Trigger 1982:2). Ethnohistoric sources can be used to reconstruct the ethnography of a non-literate culture in an area through the use of primary written sources, and not the people themselves (Baerreis 1961:49). Ethnohistoric research is often associated with the acculturation studies of a non-literate societies. Anthropologist use historic and ethnological references to study changes seen among a group and to understand the impact of European influence on native cultures. From the generic definition, ethnohistory is very similar to ethnography, as both attempt to reconstruct or document a single culture. Ethnohistory combines the important

features of both history and anthropology, which allows for a far greater interpretative base for the study of a particular culture. The majority of Great Plains ethnohistorical work has dealt with application of the direct-historical approach to the archaeological record. Some of these early works include William D. Strong (1935), Mildred Mott (1938), Waldo R. Wedel (1938), and Julian H. Steward (1942).

The research conducted by M. Wedel (1974, 1981, 1986) exhibits the importance early maps can have for ethnohistoric research. M. Wedel's research provided information on the early encounters between native populations in Iowa with the French explorers during the late 17th century into the early 18th century. Ethnohistoric research conducted on maps is of great interest for the field of archaeology because the ethnohistoric record can be tested with archaeological record. Archaeology can often validate the ethnohistoric record.

M. Wedel (1978) also looked at some of linguistic issues in Ioway ethnohistory. This study compiled the numerous names used for the Ioway. The borrowing patterns reflect name usage and changes in the terminology applied to single group by other groups through time (M. Wedel 1978). Thus, inferences regarding native interactions as well as indigenous-Euro-American exchange can be examined in the names given to the Ioway by others.

Linguistic information for the Omaha is derived from basically two sources. The first source is the work of J.O. Dorsey, who conducted ethnographic research on the Omaha in the late 1800's and published several reports (Dorsey

1884). Several other unpublished manuscripts were complied by Dorsey and are housed at the National Anthropological Archives (Hollow and Parks 1980). These manuscripts on the Omaha language have been used as the main source of data for Siouan linguistic reconstructions.

A second source for Omaha ethnography is Fletcher and La Flesche (1911), and is the result of 30 years of field research. La Flesche was a member of the Omaha tribe, making this ethnography unique in that an actual member of the culture was both an informant and an investigator. The work is also of value because Fletcher and La Flesche interviewed both genders among the Omaha. Their ethnography has produced significant linguistic data.

The ethnographic research on the Ioway and Oto follows a very similar scenario. Most of the work was done in the early 1900's with the exception of a recent publications by Blaine (1979) and by Foster (1994). The best known ethnographic work was done by Skinner (1926). Skinner produced a number of publications over years. Skinner, however, was not as interested in the linguistics of the Ioway, and his transcriptions often exhibit these inconsistencies when compared to Whitman's work (Foster 1994). Whitman (1947) produced a description of the Iowa and Oto language using missionary work from the Oto as part of this research. Whitman (1938) produced several other publications on the Oto society, and one such work looks at clan origin myths. Whitman (1938) did comparative work with other Siouan-speaking groups examining origin story similarities. These works have provided some linguistic data for researchers,

and additional linguistic information on the Ioway and Oto is found in unpublished works by Dorsey as well.

Blaine (1979) complied previous ethnographic, ethnohistoric, and archaeological research into a modern summary of the Ioway. The linguistic information is limited, and the work centers more around the recent history of the Ioway. Chapman (1974) and Gussow (1974) use previous research, and additional investigation to derive a history of the Oto and Missouri, and the Sauk, Fox and Ioway.

Wolff (1950), Matthews (1959), and Chafe (1976) developed the classic of Siouan linguistic reconstruction that is still used in most cases today. Proto-Siouan is divided into several units: Missouri Valley, Mississippi Valley, and Southeastern speakers (Wolff 1950; Matthews 1959; Hollow and Park 1980). Our interest lies in the Mississippi Valley group, which is divided into Dakota, Chiwere-Winnebago, and Dhegiha speakers (Wolff 1950; Matthews 1959; Hollow and Park 1980).

Wolff (1950) constructed several cognate sets for each of the language subgroups attempting to show closeness between groups. Matthews (1959) looked at possible Proto-Siouan kinship terminology for reconstruction. Using comparative methods and ethnolinguistics, Matthews (1959) determined the possible sound changes over time. Additional work conducted by Springer and Witkowski (1983) postulate that subgroups Proto-Dakota, Proto-Dhegihan and Proto-Chiwere-Winnebago formed between A.D. 700 and A.D. 1000. Chafe (1976),

following the previous reconstructions, was interested in influences and similarities in Caddoan, Iroquoian, and Siouan Languages. Chafe (1976) was looking for diffusion from other language groups by examining semantics and verb bases.

Cross-disciplinary studies should be conducted, as pointed out by Foster (1994). Linguists sometimes know very little about the archaeology and the archaeologists know very little of the linguistic work. Perhaps, a new perspective could be developed and used when studying Plains cultures. A good example of this would be from Hall (1997), who uses material culture with belief systems and linguistics to examine culture systems archaeologically. Again the importance of looking at cultural-linguistic development in archaeological perspective is perhaps best summed up by Foster (1994:308): "Clans cut across tribal boundaries...tribes may form and reform, but clans stand distinct." With this concept in mind perhaps a better understanding of the many prehistoric and historic cultural systems of the Plains and the linguistic variation among them would be better perceived, if the historic "tribes" are studied not as fixed entities (e.g. tribes) but as strongly-bounded extended kin groups with varying and sometimes ephermal socio-political organization beyond the extended family unit. Researchers may try to develop or model Plains culture history, but they are not going to be able to account for the variation present unless more realistic socio-cultural/linguistic approaches are used.

CHAPTER 3: THE GILLETT GROVE SITE (13CY2)

Research Setting

Since 1995, the Gillett Grove site has been the focus of archaeological field work for the Iowa Lakeside Laboratory archaeological field school. Each summer three to four week field schools have operated under direction of one of these archaeologists from a Board of Regents institution. In 1995, Michael Shott, University of Northern Iowa, directed the first field school at Gillett Grove. In 1996 and 1997, John Doershuk, Office of the State Archaeologist, The University of Iowa, directed the field schools testing additional portions of the site. In 1998, Joseph A. Tiffany, Iowa State University, conducted field investigations at Gillett Grove. The field school is headquartered out of the Iowa Lakeside Laboratory, which is located along the west shore (Little Miller Bay) of West Lake Okoboji Whapeton, Iowa.

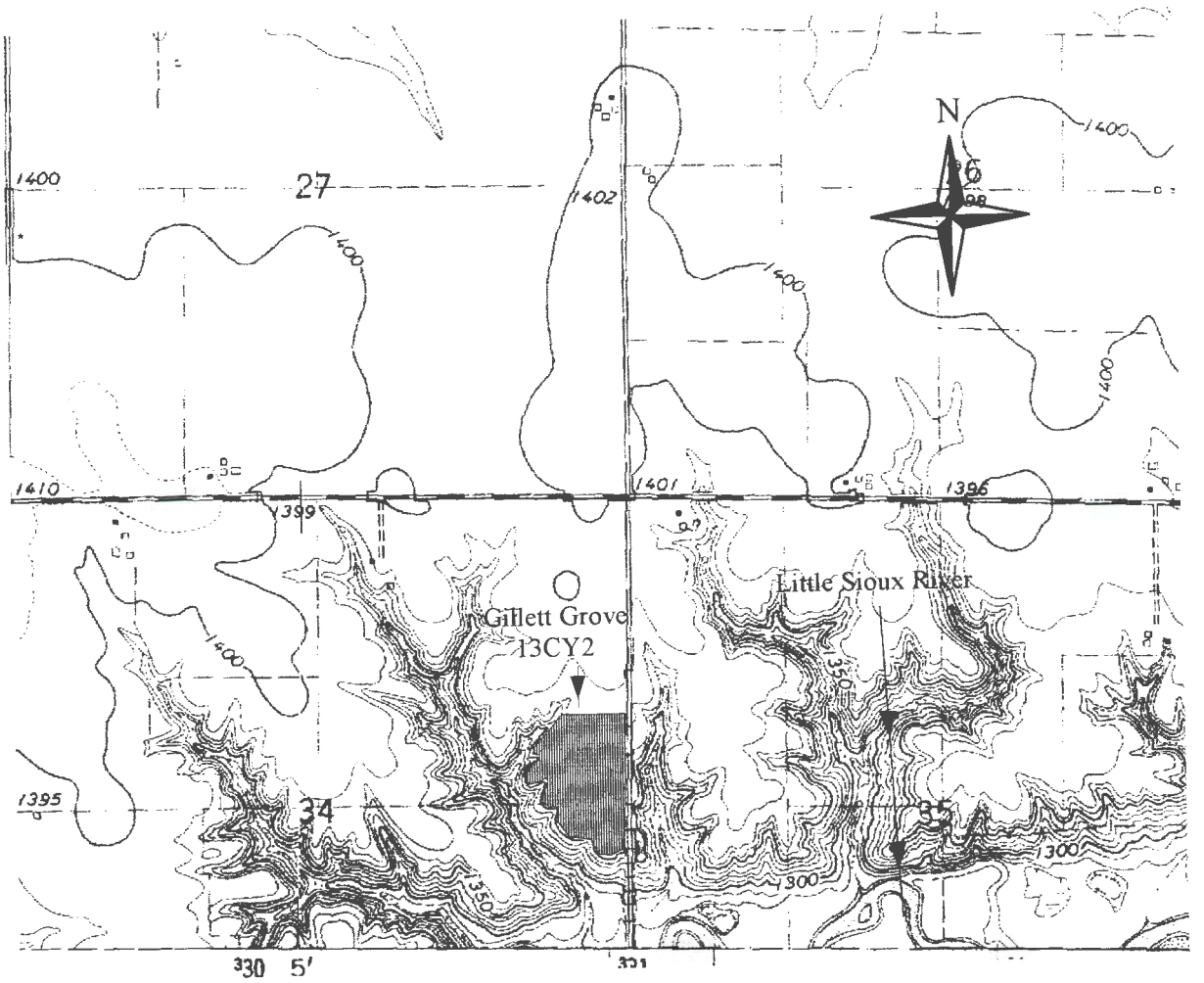
The Gillett Grove site is owned by Gross Farms, Incorporated, and research is made possible from cooperative efforts and interest of Tom Gross and his brother Jerry. The site is located approximately two miles west of Gillett Grove, and ten miles south of Spencer, Iowa.

Environmental Setting

Gillett Grove is located on an upland area overlooking the Little Sioux Valley, approximately 420 m north of the Little Sioux River, which is directly

south of the site (Figure 3.1). North of the site is open, level upland for some distance. On the east and west sides of the upland, the site is bounded by steep-walled valleys of intermittent drainages. The Little Sioux River is the major western Iowa drainage, and serves as the eastern border of the Northwest Iowa Plains. The Northwest Iowa Plains are characterized by gently rolling terrain with a well-defined branching network of streams. The eastern portion of the Northwest Iowa Plains is also covered with Wisconsinan-age loess overlying glacial till of the early Wisconsinan Sheldon Creek Formation (Prior 1991:34-35, 76-78).

The size of the Gillett Grove site has been an issue over the years. Several official Iowa Site Record forms have been filed with the Office of the State Archaeologist, each with a slightly different area mapped for Gillett Grove. Based on investigations up to 1998, the site parameters defined for Gillett Grove are shown in Figure 3.2. During the first two seasons at Gillett Grove, archaeologists focused on the western unplowed portion of the site. Archaeological testing, in the form of excavation units and bucket auger tests, revealed that the western portion of the upland area was a part of the site extending along each lobe of the landform (Shott and Doershuk 1996). Defining the western boundary is not a problem as the topography becomes drastically steep, hence preventing human occupation of the side slope. The southern and southeastern boundary have similar boundary traits with steep side slopes delineating the perimeter. Although no archaeological testing has been



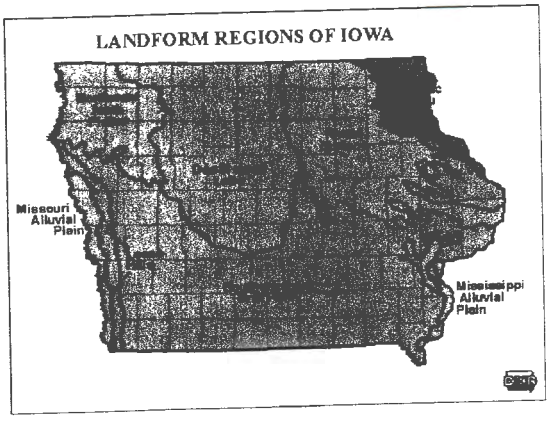


Figure 3.1. Location of the Gillett Grove site (USGS quadrangle, 1975)

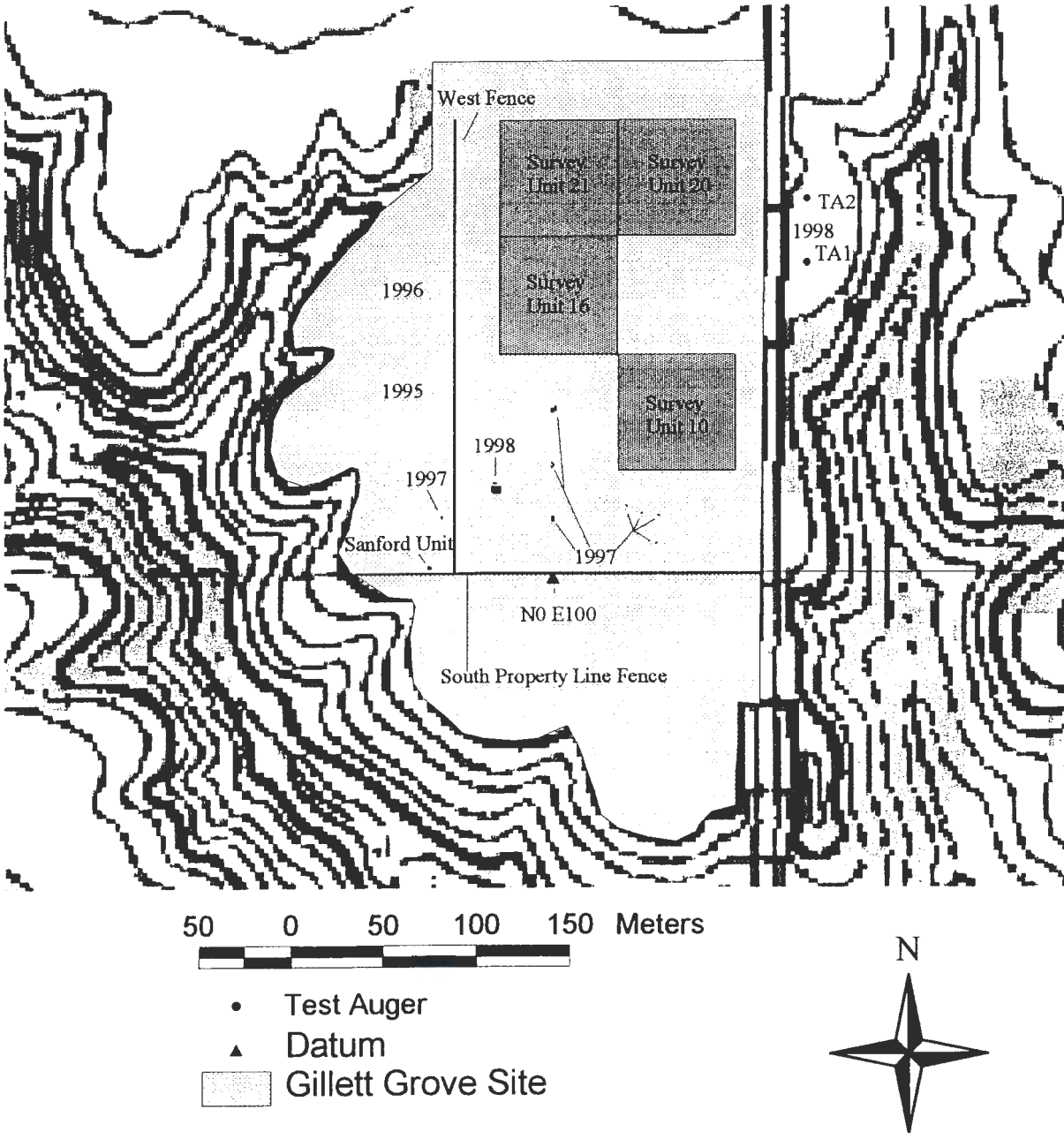


Figure 3.2. Map of the Gillett Grove site

conducted on the very southern portion of the site, Mr. Barglof recalls in his earlier years collecting artifacts from this area, and mound features were mapped in this area by Keyes. The area defined as "southern portion" refers to land south of the current property line marked by a east-west fence-line (Figure 3.2). This southern portion remains untested because it is under different ownership, and in the past archaeological testing has not been allowed. This portion of the site contains surface features in the form of burial mounds, an enclosure or both.

The eastern boundary is defined by modern construction in the form of a secondary road running north-south parallel in the eastern portion of the site (Figure 3.2). When the new bridge (Price Bridge) was built over the Little Sioux River and the road straightened, mound burials were reported during construction, indicating the present road cut through and destroyed a portion of the southeastern and eastern site boundary (Tom Gross, personal communication, 1998; Parker Barglof, personal communication, 1998). In 1998, across the road (east side) opposite the site, two bucket augers four meters away from the north-south fence-line were placed in the same upland landform as the site along the eastern boundary of the upland landform. These tests were conducted to record a stratigraphic profile in the area, and to see if there was any evidence that the site extended that far east. The tests recovered no artifacts and showed an intact soil solum confirming the road is now the eastern boundary. The northern boundary is more arbitrary than the other borders. This boundary is based on the surface survey conducted in the area as well as surface

investigation by Joseph A. Tiffany and myself. Additionally, collaboration with the landowner Tom Gross, who does his own surface collecting on the site, aided in establishing the northern boundary 275 meters north of the south property line fence (Figure 3.2).

Today the majority of the site is used for row-crop agriculture. The plowed portion of the site is mapped as a Primghar silty clay loam (Fisher 1969: Sheet 70). Adjacent to the plowed Primghar series is an Everly clay loam, 2-5% slopes. Based on 1995 and 1996 field work, the unplowed portion of the site matches the descriptions given by Fisher (1969:20) for Everly clay loam soil solum in particular the upper 30 cm (Shott and Doershuk 1996:2). Forming the steep slopes adjacent to the Everly clay loam is a Storden loam, 20-50% slopes, found on the border of the western and southern perimeter of the site.

Soil properties can be used to model past vegetation (Birkeland 1984:260). These mapped soils are typical of the area and usually are associated with prairie (Fisher 1969). In the Storden series, however, trees are not uncommon especially near intermittent streams (Fisher 1969:38). Based on the soils present at the site as well as early historical accounts (Harvey 1979:14-19) , the local environment probably has changed very little in the last 300 years. The site area was likely in prairie grass with bordering timber or groves along the intermittent streams in the side valleys to the east and west of the site. Local environmental modeling for the Milford site (13DK1) has been conducted (Tiffany and Anderson 1993). Milford is farther up the Little Sioux River--approximately 35 km. The local

environment modeled for at Milford should be very similar to Gillett Grove because both sites are located on similar landforms above the Little Sioux Valley and are possibly contemporaneous or very close in time. The Milford area has been described as having cooler and moister conditions than seen today (Semken and Falk 1987:216-217). The local environmental conditions were modeled as a tall grass prairie uplands with seasonal wetlands and groves confined to the valley systems bordering the site (Tiffany and Anderson 1993:289-291). This environmental model has been validated by various data acquired at Milford such as faunal remains. The similarities between Milford and Gillett Grove seem adequate at present to suggest that Gillett Grove was occupied in a local environment and climatic conditions similar to Milford. Further studies, however, on Gillett Grove's microfauna and botanical remains may change this assumption.

History of Site Studies

For many decades Gillett Grove was studied on a very surficial level. Reports of the site were based primarily on surface collections (Harvey 1979:188-189; Henning 1961:32-33, 1998a:383; Hull and Barglof 1966). The earliest investigations on a professional level were conducted by Charles Keyes who visited the site in 1921 and 1926 and did the initial description of the site. He noted 12 mound features, 7 of which were located on the southern end of the field out side of the now cultivated portion of the site (Keyes n.d.). Most of this

work was compiled during his 1926 visit. Additionally, Keyes noted the possibility of a 100-m diameter enclosure with embankment measurements of 5 m by 1 m located at the center of the site based on several accounts by local residents. Keyes reported, however, in his 1926 visit that the enclosure had been destroyed by cultivation. One other feature reported by Keyes was the possibility of an additional embankment located in the southwestern portion of the site. Several large collections were also noted by Keyes and included in his summations were the presence of several artifact types including Oneota pottery.

A decade after Keyes last visited the site, Parker Barglof began to amass his collection from the Gillett Grove site. Barglof collected for several years, but probably has not seriously collected from the site in the last 15 years. This collection was used as a source of information in earlier Oneota studies when the Gillett Grove site was discussed (Harvey 1979; Henning 1961). A sketch map showing a portion of the site drawn by Parker Barglof in the 1930's (Figure 3.3) depicts only six mounds as visible. A decade after Keyes' last visit, erosion and cultivation had already depleted these six mounds. During the time Mr. Barglof collected from the site, the southern portion of the site was plowed for a short period of time. Today, however, the six mounds Barglof recorded are not clearly visible. Minimal evidence of these mounds can be seen from photographs taken in the spring of 1999, Figure 3.4 is a southwest facing photograph of the western part of the south portion of the site. The slightly elevated surface features are possibly remnants of Barglof's recorded Mound 1 and Mound 3 (Figure 3.3).

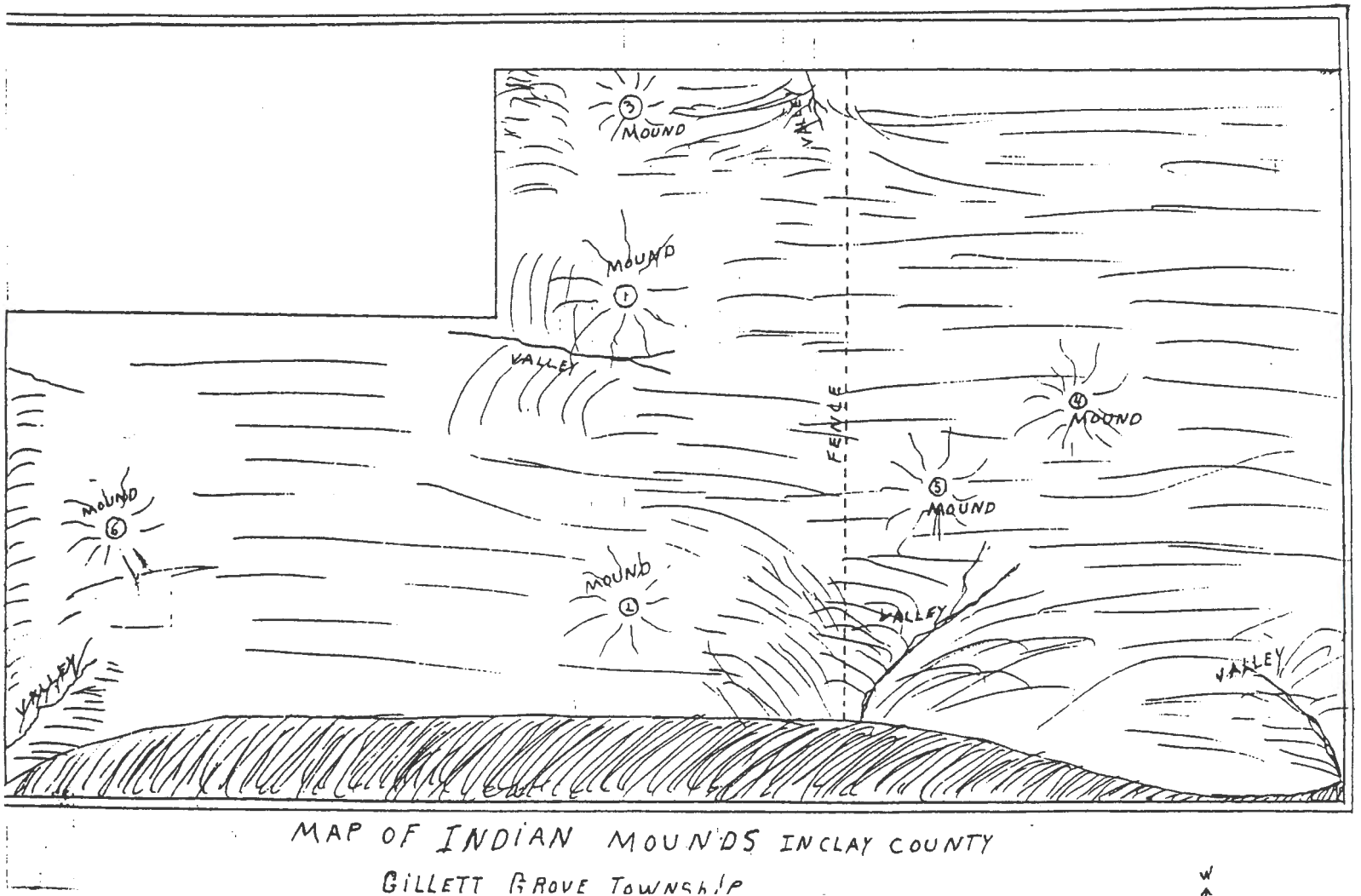


Figure 3.3. Parker Barglof sketch map of Gillett Grove

Additionally, Figures 3.4 and 3.5 show where Mound 2 and Mound 6 would be located according to Barglof's sketch. Today, it appears that these mounds are gone as well as Mound 4 and Mound 5. What these mounds represent or did represent is still unclear. Mounds are traditionally seen in the archaeological record as graves or "burial mounds"; these former mounds could have served this function. Another possibility is that the mounds represent midden debris piles; these features are found on post-contact Plains sites such as the Mandan villages in North Dakota. Though the Mandan midden mounds are quite enormous, and not the same magnitude or shape as what was probably at Gillett Grove. Additionally, other late prehistoric sites, notably in Oklahoma, had refuse piles in the form of mounds (Sudbury 1975:5).

While burials are not an uncommon association with Oneota villages, the latter explanation of these mound features as middens seems more appropriate. The recorded mounds are on the periphery of the village site, and this would be the most ideal location for refuse to be deposited. Additionally, burial mounds are a constructed feature that took planning and perhaps would survive various impacts such as erosion and cultivation much better than a concentrated midden deposit. The southern portion of the site, used as pasture the majority of the time, had 7 mounds recorded in the vicinity, and would require very intensive agriculture to erode them. Barglof claims that the area was only plowed for a brief period. The burials encountered during the past road construction near the Gillett Grove site suggest that a cemetery was already destroyed on the southeast

Figure 3.4. Southwest view of western south section of 13CY2

Figure 3.5. View of southern portion of 13CY2

edge of the site. These recorded mound features will probably remain a mystery until examined by excavation.

In 1955, the Northwest Chapter of the Iowa Archeological Society based out of the Sanford Museum and Planetarium, Cherokee, Iowa conducted archaeological investigations at Gillett Grove (Anderson and McAllister 1972). Material was collected from on the southwestern portion of the site and along the fence-line where a badger had burrowed. A test unit was also excavated. This unit was relocated by myself during a visit to the site. The unit is located 4 meters north of the south property fence-line and 14 meters west of the west fence-line (Figure 3.2), dimensions based on relocating the unit appear to be approximately 1.5 X 1.5 m, with a depth of 15 inches below the surface or 28.1 cm. The materials collected include a wide variety of artifacts typically found on the Gillett Grove site (Table A.2).

This was the extent of the research conducted at the Gillett Grove site prior to Iowa Lakeside Laboratory activities. The only impact to the site over the years is the numerous local collectors that have frequented the site. The site itself has changed very little over the years. The majority of the site is used for cultivation while the western and southern peripheries remain in pasture.

Recent Investigations

Gillett Grove has now become a focus for archaeological study. The cooperative efforts of Iowa Lakeside Laboratory, Iowa archaeologists, and the

Gross family provide a unique opportunity to conduct research at Gillett Grove. The major objective of this work is to educate and train students. Students are instructed in archaeological field and laboratory techniques, and Iowa prehistory. Though education is the primary purpose of the field school, each year research objectives are implemented by the archaeologist in charge.

1995 Season

In 1995, Michael Shott from the University of Northern Iowa conducted the first field tests on the second lobe of the western unplowed portion of the site (Figure 3.2). The western portion of the site has three lobes separated by steep ravines that drain the upland. The area lies on the outer portion or very western edge of the site is in an area that had never been plowed.

A total of eight 1 m^2 units were excavated as well as forty-two auger unit tests on the second lobe (Shott and Doershuk 1996:4). The assemblage contained shell-tempered pottery, a variety of lithics, triangular bifaces, fire-cracked rock, faunal remains, brass, iron and sandstone (Shott 1995). Excavations revealed a silt loam to clay loam forming a 30 cm deep unplowed midden (Shott and Doershuk 1996:4). Based on the auger tests, sample densities of artifact classes were derived as well as estimated total quantities (Shott and Doershuk 1996:5). The assemblage from the 1995 field season is already reported and not a part of this thesis research. During the 1995, two small features were found. The function of these features is unknown.

1996 Season

In 1996, field work was conducted by John Doershuk of the Office of the State Archaeologist, The University of Iowa. Again, the western unplowed portion of the site was tested. Dr. Doershuk conducted research primarily on the third or northern lobe (Figure 3.2). A total of twenty-three 1 m^2 units were excavated normally to a depth of 30 cm. Bucket auger testing was also employed with a total of eleven tests excavated. Four of the auger tests were conducted in excavation units: A1 NE, A5 NW, E1 SE and E5 SW. During the 1996 investigations one small feature was discovered. Since more than one feature may have the same feature number assigned, features will be discussed and described according to the following label: 96-Feature 1 refers to feature 1 from 1996 excavation, 98-Feature 1 represents Feature 1 from the 1998 excavations, and so forth. Located in Unit G8 (Figure 3.6), 96-Feature 1 was small, 1 m by 1 m in size, and was excavated to a depth of 24 cm. This feature is defined as a concentration of shell-tempered ceramics with associated flake debitage, faunal and botanical remains and fire-cracked rock (FCR). FCR is irregular, sharp-angled jagged edged broken rock (primarily granite) that has exploded due to heating and thermal alteration. Additionally, rock often referred to as FCR can be formed by natural processes such as freezing and thawing. Since this natural process occurs rock identified as FCR may not correct, however, this rock material is culturally introduced though for convenience this introduced rock is referred to as FCR. The function of this feature is unknown. Artifacts recovered

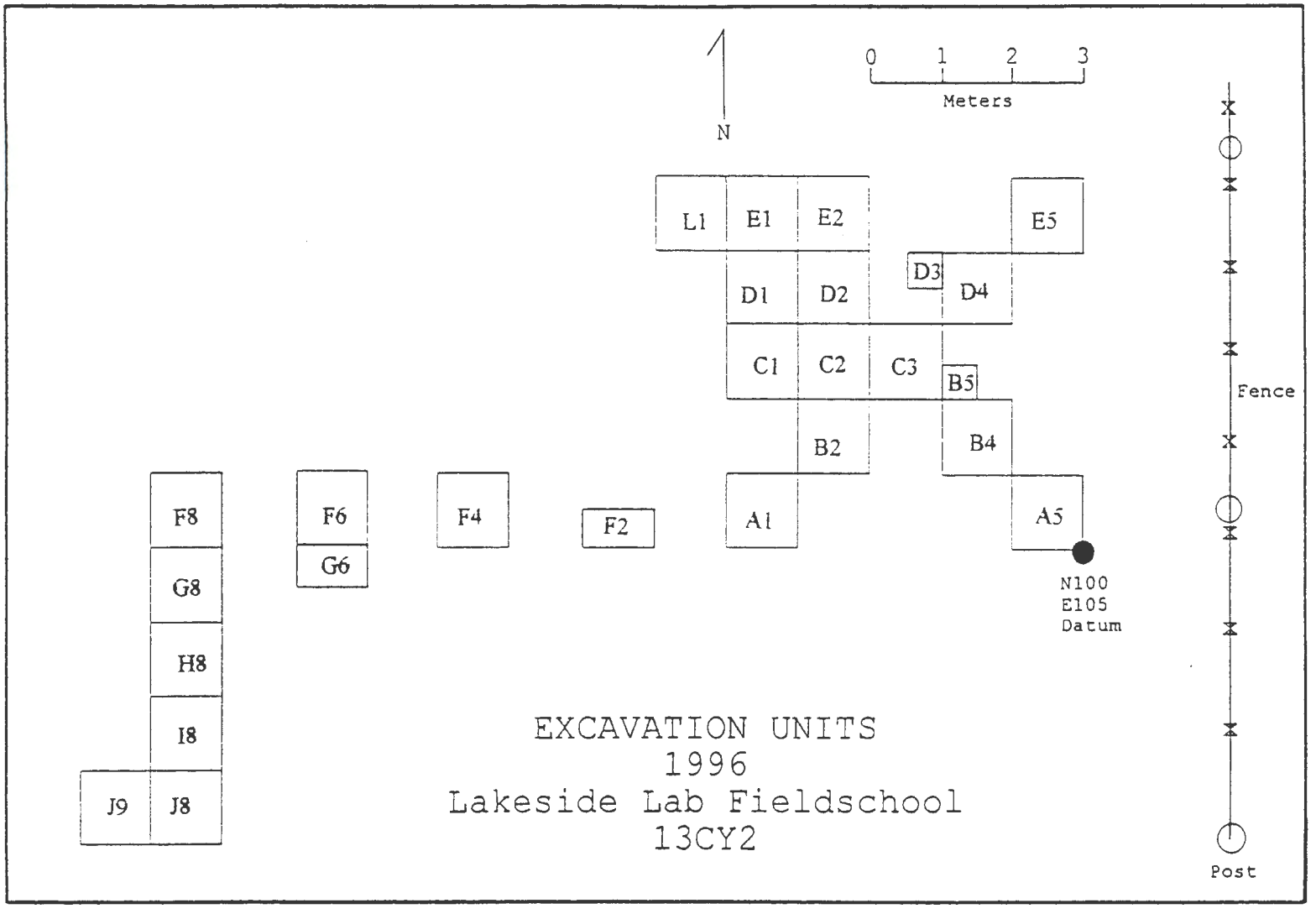


Figure 3.6. Plan view of1996 excavations (Figure created by Dr. John F. Doershuk, The University of Iowa)

from 96-Feature 1 include: 36 body sherds, 8 waste flakes, one utilized shatter, 17 (2729.4 g) FCR, one limonite fragment, 24 small waste flakes recovered from a soil sample, 9 unidentified bone fragments, 2 shell fragments and numerous botanical remains.

The artifact assemblage from 1996 was similar to the 1995 assemblage in terms of artifact types with some differences. Excavations revealed a unplowed midden similar to the midden found in 1995 field. The upper 30 cm was a brown to grey silty loam (10YR3/1 to 10YR4/2). Bucket auger testing in the test units showed a increase of clay content below 40 cm with a yellowish brown (10YR5/6) clay loam continuing to a depth of 140 cm (Shott and Doershuk 1996:4). The field work confirmed that Gillett Grove is an Oneota village with the recovery of several diagnostic shell-tempered sherds as well as the recovery of some European trade goods like glass beads and copper and brass fragments. Additionally, the archaeology showed that the site continues to the western edge of the upland area. Village activity, however, appears to be limited since very few features were uncovered. The midden does contain a relatively dense amount of cultural material, suggesting that materials were being disposed on the periphery of the village similar to other Plains Village and Oneota sites.

1997 Season

The 1997 field work was once again under direction of John Doershuk. During this season Tom Gross granted permission to conduct excavations on the cultivated portion of the site. As a result it was decided to open units along a

north-south transect that approximately bisected the site. Three sets of units were placed 30 m, 60 m and 90 m north of a permanent datum established along the south fence-line (Figure 3.2). A total of eighteen 1 m X 1 m units were excavated through the plowzone, revealing, a sub-plowzone layer and features in the central portion of the site (Doershuk 1997:2). Additionally, four units were opened in the southeastern portion of site and one unit in the western portion adjacent to the 1995 units.

Sub-surface features included two pit features (97- Feature 2 and 97-Feature 4) in the form of circular stains, and two probable post molds (97- Feature 1 and 97-Feature 3). The fill of both pit features can be described as a very dark grayish brown (10YR3/2) sediment containing a significant amount of ash, charcoal and burned earth. This suggests their function perhaps were hearths at one time, and that they were converted into refuse pits later (Doershuk 1997). The location of 97-Feature 2 was in Units 113 and 116. This feature had a diameter of 95 cm and maximum thickness of 26 cm (Figure 3.7). The top of the feature was 50 cm below the unit datum (or 40 cm below the ground surface). The sides of the feature were straight with a flat-bottomed base (Figure 3.8). The physical descriptions of 97-Feature 4 are very similar to 97-Feature 2. The diameter is approximately 100 cm with a maximum thickness of 29 cm. However, 97-Feature 4 is described as a basin with a gently rounded base. The location of 97-Feature 4 was in Units 116, 118 and 121; at a depth of 51 cm below the unit datum (41 cm below the ground surface) (Figure 3.7).

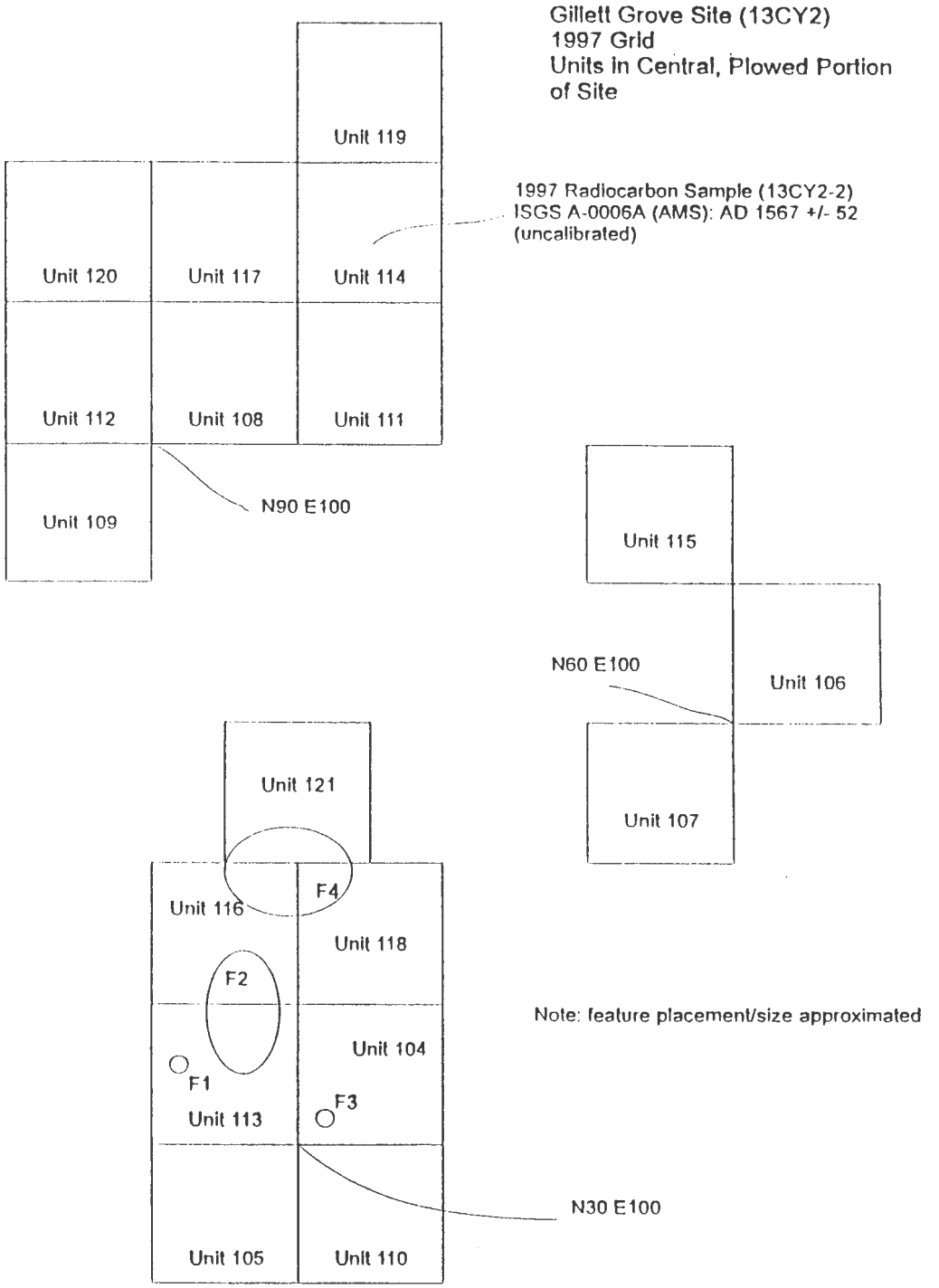


Figure 3.7. Plan view of 1997 excavation units (Figure created by Dr. John F. Doershuk, The University of Iowa)

Figure 3.8. Photograph of vertical profile of 97-Feature 2

The probable post molds were located in close proximity to both pit features. The post mold (97-Feature 1) was located in Unit 113. It had a diameter of 15 cm and a depth of 15 cm (Figure 3.7). In profile, 97-Feature 1 was conical shaped and found at a depth of approximately 40 cm. The other probable post mold, 97-Feature 3, located in unit 104, can be described as a dark brown circle with flecks of charcoal in the matrix. The physical dimensions of 97-Feature 3 are 16 cm diameter with maximum thickness of 7.5 cm. This feature was first noted in the excavations at a depth of 35 cm below the ground surface.

The 1997 features all appear at the same depths and are close enough in proximity that they were probably once associated with each other. Additionally, since metal was found 97-Feature 3, this would suggest that the features are associated with a post-contact occupation. The plowzone in this part of the site ranged from 25-30 cm in thickness, followed by a 8-10 cm transitional AB horizon. All the features were either in this transitional horizon and or below this horizon in the weak B horizon. A wide range of artifacts were recovered from these features and most were found in 97-Feature 2 and 97-Feature 4. Materials from 97-Feature 2 include: 10 waste flakes, one core/shatter fragment, 4 utilized core/shatter fragments, 2 FCR or introduced rock, 2 shell fragments, a rim sherd, 11 body sherds, 13 unidentified bones and one miscellaneous rock. Materials from 97-Feature 4 were similar and include: 12 waste flakes, 5 core/shatter fragments, 2 FCR, one sandstone fragment, 2 body sherds and one unidentified bone. One post mold feature, 97-Feature 3, contained two artifacts, a single biface and a metal fragment. The metal fragment suggests that the feature was filled in during the post-contact period. The other three features are probably associated with 97-Feature 3. These features are collectively representative of a post-contact component.

1998 Season

Joseph A. Tiffany, Iowa State University, directed field investigations at Gillett Grove in 1998. Testing continued on the plowed portion of the site 30 meters west and 46 meters north of the datum established the previous year

(Figure 3.2). During the 1998 season, the site datum was re-established and a permanent benchmark was seated into the ground by placing a re-rod bar along the fence-line at the datum point replacing a wooden stake. A total of twenty-one 1 m X 1 m units were opened. As mentioned, two bucket auger tests were placed across the road from the northeastern portion of the site (Figure 3.2). The two auger units were placed four meters east of the fence line on the east side of the road and were set 35 m apart. Test Auger 1 was augured to a depth of 53 cm, the soil profile is as follows: 0-25 cm A horizon, 25-38 cm AB horizon, and 39-53 cm B horizon. Test Auger 2 was augured to a depth of 53 cm with the following soil profile: 0-22 cm A horizon, 22-48 cm AB horizon and 48-53 cm B horizon. No artifacts were recovered from either auger, and the soil profiles appear to be intact with very little if any erosion or disturbance.

Part of the research objective for the 1998 field season was to conduct a systematic surface survey of the site. The purposes of this survey was to quantify potential amounts of material culture from the site as well as to define site boundaries and to assess areas of artifact concentrations within the parameters of the site. Preliminary mapping of the site into twenty-two 1 acre square survey units was done. From the twenty-two 1 acre units, four (18% of the site) were randomly selected for survey purposes. Survey Units 10, 16, 20, and 21 were the selected and flagged in the field for the students to collect (Figure 3.2).

The 1998 surface survey was the first systematic survey of the Gillett Grove site. The survey served as an educational tool, and a representative site sample

was obtained. The sample data can be used to extrapolate quantities of artifact types that could possibly be present at the site, such as the potential amount of European trade goods present. This survey was also needed to define the site boundaries, especially the northern boundary.

To conduct the survey, a site map was created using a United States Geological Survey topographic map. Hypothetical boundaries were established extending beyond the probable site limits to the north using information gathered from site records and information from the land owner. The potential site area was divided into twenty one acre square units, each with its own designated number. A simple random sample, using a random numbers table, was used to select four units (18% of the potential site area) for surveying. The units selected were survey units 10, 16, 20 and 21 (Figure 3.2). The survey was conducted by field school students systematically collecting artifacts for each unit in 2 meter intervals or rows over each selected unit. All four units were located on the plowed portion, which was currently being used for row crop production.

During the survey each student was assigned 2 corn rows or approximately 2 meters to survey at a time. The students worked across each unit focusing on their own assigned rows. As students progressed in the rows, Dr. Tiffany and I followed the students checking and collecting any missed artifacts. Students were told to collect everything except fire-cracked or introduced rock and other non-cultural rock. These were initially left in place because of the enormous quantity of rock that would have had to be collected. Dr. Tiffany and I felt that

the rocks may serve another purposes at a later time such as demarcating areas of village domestic activity or houses. The surface conditions during the survey favored a high percent (80% to 100%) of visibility in the plowed field. There were problems, however, primarily the ground surface had not been broken since initial planting of the corn crop, this left a very dry compacted surface that hindered artifact visibility as the ground surface dried daily.

The survey results did not produce a large amount of material relative to the area surveyed. Various artifact types were collected with very few representing any trade goods. Table 3.1 lists the artifact types and quantities from each survey unit. The units themselves are probably too large for intricate detailing of intra-site definition of features, houses, and the like. Implementing the survey was a simple task, and it helped establish the questionable northern boundary of the site. Based on the survey the north boundary was determined different than thought. The site is now defined to be 15 acres (6.1 hectare), and the actual area surveyed was 23% of the total site. Several approaches could be done with future surface collecting to improve upon the data recovery such as using smaller survey units, multiple collecting of units under different weather/farming conditions, and the like. The potential amount of artifact types predicted for the site appears to be low, especially, when compared to the recent surface collections made by Mr. Tom Gross, a landowner of the site. The Gross collection was initiated in the spring of 1998, and continues to be expanded (Table A.3).

Table 3.1. Artifact totals from survey units

Item	Unit 10	Unit 16	Unit 20	Unit 21	Total	Potential amount*
Metal	1	2			3	16.5
Glass bead	1	2	1		4	22
Glass disc bead		1			1	5.5
Unidentified bone	36	106	1	4	141	775.5
Identified bone		4			4	22
Teeth	3	7			10	55
Shell		31		10	41	225.5
Rim sherd		2		1	3	16.5
Handle		2			2	11
Body sherd	107	205	9	14	335	1842
Limonite	4	8			12	66
Daub		2			2	11
Core/shatter	203	388	18	52	661	3,635.5
Waste flake	550	1,124	24	75	1,773	9,751.5
Utilized core/shatter	8	8	3	6	25	137.5
Utilized flake	27	101	4	9	141	775.5
Point	5	4			9	49.5
Biface	3	9	1	2	15	82.5
Retouch flake	4	3		2	9	49.5
Drill	1				1	5.5
Spoke shave	1				1	5.5
Ground stone	2	1			3	16.5
End scraper	3	2			5	27.5
Pipestone		5	1	1	7	38.5
Stoneware			2	2	4	22
Pipe fragment		1			1	5.5
Brass/copper		1			1	5.5
Glass		1			1	5.5
Large biface		2		1	3	16.5
Total	959	2022	64	179	3218	17,698.5

** total based on hypothetical site size of 22 acres.*

While the numbers are low, the relative abundance of each artifact class as a percentage of total artifact estimate may stay the same even with more refined sampling procedures. The density of artifacts from each survey unit was used to approximate probable high areas of village activity. Artifact densities for each square meter were calculated for comparative purposes to artifact densities for excavated houses at the Dixon site. Initially, this comparison was hoped to identify areas with potential for house locations at Gillett Grove. The artifact densities, however, from the survey units were too small when compared to artifact densities from the Dixon houses to make this analysis work. The comparison showed that none of survey units had a compatible density for the location of houses. Though one artifact class that could not be compared which may be significant in this regard is fire-cracked or introduced rock. Fire-cracked rock was the most numerous artifact type from the three houses excavated at Dixon. An altered systematic survey including documenting the location of fire-cracked rock in smaller, repetitively collected units may be the key to discovering locations of former house structures and establishing artifact densities, quantifies and distribution.

The excavation results proved to be interesting. Joseph A. Tiffany and Stephen C. Lensink of the Office of the State Archaeologist selected the area for excavation based upon preliminary field examination. The area selected was a slight surface depression in the field where a number of fire-cracked or introduced rocks were observed on the surface. It was speculated that the rock

indicated the presence of a former house area. The excavation did not confirm this completely. All of the units, with the exception of units U (N51 E68) and V(N51 E69), were adjacent to one another allowing a block area to be opened. The excavations produced a lower density of artifacts in comparison to previous field seasons. A storage pit feature, however, and several post molds were uncovered during excavations (Figure 3.9).

The general soil profile for this part of the site is different from previous examined areas. A look at the north profile of excavation units (Figure 3.10) shows a plowzone extending from the surface at 20-25 cm below the datum. Very little, if any, transitional AB horizon exists, below the A horizon. The depressed area represents a very deflated surface resulting from some sort of erosional or prehistoric activity.

Features were intact below the plowzone. A bell-shaped storage pit, 98-Feature 1, was located in units N(N49 E69), O(N49 E70), J(N48 E69), and K(N48 E70). The feature had a very dark brown organic fill with associated deposits of C horizon soil and clay-rich B soil adjacent to 98-Feature 1 (Figure 3.11). These data suggest that the 1998 excavations began at the top of 98-Feature 1, which appeared to have been still sealed and unaffected by farming (Titcomb 1998:5). The feature contained a large amount of well-preserved faunal material as well as, shell-tempered ceramics, lithics, iron and botanical material (Table 3.2). The feature fill was very organic with visible amounts of charcoal throughout the fill and some ash material. Several soil samples were taken for processing, which are

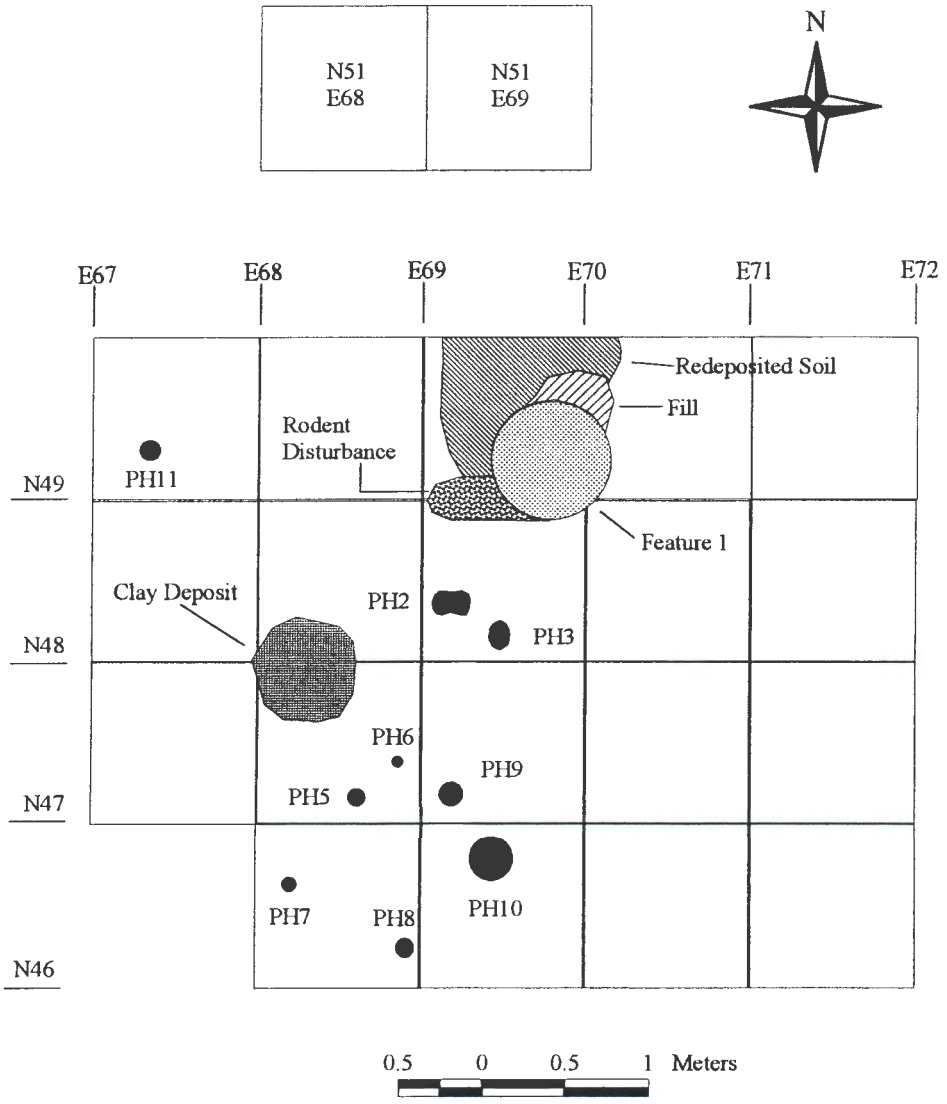
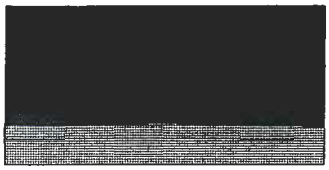
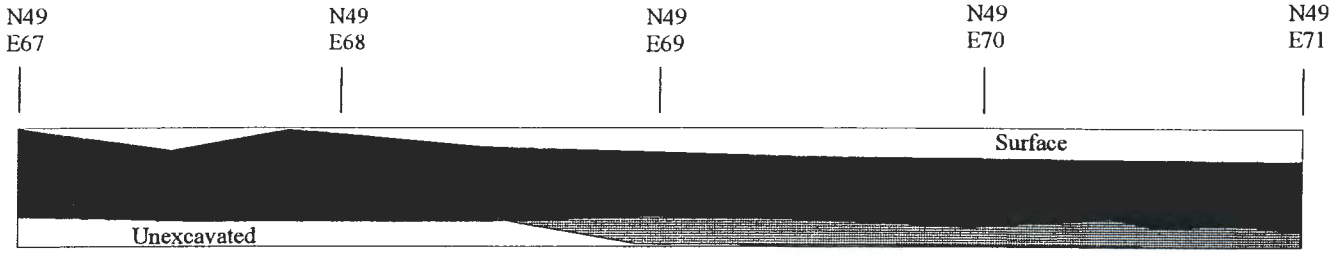


Figure 3.9. Plain view of 1998 excavations



1997 Vertical Profile
West Wall of Unit 104



1998 Vertical Profile
North Wall of Excavation

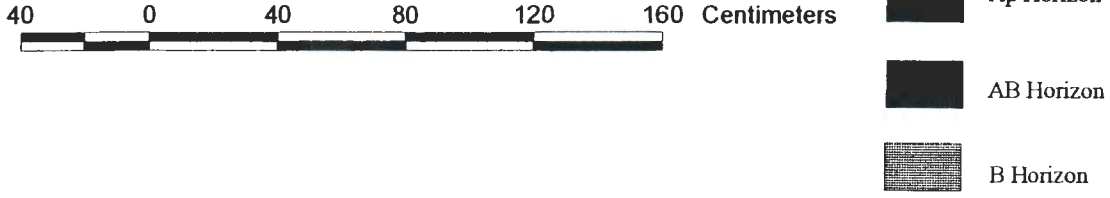


Figure 3.10. Profiles from the 1997 and 1998 excavations

currently part of an M.A. research project at The University of Iowa. The physical description of the 98-Feature 1 is as follows: Orifice, 74 cm; neck diameter, 64 cm; neck vertical thickness, 18 cm; depth, 72 cm; and base, 108 cm (Figure 3.12). The feature was defined 27 cm below the surface.

In addition to the 98-Feature 1, nine post molds were found in 1998. The post molds, PH2, PH3, PH5, PH6, PH7, PH8, PH9, PH10 and PH11, were excavated and cross-sectioned (Figures 3.9, 3.13). The size and profile varied for the nine post molds with PH3, PH5, PH6 and PH7 having conical bases, PH8, PH9 and PH11 having gently rounded to flat bases, and finally, PH2 and PH10 having irregular bases (Figure 3.13). Post molds PH3, PH10 and PH11 produced large fire-cracked rock perhaps used as support for the posts. Table 3.3 shows the physical characteristics for each probable post mold. The post molds were all relatively close to each other and 98-Feature 1, however, the post molds lacked any sort of pattern reflecting any past architectural structure such as a oval shape house outline. Some of the post molds, particularly PH2, PH3 and PH10 were large and well enough defined to suggest that some form of structure was in the near vicinity of the excavations. Two anomalies thought to be post molds were originally assigned PH1 and PH4, but further testing discounted them as post molds.

The post mold features did not produce an abundance of artifacts nor was it expected that they would. Post mold 2 (PH 2) had one core/shatter fragment and 11 waste flakes. Post mold 3 (PH 3) and PH 11 both produced one FCR each.

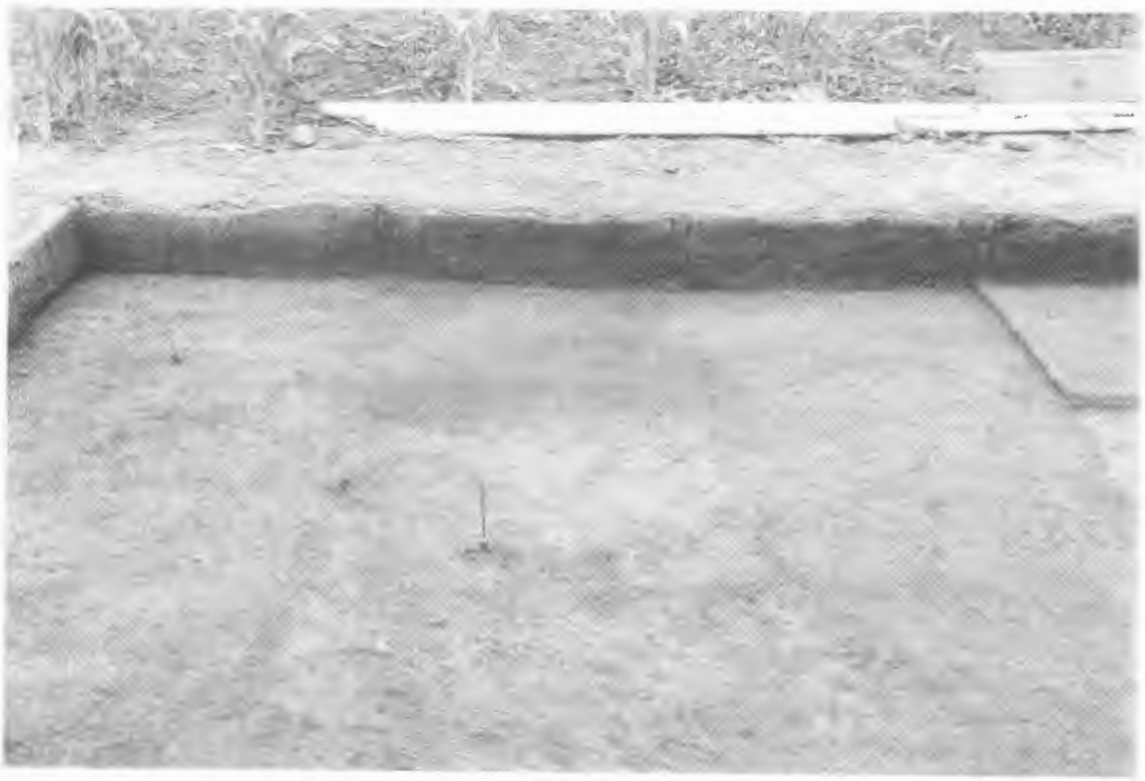


Figure 3.11. View of unexcavated 98-Feature 1

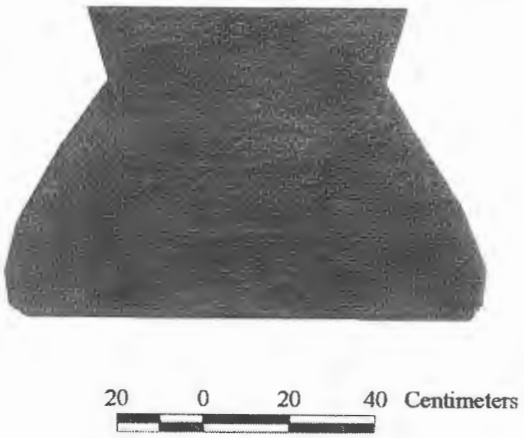


Figure 3.12. Vertical profile of 98-Feature 1

Table 3.2. Contents of 98-Feature 1

Description	Count	Description	Count
Lithics		**Ceramics**	
Biface	1	Rim sherd	2
Drill	1	Body sherd	87
Point	2		
End scraper	3	Daub	6
Utilized flake	12	Mano	1
Utilized core/shatter	3	Bird bone needle	1
Waste flake	68	Botanical remains	-
Core/shatter	29	Misc. rock	2
Faunal remains		FCR	102
Large mammal	24	Limonite	6
Unidentified	44	Metal	7
Medium mammal	36	Shell	5
Turtle	60		
Fish	16		
Deer	2		
Beaver	3		
Bird	2		
Blue or Green-winged teal	2		
Canis sp.	34		

Table 3.3. Post molds excavated from 1998

Post mold	Unit	Depth	Diameter	Vertical Thickness
PH2	N48 E69	24 cm	23 cm X 12 cm	19 cm
PH3	N48 E69	24 cm	17 cm X 12 cm	15 cm
PH5	N47 E68	24 cm	12 cm	14 cm
PH6	N47 E68	24 cm	8 cm	5 cm
PH7	N46 E68	24 cm	10 cm	7 cm
PH8	N46 E68	24 cm	12 cm	10 cm
PH9	N47 E69	24 cm	15 cm	18 cm
PH10	N46 E69	24 cm	28 cm	31 cm
PH11	N49 E67	23 cm	13 cm	9 cm

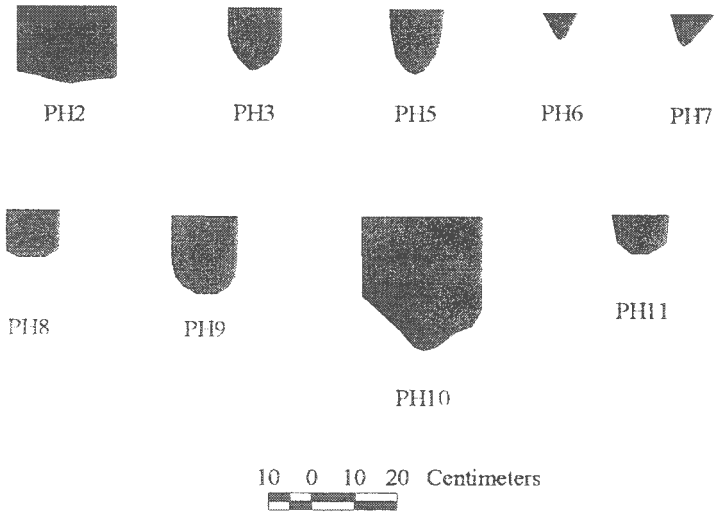


Figure 3.13. Vertical profiles of excavated post molds in 1998

Post mold 9 contained one waste flake, and PH 10 contained 11 FCR (12,734.5 g). The bell-shaped pit feature, 98-Feature 1, as described earlier, had a rich organic matrix with well-preserved faunal material. Several artifact types were recovered including ceramics, FCR, metal, lithics and the like. Table 3.3 summarizes the types and quantities of artifacts recovered from 98-Feature 1.

The 1998 field work provided sufficient data to establish the parameters of the site based on a combination of past research at Gillett Grove as well as the systematic surface survey and auger testing. Additionally, test units from 1998 showed a difference in the soil solum on a portion of the site. The 1998 units were in a shallow depression, which had a deflated A and AB horizon, and midden accumulation was not as pronounced as other parts of the site. Artifact density in the 1998 units was lower than previous years. Village activities, however, in the area is apparent based on the unearthing of an intact storage feature and several post molds.

CHAPTER 4: THE PARKER BARGLOF COLLECTION

Parker Barglof of Spencer, Iowa, grew up on a farm near the Gillett Grove site. During his youth, Mr. Barglof began collecting artifacts from the site after observing an older man examining the ground of the plowed field portion of 13CY2. Following the man across the field, Mr. Barglof soon discovered two or three projectile points and proceeded to ask the man if this is what he was looking for. Mr. Barglof recalls that the man scoffed at him for having found several artifacts within minutes while he had been there for quite some time. This point in time marks the beginning of the Parker Barglof collection. Mr. Barglof started his collection in the late 1930's and collected for many years. The Barglof collection is an unsystematic surface collection from the Gillett Grove site. His collection is quite large and is thought to be the most extant collection from the Gillett Grove site. The collection is not only unusual in terms of the number of items, but also for the different types of material culture represented. The collection possesses many items of great interest because it contains a range of material culture that archaeologists have not found at the Gillett Grove site in the few years of recent excavation. For this reason an in-depth analysis was warranted. Additionally, while the Barglof collection has been viewed by many professional archaeologists over the years, no one has documented the collection in any extensive manner. The collection was used as reference by several researchers (Harvey 1979; Henning 1970; Hull and Barglof 1966; Shott and

Doershuk 1996) as the primary source of information when discussing Gillett Grove.

This analysis of the Parker Barglof Collection has several objectives. 1) Identify artifacts and inventory them to establish basic counts of artifacts and artifact classes present. 2) Analyze some specific artifact types such as ceramics, pipes and trade items. 3) Document important cultural items such as trade goods, catlinite objects and pottery. Included in this documentation is a photographic record of rare items and representative items of each artifact class. A problem with studying such a collection is that it is highly biased. Often, collections like this are not representative of the archaeological site because the collector was selective. An additional problem with this study is that a significant portion of the collection is mounted on handcrafted display plaques, which limited complete recording of every attribute for an artifact. Extensive data sets of all measurements, and information recorded about the Barglof collections is available in paper and electronic form. Complete data sets are reposed at ISUAL, The Office of the State Archaeologist, and with the directors (Doershuk, Shott and Tiffany) of the Iowa Lakeside Laboratory field schools.

Ceramics

The Barglof collection contains some excellent partial vessels, rims and handles. Excavation by archaeologists today have failed to recover examples of Oneota pottery of this quality from Gillett Grove. Partly responsible for this is

years of cultivation, which is very destructive to breakable items such as ceramics. The type of pottery Barglof observed and occasionally collected 30 years ago is found today pulverized by continued farming. My analysis was conducted following the standards set by other Oneota ceramic studies used elsewhere (Gibbon 1983; Henning 1970; Tiffany 1988). Additionally, several photographs of the partial vessels and unique rims (Figures B.1 to B.15) were taken. Table C.1 summarizes the ceramic assemblage from Gillett Grove, which will be discussed in further detail later. A final part of the ceramic analysis includes scoring a limited sample from Burr Oak/Harriman (13CY1) site, which is a site possibly related to Gillett Grove. A summary for 13CY1 ceramics can be found in Table C.2.

Gillett Grove Ceramics

The Barglof collection contains 99 rim and body sherds from Gillett Grove. These ceramics were collected off various part of the surface. The sample contains 68 rim and rim and shoulder fragments with 48 attached strap handles as well as 13 handle fragments and 18 body sherds. Additionally, two items not noted in the summary table include 1 rim sherd from a miniature vessel, and two rim sherds that have a perforated hole drilled though them (Figure B.15). Miniature vessels or sometimes referred to "pinch pots" are not uncommon in Oneota assemblages and have been reported elsewhere. The drilled holes, however, are of interest and perhaps were done to repair a ceramic vessel.

Surface Treatment

Several exterior surface treatments were scored and are defined based on Henning (1970:30-42). The sample can be categorized into three classes: plain-dull, plain-polished and trailed-dull. Additionally, one plain grit-tempered body sherd was observed in the sample. This body sherd is a smooth thin-walled fragment morphologically similar to shell-tempered Oneota ceramics. In this instance, the sherd is probably an Oneota sherd since grit-tempered sherds are not unknown in Oneota assemblages (Fishel 1995; Harvey 1979; Henning 1970).

Decoration on the body sherds was based on a limited sample. Decoration typically is in the form of trailing or punctuates, these are applied using either a tool or on some, using a finger for trailing. Of the body sherds, 6 out of a total of 18 body sherds were trailed, 5 of these were trailed shallow, narrow trailed lines. The remainder of the body sherds were undecorated. Eight out of 18 had dull exterior surfaces and 3 sherds had polished exterior surfaces. Additionally, two body sherds had punctuates associated with trailed lines.

Rim and Lip Form

The sample contains 68 rim and rim-shoulder fragments (Table C.1). Three lip profiles were scored for the sample consisting of flat, round and outward beveled categories (Table C.1, Class 2). A total of 62 rims had observable profiles of which 27 (40%) were scored flat and 31 (46%) were scored rounded and the remaining 4 were outward beveled.

A total of 58 rim profiles were scored (Table C.1, Class 4), 51 (88%) flared

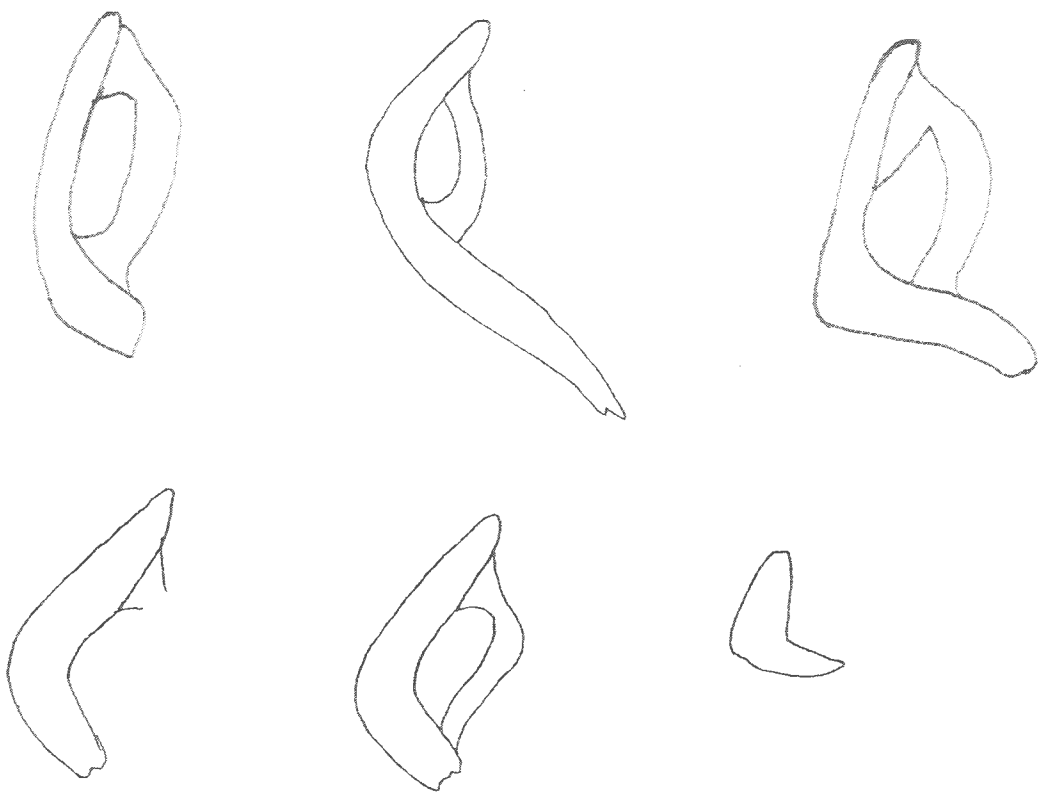


Figure 4.1. Selected rim profiles from the Barglof Collection

outward from the vessels; six were straight in profile, while one was highly flared outward from the vessel (Figure 4.1). Additional rim tabulations include rim cross section, height and neck angle (Table C.1, Classes 5, 6). In cross section, 40 (62%) out of 64 rims are parallel-sided as opposed to 24 (38%) which narrowed toward the lip. The height of the rim was measured from the interior rim and neck juncture to the lip. Rims height was grouped as low (2.5 cm or less), medium (2.6 cm to 4 cm) and high (greater than 4 cm). Rim heights were distributed as follows: 7 (10%) low, 20 (30%) medium and 40 (60%) high. The final feature scored was interior neck angle, which was scored as either angular or rounded in profile. A total of 7 are angular, while the remaining 48 (86%) are rounded (Figure 4.1).

Decoration

Lip decoration was scored in seven different categories (Table C.1, Class 3). A total of 67 rims were scored for lip decoration which fell into these lip categories: 1) undecorated or plain; 2) shallow tool impressions applied perpendicular to the lip; 3) deep finger impressions perpendicular to the lip; 4) long and shallow finger impressions; 5) tool impressions applied at an angle to the lip; 6) deep tool impressions at an angle that cut into the lip; 7) deep, straight tool impressions that cut into the lip. In a comparison of tool versus finger impressed decoration, the sample is dominated by tool impressed decoration; 63 (92%) observations out of the 68 total examined. No one type of lip decoration dominates the collection.

Another typical area of decoration is located on the upper shoulder of a vessel. The sample shoulder decoration includes trailed lines and punctuates (Table C.1, Class 8,9). For each class, traits were scored to several descriptive sizes, narrow (less than 2.5 cm), medium (2.5 to 5 cm), wide (greater than 5 cm) with regard to one dimension, and the second dimension, shallow (less than 2.5 cm) and deep (greater than 2.5 cm). The sample was quite limited (12 observable). Five shoulders had decoration with narrow and shallow trailed lines, and one shoulder had with medium and deep trailed lines. One rim sherd exhibited medium and shallow punctating.

Shoulder designs have been the focus of many Oneota ceramic studies (Gibbon 1983; Henning 1970; Tiffany 1979b, 1988, 1996). These studies attempt to analyze the combination of trailed lines and punctuates on the shoulders of vessels to define the different types of decoration and motifs present in an assemblage and to associate them with broad spatial and temporal patterns. An element of decoration (trailed line or punctate) is a discrete unit and a combination of these elements form a motif (Tiffany 1996:63). Five different shoulder designs or elements of designs were documented from this assemblage (Figure 4.2). Figure 4.2 represents the findings from body sherds, rims and rim-shoulder sherds. The sample only had 10 specimens in which observations of this type could be made. Six of the observations had a design of three trailed lines (Figure 4.2, number 1). One of the observations had a single narrow trailed line adjacent to several punctates (Figure 4.2, number 2). Additionally, a single

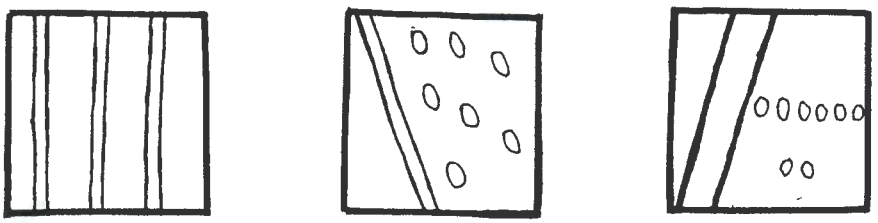


Figure 4.2. Shoulder decorations recorded in the Barglof Collection

observation had two narrow trailed lines adjacent to a line of punctates (Figure 4.2, number 3). Both of the decorative patterns could represent fragments of the nested punctate-filled chevron occasionally seen on Allamakee Trailed pottery. At Milford, this Allamakee Trailed-like motif was recorded by Tiffany (1996), and the decorated examples from Gillett Grove could represent similar motifs.

Handles

Sixty-one strap handles were observed either as handle fragments or attached to rim or rim-shoulder fragments. A total of 35 handles attach to the outer surface of the rim below the lip of the vessel. The thirteen remaining handles were attached at the lip. Handle decoration consisted of trailing, punctuates, dashes and combinations of trailing and punctuates with fifteen different design patterns recognized. Handle decoration consisting of three

vertical trailed lines or more were common and totaled 33 (54%) (Figure 4.3, numbers 1, 2, 7-10, 12). Punctuates used solely on decoration was observed on 16 (26%) specimens (Figure 4.3, numbers 3 and 5). One handle exhibited the use of dashes as a part of the decoration (Figure 4.3, number 5). Additionally, three handles exhibited use of both trailing and punctuates (Figure 4.3, numbers 6,11, and 14), and four handles had no decoration (Figure 4.3, number 4).

Burr Oak/Harriman (13CY1) Ceramics

The ceramic sample in the Barglof collection from 13CY1 is quite limited and will be briefly discussed. Fourteen ceramic fragments were scored in the same manner as the Gillett Grove sample. Of the 14, two plain shell-tempered body sherds and one shell tempered handle fragment were observed. A total of ten plain shell-tempered rims or rim-shoulder fragments were present in the collection with one trailed shell tempered rim-shoulder fragment.

Rim attributes scored (Table C.2, Classes 2, 4) for lip profile and rim profile have observed counts of 7 out of 8 rims with rounded lip profiles and one rim with a flat lip profile. The rim profile consisted of 10 rims out of 11 observable, being flared. Only one rim had a vertical or straight rim profile.

Additional attributes concerning rim form, cross section, height and neck angle (Table C.2, Classes 5, 6), were scored in the same manner as the Gillett Grove sample. A total of 9 rims out of 11 observable had parallel-sided rims while two had profiles which narrowed toward the lip. Rim height tallied as 2 low (less than 2.5 cm), 7 medium (2.6 to 4 cm) and 2 high (greater than 4 cm).

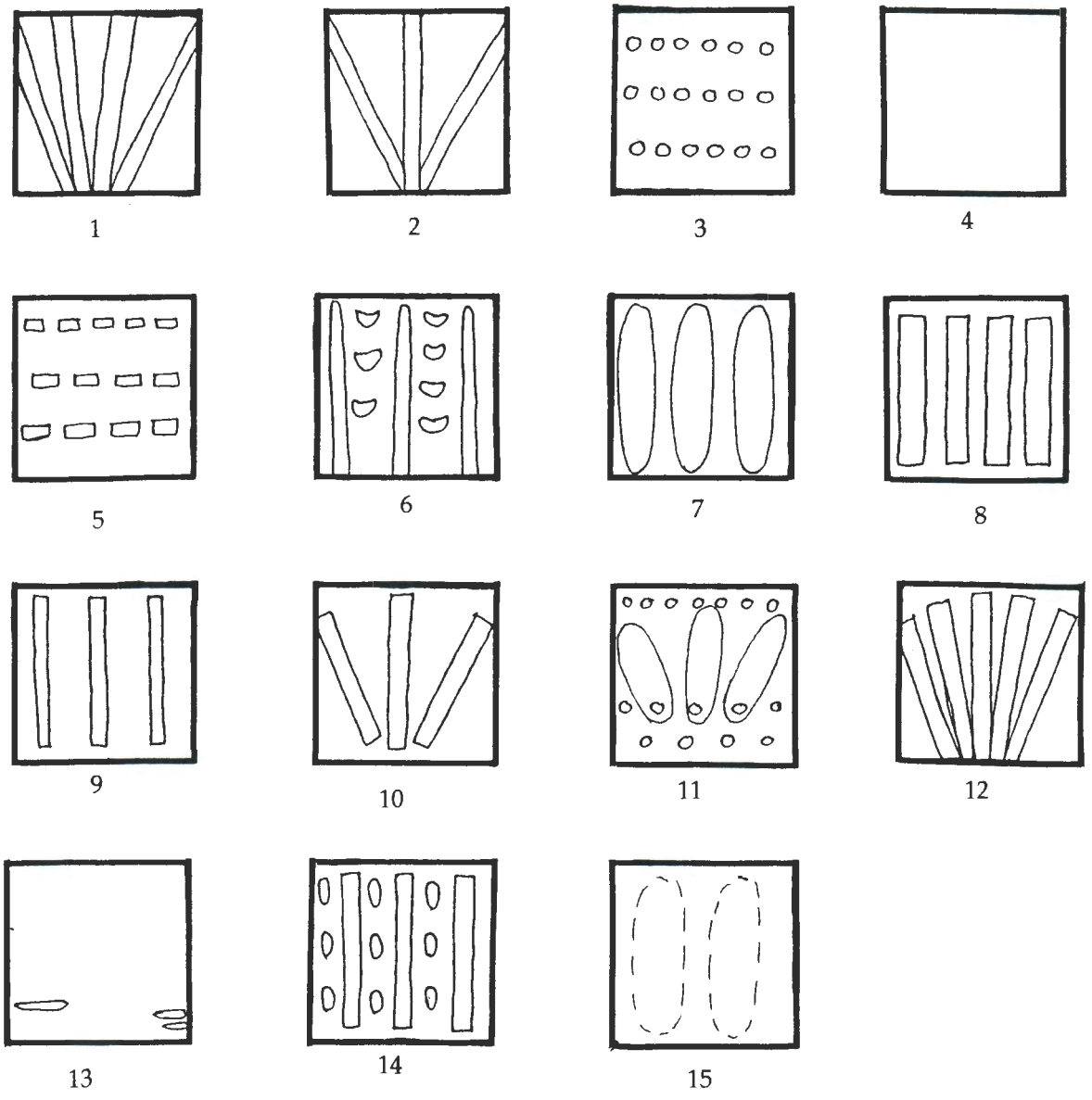


Figure 4.3. Handle decoration recorded from the Barglof Collection

The sample had 10 rims having a rounded interior neck angle and 1 rim example with a angular interior neck angle.

Decoration was scored for lip and shoulder designs (Table C.2, Classes 3, 8). Observable lip decoration occurred on 10 rims falling into these the following type categories (Table C.2, Class 3): 1) undecorated or plain; 2) long and shallow finger impressions; 3) tool impressed applied at an angle; 4) deep tool impressions angle that cut into the lip; 5) deep, straight tool impressions that cut into the lip; 6) narrow tool incised that cuts into rim. Shoulder decoration (Table C.2, Class 8) consisted of 7 rim (9 observations) with narrow and shallow trailed lines. Out of the seven rims, three decorative patterns were noted and summarized in Table C.2, Class 8 (Figure 4.2, number 1), and all rim and shoulder fragments consisted of narrow trailed lines.

Handles consisted of one handle fragment and ten handles attached to rim fragments. Three of the 11 handles were attached up to the lip of the rim, while 8 handles were attached on exterior below the lip. Handle decoration was in the form of vertical trailing and punctates. A total of six (54%) had three or more vertical trailed lines (Figure 4.3, numbers 1, 7, 8, 9, 10 and 12). Two handles (18%) had punctate decoration (Figure 4.3, number 3) and three (27%) were undecorated or plain (Figure 4.3, number 4).

Ceramic Disc

The collection has 2 ceramic discs. A complete shell-tempered disc measures 4.32 cm in diameter (Figure B.16). The second ceramic disc, also shell-

tempered, was incomplete with only half being present; its estimated diameter is 3.51 cm. Both artifacts had holes drilled in the center of the disc.

Lithics

The collection has projectile points, bifaces, end scrapers, drills, utilized flakes, retouched flakes, and waste flakes. The lithic analysis included 2,442 artifacts and follows a descriptive pattern similar to Anderson (1973). Each specimen was categorized into a tool type or debitage, measurements were taken for each specimen, and an attempt to identify raw material was done. Material sourcing was done using descriptions in Anderson (1973:2-3, 1994:5-6) and Morrow (1994). The material sourcing for the Barglof collection is not as thorough. For sound comparison, the artifacts need to be placed with probable raw materials in a type collection. This could not be done because an extensive comparative collection could not be obtained and the items could not be removed and taken to where comparative materials are available. This analysis, however, does provide a general description of the kind of raw materials in the Barglof lithic collection.

Projectile Points

Projectile points in the Barglof collection can be simply defined as small, notched and un-notched, triangular points. These are the typical point styles recovered from Oneota sites as well as other late prehistoric sites. Points in the collection were scored by base form and notching, and categorized into several

different numerical types: 0) undefined or undetermined; 1) un-notched point with a flat base; 2) un-notched point with a concave base; 3) un-notched point with a convex base; 4) side-notched point; 5) corner-notched point; 6) side and basal notched point (Figure 4.4).

Each point had three measurements taken, maximum length, maximum width and maximum thickness. However, not all points were complete nor could accurate measurement of all three attributes be made because some of the projectile points were mounted on display plaques hindering accurate measurement of maximum thickness. An attempt was made to identify the raw material used for each point type.

The Barglof collection contains 1,831 projectile points. Type 1 points were the most numerus form in the collection totaling 1,148 (63%). Type 2 points were the second most numerus with a total of 295 (16%). The other types were smaller in quantity with 53 (2.9%) observations for Type 3, 26 (1.4%) observations for Type 4, and Type 5 with 10 (.5%) observations and finally Type 6 had only one observation. Type 0 or undetermined points totaled at 298 (16.3%) and consisted of fragmented points; the only measurement usually obtainable was thickness. Table 4.1 provides a summary of point type with some descriptive statistics from the sample.

Bifaces

Bifaces consisted mostly of triangular forms similar to projectile points, however, their morphology was quite distinct. The bifaces are generally larger

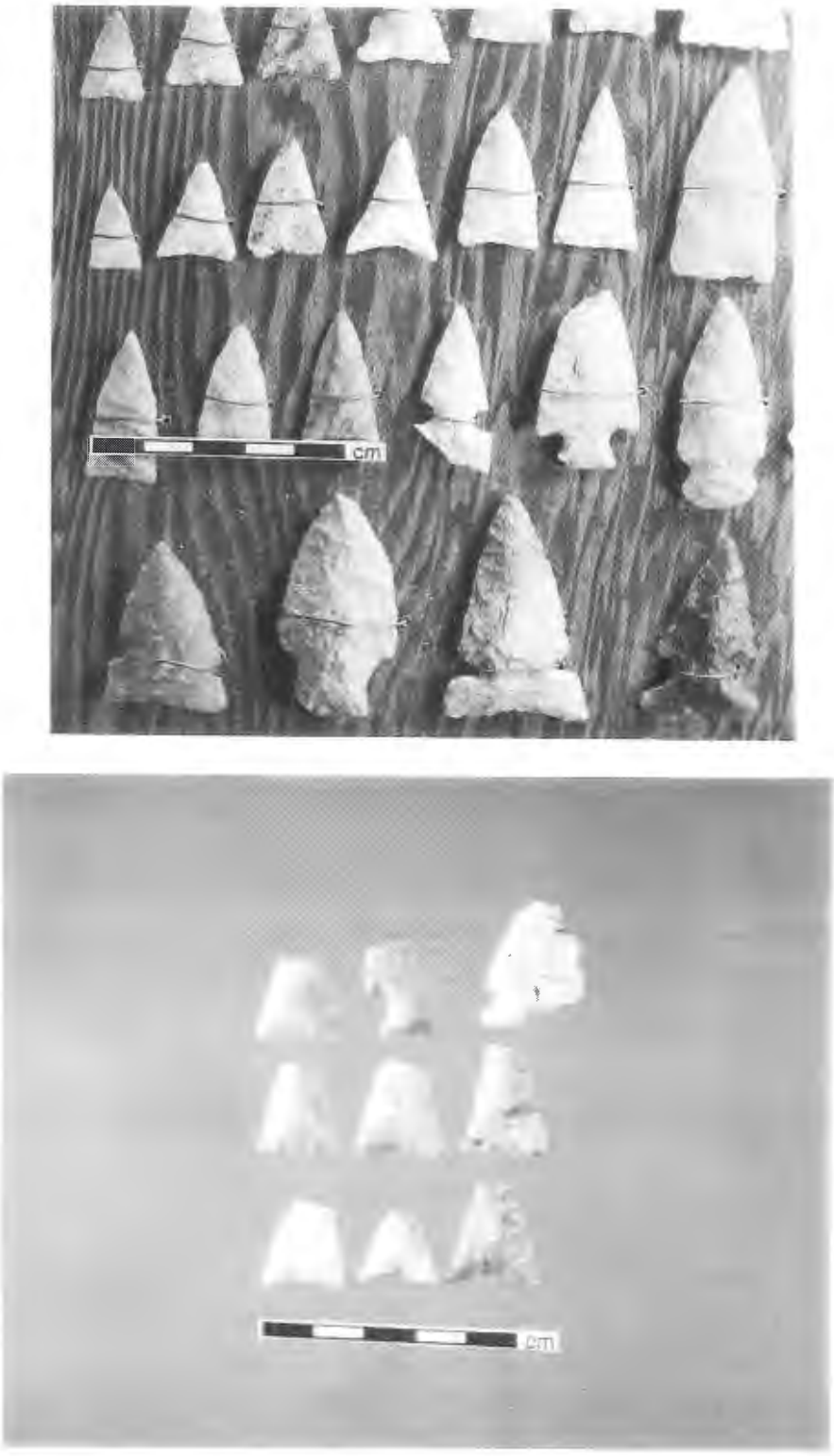


Figure 4.4. Point types represented in the Barglof collection

Table 4.1. Point dimensions from Barglof collection

	Length (cm)	Width (cm)	Thickness (cm)
Type 0			
Number	4	5	293
Mean	3.41	1.42	.33
St. Dev.	1.24	.29	.08
Minimum	2.24	1.07	.16
Maximum	4.52	1.86	.63
Type 1			
Number	769	1021	481
Mean	2.06	1.49	.34
St. Dev.	.51	.25	.09
Minimum	1.19	.90	.18
Maximum	4.17	2.39	1.39
Type 2			
Number	178	275	130
Mean	2.03	1.53	.34
St. Dev.	.46	.23	.07
Minimum	1.32	.97	.22
Maximum	3.56	2.80	.68
Type 3			
Number	46	48	11
Mean	2.17	1.60	.37
St. Dev.	.60	.33	.09
Minimum	1.41	1.13	.26
Maximum	4	2.42	.54
Type 4			
Number	17	23	9
Mean	2.97	1.69	.38
St. Dev.	.95	.66	.10
Minimum	1.58	.90	.25
Maximum	4.35	3.55	.48
Type 5			
Number	6	9	3
Mean	2.88	1.47	.51
St. Dev.	.54	.40	.03
Minimum	2.1	.70	.49
Maximum	3.66	1.99	.55
Total			
Number	1021	1382	928
Mean	2.08	1.5	.34
St. Dev.	.02	.26	.08
Minimum	1.19	.70	.16
Maximum	4.52	3.55	1.39

than point forms and extremely thick in comparison to the Barglof points. These bifaces are finished tools. The mid-section of the biface forms quite often were not flaked as well causing a thick knob of raw material to form in the center of the biface making them very thick (Figure B.23). Hence, these forms have been separated from the projectile points even though the general shape is the same. A second noted distinct biface form was ovoid-shaped bifacially worked tools made out of Bijou Hills silicified sediment (Figure B.24 and B.25). Bijou Hills silicified sediment is a raw material that originates in central South Dakota. This raw material represents a long-distance trade item from the Gillett Grove site. These ovoid-shaped bifaces were all knife fragments. Additionally, there were two knives recorded in the collection that are not triangular or ovoid-shape in form.

For each biface maximum measurements for length, width and thickness were recorded. Additionally, raw material type was also identified where possible as discussed earlier. A total of 264 bifaces were recorded in the collection of which 23 were classified as fragmented Bijou Hills ovoid bifaces. A total of 241 bifaces were examined and measured. Table 4.2 summarizes the measured statistical means for each attribute. The mean length for bifaces was 2.77 cm, mean width 1.93 cm, and mean thickness .56 cm.

Scrapers

End scrapers are another tool type found in the Barglof collection. Though not as frequent as points in the collection, this collection serves as an example of

the potential amount available from Gillett Grove. End scrapers were measured for maximum length, width, thickness and working length. The working length represents the distal portion of the end scraper that is retouched and used as the primary cutting and scraping platform. The working edge length of an end scraper is thought to be reduced as the tool is reused and retouched providing empirical data on the life of an end scraper (Anderson 1973:9).

A total of 221 end scrapers were tallied in the collection. Table 4.3 summarizes the physical descriptions of the end scrapers in the collection. The mean length for the end scrapers was 3.18 cm, mean width 2.12 cm, mean thickness .76 cm, and mean working length of .75 cm. These three scrapers were incomplete. They did not have a worked platform and were not included in the statistical summary for end scrapers.

Drills

Drills were not as numerous as other tools and may reflect part of the collecting bias involved. Drills consist of small cylinder-like, bifacially worked forms. The majority of the Barglof drills were attached to display plaques making analysis limited. When possible, however, measurements were recorded for maximum length, width and thickness. Sixty four drills were measured in the collection. The mean length was 2.97 cm (n=46), mean width 1.1 cm (n=50), and mean thickness .45 cm (n=22).

Table 4.2. Biface dimensions from Barglof collection

	Length (cm)	Width (cm)	Thickness (cm)
Mean	2.77	1.93	0.56
St. Deviation	0.64	0.40	0.16
Minimum	1.64	0.97	0.23
Maximum	5.4	3.67	1.22
Count	162	166	239

Table 4.3. End scraper dimensions from Barglof collection

	Length (cm)	Width (cm)	Thickness (cm)	Edge (cm)
Mean	3.18	2.12	0.76	0.75
St. Deviation	0.80	0.45	0.23	0.25
Minimum	1.73	1.12	0.34	0.29
Maximum	6.92	4.44	1.9	2.36
Count	215	221	158	153

Retouched Flakes

Several tools in the collection were classified as retouched or reworked by pressure flaking. The retouched items were worked unifacially and usually quite large. A total of 10 were noted in the collection. These retouched edges could reflect a number of possibilities for function such as scrapers or knives.

Utilized Flakes

Utilized flakes consist of a flake which exhibits small scars not as uniform or extensive as retouch, reflecting usage of the flake for some limited purpose. The irregular flake scars were removed from the edge of the flake during usage. A total of 32 utilized flakes were observed in the collection.

Flakes and Shatter

These two lithic categories represent the by-products of stone tool production. These by-products, however, quite often are used as tools themselves, although such tools were not observed in this collection. The Barglof collection contained 16 flakes and 3 pieces of shatter. The quantity of these two categories reflects not a lack of these items present at the site, but rather the lack of interest in these items from the collector's standpoint.

Raw Material

Raw materials used for each lithic category was based primarily on descriptions found in Anderson (1994:5-6) and Morrow (1994). Lithics were categorized into 21 chert categories, most of which are defined by Anderson (1994). These material types include the following: 1) Fusulinid chert; 2) Knife River Flint; 3) Black chalcedony; 4) White chert; 5) Black chert; 6) Bijou Hills Silicified Sediment; 7) Orange-white chert; 8) Honey-colored chalcedony; 9) Miscellaneous gray chert; 10) Miscellaneous chert and chalcedony; 11) Oolitic chert; 12) Maynes Creek chert; 13) Burlington White Mottled chert; 14) Hixton Silicified Sandstone; 15) Hopkinton chert; 16) Rapid chert; 17) Maynes Creek

Fossiliferous chert; 18) Burlington Mottled Gray and Tan chert; 19) Winterset chert; 20) Plattsmouth chert; 21) Spring Branch chert. The most frequently occurring material type is Miscellaneous chert and chalcedony with a total of 1,455 (60%). This is essentially a catch-all category. Miscellaneous gray chert totaled 340 (14%) and is another unidentifiable source. Oolitic chert is a very distinct chert making it easy to identify. The assemblage had 240 (10%) lithic items made of this material. Other unique identifiable represented by some quantity include: Knife River Flint, 28 (1%) items; Bijou Hills Silicified Sediment, 22 (.9%) items; Hixton Silicified Sandstone, 4 (.1%) items; Burlington White Mottled chert, 4 (.1%) items; Winterset chert, 41 (1.6%) items; Plattsmouth chert, 32 (1.3%) items, and Spring Branch chert, 10 (.4%) items. Essentially, over three fourths of the lithic collection could not be sourced to a specific raw material type, probably reflecting material derived from local stream outwash. A low percentage of materials represent long-distance trade. These include Bijou Hills Silicified Sediment, Knife River Flint, Hixton Silicified Sandstone, Burlington White Mottled chert, Plattsmouth chert and Spring Branch chert. A further discussion of raw material used at Gillett Grove will be presented later in this thesis.

Ground Stone Tools

A total of 48 ground stone tools made from igneous or metamorphic rock were observed in the collection. Tools consisted of 27 manos and possibly 9

metates. These tools were commonly used for processing maize and other plants for food production. The manos are all very similar, exhibiting a form that is often referred to as "biscuit manos" due to their general bi-convex to bi-plano cross-section and rounded form. The manos have been generally worked to form two flat surfaces with rounded edges. Metates are an uncommon find. Mr. Barglof has an excellent example of a stone slab that has been heavily worked by continual grinding to form a depression on the surface of the stone. Four specimens are questionable as the wear on their surfaces was not as extensive as the others. These grinding stones are a good indicator of the importance of agriculture at Gillett Grove. Additional ground stone tools recorded include 12 full-grooved hammer/mauls. These tools are large cobbles that have been worked and polished into a oval shape with a hafting groove encircling the tool at mid-section and with areas of impact on both striking surfaces.

Abrader and Scoria

Abraders manufactured from sandstone were scored into 3 categories. Abraders fragments exhibited forms with random U-shaped grooves, V-shaped groves or both. A total of 18 abraders were identified in the Barglof collection. Eleven abraders were found to have U-shaped groves, 5 with V-shaped grooves, and 2 had a combination of both U-shaped and V-shaped grooves. Additionally, abraders with multiples grooves were noted. Three abraders had multiple U-shaped grooves. All specimens were rectangular fragments and often with single

U-shaped grooves running the length of the rectangular form. Such abraders are referred to as shaft abraders. The V-shaped grooved abraders are sometimes associated as shearing implements for tool sharping (W. Wedel 1959:285).

Additionally, the collection had 12 worked scoria. Scoria is a porous volcanic rock that can be transported by rivers due to its low density. The material is abrasive and may have been used in a similar matter as the abraders. The worked scoria in the collection had various scour marks and grooves similar to the V-shaped abraders.

Pipestone

The pipestone, or catlinite as red pipestone is often errantly referred, is quite varied. Catlinite refers to material possessing the mineral and chemical composition and physical properties as found in rock deposits located at Pipestone National Monument in southwestern Minnesota (Gundersen and Tiffany 1986). Similar material occurs at several locations in North America, but differ in chemical, physical and mineral properties. These materials are referred to as pipestone (Gundersen and Tiffany 1986). Historically, the quarries at Pipestone National Monument were utilized by native populations in the Prairie-Plains region. The materials from Gillett Grove have not been tested but are assumed to be derived from Pipestone National Monument based on the fact that Gillett Grove is a post-contact site and Pipestone National Monument was in heavy use in early historic times.

All pipestone artifacts in the Barglof collection have been worked in some way. A total of 149 pipestone objects were recorded in the collection. Unidentified worked catlinite constituted the highest frequency with a total of 99 (66%) observations. Forty three (29%) pipe fragments, which include bowl and stem fragments, were recorded with 9 (6%) pendant fragments. Preforms, defined as partially worked and unfinished pipestone objects, consisted of 12 (8%) pipe and 13 (9%) pendant fragments. Additionally, the collection contains 6 (4%) complete or partially complete pipes and 5 (3%) complete pendants as well as 2 (1%) beads and 1 (.6%) incised tablet.

The pipe forms are of two varieties, the first form consists of a long-stemmed elbow pipe. The second style has a extremely short stem attached to the bowl portion of the pipe. Four of the six pipes are complete with one complete bowl (which may not have had a stem) and a complete stem portion. The dimensions of each pipe are listed in Table 4.4. One particular pipe had three sides with incised decoration. This pipe is not complete, instead Mr. Barglof carved his own bowl portion of the pipe and attached this bowl to the remaining original pipe giving the appearance of a complete reconstructed pipe. Figure B.30 displays the layered geometric designs. Figure B.31 shows a second design on the left lateral stem. A third design is located on the upper surface of the stem (Figure B.32). A pendant fragment also had a partial motif similar to the one exhibited on the pipe. The pipestone tablet (12.1 cm X 8.55 cm X 2.2 cm) is a partially polished artifact with a series of cut marks on one side, beneath the cut

marks is incised art work (Figure B.40). Exactly what shape or picture engraved on the original tablet has not been determined. A series of geometric shapes are visible, but the other forms cannot be recognized.

Table 4.4. Pipe dimensions from the Barglof collection

	Length (cm)	Width (cm)	Height (cm)	Bowl diameter (cm)
Pipe fragment	5.1		2.8	
Pipe bowl		1	2	2.35
Pipe stem	3.45		1.5	
Pipe	3.45		2.36	1.6
Pipe	2.8		2.55	1.5
Pipe	1.78		2	1.73

Bone and Shell

The Barglof collection contains very few animal remains but does have worked bone. The collection consists of 9 bone beads, 4 worked bone fragments, 2 unidentified phalanges, a large mammal incisor, a turtle shell fragment, 2 raccoon maxilla fragments, unidentified bird bone, a bison scapula hoe, two elk antler tines and an incised bison rib rasp. The bison scapula hoe, bison rib rasp and one elk tine were modified extensively and are the only really good examples of bone implements from the Gillett Grove site. These artifacts are not uncommon to Oneota assemblages; quite often they are in higher frequency.

These modified bones allow for an understanding village activities such as agriculture with indirect evidence provided by the bison scapula hoe. The bison rib rasp is an unusual piece with similar forms reported from only a few sites (Arzigian et al. 1994; Bray 1991). It is best described as a 12.6 cm long bison rib fragment modified with a series (22) of incisions or cuts parallel to one another (Figure B.42). A single shell disc bead, 1.27 cm diameter, was recorded in the collection but could not be speciated.

European Trade Goods

This category of artifacts is probably one of the most interesting and noteworthy because of their lower frequency from the site. The trade goods include a variety of items ranging from Jesuit rings, glass beads, brass/copper and iron materials. These items are of particular interest to archaeologists because they can assist in establishing a chronology for Gillett Grove. Additionally, the types of trade goods and their frequencies provide insight into some of the culture changes occurring in northwest Iowa Oneota sites.

Jesuit Rings

Two Jesuit rings were recorded in the Barglof collection. Reference (Harvey 1979) has been made to a third one, but this third ring is in possession of Mr. Barglof's son and was unavailable for study. The two rings (Figure B.43) have been illustrated by Hull and Barglof (1966), and briefly mentioned by others. The rings are engraved with two different motifs. The ring bezels are small and

round in shape. One ring is engraved with a simple heart design. The second ring bezel is engraved with "IHS" lettering and a faint cross in the center.

French Jesuit ring styles have been discussed by Cleland (1972), who analyzed ring design and motif and established a relative chronology based on these traits. Cleland (1972:202) established that ring designs on round or oval bezels date from A.D. 1624 to A.D. 1700. The Jesuit ring styles changed over time as engraved versions replicated cast versions. The styles "drift" or are altered slightly, Cleland (1972) presented stylistic changes for three defined series of Jesuit rings showing how the progression of certain attributes like the bezel shape and engraved motifs change. The IHS series is defined by a prototype containing features of the letters IHS that are stamped on the bezel (Cleland 1972:205). The sequence of rings following the prototype include engraved copies with style changes. The bezel form progresses from round and oval to octagonal and heart-shaped. These attribute differences were consistent for other ring series discussed by Cleland (1972). The engraved ring exhibiting IHS lettering in the Barglof collection fits the description for an engraved version of the prototype that belongs to a F-P-D progression, which were made on round bezels and lacked stylistic features around the lettering, additionally, a cross feature rises from the H.

The heart engraved ring in the collection does not fit any of the defined style drifts by Cleland (1972), however, one style with a simple band and central heart is described. This seems to be a reasonable match for the Barglof ring.

Chronologically, both rings are older in the sense that they both have round bezels. Prior to A.D. 1700 rings had cast designs with high relief, and after A.D. 1700 rings are engraved (Cleland 1972:207). This suggests the engraved rings could date before A.D. 1700, based on round bezel form, however, the engraving dates no earlier than the late A.D. 1600's. A larger sample would be beneficial to establishing a relative date for the site because after A.D. 1700 other styles become more popular and dominant in assemblages.

Glass Beads

Glass beads are the most numerous European trade items in the collection. The collection contains 249 complete bead and bead fragments representing tubular and disc form beads. The majority of the beads fall into what Quimby (1966:85) defines as the Middle Historic Period (A.D. 1670- 1760). Glass beads from this time period include monochrome beads in the form of elongate spheroids, decahedrals, raspberry forms and egg-shaped or wire-wound (Quimby 1966:86). Kidd and Kidd (1970) have developed a classification system for describing glass beads. This system was employed for describing the glass beads from the Gillett Grove site.

From the sample of 249 specimens, 12 different bead types were identified. Each type is defined first on how it was manufactured then classified by form color, and size. All the beads are monochrome. Tube beads, which refers to beads manufactured by drawing out a bubble of molten glass into long tubes (Kidd and Kidd 1970:221-222), comprised 10 (83%) of the 12 different types of bead

and bead fragments. A second type described as "disk beads" totals at 3 complete beads and 28 fragments (12%) of the assemblage. These beads were not recognized in the Kidd and Kidd (1970) system. Further evaluation of this bead type determined that these beads are indigenously made by recycling other glass beads into a disc form (Dr. William T. Billeck personal communication, 1999). Evidence of this activity taking place at Gillett Grove is limited. In the Barglof collection, however, are small conglomerates of melted glass similar in color to other glass beads from the site. The remainder of the bead assemblage (n=3) was not assigned to a type from the Kidd and Kidd (1970) system. Two beads appeared to be tube glass beads, one is a very large, round yellow bead that is clear. The second bead is a fragment, which appears to be hexagonal and is opaque turquoise. The final unidentified bead is a small (.2 cm) circular bead that does not appear to be made out of glass. The color of the bead is turquoise and is perhaps made out of turquoise material as well. Table 4.5 lists the identified bead types and colors.

Metal

Metal objects in the collection consist of two unidentified iron fragments, eight iron knife fragments, one horseshoe fragment, a trade axe and four iron points. These items have to be taken into careful consideration because historic land use can account for some of these items on the site. Artifacts of definite association with the Oneota occupation and French trade goods at the site include an iron trade axe (Figure B.47) and the four metal projectile points

Table 4.5. Bead types in Barglof collection

Type	Count	Shape	Size	Color
IIa6	4	Round	4-6 mm	Black
IIa19	2	Tube	2-4 mm	Bright Navy
IIa20	1	Round	4-6 mm	Cinnamon
IIa37	8	Circular	2-4 mm	Aqua Blue
IIa40	153	Round	4-6 mm	Robin's Egg Blue
IIa41	43	Circular	2-4 mm	Robin's Egg Blue
IIa42	1	Oval	2-4 mm	Robin's Egg Blue
IIa52	2	Round	4-6 mm	Ultramarine
IIa56	7	Circular	2-4 mm	Bright Navy
IIa57	1	Oval	4-6 mm	Ultramarine
Disc Bead	31	Flat disc like	10+	Robin's Egg Blue
Non-glass	1	Circular	2 mm	Turquoise
Unidentified	1	Round	6-10 mm	Light Yellow
Unidentified	1	Hexagon?	-	Turquoise

(Figures B.49 to B.52). These points have similarities to other metal points seen in the archaeological and historical records (Pyszczyk 1999). These points are quite long and thick; though two of the points have a flat appearance, which is thought to have been favored over the traditional stone points by some groups historically. The trade axe has a common form typically seen during the historic period. Measuring 16. 6 cm long and 12.1 cm wide. Trade axes changed very little in North America, and as a result, using them as a reference for dating has been useless (Quimby 1966:69-71). The knife fragments more than likely are associated with the Oneota occupation of the site. They are very fragmented and are highly corroded, making analysis and positive identification questionable. The other unidentifiable iron items and a possible horse shoe fragment are probably not associated with the village occupation, or at least speculation of such an association is probably not wise.

Brass/Copper

Brass and copper items are probably both represented in the collection. Distinction between the two materials was not made because the specimens were mounted and could not be examined closely, thus, they will be referred to as one combined term for practical purposes. Brass/copper artifacts consist of fragments and decorative items. Copper was used for ornamental purposes and was derived from native sources as well as European sources. The source of the brass is derived from kettles or cauldrons that were a part of the European trade goods. Due to the brass inferiority, however, the kettles were not used for utilitarian

purposes but instead were modified by cutting them up into multiple pieces for other uses. Commonly found in the Barglof collection are some of these items such as decorative tinkler cones, coils and pendants. There are 56 tinklers in the collection. These tinklers are basically brass/copper fragments which have been rolled into a cone-shaped form and were used for decoration (Figure B.54). Additional items in the collection include 9 fine brass/copper coils, and a small pendant. Seventy-seven (54%) (121.9g) of the collection is fragments or scrap. Brass/copper recovered from the site is typically very small and appears to be discarded material.

Summary

The Barglof collection is quite extensive and rather unique for personal collections. Rarely does a personal collection contain material documented from a single site. This collection serves as an example of the type and range of materials associated with the Gillett Grove site. Mr. Barglof spoke freely of other personal collections that he knew of over the years that were from the Gillett Grove site. In one such example, Mr. Barglof describes a collector possessing a cigar box full of glass trade beads collected from the site. Based on the analysis from this collection Gillett Grove appears to have been occupied around or slightly before A.D. 1700 based on the chronology of the Jesuit rings and glass beads.

Trade played a role at the Gillett Grove site. Evidence of interaction across

the Prairie-Plains is seen through two sources of data. Native trading is evident by the presence of exotic raw materials such as Knife River flint from North Dakota, Bijou Hills Silicified sediment from South Dakota, Hixton Silicified sediment from western Wisconsin and Prairie Du Chien chert from eastern Minnesota southwestern Wisconsin. These materials are mentioned because they are distinct enough to be easily recognized by archaeologists and are important because of the limitations with the raw material identification with the Barglof collection. These raw materials observed in the Barglof collection are in the form of finished tools and debitage. Similar lithic materials have been reported from prehistoric western Iowa Oneota sites like Dixon (Fishel 1999). The limited presence of these materials, primarily finished tools, suggests long-distance trading at Gillett Grove with other groups on the Plains and the upper Mississippi Valley that had been in place for some time regionally.

Other evidence of down the line trading is indicated by European trade items. Down the line trading represents a form of distribution of goods from one area that travels across several territories through several exchanges (Renfrew and Bahn 1996:352). The presence of glass trade beads, Jesuit rings, brass and copper ornaments, iron objects (points and a trade axe) signifies that a network of trading existed with other native groups and not direct trade with Europeans. If residents of Gillett Grove had direct ties with French trader then the quantity of trade items would in theory be greater in the collections from the site. Additionally, complete items should also occur such as brass cauldrons and iron

tools.

The variety of raw materials from several different geographic areas indicates that a trade network was already functioning for the occupants of Gillett Grove. The introduction of European goods was incorporated into the already in situ network between Gillett Grove and other groups in the Prairie-Plains. Additionally, since the raw material originates in places like North Dakota, South Dakota, Wisconsin and several areas within Iowa, established trade relations would be needed to obtain the variety of materials found. This is important because Gillett Grove is thought to be a short-term occupation and that residents would not have had the time to develop new trade relationships from the several areas mentioned if trade relations had not already been established prior to the Gillett Grove occupation.

CHAPTER 5: GILLETT GROVE RESULTS

Assemblages

This portion of my research involves the analysis of the three assemblages from the 1996, 1997 and 1998 field seasons. A total 19,407 artifacts were analyzed and will be described in the following text. A brief description of artifacts examined from various features survey units and the Barglof collection has already been presented. The following discussion includes the materials from the survey units, excavation units and features. Comparisons will be made with the Milford assemblage previously studied (Anderson 1994; Tiffany 1996; Tiffany and Anderson 1993). Such comparisons can expand upon the chronology and site history based on comparative data.

Ceramics

The ceramic assemblage was studied in the same manner as previously described for the Barglof collection. A total of 4,299 body sherds, rim and handle fragments were examined. Attributes were scored as described earlier (Table 5.1). The body sherds (Table 5.2) were scored as follows: plain-dull, plain-polished, and trailed-dull shell tempered and plain-dull, plain-polished, and trailed-dull shell and grit tempered, plain-dull and trailed-dull grit tempered,and plain-dull grog tempered. The majority of the body sherds were scored into the plain-dull shell tempered category with a total of 3,372 (80%). The second most common surface

Table 5.1. Summary of ceramic assemblage

Type	1996	1997	1998	Total
Body sherds	1,555	1,779	866	4200
Rim sherds	39	28	10	77
Handles	7	11	4	22
Total	1601	1,818	880	4,299

Table 5.2. Summary of attributes on body sherds

Surface Treatment/Temper	1996	1997	1998	Total
Plain-dull shell	1151	1381	840	3372
Plain-dull shell/grit	333	331	14	678
Plain-dull grit	56	36	6	99
Plain-dull grog	4			4
Plain-polished shell	1	5		6
Plain-polished shell/grit	1			1
Trailed-dull shell	1	26	3	30
Trailed-dull shell/grit	7		3	10
Trailed-dull grit	1			1

treatment was plain-dull shell and grit tempered represented by 678 (16%) body sherds. The remainder of the body sherd sample was distributed into the other categories. Only 41 (1%) of the body sherds were decorated. Of the 41 decorated sherds, all consisted of either narrow or medium-width-trailed lines. Most of the decorated sherds were narrow trailed, 35 (85%), and 6 were medium trailed. Figures 5.1 and 5.2 are examples of the largest decorated sherds in the assemblages; additionally, five trailed sherds also possessed one or more punctates. Most of these samples were very small and did not produce any recognizable motifs similar to those associated with other Oneota assemblages.

Rim and handles comprised a smaller portion of the assemblage and in most cases were badly fragmented as well. Of the handle fragments, 15 had plain-dull shell surface treatment and temper, and the remaining 7 were plain-dull shell/grit tempered. All handle fragments appear to be in the form of strap handles. Decoration consisted of 6 with punctates, 3 medium-trailed, 2 wide-trailed and 1 narrow-trailed fragment.

Rim sherds were scored into the same classes as previously described in Chapter 4. The assemblages contains 77 rim sherd fragments. Surface treatment on rims consisted of three categories: 48 (62%) plain-dull shell tempered, 28 (36%) plain-dull shell/grit tempered and one plain-dull grit. The sample is limited in comparative purposes because of the small size and fragmentation of the rims. The rim sherd attributes are summarized in Table 5.3.

The Milford site ceramic assemblage researched by Tiffany (1996) is

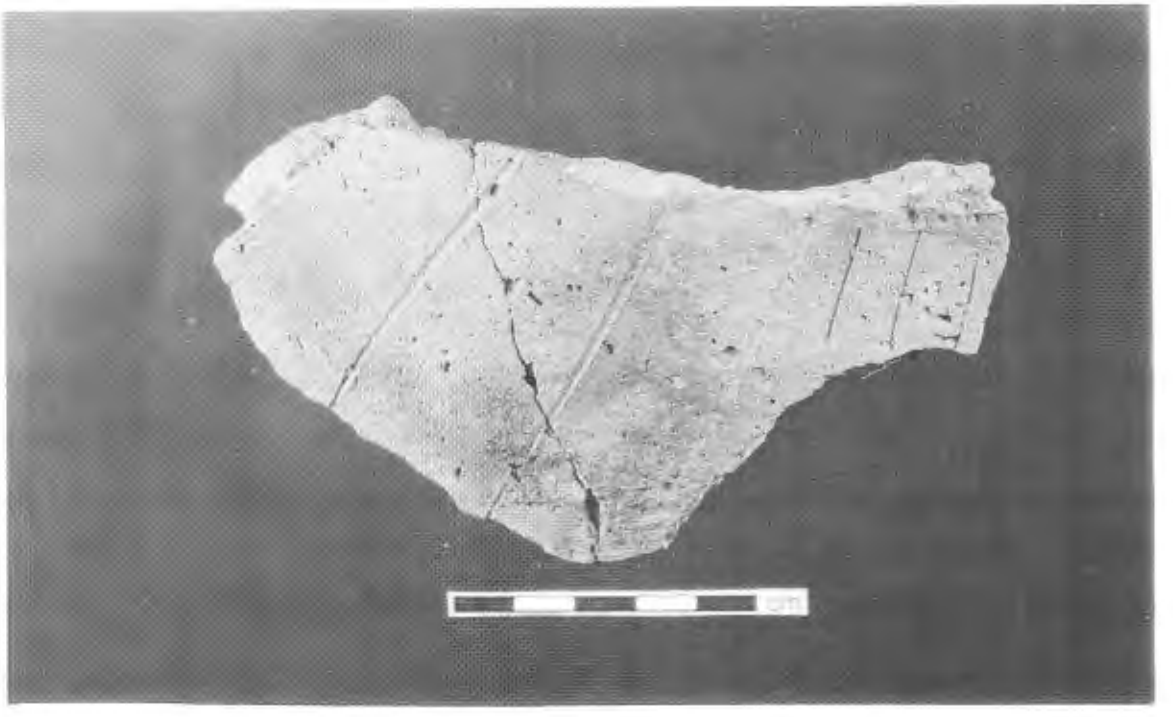


Figure 5.1. Decorated body sherd

Figure 5.2. Decorated body sherd

Table 5.3. Summary of rim attributes

Attribute	1996	1997	1998	Total
Lip profile				
Found	14	15	2	31
Flat	6	6		12
Outward beveled	1			1
Lip design				
Plain		2		2
Shallow/straight	4	4	1	9
Finger impression-interior		1		1
Long/shallow		2		2
Acute/oblique		2		2
Acute/oblique cuts	4	3	1	8
Straight/deep cuts	9	7		16
Rim profile				
Flared	9	6		15
Straight	1			1
Rim cross section/height				
Parallel	8	18	1	27
Narrows to lip	12	4		16
Low	3	1		4
Medium	1	1		2
High	3	6	2	11
Neck angle				
Round	7	5		12
Angular	1	4		5
Shoulder decoration-lines				
Narrow	3			3
Medium	1	2	1	4
Appendages				
Strap	1	2		3
Not up to rim	1	1		2
Up to rim		1		1

comparable in size to the assemblage from Gillett Grove. Based on total scoreable attributes per ceramic item, the Milford assemblage had more examples that were scoreable (2 to 1 in most cases). Vessel form and decoration, notably on the lip, are very similar for both assemblages. Both are composed primarily of shell-tempered vessels with flared rims and strap handles. The most noticeable difference between the assemblages at Gillett Grove compared to Milford is the identifiable shoulder decorations. No recognized motifs were recorded from the Gillett Grove ceramics, and a only 1% of the body sherds and 7% of the rim sherds had shoulder decoration. Milford ceramics had twenty-five different elements and motifs on 144 observations (Tiffany 1996:63). The second significant difference is the percent of ceramics that have a combination of shell and grit temper. This type of temper was not noted at Milford. An argument could be made that the "grit" appearance is a part of the clay inclusions, however, much of the grit present is too large to be solely a part of the clay used to make the pot. This combination of shell and grit temper is a distinct difference between Milford and Gillett Grove ceramic assemblages. The presence of grit-tempered Oneota pottery was noted in the Olivet phase in eastern South Dakota (Alex 1981). This grit tempering may be a unique feature of Oneota ceramics regionally.

Lithics

The lithic sample contains 8,250 artifacts sorted into several types including tools, debitage and utilized materials. For each tool type, maximum

length, width, thickness and working edge (end scrapers only) were measured. Additionally, raw material was identified for each lithic artifact. Artifact types identified in the assemblage include: points, bifaces, end scrapers, drills, spoke shaves, retouched flakes, utilized flakes, utilized core/shatter, waste flakes and core/shatter. For this research core and shatter have been grouped into one category. Part of the 1996 collection (1,174 lithic artifacts or 43%) were analyzed as an independent study project at The University of Iowa. The study focused on different morphological features of the lithic debitage as well as identifying raw material types (Morse 1997). The latter part of this study pertains to this research. The following Table (5.4) summarizes the lithic debitage from the Gillett Grove site.

As typically found in lithic assemblages, waste flakes are the most numerous category with a total of 5,407 (66%) followed by core/shatter fragments with a total 2,081 (25%). These two categories represent the majority of the lithic assemblage and are byproducts of lithic tool production. Finished tools, represented by 104 examples (1%), consist mostly of bifacial tools such as points and small bifaces. Other lithics observed (retouched and utilized items) total at 658 (8%) examples.

The raw materials represented in the lithic assemblage are quite varied. Raw material sources in northwest Iowa are limited, and source material is derived mainly from glacial outwash (Anderson 1973). The 1996 lithic assemblage was previously studied. Part of that research sourced raw material

Table 5.4. Lithic types identified in the assemblage

Type		1996	1997	1998	Total
Points					
	Type 0	8	3	6	17
	Type 1	10	7	5	22
	Type 2	3	3	2	8
	Type 3	1	1		2
	Type 4			1	1
Biface		8	8	25	41
End scraper		3		7	10
Drill				2	2
Spoke shave				1	1
Retouched flake		7	16	33	56
Retouched core/shatter		6	4	16	26
Utilized flake		133	78	215	426
Utilized core/shatter		38	61	51	150
Core/shatter		678	544	859	2,081
Waste flake		1,812	1,157	2,438	5,407
Total		2,707	1,882	3,661	8,250

types in the sample. In that study (Morse 1997) used the comparative collection located at the Office of the State Archaeologist in Iowa City to identify raw material types. My thesis research used a combination of references to identify lithic types for the 1997, 1998 and remaining unstudied 1996 assemblage. The primary references include material descriptions in Morrow (1994), and comparative materials identified in the 1996 assemblage as well as a small comparative collection located at the Iowa State University Archaeological

Laboratory (ISUAL). Table 5.5 presents the counts of lithic artifacts according to the raw material. These results show a wide range of material representing 38 types from several different geographic locations. Some of the material as expected was unidentifiable. Unidentifiable cherts comprise 29% of the assemblage (2,360 items). The most frequently observed material was Maynes Creek Cream chert represented by 1,966 artifacts (24%). Maynes Creek Cream chert outcrops and is common in central Iowa along the Iowa Valley. It was used extensively by prehistoric groups in central Iowa as well as other parts of the state (Morrow 1994:121). Prairie Du Chien chert, which includes both Shakopee and Oneota types, comprises 8% (733 artifacts) of the lithic artifacts. This type of material is quite distinct with multiple oolites or fossil remains and is found in parts of southeast Minnesota and northeast Iowa (Morrow 1994:118). Another common lithic type is Curzon chert (738 observations, 9%). Warsaw Chalcedonic (690 observations, 8%) is located in central Iowa and in southeast portion of the state. Grand Meadow chert (267 observations, 3%) outcrops in southeastern Minnesota and archaeologically is found in the northern half of Iowa (Morrow 1994:120). Chert from southwest Iowa found in the Gillett Grove assemblage in some quantity include Spring Branch (200 observations, 2.4%), Ervine Creek (130 observations, 1.5%) and Winterset (198 observations, 2.4%) (Morrow 1994:126-127). The raw materials are derived from several geographical areas, but central Iowa dominates the assemblage. These include several Maynes Creek types (2,442) and Warsaw Chalcedonic (690) that comprise 38% of the total lithic

Table 5.5. Raw materials identified for each field season

Material	1996	1997	1998	Total
Argentine		25	10	35
Bethany Falls	1	3		4
Bethany Falls B	33	82	108	223
Bijou Hills Silicified Sediment	12	14	7	33
Burlington		17	59	76
Cobden	1		1	2
Curzon A	416	131	180	727
Curzon B	8		3	11
Ervine Creek	21		5	26
Ervine Creek A	44	13	47	104
Grand Meadow	222	18	27	267
Hematite	3	1		4
Hixton Silicified Sandstone	3	5	6	14
Knife River Flint	3	4	3	10
Maynes Creek Cream	795	362	809	1,966
Maynes Creek Fossiliferous	57	1	14	72
Maynes Creek Gray	153	25	154	332
Maynes Creek Gray Fossiliferous	3			3
Maynes Creek Speckled	3	11	55	69
Metamorphic	9		2	11
Moline	3		1	4
Plattsmouth		1	2	3
Prairie Du Chien	283	171	279	733
Pennsylvanian (Unidentified)	24			24
Scotch Grove	2	3	17	22
Sioux Quartzite		1	1	2
Spring Branch	26	80	94	200

Table 5.7. (continued)

Material	1996	1997	1998	Total
Stoner B	1			1
Swan River	12		3	15
Tongue River Silica	3	1	2	6
Unidentified	223	770	1,314	2,307
Unidentified Oolitic	50		3	53
Warsaw Banded	2			2
Warsaw Chalcedonic	212	109	369	690
Winterset	13	5		18
Winterset A	3			3
Winterset B	63	29	86	178
Total	2,707	1,882	3,661	8,250

artifacts. Additionally, the unidentified materials (29%) as well as some other types found in northern regions are probably derived locally from the glacial outwash. This idea is based on previous lithic studies done at Milford and other local prehistoric sites in northwest Iowa (Anderson 1973, 1994).

The conclusions, however, based on the lithic sourcing should not be made without precaution. The sample previously identified from the 1996 assemblages was used as a primary comparative tool. Chert sourcing can be plagued with problems of accuracy and chert variation can be quite extreme, making a correct identification problematic. The original sourcing of the 1996 assemblage appears to have inconsistencies, thus making further evaluation of

the other excavated assemblages not as precise as one would expect. Though the end results have produced several positive identifications on the author's part, the original comparative analysis may have a eastern geographic bias. A collection with additional chert varieties from western and northern sources as well as expertise with chert identification may have been beneficial for this part of the study. Future lithic studies at Gillett Grove should focus on such issues to either support or question this part of the analysis.

The raw material assemblage from three years of excavation shows a wide range of materials. While almost a third of the assemblage is dominated by locally derived materials, the rest is derived from sources in North Dakota, South Dakota, Minnesota, Wisconsin and Nebraska as well as several parts of Iowa. The role of long-distance trade is significant as non-local raw materials comprised 71% of the assemblage. As previously stated because of the diversity and quantities of non-local raw material, an established trade relation-network had to be in place for the Oneota people at Gillett Grove. These materials were curated and used for a variety lithic tools. The abundance of projectile points reflects the dependence on quality raw materials not available at Gillett Grove.

The procurement of these materials suggests the Oneota peoples at Gillett Grove interacted with a number of groups on the Prairie-Plains. Long-distance trade could have occurred with groups like the Arikara and Dakota for materials such as Bijou Hills silicified sediment and Knife River flint. Depending on who was occupying Gillett Grove, interaction with groups to the east could include

the Ioway and Oto and possibly the Winnebago. Other groups such as the Omaha and Pawnee may have been involved as well. This sphere represents a well established network of groups trading among each other over an area consisting of the majority of the Midwest. These non-local materials may have been acquired during bison hunting expeditions. Long-distance trade and raw material procurement is not new to the Oneota in western Iowa. Analysis of raw material from the Dixon excavations exhibit the importance of non-local raw materials as well. Similar raw materials have been identified at Dixon, but more importantly, these raw materials originate from similar places ranging from western Wisconsin to North Dakota and into Kansas (Fishel 1999). The Oneota at Dixon may have had a very similar exchange system in prehistoric times that developed and continued into the historic period or at least this system could have been a precursor to later systems used by Oneota residents in northwestern Iowa.

Faunal Assemblage

The faunal data consists of a total of 4,030 items. The 1996 assemblage was analyzed in depth as an independent study project at The University of Iowa in 1998. This study identified elements, species and modifications as well as the distribution of remains from the excavation units (Slaughter 1998). The 1997 and 1998 assemblages are presented here with elements and taxons identified where possible. The 1996 assemblage was also reviewed to collaborate the thesis work with the report produced by Slaughter (1998). Table 5.6 lists the species identified

in the assemblages from Gillett Grove.

The variety of animals in the faunal assemblage is typically seen in Oneota assemblages from western Iowa. The remains of these animals show the different environmental sources available to the inhabitants of Gillett Grove. Aquatic species include the remains of fish and turtle as well as water birds. Upland prairie species represented include the thirteen-lined ground squirrel, plains pocket gopher and bison remains. Gallery forest species are present in the form of deer, eastern chipmunk and raccoon. This assemblage is similar to the species identified at Milford, implying that the local environment and climate were similar at Gillett Grove. Semken and Falk (1987:216-217) propose that at Milford conditions were slightly cooler and more mesic than today. The same can be said at Gillett Grove, and this interpretation is further supported by the presence of the eastern chipmunk. The eastern chipmunk, a forest species, is no longer found in northwest Iowa, its presence suggests that climatic conditions at Gillett Grove were more mesic than today (Hall and Kelson 1959).

The exploitation of local fauna is apparent from the bones recovered from Gillett Grove. Bison hunting appears to have done locally as almost every element such as skull fragments, vertebral fragments, long bone, hoof and various other elements are represented from the 1996 and 1997 assemblages. Slaughter (1998) noted the presence of the caudal vertebrae as well.

A large portion (76%) of the faunal remains were unidentifiable and highly fragmented, which limited the analysis. Evidence for modification was

Table 5.6. Vertebrate fauna totals (NISP) from Gillett Grove

Taxon	1996	1997	1998	Total
Fish	22	89	16	127
Turtle	50	80	60	190
Chelydra serpentina (snapping turtle)	2			2
Mammals				
Blarina brevicauda (short tail shrew)		1		1
Tamias striatus (eastern chipmunk)	1			1
Spermophilus tridecemlineatus (thirteen-lined ground squirrel)	1			1
Spermophilus franklinii (Franklin's ground squirrel)	1			1
Geomys bursarius (plains pocket gopher)	17	10		27
Castor canadensis (beaver)	16	8	3	27
Microtus pennsylvanicus (meadow mole)	1			1
Ondatra zibethicus (muskrat)	6	3		9
Canis latrans (coyote)		4		4
Canis familiaris (dog)	26	1	2	29
Canis sp.	17	14	32	63
Vulpes vulpes (fox)	1	1		2
Procyon lotor (raccoon)	5	2		7
Odocoileus sp. (deer)	13	16	2	31

Table 5.6. (continued)

Taxon	1996	1997	1998	Total
Bison bison (bison)	29	27		56
Large mammal	28	185	24	237
Medium mammal	16	37	36	89
Small mammal	4	19		23
Bird	2	15	2	19
Butorides virescens (Green heron)		1		1
Fulica americana (American coot)		1		1
Anas sp. (Green or blue winged teal)			2	2
Unidentified bone	1,698	1,337	44	3,079
Total	1,956	1,851	223	4,030

present usually in the form of cut marks as a result of butchering practices. Some of this modified bone was worked or polished in some instances. However, only two bones tools were recovered. A single incomplete bird bone needle measuring 4.68 cm long and .58 cm wide was recovered from 98-Feature 1. The bone needle exhibits a polished surface and has a drilled hole located on the distal portion measuring .25 cm in diameter (Figure 5.3). Two modified ribs were recovered in 1996. One rib exhibits several v-shaped notches and two polished holes with additional scratches. This may have been a shaft wrench. Shaft wrenches were used to straighten arrow shafts, and they are commonly made from long bones. The second rib fragment has a drilled hole (Figure 5.4). Taphonomic features such as carnivore and rodent gnawing are common among the fragmented remains. This suggests exposure of the bone prior to becoming part of a the village midden and pit fill.

Several *Canis sp.* elements were recovered from 98-Feature 1 such as long bones, a mandible and the occipital portion of a cranium (Figure 5.5). Additionally, ear bones (anvil and stirrup) were recovered from the petrous portions of the canis cranium. Some of the canis remains exhibit butchering marks (Figure 5.5). A partially reconstructed turtle shell was also recovered from this feature (Figure 5.6), this shell does not exhibit any cultural modification. Several cervical vertebrae, however, have butchering marks (Figure 5.7). Further evidence of good preservation at Gillett Grove is evident from the 135 fish remains recovered which include fish scales. The fish remains were not

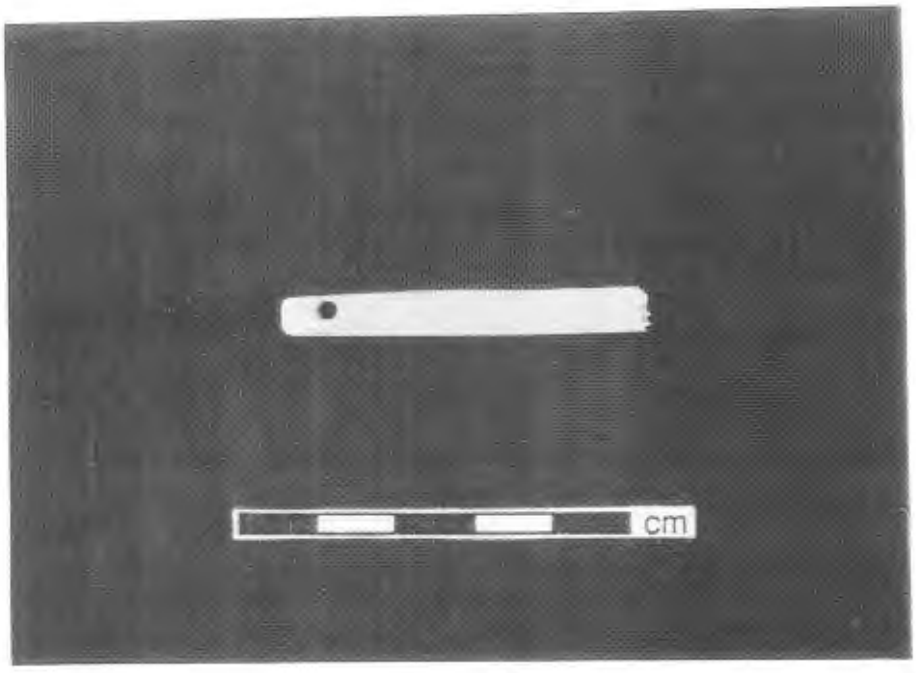


Figure 5.3. Bird bone needle recovered from 98-Feature 1

Figure 5.4. Modified bone from the 1997 assemblage

Figure 5.5. *Canis sp.* mandibles recovered from 98-Feature 1

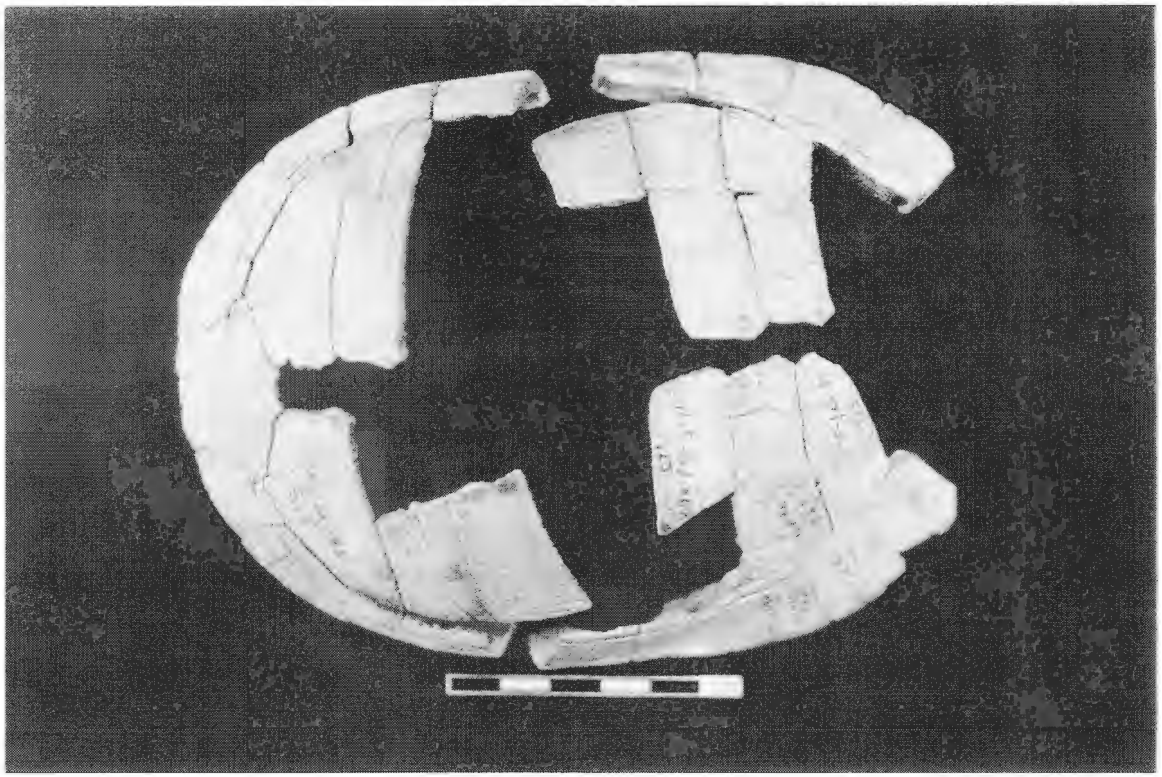


Figure 5.6. Reconstructed turtle shell from 98-Feature 1

Feature 5.7. Butchered vertebrae recovered from 98-Feature 1

identified as to species.

Shell

The shell remains were not identified as to species. A total of 238 shell fragments (26 hinge fragments and 4 complete bivalve halves) were recovered from the excavations with 54% (n=138) from the 1998 investigation. There was no evidence of any modified shell as sometimes found on Oneota sites. The presence of the shell probably represents an additional food source as well as the primary agent used for temper as seen in the ceramic assemblage.

Botanical Remains

Botanical remains have been recovered each year from the Gillett Grove site. The majority of the remains are of charred wood fragments; however, seed fragments have been recovered as well. Currently, all botanical remains are being studied for a separate MA project at The University of Iowa.

Ground Stone

The recovery of ground stone has been very limited. A single mano was recovered from 98-Feature 1 and exhibits horizontal wear on two sides. The mano is a smaller specimen compared to examples in the Barglof collection. It measures 6.3 cm in diameter with a thickness of 3.09 cm. Three unfinished and unidentified ground stone items were also recovered the surface of the site. A single sandstone abrader fragment was recovered in 1997. Nine scoria fragments were recovered from Gillett Grove. Utilization on these specimens is not present.

Pipestone

Pipestone material, presumed to be from the pipestone quarries in southwestern Minnesota, was recovered from the Gillett Grove primarily from a surface context. All 20 pipestone artifacts recovered were modified in some form with 3 pipe fragments and one pendant fragment in the collection. The pipe fragments found include, a single polished bowl portion and two stem portions of pipes.

Miscellaneous materials

Several artifact types have been grouped into this class for discussion. The most numerous class is introduced or fire-cracked rock. A total of 2,126 (79,299.6 g) pieces of FCR have been recovered, and though the frequency of FCR has varied from year to year, the overall weight is closely distributed (Table 5.7). Additional rock material (120 pieces) representing various types of igneous, metamorphic and sedimentary rocks were recovered that have no cultural modification. Materials used for pigmentation have been found at Gillett Grove as well. A total of 118 limonite fragments and 2 hematite fragments were noted in the assemblage, and none appear to be modified. Additional unmodified materials include fragments of mica, coal and iron concretions. The coal is from surface collections.

Daub is sparsely represented. Eighty-eight pieces of daub have been identified. Daub is often used as an agent in the construction of wattle and daub structures or to line hearths. No evidence has been found to suggest the presence of wattle and daub shelters, and the fragment remains may be associated with pottery production because they lack grass marks or mold intrusions associated with structure use.

Historic material

Metal

Metal objects (n=27) consist of small fragments of unidentifiable iron, modern fence staples, a wire nail, a bolt and a nut. Items such as the fence

staples, the wire nail, bolt and nut are recent and not associated with the native occupation of Gillett Grove. A single steel shotgun pellet was recovered and is not associated with the village occupation. The remaining 22 fragments, however, could be associated with native use, and in fact some iron fragments were found in context with the Oneota occupation. Seven small fragments were recovered from 98-Feature 1, with one object surrounded with preserved wood. The deterioration of the wood altered the possibility of recognizing the type or function of the object.

Brass/copper

Brass/copper artifacts, which are associated with the post-contact Oneota occupation, are usually very small and found in the form of coils, pendants, tinklers and scrap material. Twenty-one brass/copper artifacts have been recovered from the Gillett Grove excavations. Brass/copper tinklers consist of two very small specimens, which appear to be brass. Tests, out of the scope of this study, could determine, if these items are brass or copper.

Glass Beads

Glass beads were also recovered with a total of 12 complete or fragmented beads found. Four types were identified using the Kidd and Kidd (1970) system. Seven beads were classified as type IIa40, the most common type found at Gillett Grove. These are medium round Robin's egg blue tubular beads. Two additional types were identified, one of each type (IIa37 and IIa41). These can be described as small, circular and aqua blue and Robin's egg blue in color. A single bead was

identified as IIa57, which is medium-sized, oval-shaped and ultramarine in color. A final bead in the assemblage is a fragment of a blue disc bead and not classifiable.

Miscellaneous

The artifact types discussed here are more recent in origin and not associated with the Oneota occupation of the site. Glass artifacts consisted of four small clear plate fragments. Additionally, two stoneware fragments and one earthenware fragment were recovered from the surface of the site.

Chronology

Accessing the chronology of Gillett Grove has yet to be discussed thoroughly. Carbon dating is a mean of obtaining further data on site age. Gillett Grove has had minimal radiocarbon testing. Two samples have been submitted for dating. Three soil samples were submitted for oxidizable carbon ratio (OCR) dating. OCR dating is a relatively new alternative for absolute dating. OCR different situation involving multiple components could be postulated at Gillett Grove. Radiometric dating is only one part of the data and must not be relied on alone. Radiocarbon dating is also not without problems. It is often impossible to correctly associate radiocarbon dates with calendar dates due to the fluctuation in the atmospheric Carbon-14 levels in the past (Stuiver and Reimer 1993). The end result when assessing a radiocarbon date along portions of the radiocarbon curve is that specific calendar dates cannot be accurately calculated for certain

Table 5.7. Summary of remaining materials

Item	1996	1997	1998	Total
Brass/copper	2	6	5	13
Brass/copper coil	4	2		6
Brass/copper tinkler	1	1		2
Clinker		4	5	9
Daub	45	12	31	88
FCR	1,465 (20,852.7 g)	536 (26,355 g)	125 (32,091.9 g)	2126 (79299.6 g)
Glass		3	1	4
Glass Bead	2	4	6	12
Ground stone			8	8
Hematite		2		2
Limonite	2	11	105	118
Metal	2	9	13	24
Rock	7	100	2	109
Sandstone	2	7	1	10
Abrader		1		1
Iron concretion		3		3
Wire nail	1			1
Fence staple	2			2
Shotgun pellet	1			1
Coal	1			1
Microlith	24			24
Shell	30	130	78	238
Euroamerican stoneware			2	2
Earthenware			1	1
Cigarette filter		1		1
Limestone		1		1
Mica		1		1
Pipestone	4	2	14	20
Total	1,595	836	397	2,828

radiocarbon date intervals. Additionally, the radiocarbon samples from Gillett Grove were derived from unidentified wood charcoal fragments in an unplowed midden context.

Part of the problem for dating such samples, even when derived from a level undisturbed from modern agriculture, is that the midden still represents an area of mixed and accumulated material culture. A midden may contain redeposited materials from a earlier occupation. The site has been defined as a Oneota village, however, diagnostic artifacts of earlier prehistoric activity at Gillett Grove are present. The Tom Gross collection (Table A.3) contains older projectile points as well as a full-grooved ground stone axe, which could have a variable context up to two thousand years before an Oneota occupation. Previous use of the site cannot be ruled out, but may have been present in the Little Sioux Valley before any Oneota populations arrived at this site.

The OCR dates (Table 5.8) suggest a much earlier occupation than thought at Gillett Grove. Though ACT#2902 is derived from the same location as the radiocarbon sample A-006A, it provides slightly different dates. Additionally, ACT#2902 and ACT#2903 were collected from 96-Feature 2 and 96-Feature 4, which are close in proximity and depth (Figure 3.7) and yield dates 100 years apart. OCR dating is not without controversy and debate in archaeology (Frink 1994, 1999; Killick et al 1999), thus caution in use of these data is warranted.

Table 5.8. Summary of dates.

ID	C-14 RCYBP	Calibrated*	Location	Depth	Comments
A-0006A	383 ± 52	1430 (1481)1637	Unit 114	Level 2	AMS sample
3439	460 ± 70	1322 (1441)1637	Unit D1	Level 3	Wood charcoal
OCR	**YBP (1950)**				
ACT#2901	435 ± 13	1515	Unit 114	Level 2	1997
ACT#2902	414 ± 12	1536	Feature 2		1997
ACT#2903	320 ± 9	1630	Feature 4		1997

* *Calibration dates calculated by Dr. M. Shott, University of Northern Iowa.*

Artifact Density

Only a small percentage (.1%) of the Gillett Grove site has been tested to date. A simple look at the artifact densities per cubic meter can show the potential amount of artifacts present. The volumetric amount excavated for each season is approximately 7.06 m^3 (1996), 6.55 m^3 (1997), and 5.75 m^3(1998) with a grand total of 19.36 cubic meters. The total amount of artifacts recovered from the excavations is 19,407. To calculate a artifact density volumetrically, artifacts recovered from the surface survey in 1998 will be excluded since subsurface testing was not associated with those units. The 1998 survey recovered 3,218 items (Table 3.1), which when subtracted from the total assemblage gives a total of 16,189 artifacts from 19.36 m^3. The density of artifacts is 836 artifacts per cubic meter. Extrapolated to the entire Gillett Grove site,

which is estimated at 15 acres (or 60,729 m^2), with an estimated depth of 25 cm the site would have a volume equal to 15,172.5 m^3. This means that, based on the artifact density from the excavations, the site could produce a total of 12,687,376 artifacts if the entire site was excavated. This is potentially an enormous amount of material. Examining this number further, if only 1 glass trade bead had been recovered from three seasons of excavation, potentially, the site could have 784 glass trade beads. This shows that while a relatively low number of European trade items have been recovered through excavation, this may not fully reflect the total amount or potential influence of European items on the material culture. This is quite clear when archaeologists examine personal collections from the site, which contain these types of items (trade beads, catlinite pipes, brass and the like) that have not been found extensively in excavation.

CHAPTER 6: DISCUSSION

As a result of this research, several comparisons can be made with other post-contact Oneota sites in northwest Iowa. The issues of interest are multiple with specific queries about the chronology of these sites, the relation of these sites to each other, what each site represents, who might have occupied them and the influence of European trade items on native cultures. Specifically, direct comparisons of the material culture can be made between Gillett Grove and Milford as well as Blood Run.

Blood Run, Milford and Gillett Grove are post-contact village sites in the Upper Little Sioux Valley located on uplands. This is contrary to prehistoric Oneota villages located further south along the river, which are on terraces. Though prehistoric Oneota sites have been found on uplands in central and southeastern Iowa (Gradwohl 1974; Tiffany 1982). Environmentally, based on current and past studies at Milford and Gillett Grove, both sites are located near similar ecotones. Both have centers of occupation on the upland prairie which is adjacent to gallery forest near a major river system. This environmental scenario provides a wealth of diverse resources for village occupants that is exhibited in the many different fauna represented in the assemblage. Climatic models and interpretation have been addressed in past studies (Semken and Falk 1987; Slaughter 1998; Tiffany and Anderson 1993). These studies suggest conditions were cooler and more mesic when these sites were occupied than

today.

The environmental data have also been used in the evaluation of subsistence pursuits at these sites. At this point, generalizations can be made particularly based on faunal data, however, future research focusing on botanical remains will aid in addressing subsistence. A mixed economy can best describe the subsistence strategy at Gillett Grove. Large mammal hunting played an important role. Large mammals accounted for 30% of the total (NISP) of identifiable faunal remains (Table 5.6). During the post-contact period, seasonal bison hunts among semi-sedentary villagers were conducted by groups such as the Ioway, Oto, and Omaha (M. Wedel 1986). The importance of bison should be reflected then among these post-contact sites, which possibly represent Chiwere or Dhegihan speakers. Additionally, maize agriculture was an important part of the Gillett Grove subsistence. No seed analysis results are available yet for Gillett Grove, but evidence of maize (charred kernels) has been observed in processed soil samples as well indirect evidence present in the form of processing tools like metates, manos and the scapula hoe in the Barglof collection.

Direct comparison of artifact classes between Milford and Gillett Grove shows several similarities between these sites. The ceramic assemblage is similar with regard to vessel morphology, lip decoration, handle type and decoration. The Milford assemblage, however, had more recordable shoulder decoration elements and motifs than Gillett Grove. The Gillett Grove ceramics were quite limited in sample size and in general undecorated. Handle decoration consisted

of similar decorative elements at both sites (Figure 4.3), but several different motifs or styles were noted at each site (handle decoration can be quite variable). Temper used at Gillett Grove varied with the use of shell and grit combined as well as a few grit-tempered sherds. Milford ceramics were exclusively shell-tempered. Milford pottery is similar to Orr focus Allamakee Trailed pottery material in northeast Iowa (Tiffany 1996:69). Allamakee Trailed is a catch-all ceramic type, however, which exhibits stylistic variation found in well-documented collections spanning 200 years or more. Orr focus has been associated with the Ioway in northeast Iowa by M. Wedel (1959). Tiffany and Anderson (1993:303) have suggested that the Milford village occupants were Chiwere speakers, namely Ioway or Oto groups. The ceramic assemblage at Milford (Tiffany 1996) supports this hypothesis in a general way. Gillett Grove may be a Chiwere Sioux occupation based on the ceramics.

A wide range of activities appears to be present at Gillett Grove based on the presence of stone tools, and other artifacts. Projectile points predominate followed by modest quantities of end scrapers, bifaces, drills and the like. Hunting played an important role as evident in the numerous points found on the site not only through controlled surface collection and excavation, but by collectors as well. Strictly from the archaeological investigations, the ratio of points to end scrapers is 4 to 1. Currently, this is a major difference between Milford and Gillett Grove. During the Milford excavations only one end scraper was recovered (Anderson 1994:11), though a variety of other lithic artifact types

are present at Milford. At Dixon, excavations in 1994 recovered slightly more end scrapers than projectile points. Ratios of projectile points compared to end scrapers may support the hypothesis of rapid adoption of metal knife and use of metal fleshers over indigenous end scrapers in post-contact times. With regard to acculturation, the Milford assemblage appears to reflect people more acculturated than Gillett Grove in this regard. Gillett Grove appears to be in the middle between the prehistoric Oneota and post-contact Milford with regard to the end scraper/point ratios.

The other trade goods and their incorporation into the material culture is different at both Gillett Grove and Milford. European goods present at both Gillett Grove and Milford include glass beads, brass/copper artifacts, Jesuit rings and miscellaneous metal. Only slight variability is present between sites. A greater variety of beads are found at Gillett Grove. Milford, however, had four musket parts, metal fishhooks and gunflints recovered (Anderson 1994:15). Gillett Grove produced no guns or gun parts, though gun flints may have been recovered by personal collectors as reported on site record forms from the Office of the State Archaeologist. Similarly, post-contact sites in northeast Iowa have not produced gun parts or gun flints (M. Wedel 1959:39). European trade goods are far more sparse at sites in the Upper Iowa Valley (M. Wedel 1959:39), suggesting no direct contact with European traders. Gun parts or gun flints have never been recovered from Blood Run. The site is hypothesized to have been occupied from A.D. 1500 until the early A.D. 1700's (Henning 1998a:385). The

occupations at Milford and Gillett Grove perhaps represent a time when trade goods were readily available or at least distributed in a higher frequency. Investigating Burr Oak/Harriman (13CY1), may aid in evaluating the types of trade goods present in the Little Sioux Valley and when they arrived. In theory if 13CY1 is close in age to both Milford and Gillett Grove, then similar assemblages should be present.

The origin of and relationship among post-contact sites along the Little Sioux River has had limited study. Traditionally, these villages are thought to represent the locations of migrating Ioway from northeastern Iowa. M. Wedel (1981) recorded evidence for Ioway migration to the Iowa lakes area in northwest Iowa where Ioway went to pursue beaver for trading. This relocation may have been due in part to an increase in seasonal bison hunting. If this were the case, then Oneota sites in northeast Iowa would not be similar to post-contact Oneota sites in northwest Iowa. Beaver remains, however, recovered from Gillett Grove are limited. A total of 27 beaver bones were recovered from three years of excavation at Gillett Grove in comparison to 56 bison bones, though more bison elements are suspected based on unidentifiable large mammal remains (Table 5.6). Milford faunal remains consisted of 27 beaver elements and over 503 bison elements (Tiffany and Anderson 1993:293-294). The few beaver remains suggest that beaver trapping was not predominate at either site. One possibility is that beaver were trapped and processed elsewhere. A second possibility is that beaver pelts were being acquired from other groups through established trade relations,

and bison hunting was occurring locally.

An initial look at northeast Iowa site assemblages discussed by M. Wedel (1959) shows general similarities to northwest Iowa as with most Oneota assemblages. One noticeable difference is the trade goods; the quantity of European items is less common from the northeast Iowa village sites, while larger quantities of glass beads, brass and copper ornaments and metal, were recovered from burials (Bray 1961; M. Wedel 1959). The Gillett Grove and Milford sites possess a greater range of trade materials from a village context. This suggests that these two sites had more European trade goods available to them and are later in time. Evidence of guns at Milford, and the presence of Jesuit rings, trade axes and greater variety materials at both Milford and Gillett Grove indicates that these sites are more recent than the Oneota sites in northeastern Iowa. The presence of items such as Jesuit rings and trade axes from sites in northwest Iowa shows that access and quantities of prestige and curated goods had to be greater for Oneota groups to leave these items behind. Possibly, Oneota groups in northeast Iowa had these types of prestige items, but were more particular in the long-term curation of these trade goods. Thus, these types of artifacts would not necessarily show up at these earlier post-contact village sites in northeast Iowa.

Differences among post-contact Oneota sites is variable from region to region, and the influence of European material culture is present among these assemblages. These new goods did not always affect each group in the same

manner. Native peoples incorporated new items into their own culture based on already established cultural systems. Traditionally, it is thought that with the introduction of trade goods, indigenous technologies such as ceramics and projectile points would be the first things to be replaced. This type of replacement did occur. The Huron were noted to adopt European kettles that replaced their ceramic tradition and function during the A.D. 1690's (Branstner 1992:191). However, Milford, Gillett Grove and Blood Run all contain European trade items, but have an enormous amount of ceramics and chipped-stone points present. Instead of utilitarian items being replaced, the increase of non-utilitarian items seems to be more prevalent, in particular decorative items such as glass beads, brass/copper tinklers and pendants and Jesuit rings. This research has presented a number of these types of items specifically from Gillett Grove. The occupations of Gillett Grove and Milford and perhaps 13CY1 represent a period of increased commodity exchange without alteration to the lifestyles to these people. Though certain items may be selectively replaced such as the end scrapers with metal knives as theorized for Milford.

Chipped-stone tools are items that could be easily replaced with the introduction of metal tools. Metal tools may function superior to the chipped-stone tools, but metal tools were not selected to replace stone tools solely based on function in northwest Iowa. Other factors such cultural preference, local economy and availability prevented transitions (Ahler et al. 1991). At both Gillett Grove and Milford there is a predominance of traditional lithic tools with

the presence of metal tools as well. These types of associations are not uncommon at Oneota sites. At the Utz (23SA2) site in Missouri quantities of both metal and lithic tools were common to the site assemblage (Bray 1991).

These post-contact sites in northwest Iowa produce numerous lithic projectile points. The large quantities of stone points may indicate the preference by Oneota for stone over metal for hunting. Guns during the 17th and 18th centuries were not reliable or as efficient for hunting practices. Additionally, items like gun powder, musket balls, gun flints, and replacement parts and repair that would be required for prolonged use of a gun for hunting were difficult to obtain. Guns generally would be difficult to replace and obtain on the Plains in the early contact times under discussion. Flintlock guns were inefficient as a weapon for bison hunting, and groups on the Prairie-Plains continued to use the bow and arrow (Bleed and Watson 1991:234). Projectile points on the other hand could be easily made and replaced. These combined factors, prior to the introduction of the horse, negated replacement of traditional weapons with firearms by Plains people during the early 18th century.

Metal points are another example of tool substitutions on the Plains. Occurring more frequently in the historic period, archaeologists have debated on the efficiency of metal points versus their stone counterparts. While metal points have been recovered from Gillett Grove and Milford, stone projectile points are more frequent. The use of the traditional stone points was probably more practical, because they could be easily replaced. Metal points would also

require arrow shaft design alterations to accommodate for the physical differences between stone and metal points (Pyszczyk 1999:166). Therefore, manufacture of metal points might serve as a native prestige trade item as opposed to a hunting implement.

The presence of both metal and stone tools in the archaeological record has been discussed at some length in this research. Other archaeologists have noted similar situations, and in the northern Plains this co-occurrence of stone and metal points is seen around A.D. 1650 (Ahler et al. 1991:74). However, the arrival of metal tools is earlier than what the archaeological record shows. Indirect evidence of the presence of metal tools has been recorded on the Plains in the 16th century. The evidence is in the form of modified bone tools and other bone remains. Archaeological evidence derived from village sites of the Arikara and Hidatsa shows that scapula hoes were modified with a metal tool even though metal implements were not recovered from these sites (Ahler et al. 1991:70-71). This implies that European trade items, especially metal tools, could be under-represented at sites like Milford and Gillett Grove. These sites are occupied at a time (ca A.D. 1700) when a majority of these trade goods are readily available on the Prairie-Plains. Over time on the Plains, chipped-stone is replaced by the increased usage of metal, especially after A.D. 1700. This results in an increase of simple expedient chipped stone tools with lesser reliance of quality lithic raw materials for production (Ahler et al. 1991:74-75; Hudson 1993:275).

At Gillett Grove and Milford, reliance on stone implements does not appear to be affected by the addition of metal tools. Various lithic resources used to make tools at Gillett Grove reflect the importance of stone tools to the Oneota. The Oneota of northwest Iowa were incorporating metal tools as either supplements or prestige items though an argument can be made that at Milford end scrapers have been replaced by metal equivalents. If this is the situation, then the archaeological record shows how specific material culture items could quickly change with some tool classes while other elements of the material culture remained constant.

Bone tools are an example of items that could be replaced and most were. The continued use, however, of the bison scapula hoe seen in the archaeological record on the Plains reflects more selective behavior (Ahler et al. 1991). This tool was easily obtainable, and easy to make especially with a steel axe; making the metal hoe was also unappealing to native woman farmers. An another alternative for traditional bone tools being used may have been personal preference. Several references point to the fact that certain intangible reasons were the factor for not adopting new tools for everyday use. For example, Wilson (1917) documented an explanation from Buffalo Bird Woman, stating that food processed using bone rather than metal tools made the food taste better. Another example of traditional tools in continued use over metal tools is seen among the Omaha who used chipped-stone knives for certain ceremonies (Fletcher and La Flesche 1911). However, some bone tools such as awls were

often replaced by a metal counter part during the post-contact period. This type of replacement is questionable at Milford and Gillett Grove, since bone awls have been found at Milford (Tiffany and Anderson 1993), and a bone needle was recovered from Gillett Grove.

Brass and copper kettles did not replace Oneota ceramics until much later. Instead they became a raw material source for other items. These kettles were cut and modified into decorative items and tools. Tinklers, pendants and beads are examples of the decorative items made. Tools from a post-contact Oneota site in Missouri consisted of native made metal points, and knife blades of reworked brass and copper (Bray 1991). The brass and copper really reflect a raw material choice as opposed to a functional replacement of cooking vessels on the Plains (Ahler et al. 1991:76).

Selective replacement describes the choices made at northwest Iowa Oneota villages. Most of the brass and copper found at these sites in Iowa is in the form of decorative tinklers, coils and scrap material. The Oneota may have used tinklers to replace bone beads or added them to the native materials used for decoration. I speculate that scrap brass, copper and iron might be the source of the end scraper replacement at Milford as these items were reworked into scraping tools.

Prestige items were primarily decorative in function. These items recovered from northwest Iowa have already been discussed. The dominant artifacts include glass beads and unique items like Jesuit rings. These trade items

were likely incorporated into existing artistic and craft skills within the Oneota culture. The use of these items is not necessarily an "acculturation" to a new lifeway. Rather, they reflect an adoption/incorporation of different material from trade to replace the time consuming quill-work process with easier to use and more readily available and colorful items. Thus, early use of glass beads is analogous to the discussion of brass and copper where an alternative raw material is sought for a traditional native technology.

Gender roles are often over-looked in examination of acculturation and changes in material culture. For example, the hide production process was traditionally the role of women. In the perspective of the native culture, the producer owned the commodity. Thus, when men traded hides with Europeans, they obtained products for the women (beads) who owned the commodity being bartered. Bead decorated clothing produced by women would become prestige items for the men and women who wore them.

The advent of selective replacement of material culture in Oneota systems would have other impacts on other areas of the society as well. The prehistory and early contact record at Gillett Grove, Milford and Dixon demonstrate the existence of established long-distance exchange in lithic raw materials across the central Prairie and north and central Plains. Undoubtly, as contact occurred, these traditional trading systems and alliance networks would have been used by the Oneota to broker exchange of incoming European goods with Native American groups to the west. A singular pattern in European/Native contact

was the on-going efforts by Europeans to maneuver around native tribes and establish trade systems directly with the primary supplier to obtain what they desired. This disruption does not appear to have taken place yet at Gillett Grove. The role of the gun during the Oneota occupation of Blood Run, Milford and Gillett Grove is primarily as a prestige item. The impact of the horse and gun on the Plains did not begin until A.D. 1780 to A.D. 1810 (Ahler et al. 1991:64). This is well after the occupations at Milford and Gillett Grove, and the different material culture associated with the horse is not present in the Oneota lifeway in northwest Iowa.

Pipestone artifacts served as male-dominated prestige items among native groups. The development and role of the calumet ceremony increased the importance of pipestone. This increased the demand, distribution and trade value, perhaps, for more pipestone is reflected in the northwest Iowa archaeological record where pipestone is found in abundance at several Oneota sites. Pipestone could be distributed in raw material form, but the amount of pipestone process waste on the northwest Iowa Oneota sites suggests that pipestone was a closely guarded resource and only finished artifacts were traded. Historically, the Omaha discuss trading for finished pipes rather than making them (Fletcher and La Flesche 1911). Pipestone in various production stages has been collected from Gillett Grove, but Milford has many times the amount of pipestone recovered than Gillett Grove. This difference may be attributed to increased trade interaction with other groups, which possibly included the

addition of other prestige items like guns. Both guns and pipestone are prestige items controlled by men in the tribe who also were the key trading partners in the established alliance networks for lithic materials already discussed. The Oneota men at Milford perhaps had gained more trade influence in the regional exchange system than the men at Gillett Grove which would explain the differences in male prestige items between the sites. The possibility that Gillett Grove is earlier in time is also a factor.

The main catalysts for increased cultural transformations can be attributed to the continued development of the fur industry, which impacted groups on the Plains. With this created market expansion came competition for fur sources as well as a desire for certain European goods. M. Wedel (1959; 1981) reports that the quest for beaver was the incentive for the Ioway to head to northwest Iowa in addition to pressures from various other groups in the east. The increase of trade items in a relatively short period of time across opposite corners of present day Iowa could be attributed to the growth of the fur market exchange. The construction of Fort Vert in Minnesota in close proximity to Chiwere and Dhegihan speakers on the Prairie-Plains of southwestern Minnesota and northwest Iowa is another example. Fort Vert was established by Le Suer ca 1700 with the intention to trade with such groups as the Ioway and Oto (M. Wedel 1974, 1981, 1986). Though there is no evidence that direct trading ever took place between groups such as the Ioway, Oto and Omaha, their residence and coalescence in the area at this time at Blood Run may reflect the establishment of

Fort Vert. Fort Vert was burned down within the following year of its construction (M. Wedel 1981). The fort, however, possibly served as a catalyst for Prairie groups to coalesce and broker trade goods to groups regionally.

The chronology of the upper Little Sioux River is still an area that needs to be thoroughly researched. Currently, radiocarbon dates are available from Gillett Grove and Blood Run. The Gillett Grove dates, as previously discussed, fall into the 16th century, and predate the hypothesized occupation of the site. The Blood Run dates, sampled some time ago, reflect a longer continuous occupation of the area from A.D. 1500 to A.D. 1700 (Boszhardt et al. 1995:215; Henning 1998a:385). Milford has had no radiometric dating done at the present time.

The Gillett Grove radiocarbon and OCR dates (Table 5.8) predate a late A.D. 1600 occupation. This may suggest an earlier component from ca A.D. 1500 or later, but the cultural material does not support this hypothesis. If Gillett Grove was occupied earlier, speculation would indicate that ceramic traits and other artifacts similar to what is observed at the Bastian site would be found. The ceramic assemblage should reflect something of both Allamakee Trailed and Correctionville Trailed decoration. Ceramics, however, from Gillett Grove do not posses anything remotely similar to Correctionville Trailed. Pipestone artifacts should reflect qualities as seen as Bastian such as the elaborate documented catlinite plaques (Bray 1961) and disc pipes. Pipestone artifacts at Gillett Grove do not have such similarities, though pipestone is present, pipes and pipe fragments shaped in the form of small elbow and larger elbow forms

reflect a latter time period at Gillett Grove. At this point, acceptance of the radiocarbon assays from Gillett Grove is not supported by the assemblage, and based on research so far, do not represent the probable occupation of Gillett Grove.

Relative dates based on the types of European trade goods has confirmed what the ethnohistoric and ethnographic research has established. The majority of the trade items have generalized dates because types of materials were used and produced over a long period of time with little stylistic differences. The Jesuit rings, based on stylistic features, date from the late A.D. 1600 into the A.D. 1700's. The glass beads recorded from Gillett Grove were all drawn with several styles present. While some of the defined types can predate A.D. 1700, most types were seen historically and archaeologically over a long period of time.

CHAPTER 7: SUMMARY AND CONCLUSIONS

The research compiled from Gillett Grove expands what is known of Oneota occupation in northwest Iowa, specifically, during the post-contact period. This research has attempted to summarize three years of field investigation at the site as well as incorporate the largest single extant collection from the site. Additional goals achieved include establishing site parameters at Gillett Grove from field investigations since 1995, and evaluating the Oneota taxonomic system employed in northwestern Iowa. From this work a multitude of ideas can be discussed with regard to the settlement of the Gillett Grove, and transformations taking place during the brief period of time the site was occupied.

Several possibilities exist with regard to occupation, time and tribal representation at the site. As previously mentioned these post-contact sites in northwest Iowa were thought to be associated with Ioway and Oto migration to the Iowa "Great Lakes" region. The research at Milford suggests that this settlement represents Chiwere speaking groups. Because of the similarities with Gillett Grove, the same might be said of the occupation here as well. This may be an issue that is unresolvable; however, further comparisons of Gillett Grove and Milford with Orr focus/phase sites in northeastern Iowa may confirm such a relationship.

Fishel (1999) has developed several migration models for Oneota

populations in the Little Sioux Valley. The focus of these models is primarily prehistoric population movement. Fishel's (1999:127) proposed the Iowa Lakes phase as settled by either migrating populations from northeast Iowa or perhaps the Blood Run locality. Both ideas are likely possibilities for Gillett Grove. As a result of this research and comparisons among post-contact sites in the northwest Iowa, several theories on Oneota occupation in the upper Little Sioux valley are proposed.

One possibility is that Gillett Grove represents a Chiwere group from eastern migrations of people who settle for a short period at Gillett Grove before moving on to Blood Run ca 1700 as the ethnohistoric and ethnographic research suggests (Fletcher and La Flesche 1911; M. Wedel 1974, 1981, 1986). Second, Gillett Grove, again representing Chiwere dwellers from eastern migrations, could be contemporaneous with Burr Oak/Harriman in which the residents of both villages coalesce at the Milford site before moving further west to Blood Run. The Oto were known to live not as a tribal identity in one village, but rather they organized themselves (centered) around clans and kinship (Whitman 1937). One group of clans (moiety) then may occupy one village, and another at a separate nearby village. M. Wedel (Mott 1938, M. Wedel 1981) noted the close relationship of the Ioway and Oto; villages of the Oto were said to be often located near Ioway villages. Such identification and affiliation as Ioway and Oto may not have existed at the time of the post-contact villages in question, however. Thus, the culture systems of both groups was similar and the

archaeology would be as well. The issue of contemporaneous occupation of both Gillett Grove and 13CY1 will require further investigation. Both sites are similar in size, and have reported trade goods. Though very little is known of 13CY1, archaeologically, this research reported on a small ceramic sample in the Barglof Collection that showed similarities with Gillett Grove pottery. Additionally, the Sanford Museum possesses a small surface collection from 13CY1, and though not part of this research, it was noted to contain one glass bead. The substantially larger size of Milford, which is more than twice the size of both Gillett Grove and 13CY1 combined, could have supported the area needed for disparate clan groups to coalesce at one village location. It could be argued that Milford is slightly more recent based on material culture, including the presence of gun parts and accessories (powder cans and lead shot) and the lack of end scrapers that have been collected from the site (Tiffany and Anderson 1993:301). From the investigations at Milford, two end scrapers have been reported, one recovered from excavation, and a second recorded in a personal collection (Tiffany and Anderson 1993). The acquisition of guns and gun accessories seen at Milford possibly is an indicator of time. Additionally, the difference in end scraper frequencies between Gillett Grove and Milford may reflect a rapid selection of a metal knives to replace the end scraper. This theory of end scraper replacement is a localized scenario, suggesting the influence of trade goods being adopted indirectly during the occupation of this region. The Utz site (23SA2) in Missouri is quite different. There end scrapers are plentiful (fifth numerous of all artifact

classes) in direct association with several trade items, including metal knives among the assemblage (Bray 1991:113).

The residents of Gillett Grove, and 13CY1 as well, may represent either Chiwere or Dhegihan speakers not politically organized as they were after Euro-American intrusion, but rather as clans or clan segments at the northwest Iowa sites. Although seemingly unlikely, it should not be ruled out that Gillett Grove may represent a local Dhegihan group. Though not archaeologically well-known, Dhegihan origins still are thought to reside with the Oneota tradition by some archaeologists (Henning 1993; Vehik 1993). Omaha tradition speaks of a breaking apart from other Chiwere and Dhegihan speakers to make their way up the Des Moines River to the northwest Iowa-southwest Minnesota region (Fletcher and La Flesche 1911:72). This serves as an example of the close ties at times between Chiwere and Dhegihan speakers and is further supported by the communal living of the Omaha-Ponca, Ioway and Oto presumably at Blood Run. Because of the interaction and proximity to one another, the material culture would probably be similar, making distinction between Dhegihan and Chiwere assemblages difficult. Further, the geographic location of the upper Little Sioux Valley is an area territorially within the boundaries of the Dhegihan speakers at this point in time. In possible support of this argument is the mixed grit and shell temper noted in Gillett Grove pottery and perhaps in the prehistoric Olivet phase Oneota sites in eastern South Dakota.

A final possibility offered is that occupations at Milford and Gillett Grove

are Chiwere speakers who left Blood Run around A.D. 1700. This is based on the frequency of French trade goods at both Gillett Grove and Milford in comparison to Blood Run. At Blood Run the types and quantities of trade items are not as extensive as other post-contact Little Sioux Oneota villages; an example of this is the fact that no gun parts, gun flints or accessories have ever been recorded at Blood Run (Henning 1998a:385). The types of trade items and their frequency, reflect similarities with assemblages from sites in northeast Iowa. Trade items from Blood Run include glass beads, brass/copper tinklers, copper coils (similar to ones described by M. Wedel 1959:72-74) and iron bracelets (Harvey 1979:137-138, 156-157). These data combined with the possibility that the Jesuit rings in the Barglof collection were more common after A.D. 1700 suggests Gillett Grove was occupied by the Oneota after residing at Blood Run. The presence of guns at Milford indicates that they were acquired after abandonment of Blood Run. One problem exists, this type of evidence is not seen from Gillett Grove. However, gun flints are reported to have been collected from the site, and Mr. Barglof had found parts of a gun on a field adjacent to Gillett Grove, though the gun was not present when the Barglof collection was studied. Mr. Barglof stated that the gun was in the possession of his son, thus confirmation on the antiquity of the find could not take place during my research project.

Part of the issue here is if the post-contact sites in the Little Sioux Valley represent populations that later settled with other groups at Blood Run, then the material culture should be similar in both locations (such as gun remains, Jesuit

rings, variety of glass beads and metal tools). Artifact assemblages, such as ceramics and lithics, described from Blood Run (Harvey 1979; Henning 1998) are similar to Gillett Grove and Milford assemblages. European trade goods, however, from Blood Run are not diverse or as abundant as compared to collections from Milford and Gillett Grove. The size of Blood Run is enormous in comparison to most sites, and archaeological investigations have only tested a small portion of the site making such comparisons questionable. Knowledge, however, of the Blood Run site dates back over 100 years, and it has been hunted by artifact collectors for decades. While not every personal collection has been documented from the Blood Run site, archaeologists have viewed many collections and have failed to report any different types of European trade goods compared to Milford and Gillett Grove.

The chronological relationship between Milford, Gillett Grove and Blood Run and the ethnohistoric record is complex. Blood Run apparently was occupied intermittently for a long period time and has been directly linked as primarily a village of the Omaha. Blood Run was abandoned shortly after A.D. 1700, and the Omaha-Ponca moved further up the Missouri River settling near the mouth of the White River in A.D. 1714 (O'Shea and Ludwickson 1992:17). The Ioway and Oto, after residing with the Omaha-Ponca at Blood Run, were documented by French maps (Etienne Veniard de Bourgmont and Guillaume Delisle) to be residing either on the Big or Little Sioux Rivers prior to A.D. 1720 before eventually moving farther south along the Missouri River to the present

day Council Bluffs area (Blaine 1979:36).

There are several probable reasons for the settlement of northwest Iowa area. First, M. Wedel (1976:28) suggested that the Ioway joined the Oto in western Iowa to continue beaver trapping. Evidence for beaver or other small fur procurement has not been found at Milford or Gillett Grove. Other reasons for occupying the area may be related to seasonal bison hunting as well as close proximity to the pipestone source at Pipestone National Monument in southwestern Minnesota where in early historic times the Ioway served as caretakers of the quarry. Pipestone is frequently found at Milford, Gillett Grove and Blood Run in many forms. Pipes, pipe fragments, pendants, beads, tablets and worked preforms are all pipestone artifacts that have been recovered from these sites suggesting on-site manufacturing. Pipestone was more than likely a significant factor for residency in this area. The role of the calumet ceremony increased historically on the Prairie-Plains as many groups were undergoing social and political changes.

Future research at Gillett Grove is unlimited. My research has taken only the initial look. The exploration and documentation of more personal collections may be of some use to help establish regional chronology as well as understanding some of the cultural transformations. As mentioned throughout this thesis, one of the most striking theories is the reduction in end scraper usage in favor of possible metal implements. Future research could explore the impact of metal tools replacing traditional lithic items by examining cut marks on

faunal remains. The Gillett Grove sample has several examples of butchering of bone material. Microscopic analysis may be able to differentiate between a cut mark made by stone tools versus a cut made by metal tools. Examining this type of data could be useful to compare both at Milford and Gillett Grove. Other areas for future research include testing at either Milford or 13CY1, to identify houses and other functional areas in each site for comparative purposes. Furthermore, surveying the Little Sioux Valley and Big Sioux Valley for other post-contact Oneota sites may identify new sites, and thus, bring new perspectives to understanding to the Oneota occupation of northwest Iowa. This research has contributed to previous work in Iowa archaeology. These data add to the understanding of cultural changes occurring on Plains. More importantly, this project has contributed to a long-term Oneota research issue in Iowa archaeology that began with Mott (1938) and Griffin (1937), namely, understanding how archaeology can be tied with living tribal groups.

APPENDIX A:

GILLETT GROVE TABLES AND FIGURES

Table A.1. Soil profiles from 1998 auger tests

Auger Test No.	Depth	Description
Test Auger 1 (TA1)	0-25 cm	Dark gray clay loam
	25-38 cm	Dark grayish-brown clay loam
	39+ cm	Brown clay loam
Test Auger 2 (TA2)	0-22 cm	Dark gray clay loam
	22-48 cm	Dark grayish-brown clay loam
	53+ cm	Brown clay loam

Table A.2. Inventory of Gillett Grove artifacts curated at the Sanford Museum

Description	Count	Description	Count
Rim sherd	19	Pipestone	1
Body sherd	638	Abrader	3
Handle	3	Limonite	8
Point type 0	2	Daub	3
Point type 1	7	FCR	31
Point type 2	2	Brass/copper coil	1
End scraper	4	Unidentified bone	219
Biface	3	Shell	22
Retouch flake	5		
Utilized flake	17		
Waste flake	211		
Debitage	109		
Ground stone	4		

Table A.3. Inventory of Tom Gross Collection

Description	Count
Rim sherd	15
Body sherd	36
Handle	10
Point type 0	14
Point type 1	47
Point type 2	12
Point type 3	4
Point type 4	1
Point type 5	1
End scraper	3
Drill	1
Biface	14
Utilized flake	6
Full-grooved axe	1
Glass Beads	56
Pipestone	15
Pipe fragment	1
Pipestone pendant	3
Carved stone	2
Ground stone	1
Abrader	2
Brass/copper tinker	2
Brass/copper fragment	7
Brass/copper pressed bell	1
Iron	1
Unidentified bone	9

Figure A.1. View of area excavated by the Northwest Chapter of the Iowa Archeological Society.

Figure A.2. West facing view of 1998 excavations

APPENDIX B:

BARGLOF COLLECTION PHOTOGRAPHS

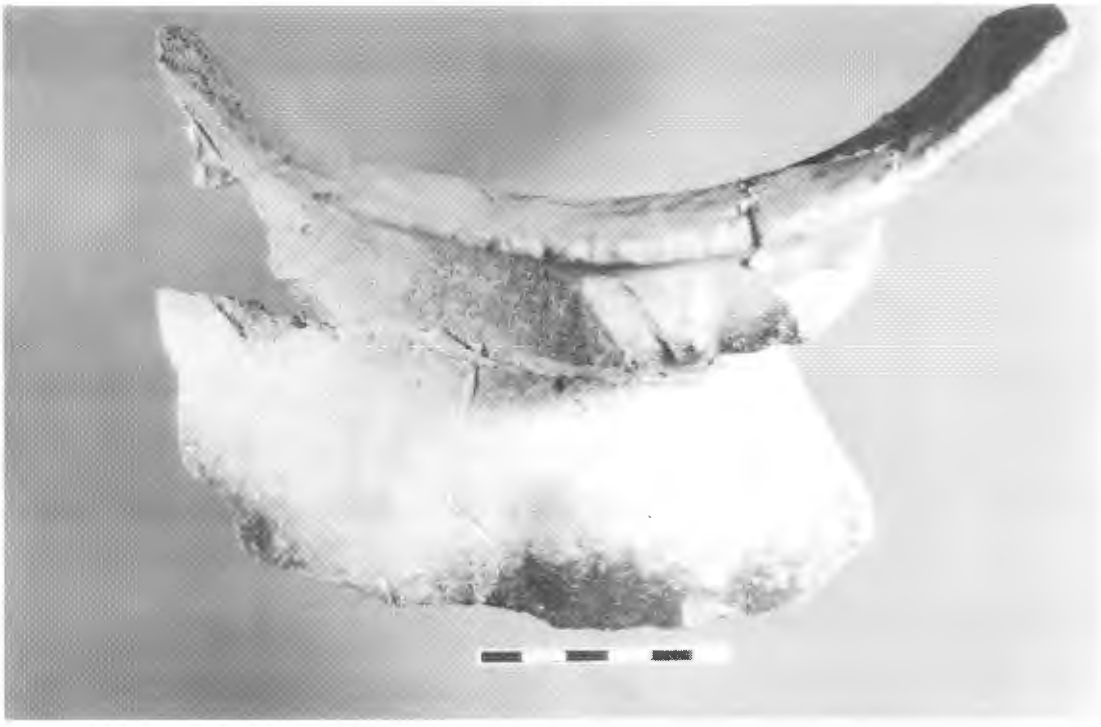


Figure B.1. Partial vessel

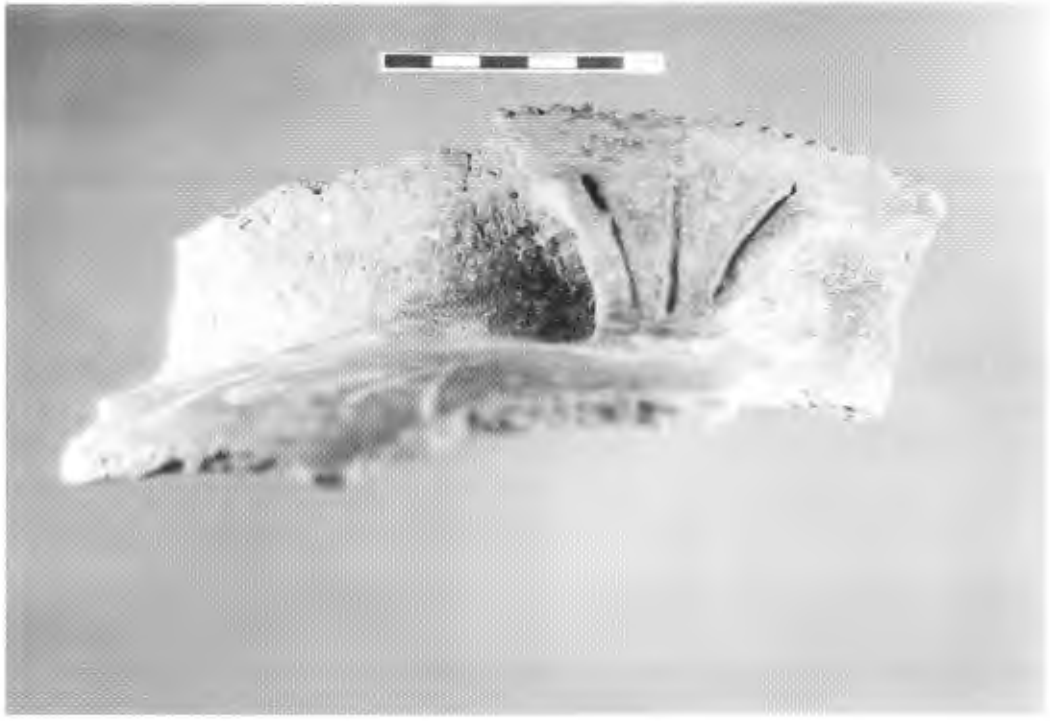


Figure B.2. Partial vessel

Figure B.3. Partial vessel

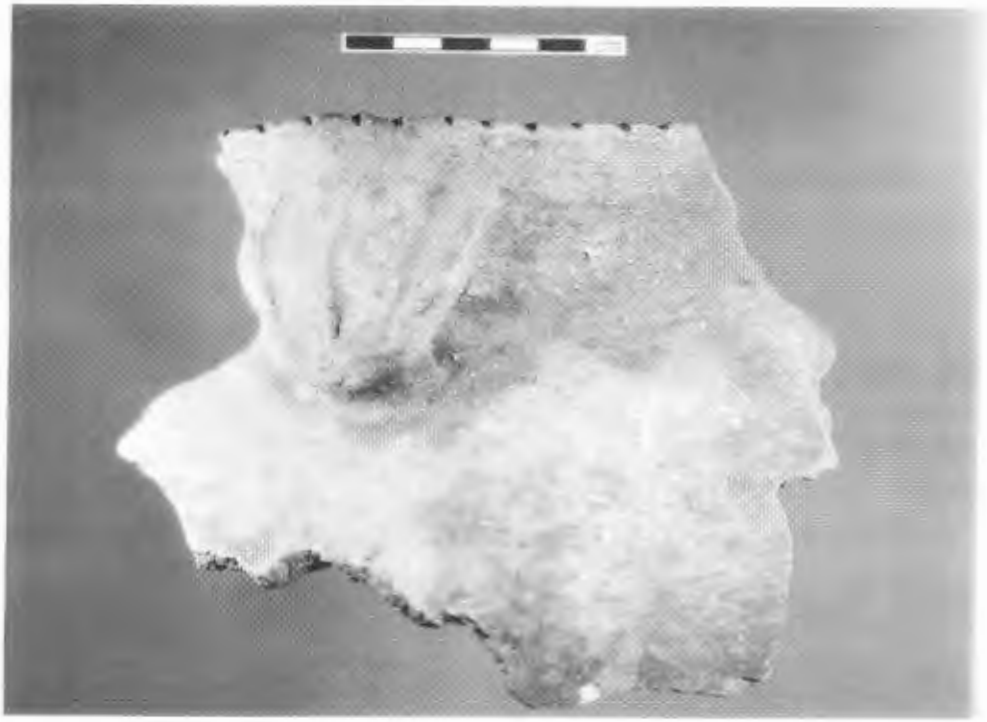


Figure B.4. Partial vessel

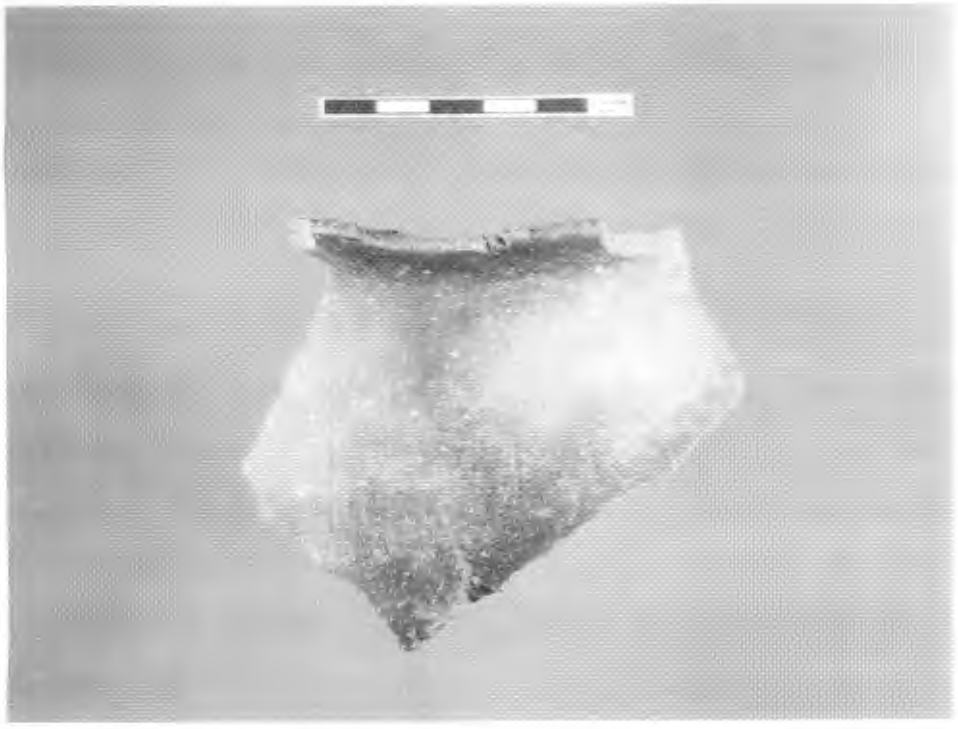


Figure B.5. Partial vessel

Figure B.6. Partial vessel

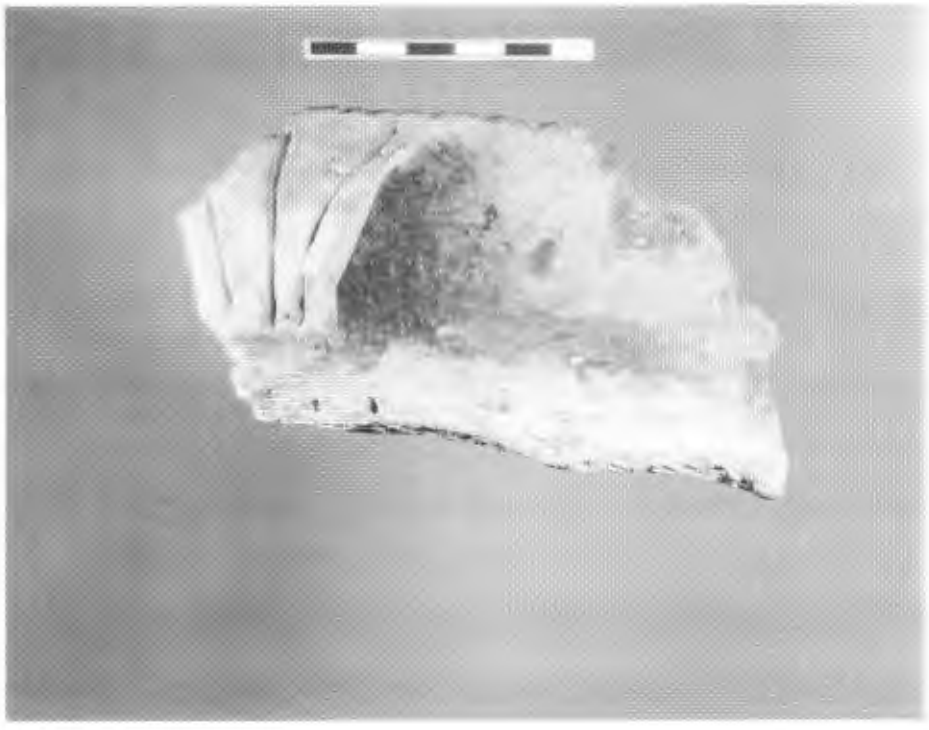


Figure B.7. Rim and handle fragment

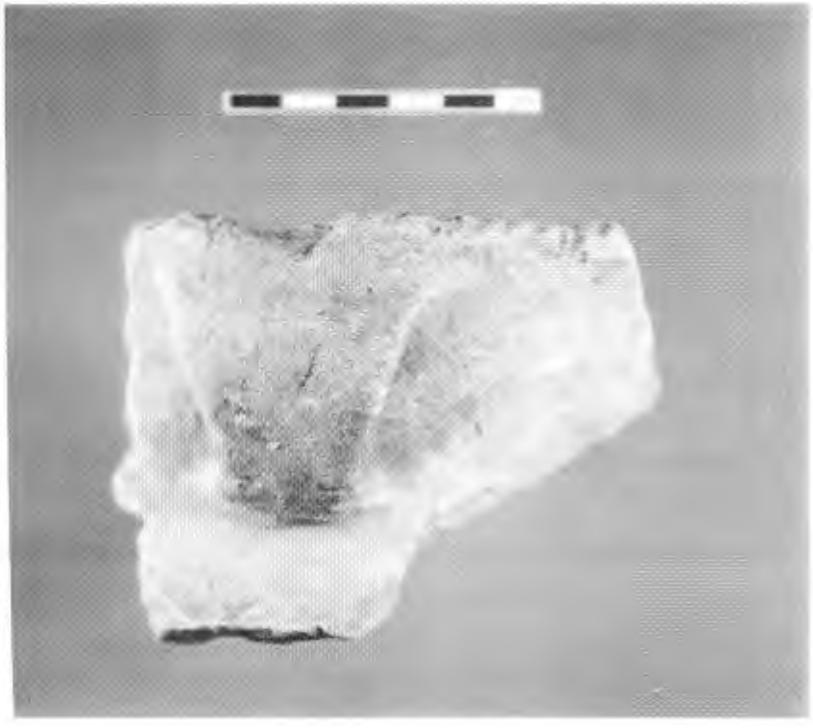


Figure B.8. Rim and handle fragment

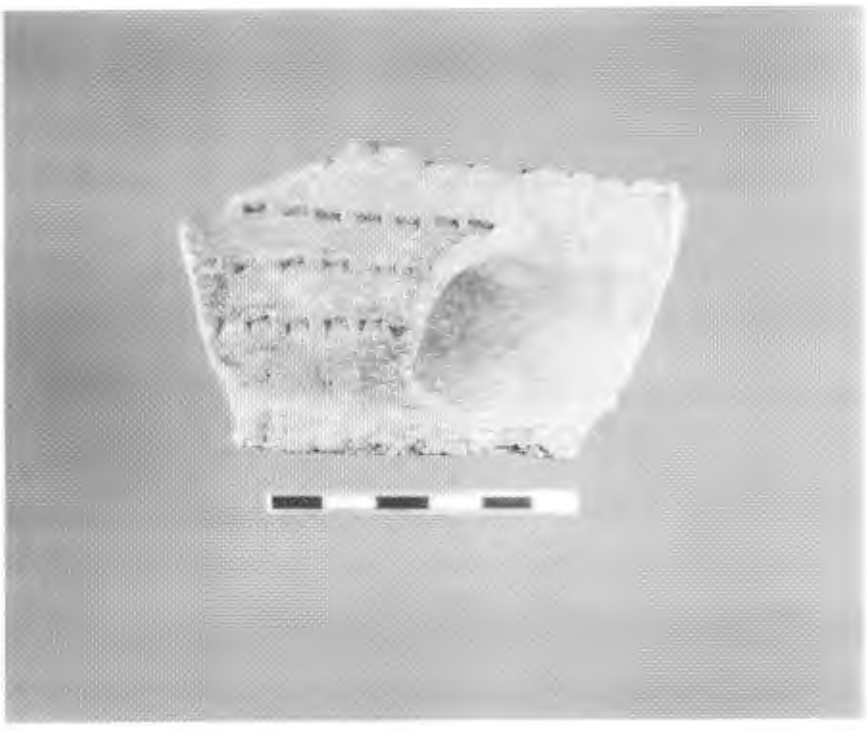


Figure B.9. Rim and handle fragment

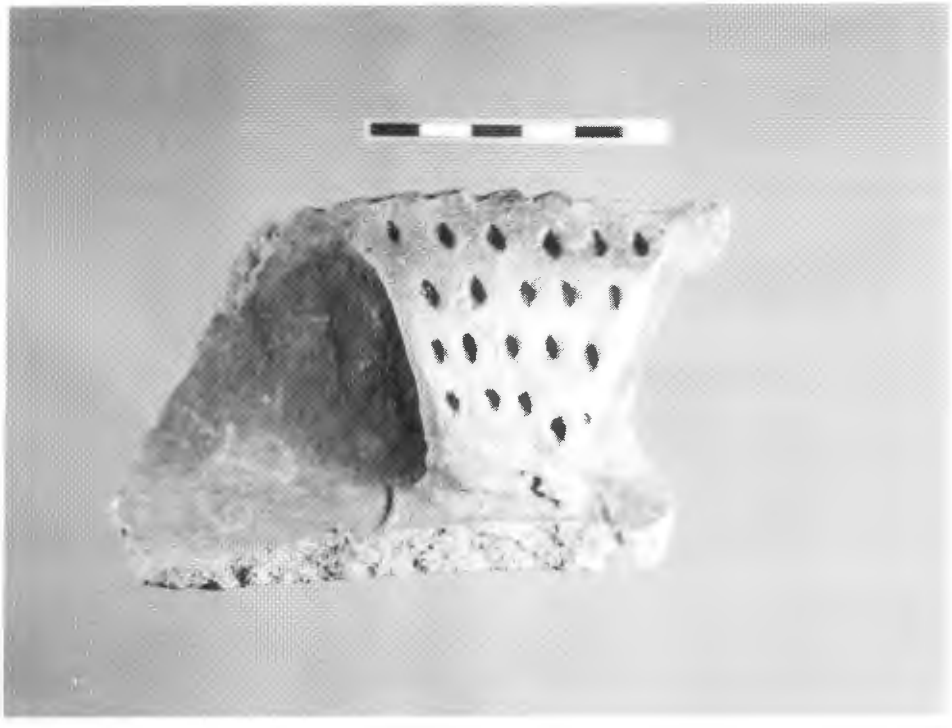


Figure B.10. Rim and handle fragment

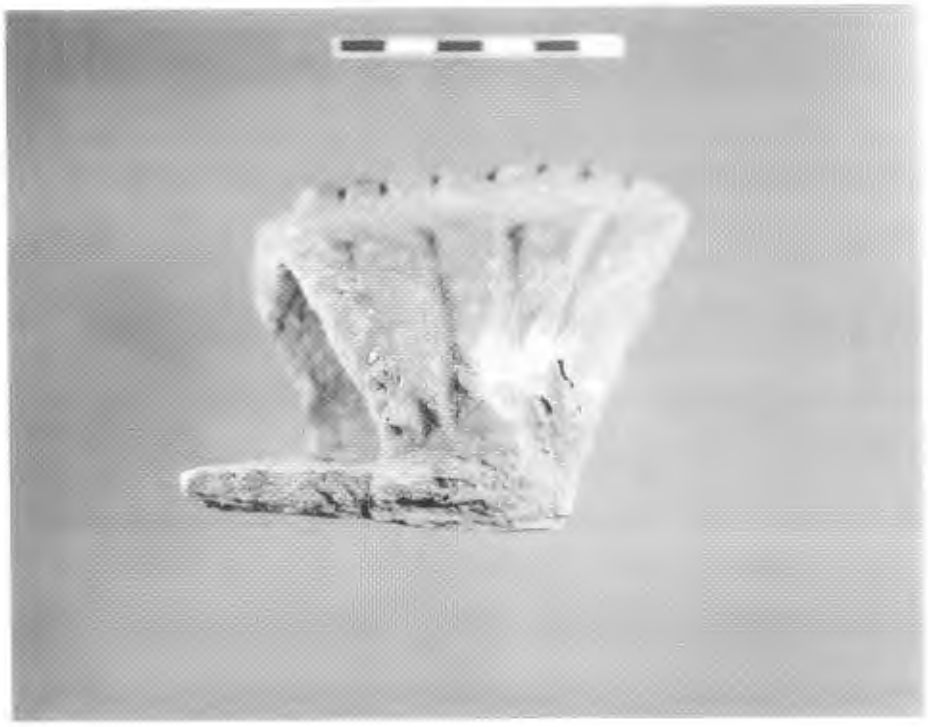


Figure B.11. Rim and handle fragment

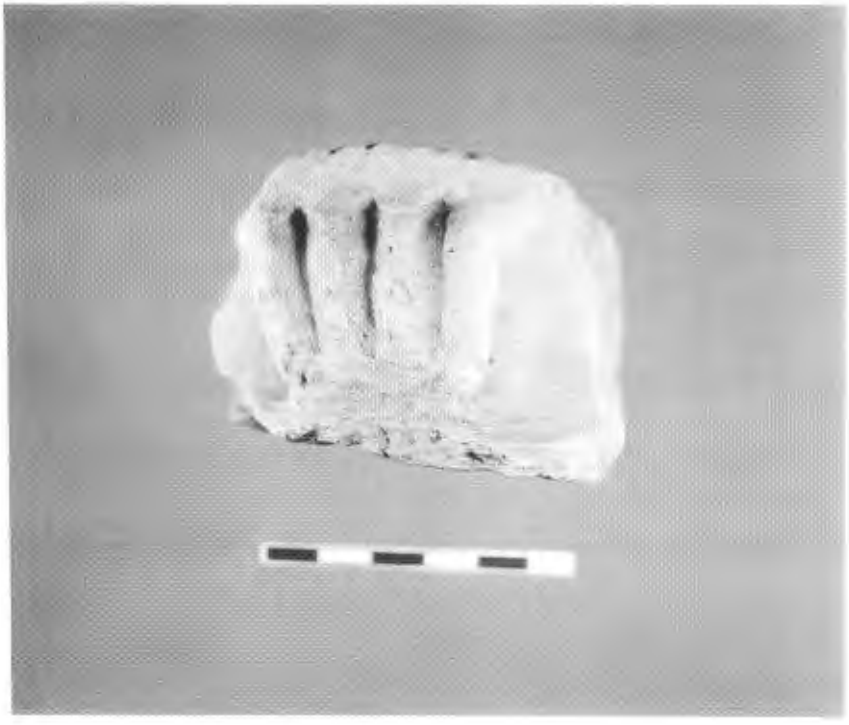


Figure B.12. Rim and handle fragment

Figure B.13. Rim and handle fragment

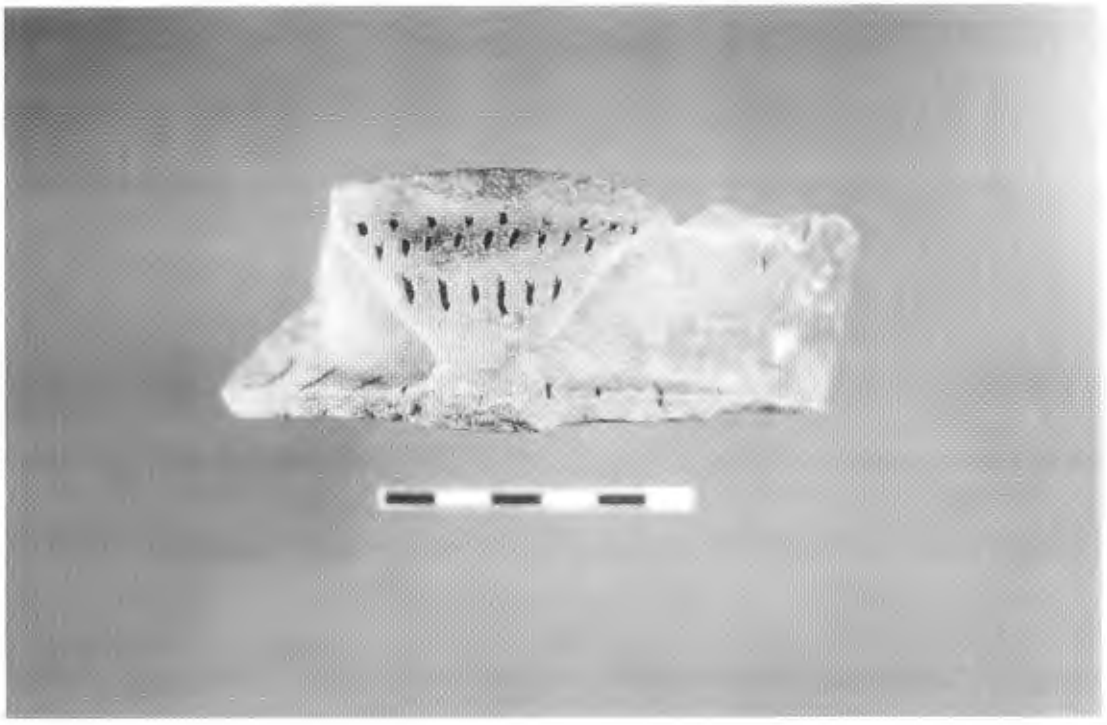


Figure B.14. Rim and handle fragment

Figure B.15. Sherds with drilled holes

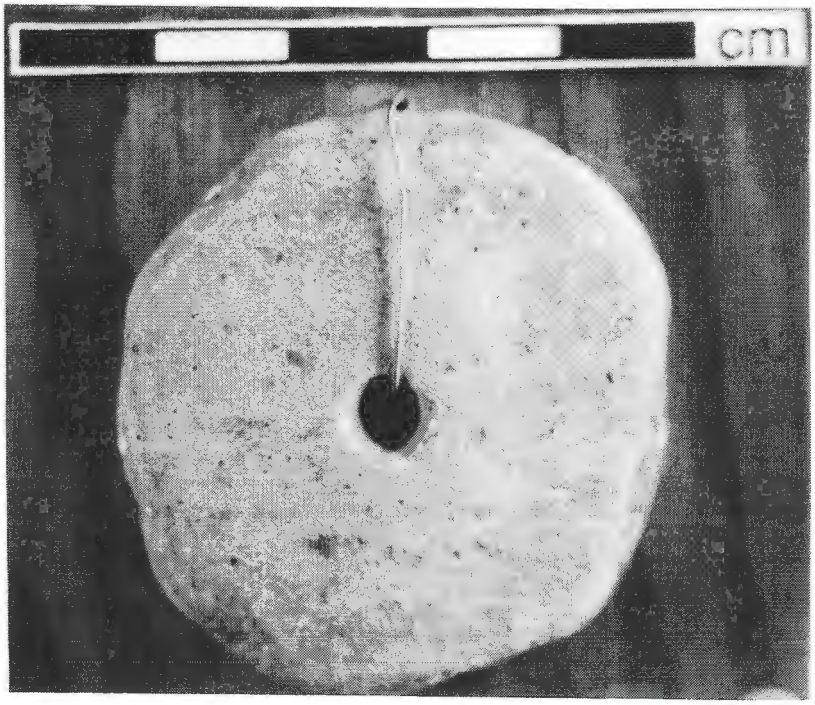


Figure B.16. Ceramic disc

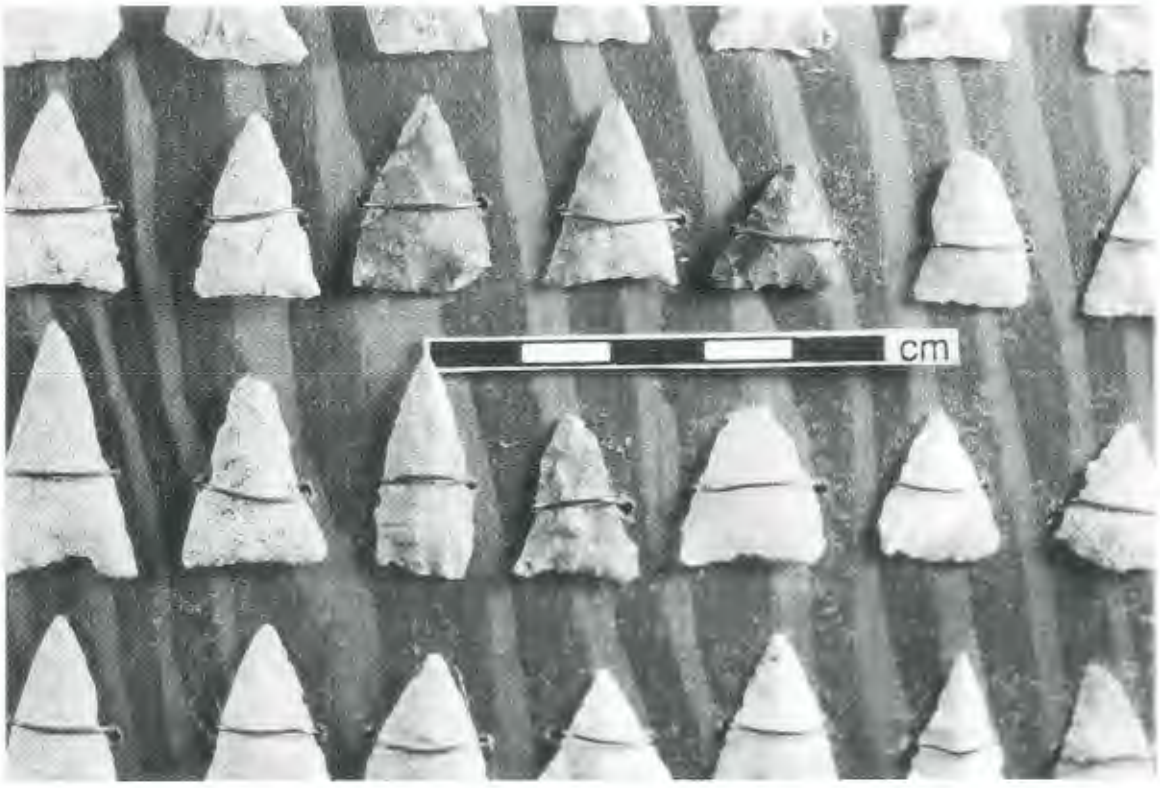


Figure B.17. Projectile points

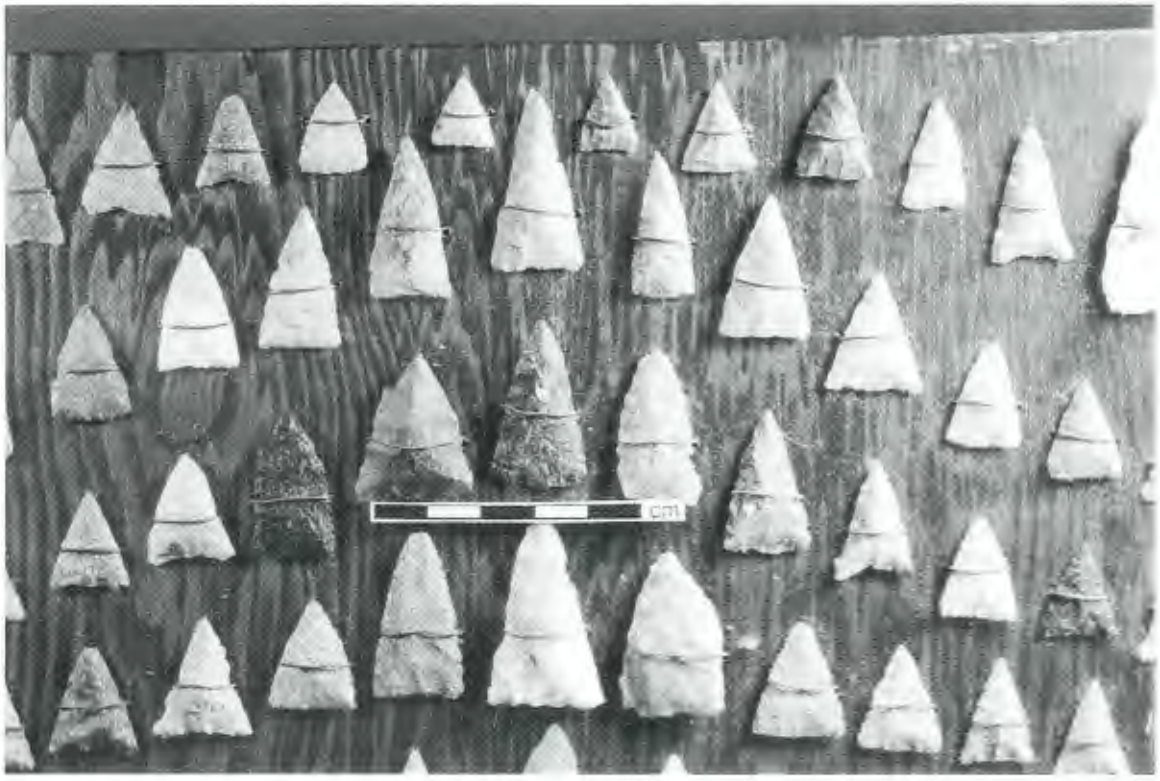


Figure B.18. Projectile points

Figure B.19. End scrapers

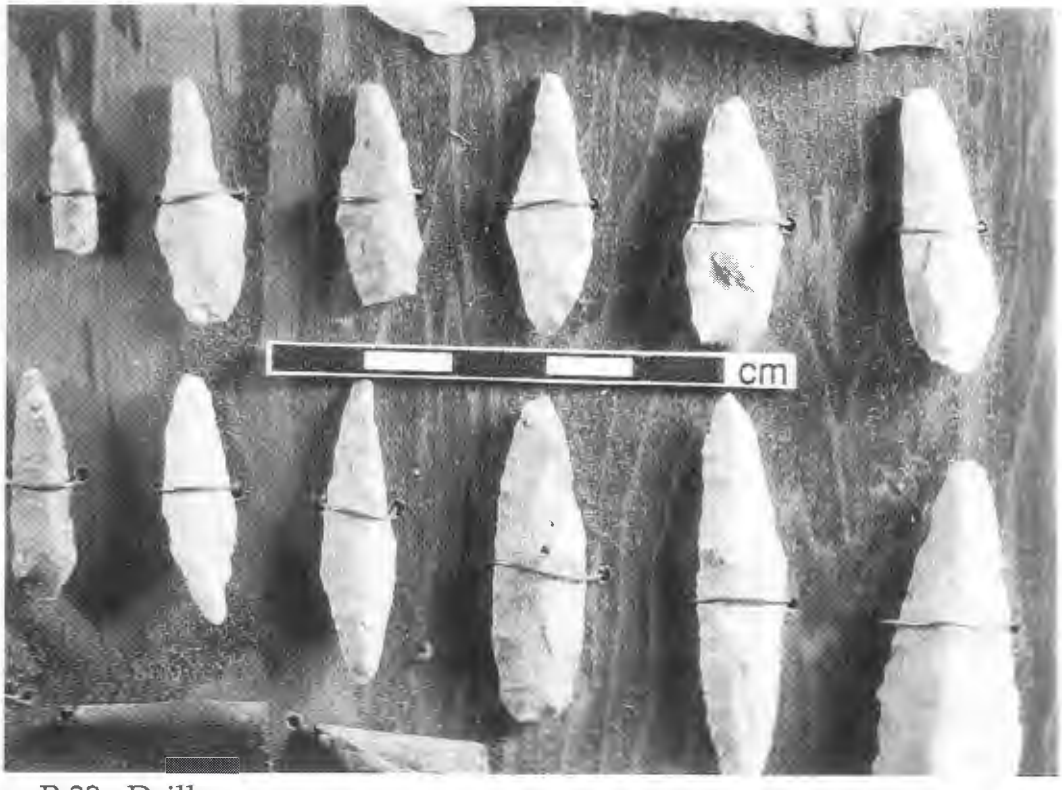


Figure B.22. Drills

Figure B.23. Triangular bifaces

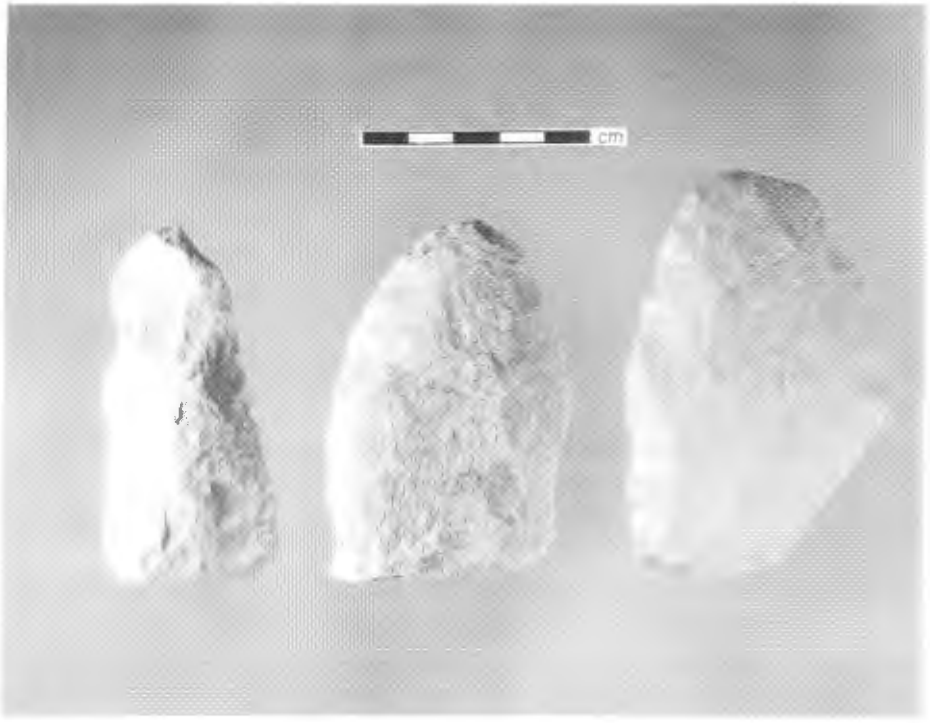


Figure B.24. Bifaces made from Bijou Hills Silicified sediment

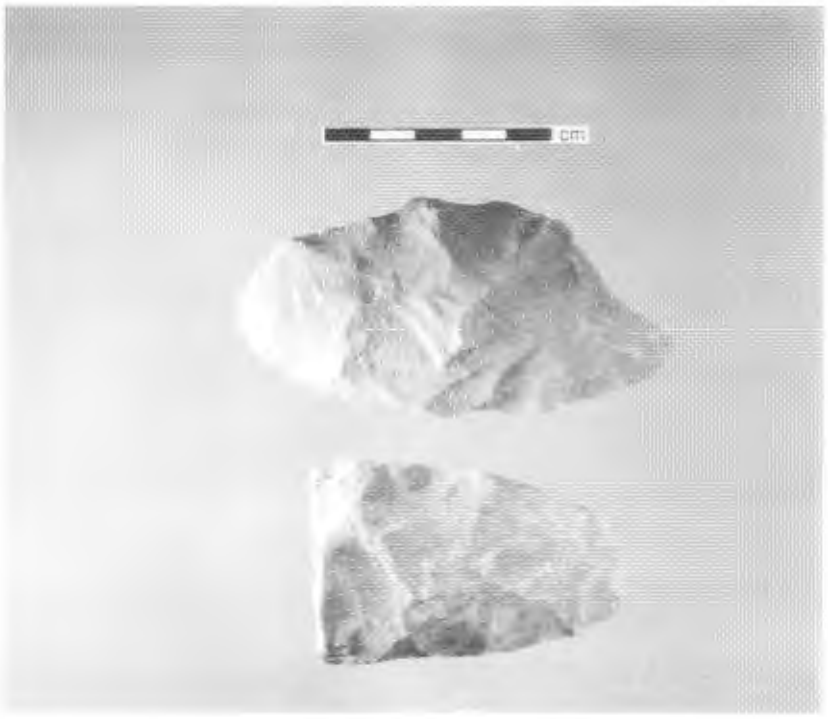


Figure B.25. Bifaces made from Bijou Hills Silicified sediment

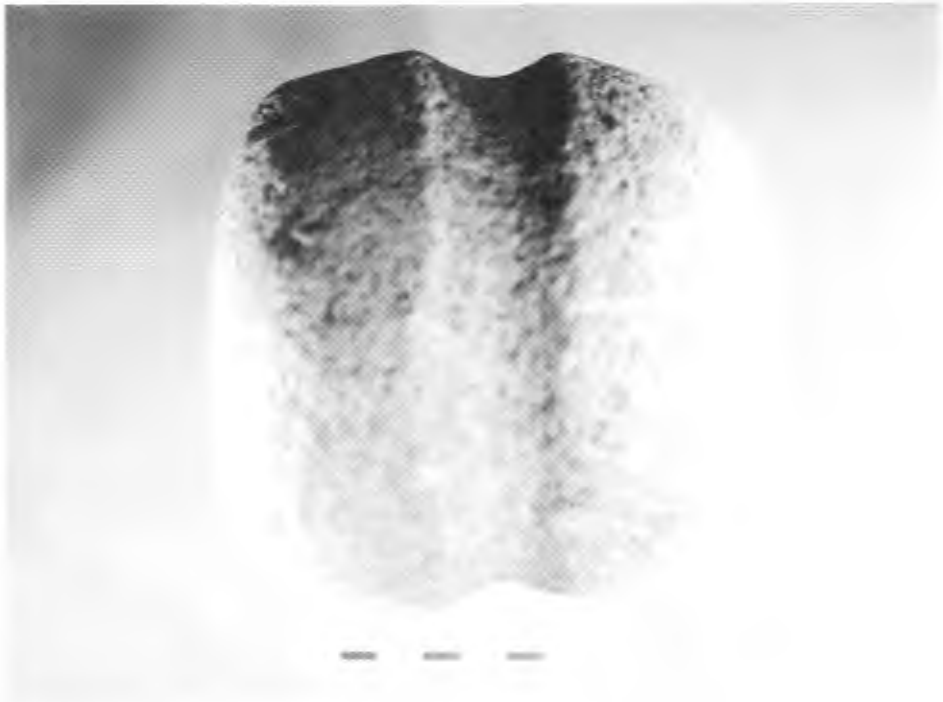


Figure B.26. Maul

Figure B.27. Mano

Figure B.28. Sandstone abrader

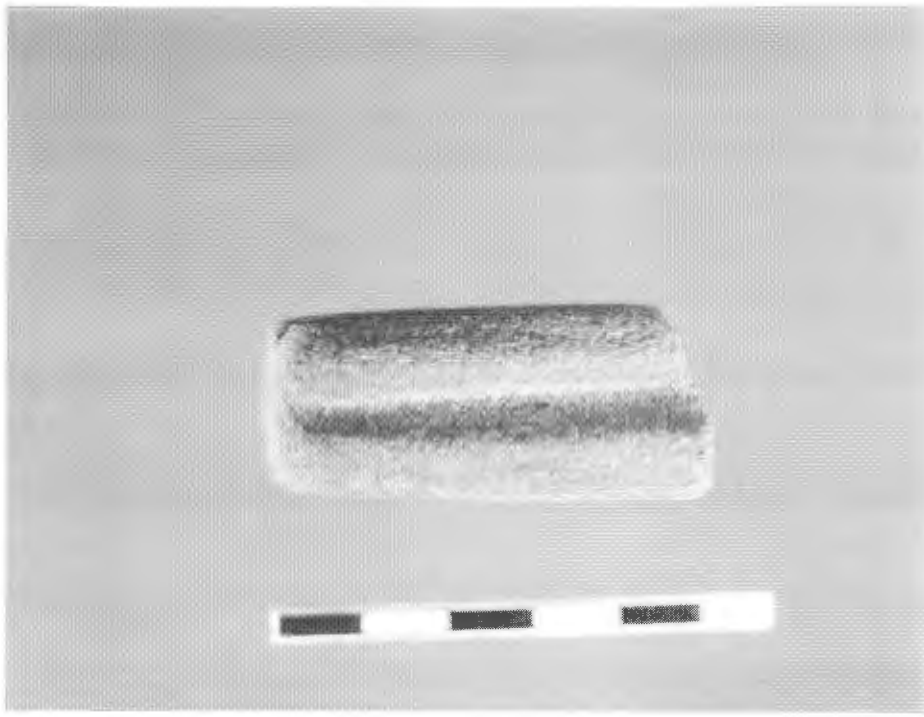


Figure B.29. Sandstone abrader

Figure B.30. View 1 of incised pipe

Figure B.31. View 2 of incised pipe

Figure B.32. View 3 of incised pipe

Figure B.33. Pipe

Figure B.34. Pipe

Figure B.35. Pipe

Figure B.36. Pipe bowl

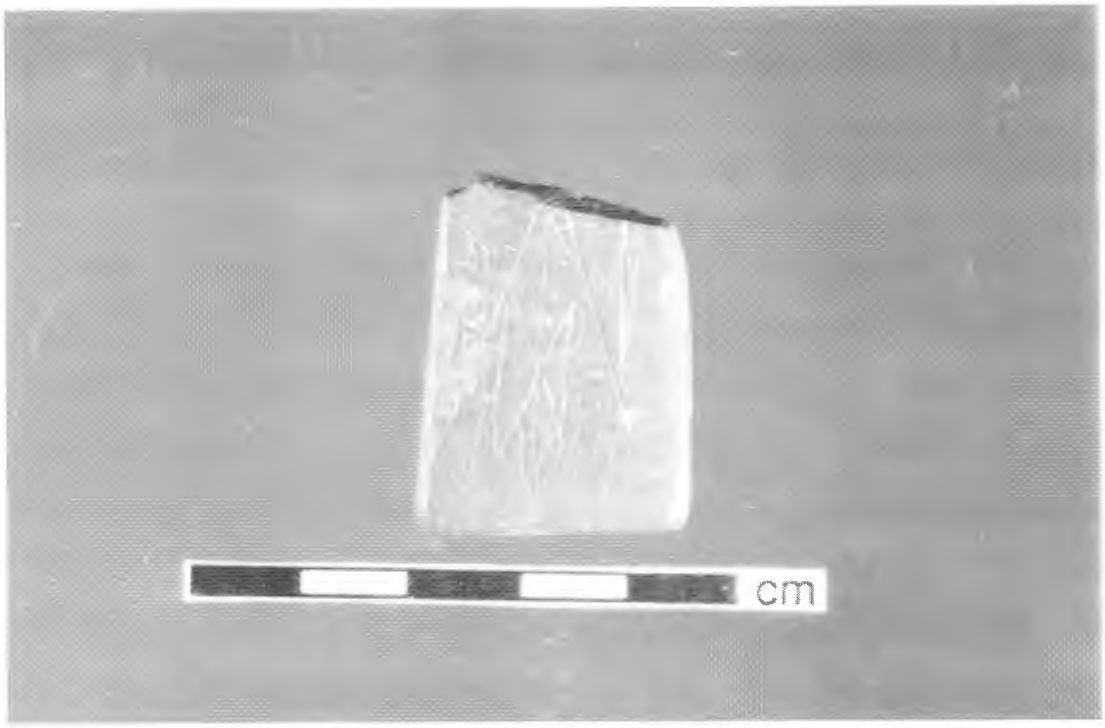


Figure B.37. Incised pipestone pendant

Figure B.38. Pipestone pendant

Figure B.39. Pipestone beads

Figure B.40. Pipestone tablet

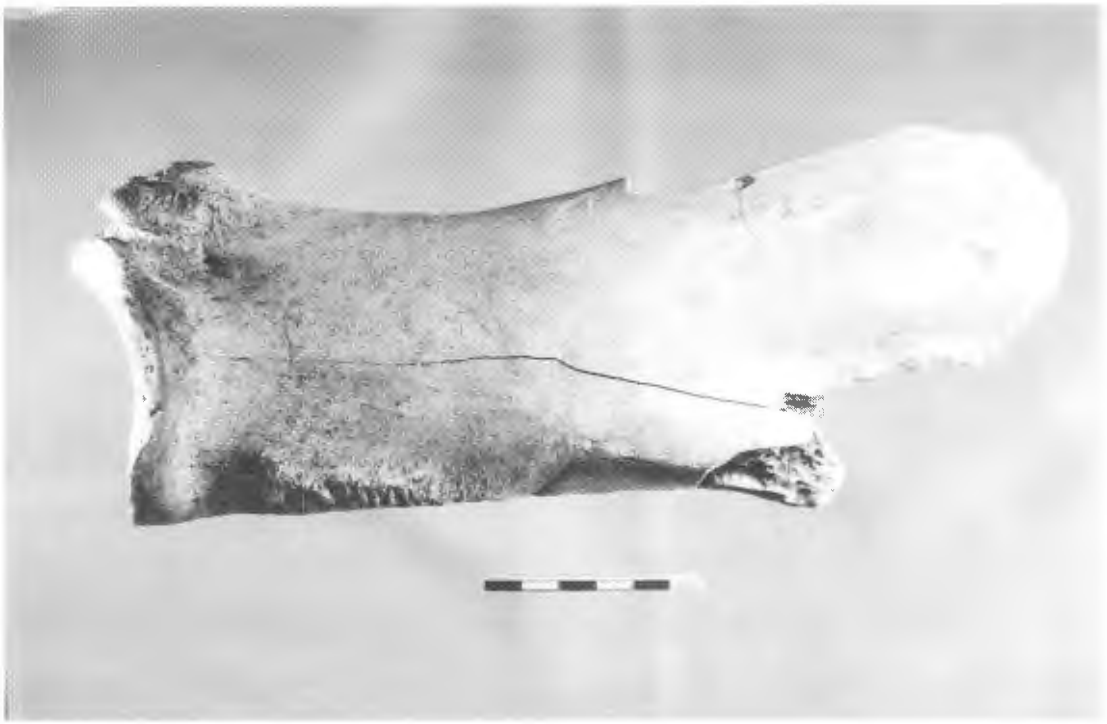


Figure B.41. Bison scapula hoe

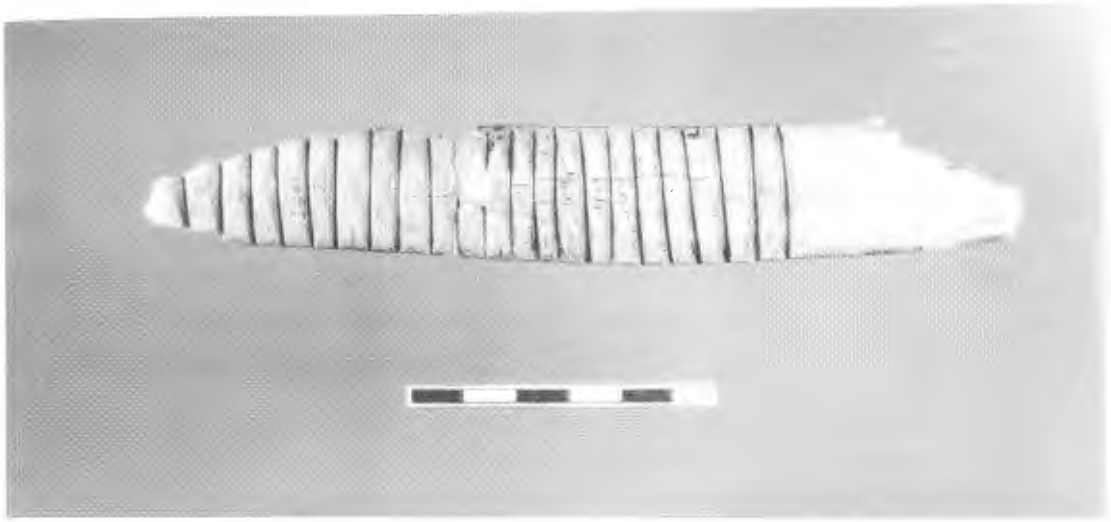


Figure B.42. Bison rib rasp

Figure B.43. Jesuit Rings

Figure B.44. Glass beads

Figure B.45. Glass beads

Figure B.46. Glass beads, disc beads (center), and shell bead (left center)

Figure B.47. Iron axe

Figure B.48. Metal knife fragments

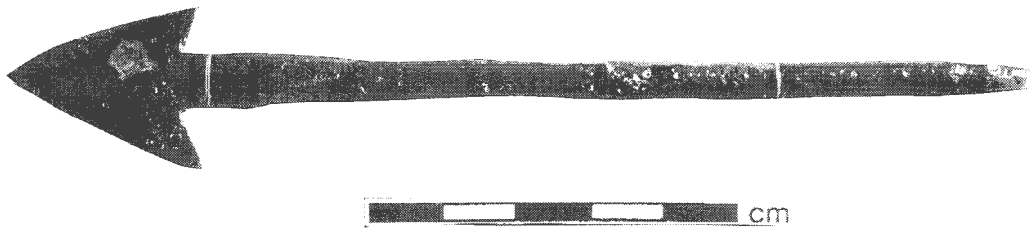


Figure B.49. Metal point

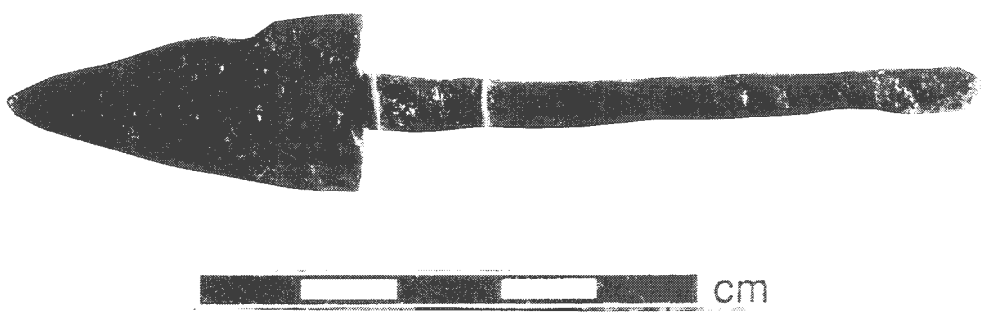


Figure B.50. Metal point

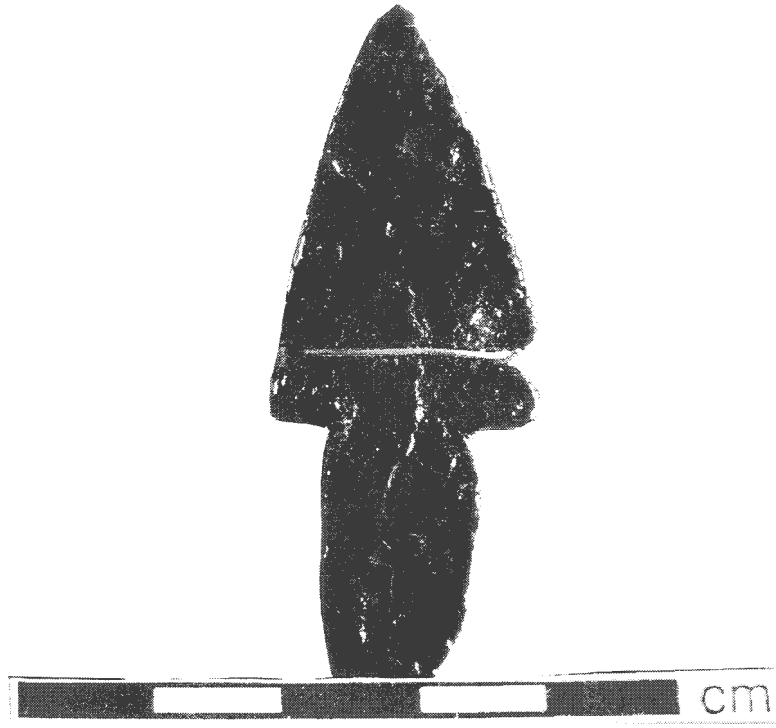


Figure B.51. Metal point

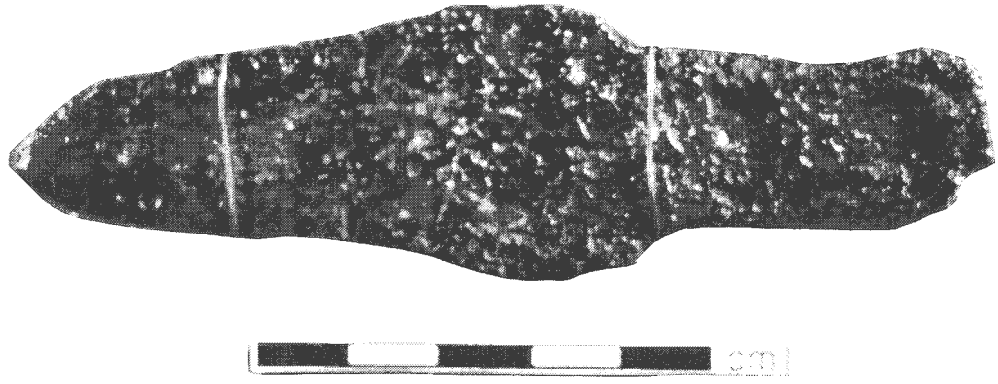


Figure B.52. Metal point

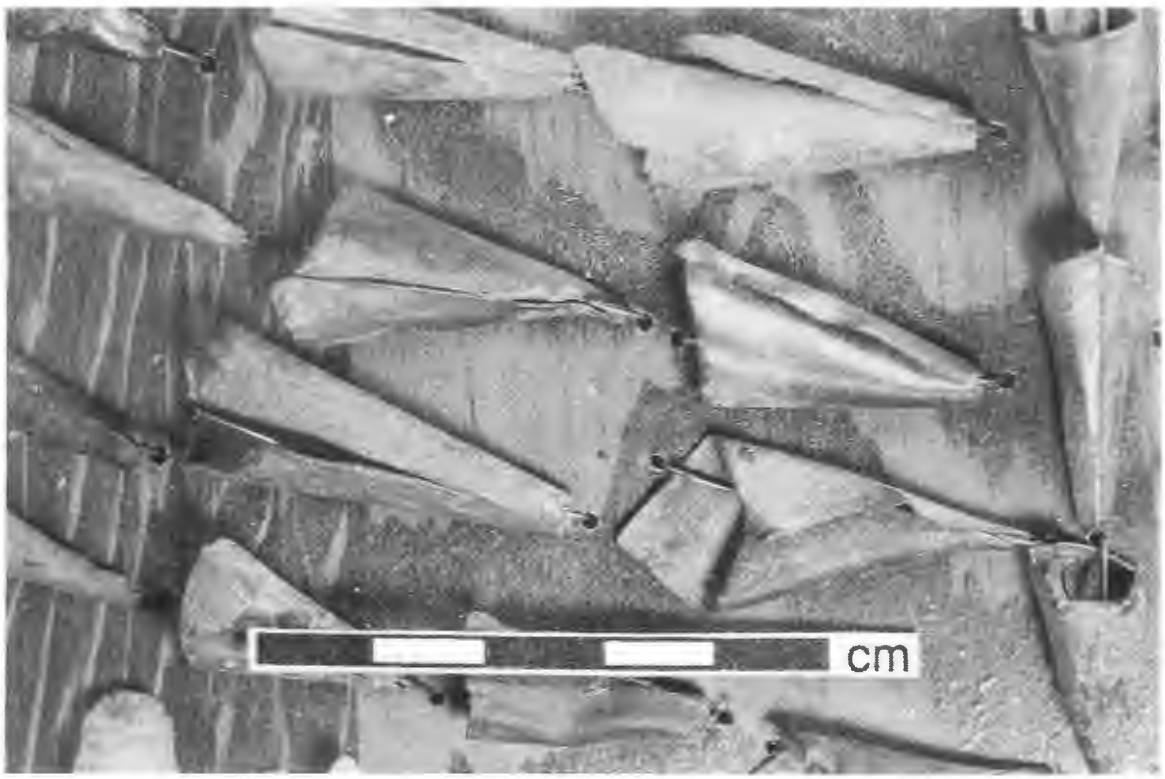


Figure B.53. Brass/copper tinklers

APPENDIX C:

BARGLOF COLLECTION DATA

Table C.1. Barglof ceramic totals from Gillett Grove

Class	Rim/Shoulders	Rims	Handles	Body sherds
Class 1 Surface Treatment				
Plain/dull-shell	7	64	64	14
Plain/polished-shell	2	3		3
Trailed/dull-shell		1		
Plain/dull				1
Class 2: Lip Profile				
Flat		27		
Rounded		31		
Outward beveled		4		
Class 3: Lip Design				
Shallow/straight		22		
Deep finger impressions		3		
Long/shallow		2		
Acute/oblique		11		
Acute/oblique/cuts into rim		11		
Straight/deep/cuts into rim		10		
Class 4: Rim Profile				
Flared		51		
Straight		6		
Highly Flared		1		
Class 5: Rim Cross Section, Height				
Parallel		40		
Narrows to lip		24		
Low (<2.5 cm)		7		
Medium (2.6-4 cm)		20		
High (> 4 cm)		40		
Class 6: Neck Angle				
Rounded	1	47		
Angular		8		
Class 8: Shoulder Decoration/ Lines				
Wide				1
Medium	1			
Narrow	5			5
Plain	6			12
Class 9: Shoulder Decoration/Puntates				
Medium				1

Table C.1. (continued)

Class	Rim/Shoulders	Rims	Handles	Body sherds
Acute				2
Shallow	1			
Class 10: shoulder design elements				
1	6			
2	1			
3	1			
Class 11: Appendages				
Up to rim			13	
Not up to rim			36	
Class 12: Handle Decoration				
1			1	
2			2	
3			16	
4			4	
5			1	
6			1	
7			5	
8			12	
9			3	
10			10	
11			1	
12			1	
13			1	
14			1	
15			2	

Table C.2. Barglof ceramics from 13CY1

Class	Rim/Shoulders	Rims	Handles	Body sherds
Class 1 Surface Treatment				
Plain/dull shell	9	1	12	2
Trailed/dull shell		1		
Class 2: Lip Profile				
Flat		1		
Rounded		7		
Class 3: Lip Design				
Plain		3		
Long/shallow		1		
Acute/oblique		2		
Acute/oblique/cuts into rim		2		
Straight/deep/cuts into rim		1		
Narrow/incised		1		
Class 4: Rim Profile				
Flared		11		
Straight		1		
Class 5: Rim Cross Section, Height				
Parallel		9		
Narrows to lip		3		
Low (<2.5 cm)		2		
Medium (2.6-4 cm)		8		
High (> 4 cm)		2		
Class 6: Neck Angle				
Rounded		11		
Angular		1		
Class 8: Shoulder Decoration/ Lines				
Narrow	7			
Plain	2			2
Class 9: Shoulder Decoration/Puntates				
none				
Class 10: shoulder design elements				
Class 11: Appendages				
Up to rim			3	
Not up to rim			9	
Class 12: Handle Decoration				
2			3	
3			2	
4			3	
8			3	

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