THE MACLEOD SITE (AlGr-1)
AND A PRELIMINARY DELINEATION
OF THE LAKE ONTARIO IROQUOIS

By

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ABSTRACT

The present work describes the archaeological material recovered from excavations at the MacLeod site, a Late Ontario Iroquois site in Oshawa, Ontario, which were carried out between 1968 and 1972.

In comparing ceramic and non-ceramic data from the MacLeod site with other sites in southern Ontario, the existence of a distinct group which has been named the Lake Ontario Iroquois is tentatively defined. This group extended along the north shore of Lake Ontario from the Rouge River in the west to Prince Edward County in the east. The sites of the Lake Ontario Iroquois shared similar frequencies of certain ceramic attributes and similarities in their non-ceramic assemblages. It is suggested that the Lake Ontario Iroquois may have formed a group similar to the historically described tribes of the Huron.

It is also recommended in this thesis that students turn their attention to the analysis of previously existing collections over the excavation of further unthreatened sites.

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At the time of the excavations, the Banfield Construction Co. Ltd of Oshawa, Traders' Realty Ltd of Toronto, the Oshawa Church of Jesus Christ of the Latter Day Saints, Mr. and Mrs. Howard W. MacLeod and Mr. and Mrs. Frank Hoag all generously permitted free access to their property and gave their support to the excavations.

For the present analysis, I would like to thank the University of Toronto for permitting access to the collection and J. Reid of U. of T. and Charles Garrad of the OAS for helping to locate some of the field notes. I appreciate the cooperation of Laura Suchan of the Oshawa Sydenham Museum who allowed me access to the MacLeod Site artifacts on display at the museum. Thanks go also to M. Latta of the University of Toronto for suggesting the project and for her support and enthusiasm through my undergraduate and graduate years.

I am grateful for the financial assistance for this research which was provided by the Ontario Heritage Foundation.

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INTRODUCTION

Archaeological sites of the Late Ontario Iroquois time period which are located between the north shore of Lake Ontario and Lake Simcoe traditionally have been called Southern Division Huron sites (Wright 1966). These sites have been distinguished from those located north of Lake Simcoe and known as Northern Division Huron sites by their geographical position and frequency of certain ceramic types (Wright 1966).

This extension of the historic term 'Huron' to include prehistoric groups spread over a large area has been criticized (Ramsden 1977). The historic term 'Huron' may have been misunderstood and may not have described a unified social or political group. The group defined as 'Huron' may have been much more complex than the two divisions defined by Wright (Ramsden 1977). The following thesis studies the complexities of the group known as the Southern Division Huron.

The first four chapters of this thesis describe the environs, settlement patterns, artifactual material and faunal and floral assemblages from the MacLeod site (AlGr-1), a Late Ontario Iroquois site in Oshawa, Ontario. This site was excavated between 1968 and 1972.

Chapter Five compares the rimsherd attribute analysis from the MacLeod site with 30 other sites in southern Ontario, following Ramsden (1977). Based on similar frequencies of certain rimsherd attributes, a group called the Lake Ontario Iroquois is tentatively delineated. This group is located along the north shore of Lake Ontario from the Rouge River in the west to Prince Edward County in the east. A brief comparison of non-ceramic data is also included and the similarities amongst sites of the Lake Ontario Iroquois are described in Chapter Five.

The comparison of non-ceramic data is brief due to the lack of information from some of the sites. Therefore, it is suggested that Master's students concentrate on completely analyzing previously excavated sites in order to make available all possible information before excavating more sites.

Site Location and History of Excavation

The MacLeod Site (AlGr-1) is located on Lot 16 of Concession II and Lots 16 and 17 of Concession III, City of Oshawa, Regional Municipality of Durham (formerly East Whitby Township, Ontario County), Ontario. Approximately 6.6 kilometres north of Lake Ontario, the site is bordered on its east by Goodman Creek and appears to extend under the present intersection of Rossland and Thornton Roads in the northwest corner of the city of Oshawa, Ontario (Figures 1 and 2).

The site was first reported in the fall of 1967 by Mr. James MacRae of Oshawa who discovered pieces of broken pottery and bone in soil taken from a road cut through the property of Howard W. MacLeod, on the northwest corner of the Rossland-Thornton Road intersection. Mr. MacRae notified Mr. Thomas Bouckley of the Oshawa Historical Museum of his discovery and Bouckley, together with William S. Donaldson of the Ontario Archaeological Society (OAS), tested the site

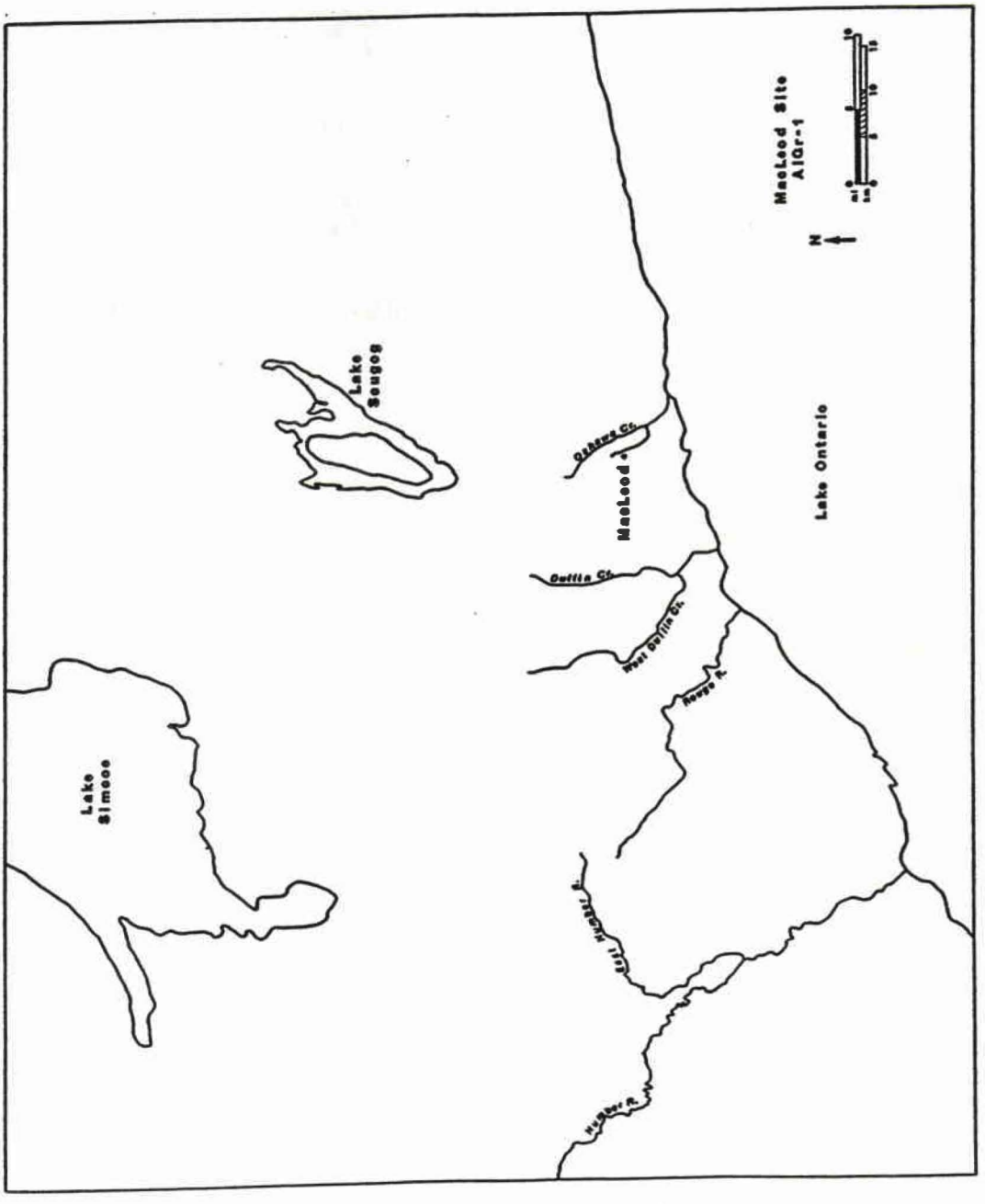


Figure 1. Location of the MacLeod Site

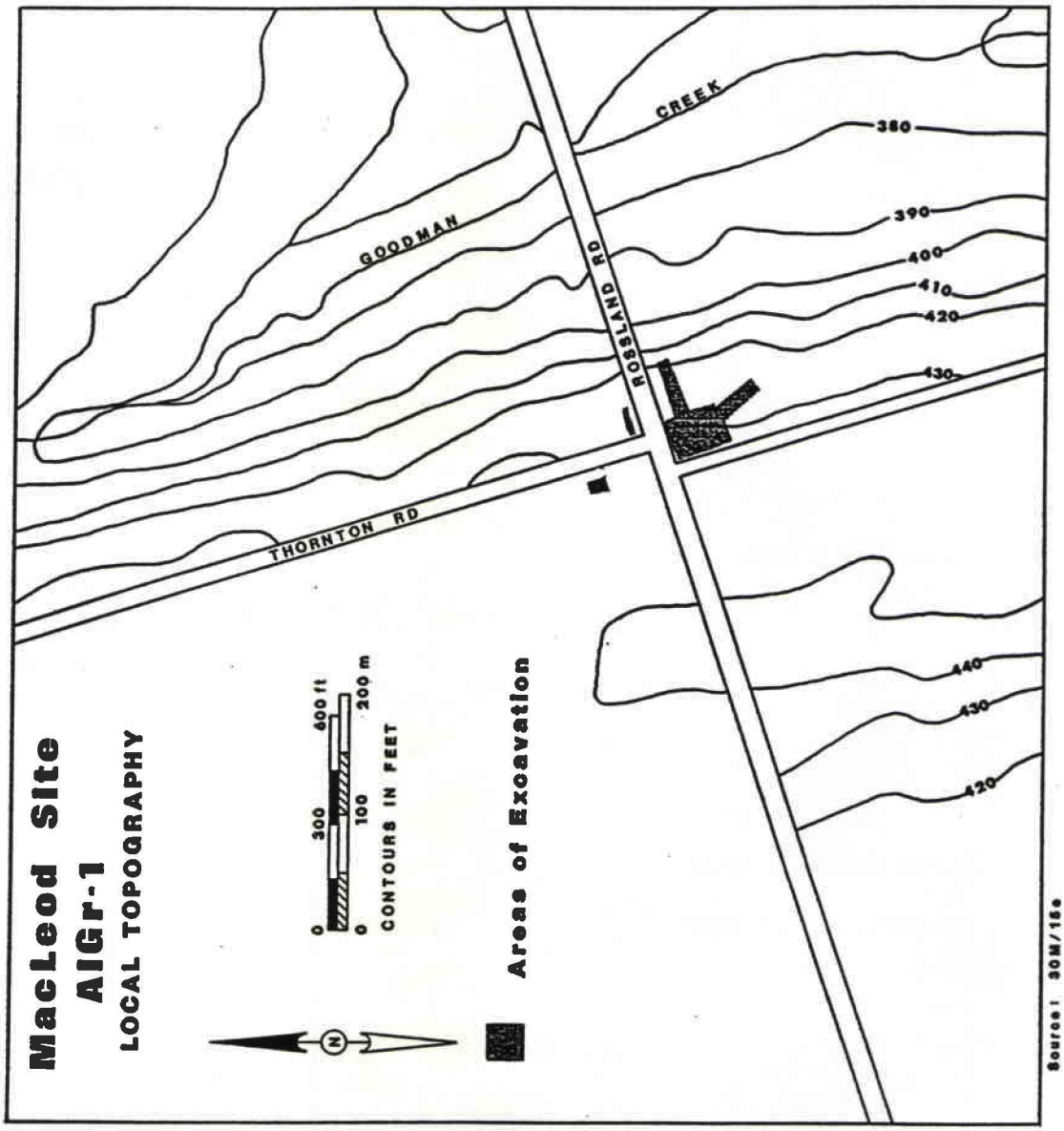


Figure 2. Site Topography and Areas of Excavation.

and recommended to the OAS that exploratory excavations take place (Latta 1972).

From 1968 to 1972 several groups carried out excavations in different areas of the MacLeod Site (Figure 3). Several different grid designation systems were used during the excavations of this site and these systems will be described in appropriate sections of the excavation history. In the spring of 1968, the OAS, along with members of the Oshawa and District Historical Society and local high school students, excavated 42 five-foot (1.52m) squares on the MacLeod property and adjacent road right-of-way on the northwest corner of the intersection. The excavation was directed by William Donaldson and Joyce Holloway (Latta 1972). The grid designation system used the numbers 30 to 39 and 50 to 51 in the south to north direction, and the units L4 to L10 in the east to west direction. Therefore, the units excavated were from 30L4 in the southeast corner to 39L10 on the northwest corner and the six units north of this were designated from 50L7 (SE corner) to 51L9 (NW corner). The test pit in the middle of these two areas was designated 47L7.

In August 1970, excavation occurred along the

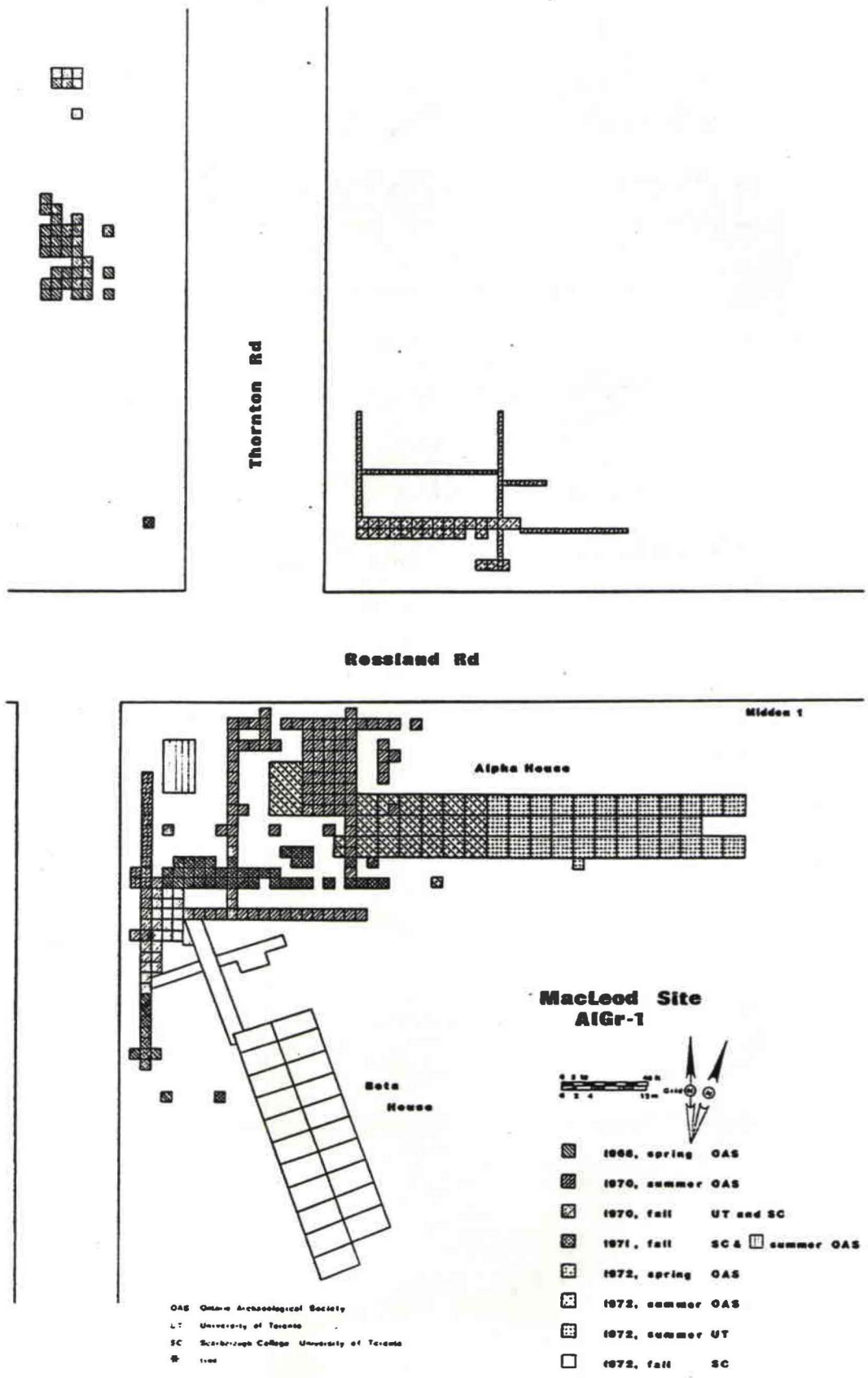


Figure 3. The MacLeod Site Excavations.

east side of Thornton Road south of the intersection, after approximately 30m of a concentrated midden area was exposed by road construction. Thirteen five-foot squares were excavated by members of the OAS and local volunteers under the direction of Joyce Holloway (Latta 1972). These units were designated X1 to X11 north to south and Y10 and Y11 to the west of X10 and X11. This grid system was also used in the fall of 1970 and it is described in further detail below.

The Banfield Construction Co. Ltd. of Oshawa, who owned the property on the southeast corner of the intersection, indicated to the OAS that a shopping plaza was being planned for the field on the corner lot. Therefore, two programs of weekend excavation were planned for the fall of 1970 (Latta 1972).

Three long trenches and one large block area (40ft x 20ft (12.19m x 6.10m)) were opened up in the southeast field by Archaeology field courses from the University of Toronto, under Dr. Bruce Drewitt, and Scarborough Campus (formerly Scarborough College), University of Toronto, under Dr. Bruce Schroeder. At the same time, an east-west trench to the south of the area opened up by the field courses was excavated by 46 students from O'Neill and Eastdale Collegiate

Institutes, with their teachers, Mr. J. Read and Mr. D. Plante. These students were instructed and supervised by Bill Donaldson and Jeff Murray (Latta 1972). The units here were designated from A to Y in an east to west direction and from -5 (negative five) to +21 from north to south (including zero). The one unit to the east of Unit A-4 was called BB-4 and -B-4. The large 40 by 20ft block excavated by the University of Toronto was divided into two 20 by 20ft areas and the northern square was named Unit I and the southern square was named Unit II. Of the three trenches excavated by the University of Toronto, the easternmost north-south trench was designated the E line, the western north-south trench was designated the P line and the northern east-west trench was the -4 line. The high school students excavated the southern east-west trench which was the 14 line. In total, 138 five foot squares were excavated in the fall of 1970.

By the summer of 1971, plans for the shopping plaza on the southeast corner had been dropped. With more time available, the OAS, again under the direction of Bill Donaldson and Joyce Holloway, excavated two areas in the southeast field, one, named South Area Block A, measured 10ft x 10ft (3.05m) and the other,

named South Area Block B, measured 15ft (4.57m) x 25ft (7.62m).

In the fall of 1971, an additional eleven units along the road cut on the southeast corner of the intersection were excavated by a field class from Scarborough College under the direction of M. Latta. These units were directly south of those previously excavated in 1970 and were a continuation of the X line. Members of the Introductory Anthropology class at Scarborough College joined this field class in November 1971 and excavated an additional 41 units in the field from line B in the east to V in the west and line 8 in the north to line 11 in the south.

It was learned that Traders' Realty Ltd. of Toronto was planning residential construction in the apple orchard on the northeast corner of the intersection in the summer of 1972. Fortunately, the OAS was given permission to test this area before construction began (Latta 1972).

In the spring of 1972 several test trenches were cut in the apple orchard on the northeast corner of the intersection with few results. Twenty-nine 5 by 5ft units were excavated along with trenches numbered from 1 to 5 which were 2ft wide. The 5 by 5ft units

were named -23, -22 and -19 in a north to south direction and JJ to D in an east to west direction (ie. double letters back to AA and then A to D). This grid designation is a continuation of the system used in the southeast corner of the intersection, with the distance involved necessitating the use of negative numbers and double letters. Further testing in the field on the southeast corner revealed the patterns of two house structures. Excavation continued in this area until June 28 during which time one longhouse (Alpha House) was completely outlined and the west half excavated, and the second house (Beta House) was partially traced (Latta 1972).

Alpha House was excavated using units designated as south and east of the datum, from 105E 50S in the northwest corner of Alpha House to 275E 75S in the southeast corner. Beta House was excavated using units numbered from 1 to 22. Unit 1 was in the northeast corner of Beta House and the units increased south along the east side of Beta House to Unit 11. Unit 12 was in the southwest corner and the units increased north along the west side of Beta House to Unit 22 in the northwest corner (opposite Unit 1). Unit 11 was not excavated.

Excavation continued on the eastern part of Alpha House during the first half of July by students of the University of Toronto summer Field Archaeology class under the direction of Dr. J.N. Emerson. Excavation of the Beta House was completed on weekends in late October 1972 by students of the Scarborough College Field Archaeology class, directed by M. Latta (Latta 1972).

No excavation took place on the southwest corner of the intersection due to the presence of a Church of Jesus Christ of the Latter Day Saints which was constructed in 1964. No indication that the site extended to this corner of the intersection was recalled in the initial construction of the church or in the construction of an extension in the summer of 1972. A paved parking lot covers the area to the east of the church adjacent to Thornton Road, preventing any information from being gathered in this location. However, some artifacts were found in the drainage ditch in front of the church (Latta 1972).

Recent Land Use

Disturbance of the MacLeod Site within the four corners of the intersection has been extensive. At the

time of the excavations, the lot on the northwest corner was residential and owned by Howard W. MacLeod. Before residential construction, this area was part of an early historic cemetery which was moved one mile south in about 1947 at the time of urban expansion into this area of Oshawa. There was probably considerable disturbance within the cemetery itself, but there may have been little disturbance in the grounds around the cemetery which acted to protect this section of the site (Latta 1972). At the present time, the MacLeod house remains on this corner and a residential subdivision now stands behind it and runs to the north up Thornton Road.

At the time of the excavations, an apple orchard was present on the northeast corner of the intersection. It had been planted in about 1910 and, before this, the area had been extensively farmed during the late 19th and early 20th century. In the autumn of 1972, the orchard was replaced by a housing development (Latta 1972).

A fenced field enclosed an area of about 1.21 hectares (3 acres) on the southeast corner of the intersection at the time of the excavations. This field has been farmed extensively since the 1920's and

"was planted in a mixture of alfalfa hay, timothy hay and wild mustard, which had re-seeded for several years, and were mixed with stands of burdock, mint and thistles" (Latta 1972: 2). To the east, the lot stretching down to Goodman Creek was also cleared of trees and in pasture. At the present time, construction has begun on a small shopping plaza on the southeast corner lot and it is surrounded on the south and east by a housing development.

As mentioned in the previous section, a church was present on the southwest corner of the intersection at the time of the excavations, thus preventing the testing of this area for archaeological evidence.

Therefore, at the present time, construction covers all four corners of the Thornton-Rossland Road intersection, making any further investigation of this site impossible.

Environs

The MacLeod Site is situated on the bed of former Lake Iroquois, on the Iroquois Plain physiographic region (Chapman and Putnam 1984: 193-194). The site sits on the western border of a drumlinized till plain which reaches in to the clay

plain of the former lake bed. The soil of the till plain is Darlington loam, a good, well-drained soil. This fact is supported by local tradition which says that this soil was some of the most fertile in this part of Oshawa (Latta 1972).

Latta (1972) states that the soil can be classified as a Gray Brown Podzolic (now called Gray Brown Luvisol), as determined from observation of profiles along the road cuts where disturbance was minimal. Clayton et al (1977) shows the area of the MacLeod Site to be dominantly Gray Brown Luvisol and dominantly well drained. This soil type is generally highly productive for a variety of field and horticultural crops (Clayton et al 1977: 119). Clayton et al (1977: 114) also state that the Gray Brown Luvisols have developed under deciduous or mixed-forest vegetation.

The MacLeod Site is located in the Deciduous Forest Region of southern Ontario. The indigenous forest of this region consists of deciduous trees common to the Great Lakes-St. Lawrence Forest Region, such as sugar maple, beech, white elm, basswood, red and white oaks, red ash and butternut. There are also a number of deciduous species which are more common in

the southern region but have their northern limits in this area. These include the tulip tree, cucumber tree, pawpaw, red mulberry, redbud, black gum, sassafras and pignut hickories. Black walnut, sycamore and swamp white oak are also found in this locality. There are few conifers, however, a scattered distribution of eastern white pine, tamarack, eastern red cedar and eastern hemlock are found in this region (Clayton et al 1977; Hosie 1979). An early survey report of the neighbouring township of Whitby indicates that the predominant species were maple, beech, elm, basswood and oak with some hemlock, pine and cedar (Jones 1795). Latta (1972) states that none of the original forest remained on the MacLeod Site at the time of the excavations, with the possible exception of some maple trees along the banks of Goodman Creek.

Goodman Creek is approximately 150m east of the MacLeod site. The land drops gradually about 15m from the site to the creek. Goodman Creek drains into Oshawa Creek approximately 2.5km south of the site. An early survey report states that Goodman Creek and Oshawa Creek were both viable and that Oshawa Creek was teeming with salmon (Jones 1795). Latta (1972) states that, according to local tradition, a grist-mill was

located on Goodman Creek during the 19th century. This would imply that the creek provided a fairly reliable source of water power. The creek is presently low, however, it often expands to 1.5m in depth during the spring run-off. Latta (1972) also mentions the presence of a spring in the pasture on the southeast corner of the intersection, about halfway down the slope to the creek. At the time of the excavation, it had been dammed to form a stock pond. However, a few sherds were discovered near the outlet and Latta suggests that it may have been a source of water for the people of the MacLeod site.

Chapter II

SETTLEMENT PATTERNS

Introduction

This is the most difficult chapter to compile as some of the field notes could not be relocated after the twenty-two years since the beginning of the excavations at the MacLeod site. The following includes information from field notes available in 1990 as well as information gathered from some of the original excavators.

Site Size

The size of the MacLeod site is difficult to estimate as the site boundaries were not located on all sides. On the northeast corner of the intersection, excavations extended 85ft (25.9m) north of the north side of Rossland Road. Latta (1972) states that the trenches became sterile about 35ft (10.7m) north of Rossland Road. Also, the eastern excavations on this corner of the intersection reached the edge of the terrace, however, excavations became sterile approximately 90ft (27.4m) east of Thornton Road. Latta (1972) concludes that the village edge in this

area was probably destroyed by the construction of Rossland Road. However, the site was excavated up to 247ft (75.3m) north of the north side of Rossland Road on the west side of Thornton Road and artifacts were still present in this area. This gives the site an odd triangular shape and indicates that it does not follow the ridge as might be expected.

The area to the south of the southern excavations of the MacLeod site was not excavated as permission was not given by the owner and survey was difficult as the field was in pasture. Thus, it is not known how far to the south the site extended.

Approximately 10 test pits were excavated on the slope to the east of the excavated area on the southeast corner of the intersection. Only about a dozen potsherds were recovered from these test pits, showing no evidence of hillside middens.

The area to the west of Thornton Road and south of Rossland Road could not be tested due to the presence of a church and a parking lot on that corner. The excavated area is approximately 4 acres (1.6 hectares) in size.

Middens

Two small midden areas and one very large

midden area were identified during excavations at the MacLeod site.

Midden 1 This midden was located directly south of Rossland Road and 295-305ft (90-93m) east of the east side of Thornton Road (Figure 5). Approximately 10 square feet were excavated in this area. Only 37 artifacts were present from Midden 1 in the collection studied in 1990. No field notes remain from this midden, so its shape and depth are unknown.

Midden 2 The second midden was not numbered by the excavators and has been called Midden 2 by the present author. It is a kidney shaped midden, located 10ft (3m) north of the west end of Alpha house (Figure 5). It measures approximately 15ft (north-south) and 10ft (east-west). It is 13 inches (33cm) deep and has four stratigraphic layers. The top is a layer of ash 2 inches (5.1cm) thick, followed by a layer of dark brown soil also 2 inches (5.1cm) deep. Below this is a layer of black soil 4 inches (10.2cm) thick and the lowest layer is of red brown soil and is 5 inches (12.7cm) deep. Of the seven units which cover Midden 2, artifacts from four of the units were not present in the collection studied in 1990.

Midden 3 The third midden was also not numbered by the

excavators and has been named Midden 3 by the present author. Thirty 5x5ft units were excavated in this midden which is located along the east side of Thornton Road on the southeast corner of the intersection (Figure 5). The artifacts from this midden comprise approximately 42% of the MacLeod site artifact assemblage.

Northwest corner of intersection

No field notes were available from this area, however, one map of this excavation was located. The map indicated that nine post moulds, twelve small features which may also have been post moulds, and thirteen larger oval-shaped features were uncovered (Figure 4). No discernable pattern was evident in the features and post moulds in this area of the excavations.

Northeast corner of intersection

No features were found in the trenches excavated in this area. A few possible post moulds were uncovered, but the soil was very disturbed by roots from the apple orchard so their identification is uncertain. Most of the artifacts in this area were found in the top 6 inches (15.2cm) of topsoil.

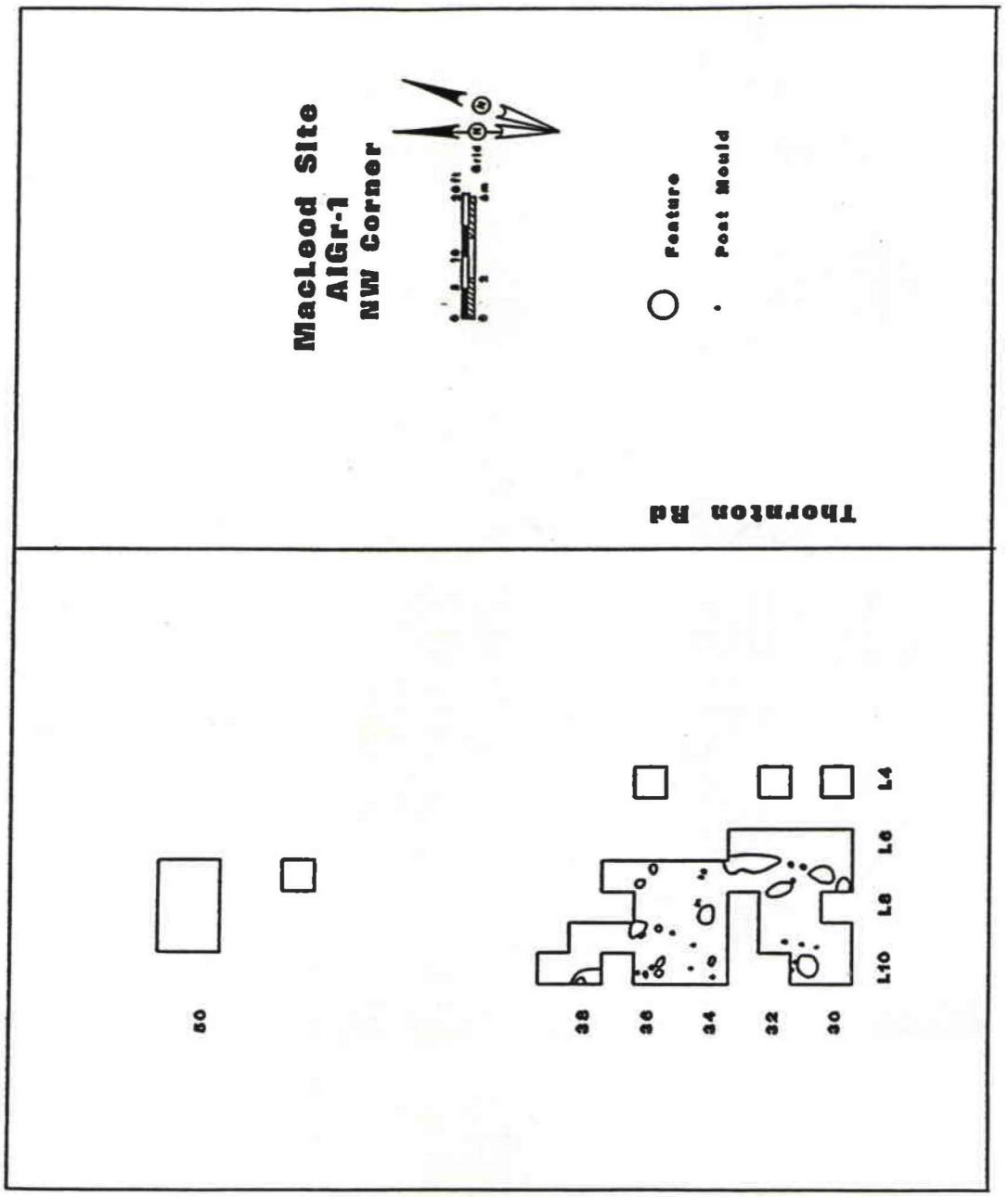


Figure 4. Excavation of the Northwest Corner.

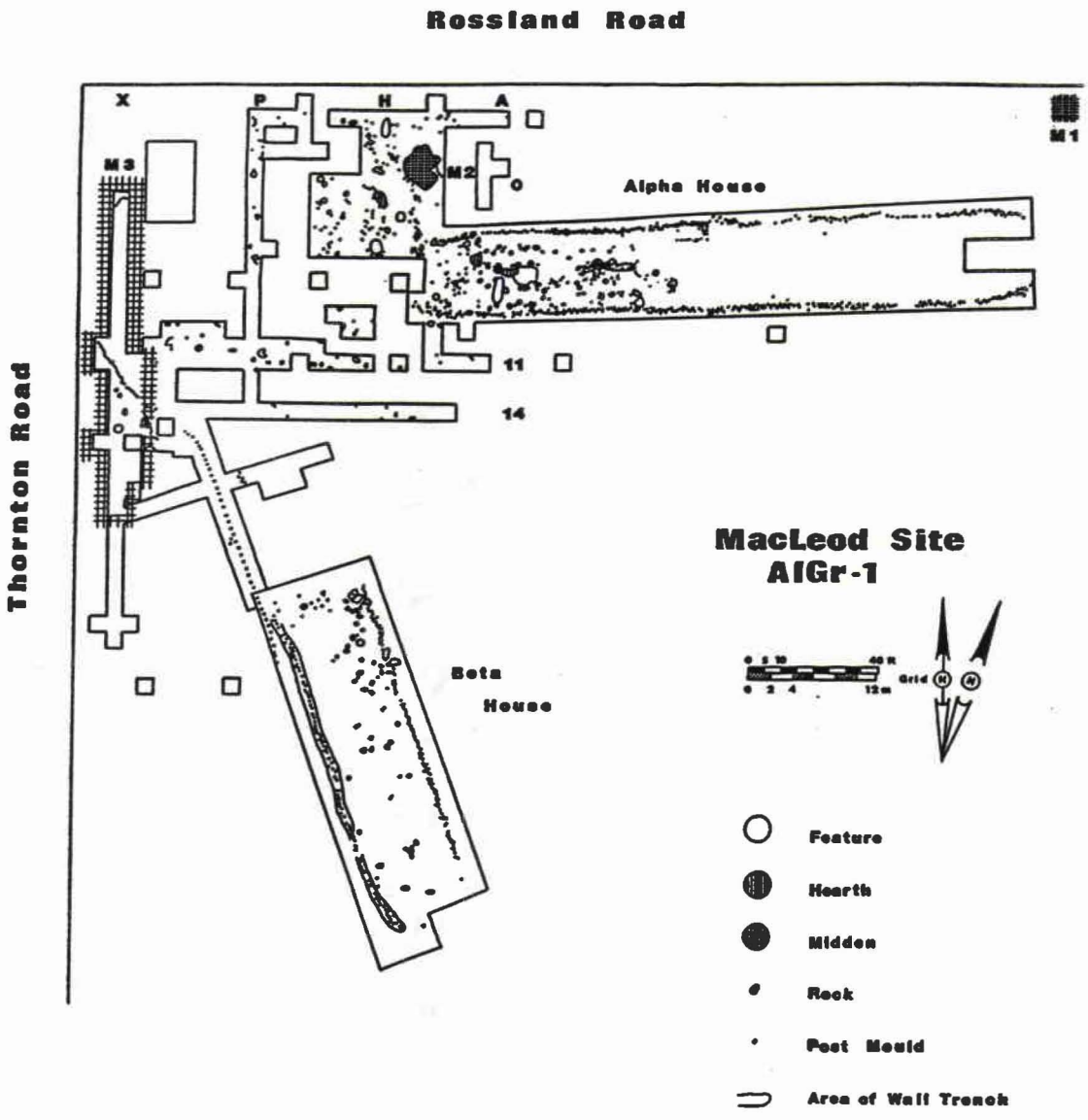


Figure 5. Excavation of the Southeast Corner.

Southeast corner of intersection

Two longhouse patterns and many external features and posts were uncovered on this corner of the intersection.

Alpha House.

Alpha house measures approximately 190ft (58m) in length and 27ft (8.2m) in width and is oriented east-west (Figure 5). Unfortunately, the field notes for the internal features of the eastern half of Alpha house could not be relocated.

House Wall Post Moulds Exterior wall posts from Alpha house number 561. The average diameter is 2.7 inches (6.9cm) and the range is from 1 inch (2.5cm) to 6 inches (15.2cm). The post density per meter is 4.8.

Interior House Post Moulds From the information available from the western half of Alpha house, the interior posts number 181. The range of the diameter is from 2 inches to 8 inches (5.1-20.3cm) and the average diameter is 2.8 inches (7.1cm).

Internal Features The western half of Alpha house has three hearths in the centre of the house. Another amorphous feature may be a diffuse hearth area. It has 66 post moulds within it which range in diameter from 2 to 3 inches (5.1 to 7.6cm). These posts may indicate

the presence of drying or cooking racks which were moved or replaced over time.

No definite internal pattern is obvious from the map (Figure 5). However, in her field notes, Latta states that "outlines are not very clear but a definite demarcation of sleeping benches and central floor space occurs". Latta (1972) also states that no evidence of end porches was found, however, "the east end of the house was very rocky and post molds were difficult to find and define".

Only 360 artifacts from Alpha house were present in the collection in 1990. Two hundred and twenty-seven (63%) were from the same unit (215E 55S). This scarcity of artifacts is probably due to the excavation technique. The topsoil was removed by a bulldozer and then the area was shovel-shined and trowelled.

No information from the cross-sectioning of features could be relocated, but Latta (1972) mentions that most of the features were sterile.

Beta House

Beta house was not completely excavated. The length of the excavated part is 105ft (32m) and the width of the house is 27ft (8.2m) and it is positioned

in a northwest orientation (Figure 5).

The exterior wall posts range in diameter from 2 to 5.5 inches (5.1 to 14cm). On average, 2 or 3 post moulds were sectioned in each unit. From the available data, the post moulds range in depth from 4 to 11.5 inches (10.2 to 29.2cm) and have pointed profiles.

Wall Trench There is evidence of an intermittent wall trench on the west wall of Beta house. The depth and form of the wall trench was not noted, as this was one of the first observations of this feature on an Iroquoian site. However, it was 4 inches (10.2cm) in width. Latta (1972) states that "it became apparent that often the line of post molds was obscured by a wide plough stain". The actual plough scars in the area ran from northeast to southwest, at an angle to Beta house.

Kapches (1980) has found evidence for wall trenches on eleven Iroquoian sites, from Glen Meyer to Proto-Contact times, in Ontario and New York, including the MacLeod site. The wall trench at the MacLeod site is narrower than those on the other 10 sites. Latta (in Kapches 1980) suggests that this is so because it is the base of a plough truncated trench.

There have been several suggestions as to the

purpose of the wall trench. W. Donaldson and J. Holloway suggested that the wall trench on the MacLeod site may have been caused by water run-off from the longhouse forming an erosion channel (Latta 1972). Kapches (1980) has several criticisms of this suggestion, including the fact that several of the reported wall trenches are too deep to be erosion channels and that the trench occurs on both sides of the post moulds, not just on the outer side. It has also been suggested (Latta 1972) that the trench was formed from the decomposition of the bark walls of the longhouse. Kapches (1980) agrees that some of the trench may be formed by such decomposition, but also notes that the width, depth and variety of materials found in these trenches argues that they are human-made. Kapches (1980) supports the idea that the wall trench is a construction technique to facilitate the placement of posts for the longhouse. She suggests that this technique may have diffused into Ontario from the southern Mississippian sphere. It appears to have been only a minor technique, as other houses on the same sites were constructed without trenches.

Internal Features Internal features are scarce in Beta house. This may be due to the excavation technique and

conditions. In this area, the topsoil was also removed by a bulldozer and then shovel-shined and trowelled. The excavation occurred during two weekends in late October during which time it rained continuously.

Four hearths were present in the central corridor of Beta house. These hearths range in diameter from 12 to 19 inches (30.5 to 48.3cm) and in depth from 4 to 11 inches (10.2 to 28cm). They are composed of ash deposits surrounded by red soil and they contain charcoal and fire-cracked rock.

There are also a number of small oval or circular storage pits in the interior of the house. These range in diameter from 8 to 15 inches (20.3 to 38cm) and in depth from 4 to 8 inches (10.2 to 20.3cm) and most are basin shaped in profile.

No artifacts from Beta house are in the collection studied in 1990.

Exterior Features and Post Moulds

A single line of posts was uncovered three to four feet to the west of the west wall of Beta house. This line was followed for 74ft and was a single line of posts, not a staggered line as was the case with the walls of Alpha and Beta houses. Latta (1972) notes that the posts in this line were smaller than the posts

of Beta house. It is unknown whether this represents a house wall or a palisade.

Another portion of a possible house wall was present at the MacLeod site. This line was uncovered at the west end of Alpha house and curved to the north and west. There is a hearth 7ft (2.1m) to the west of this line and Midden 2 is directly to the east of the line. However, the line appears to overlap the west end of Alpha house so these two structures would not have been contemporaneous.

Forty-seven exterior features were uncovered on this corner of the intersection. These are circular and oval shaped pits and the profiles of those that were cross-sectioned were shallow or deep basined pits.

Therefore, settlement patterns at the MacLeod site consist of two longhouse patterns on the southeast corner of the intersection, three midden areas and many external post moulds and features. Alpha house was completely excavated and measured 58m in length and 8.2m in width. The length of the excavated portion of Beta house measured 32m and the width was also 8.2m. Evidence of a discontinuous wall trench was revealed on the west wall of Beta House.

Chapter III

ARTIFACT ANALYSIS

The MacLeod site artifact assemblage totals 18,229 items: 17,066 ceramics, 965 lithics, 196 worked faunal specimens and two pieces of native copper (Table 1). In the following section, this assemblage will be discussed in broad artifact classes according to materials of manufacture.

Table 1. MacLeod Prehistoric Artifact Classes

Class	f	%
Ceramics*	8666	88.2
Lithics	965	9.8
Worked Faunal Materials	196	2.0
Native Copper	2	0.02
Total	9829	100.02

*excluding 8400 unanalysable sherds and microsherds

Ceramics

Ceramics make up the largest portion of the MacLeod site artifact assemblage, as is the case with most Iroquoian sites. The assemblage is dominated by body sherds (67.3%), followed by rim sherds, pipe

fragments, neck sherds, shoulder sherds and gaming discs (Table 2).

Table 2. MacLeod Site Ceramics

Type	f	%
Body Sherds*	5835	67.3
Rim Sherds	924	10.7
Neck Sherds	618	7.1
Shoulder Sherds	514	5.9
Gaming Discs	2	0.02
Miscellaneous	3	0.03
Pipes		
Stems	418	4.8
Bowls	275	3.2
Pipe Fragments	77	0.9
Total	8666	99.95

*excluding 8400 unanalysable sherds and microsherds

Body Sherds

A total of 14,235 body sherds were recovered from the MacLeod site. 5835 of these sherds are over 20mm in width and another 8400 are microsherds and are considered too small to be analyzed. Exfoliated sherds also were obviously excluded from analysis of sherd metrics.

The body sherds range in thickness from 3.5 to 22mm with an average of 8.5mm. Few sherds measured above 18mm, the largest measuring 22mm. All body sherds but a very few are tempered with crushed

granitic stone, averaging 1 to 2mm with a range up to 7mm. As would be expected from a late prehistoric site, most of the body sherds from the MacLeod assemblage are plain. Only ten of the sherds examined showed smoothed-over-cord marks or ribbed paddle impressions.

Painted Ceramics

Six body sherds from the MacLeod site appear to be decorated with pigment. Three of these are covered with a red colour on the inside surface. Two of these sherds are from Unit W13 and one is from Unit W14. It is unusual that the pigment would be on the inside surface unless these were vessels in which the pigment was stored.

Two sherds are decorated with bands of a dark brown pigment. One of these sherds, from Unit X11, has a single band across its outer surface. The second sherd is a surface find and has two parallel bands across its outer surface.

The final sherd is more extensively decorated with dark brown pigment. The portion of the design which can be seen appears to be three circles inside each other bisected by two parallel lines. This sherd is from Unit X14.

Painted ceramics are not often mentioned in Iroquoian literature, although Sutton (1989: 59) has found one painted sherd at the Bark site in the Trent valley, and Ramsden (personal communication, 1990) has noticed painted ceramics in Late Iroquoian sites in Ontario. This would be an interesting area for further research in Iroquoian archaeology.

Shoulder Sherds

Five hundred and fourteen shoulder sherds were found at the MacLeod site. Of these, 385 are round in form and 129 are carinated. Of the decorated shoulder sherds, two motifs make up 60% of the assemblage: a single string of punctates or simple oblique incised parallel lines (Latta 1972).

Neck Sherds

The MacLeod site artifact assemblage contains 514 analysable necks, 104 unanalysable necks, (Latta 1972) and 362 necks associated with rims (Figure 6). The most common decoration is oblique lines (22.9%), followed by horizontal lines (18.9%), opposed lines (9.9%), plain necks (9.1%), punctates over obliques (7.0%), punctates over horizontals (6.2%) and horizontals over obliques (6.1%).

Figure 6. MacLeod Site Neck Motifs

Decoration	f	%	Decoration	f	%
Plain	80	9.1		8	0.9
	201	22.9		8	0.9
	31	3.5		1	0.1
	87	9.9		13	1.5
	11	1.3		166	18.9
	5	0.6		1	0.1
	6	0.7		53	6.1
	1	0.1		17	1.9
	33	3.8		1	0.1
	61	7.0		1	0.1
	31	3.5		4	0.5
	54	6.2		2	0.2
			Total	876	99.9

Rim Sherds

Following an extensive vessel sort where rimsherds from the same vessel were matched together, it is calculated that a total of 924 rimsherds are present in the MacLeod site assemblage. After the exclusion of the castellation and juvenile forms and rim sherds which are too fragmentary for analysis, the total analyzable rim sherd count is 673.

Exhaustive summaries of the type and attribute methods of ceramic analysis in Ontario Iroquoian archaeology can found in Ramsden (1977), Smith (1983) and Sutton (1989), among others. The advantages of attribute analysis over typological analysis have been stated by Wright (1967), Emerson (1968) and Ramsden (1977). The following are some of the advantages of attribute analysis. First, attribute analysis allows for continuity of trends through time and space. Attributes are not pigeon-holed or forced into a relationship with other attributes to form a type. Second, attribute studies have greater accuracy than do typological studies. Since the attributes are mutually exclusive, different researchers studying the same sample will produce the same results. Attribute studies have none of the subjectiveness and

arbitrariness of type classifications. Third, attributes are the most sensitive indicators of complex patterns of interaction in time and space. Arguments in favour of attribute analysis have been accepted by the author of this thesis for the purpose of this study for the reasons listed above and also due to the large amount of comparative data available in this format. This author acknowledges that Smith's (1983) attribute complex analysis will be an interesting direction for the future of Iroquoian ceramic analysis for localized geographical areas of Iroquoia.

Ramsden's (1977: 76-154) attribute definitions are followed closely in the present analysis due to the comparative data available in this format and due to the fact that a smaller sample from the MacLeod site (spelled 'McLeod' in Ramsden's thesis) was used as one of the sites in Ramsden's study.

The attribute frequencies for the MacLeod site collection are presented in Table 3. The criteria used for data collection are not limited to Ramsden's (1977: 61-63) definition of an analyzable rim sherd which requires that the sherd be complete before it can be included in the analysis. Following Smith's (1983: 31) criticism of this limitation to data collection, all

attribute information was recorded from the MacLeod site rim sherds, whether complete or fragmentary. Therefore, in the third column of Table 3, the number of observable rim sherds for each attribute is also presented.

It is interesting to note that on eighteen of the 280 rim sherds which exhibited interior decoration, a second row of decoration was observed underneath the interior row of punctates. On sixteen of these rim sherds, the second row consisted of a row of fingernail impressions. It is possible that this row is an incidental occurrence caused by the positioning of the hand in the production of the upper row of punctates (Ramsden 1989: personal communication). This row occurs between 9 and 20mm below the upper row of decoration. From the curve of the fingernail, it appears that 7 of the 16 decorations were made with a right hand, two were made with a left hand, and seven are indeterminate. Of the remaining two rim sherds, one interior decoration consists of two rows of punctates, one directly underneath the other. The second rim sherd also consists of two rows of punctates, however, in this case the second row is opposite the base of the collar.

Table 3. MacLeod Rimsherd Attributes

Attribute	f	% of Observable	# of Observable
A. Collarless Plain	0	0.0	401
B. Collarless Decorated	2	0.5	401
C. Collared Plain	18	4.5	401
D. Collared Decorated	381	95.0	401
a. Incised	640	100.0	640
b. Stamped	0	0.0	640
c. Mixed	0	0.0	640
d. Other	0	0.0	640
E. Collar Motifs			
a. Simple	187	47.0	398
b. Opposed	75	18.8	398
c. Crossed	31	7.8	398
d. Hatched	38	9.5	398
e. Horizontal	44	11.1	398
f. Complex	3	0.8	398
h. Interrupted	0	0.0	398
i. Other	2	0.5	398
F. Neck Decoration			
a. Total	309	85.4	362
b. Horizontal	2	0.6	362
c. Horizontal/?	74	20.4	362
d. Oblique	4	1.1	362
e. Opposed	70	19.3	362
f. Hor/Obl	49	13.5	362
g. Oblique/?	109	30.1	362
h. Plain	53	14.6	362
i. Other	1	0.3	362
G. Secondary Decoration			
a. Interior	280	43.9	638
b. Lip	6	0.9	667
c. Frontal Lip	0	0.0	667
d. Upper Punctates	7	1.0	668
e. Lower Punctates	2	0.5	398
f. Dividing Punctates	22	5.3	419
g. Basal Punctates	7	1.8	395
h. Sub-collar dec.	117	30.3	386
H. Interior Profile			
a. Convex	82	23.6	348
b. Concave	136	39.1	348
c. Straight	130	37.4	348
I. Exterior Collar Form			
a. Convex	81	20.4	397
b. Concave	49	12.3	397
c. Straight	267	67.3	397
J. High Collars	36	8.8	408

Intrasite Rim Sherd Comparison

Latta (1972) has commented on the odd triangular shape of the MacLeod site. Considerable testing occurred on the northeast corner of the intersection and it was confirmed that the occupation ceased approximately 36m south of the artifacts uncovered on the northwest corner of the intersection. This shape was considered unusual as the site was expected to follow the ridge beside Goodman Creek. Latta (1972) also records that a resident of Rossland Road, on the third lot west of the intersection, informed the excavators that he had found some pottery from the excavation of his house. Latta suggests that this would indicate that the MacLeod site stretched considerably farther west. Latta (1972: 12) hypothesized that an explanation for this distribution could be that "the MacLeod site represents two village components, with the MacLeod property midden representing the easternmost extent of the second village". Latta recognized that chances of field testing the theory were not good due to extensive construction and disturbance and she recommended that the artifacts from the two areas be compared to search for possible differences.

Table 4. MacLeod Rimsherd Attributes-NW corner

Attribute	f	% of Observable	# of Observable
A. Collarless Plain	0	0.0	43
B. Collarless Decorated	0	0.0	43
C. Collared Plain	5	11.6	43
D. Collared Decorated	38	88.4	43
a. Incised	72	100.0	72
b. Stamped	0	0.0	72
c. Mixed	0	0.0	72
d. Other	0	0.0	72
E. Collar Motifs			
a. Simple	18	41.9	43
b. Opposed	12	27.9	43
c. Crossed	3	7.0	43
d. Hatched	2	4.7	43
e. Horizontal	3	7.0	43
f. Complex	0	0.0	43
h. Interrupted	0	0.0	43
i. Other	0	0.0	43
F. Neck Decoration			
a. Total	33	80.5	41
b. Horizontal	0	0.0	41
c. Horizontal/?	9	22.0	41
d. Oblique	2	4.9	41
e. Opposed	5	12.2	41
f. Hor/Obl	4	9.8	41
g. Oblique/?	13	31.7	41
h. Plain	8	19.5	41
i. Other	0	0.0	41
G. Secondary Decoration			
a. Interior	33	45.8	72
b. Lip	0	0.0	76
c. Frontal Lip	0	0.0	77
d. Upper Punctates	0	0.0	77
e. Lower Punctates	0	0.0	43
f. Dividing Punctates	1	2.3	43
g. Basal Punctates	2	4.7	43
h. Sub-collar dec.	15	34.9	43
H. Interior Profile			
a. Convex	14	40.0	35
b. Concave	10	28.6	35
c. Straight	11	31.4	35
I. Exterior Collar Form			
a. Convex	14	32.6	43
b. Concave	7	16.3	43
c. Straight	22	51.2	35
J. High Collars	5	11.1	45

Table 5. MacLeod Rimsherd Attributes-NE & SE Corners

Attribute	f	% of Observable	# of Observable
A. Collarless Plain	0	0.0	358
B. Collarless Decorated	2	0.6	358
C. Collared Plain	13	3.6	358
D. Collared Decorated	343	95.8	358
a. Incised	568	100.0	568
b. Stamped	0	0.0	568
c. Mixed	0	0.0	568
d. Other	0	0.0	568
E. Collar Motifs			
a. Simple	169	47.6	355
b. Opposed	63	17.7	355
c. Crossed	28	7.9	355
d. Hatched	36	10.1	355
e. Horizontal	41	11.5	355
f. Complex	3	0.8	355
h. Interrupted	0	0.0	355
i. Other	2	0.6	355
F. Neck Decoration			
a. Total	276	86.0	321
b. Horizontal	2	0.6	321
c. Horizontal/?	65	20.2	321
d. Oblique	2	0.6	321
e. Opposed	65	20.2	321
f. Hor/Obl	45	14.0	321
g. Oblique/?	96	29.9	321
h. Plain	45	14.0	321
i. Other	1	0.2	321
G. Secondary Decoration			
a. Interior	247	43.6	566
b. Lip	6	1.0	591
c. Frontal Lip	0	0.0	591
d. Upper Punctates	7	1.2	591
e. Lower Punctates	2	0.6	355
f. Dividing Punctates	21	5.6	376
g. Basal Punctates	5	1.4	352
h. Sub-collar dec.	102	29.7	343
H. Interior Profile			
a. Convex	68	21.7	313
b. Concave	126	40.3	313
c. Straight	119	38.0	313
I. Exterior Collar Form			
a. Convex	67	18.9	354
b. Concave	42	11.9	354
c. Straight	245	69.2	354
J. High Collars	31	8.5	363

In order to test this hypothesis, the rim sherd data from the northwest corner were separated from the data from the rest of the site. The rim sherd attributes from these two areas are presented in Tables 4 and 5. The Chi Square test was performed on the data from these two areas for the chronologically and socially significant attributes as defined by Ramsden (1977) which exhibited large enough cell totals. None of the attributes were found to be significantly different at the .01 level. Therefore, according to the rim sherd information, it can be suggested that these two areas form two parts of the same site.

Castellations

There are 93 castellations in the MacLeod site assemblage (Figure 7). None were included in the rimsherd analysis due to the alteration of the decorative motif in the area of castellations. The most common form of castellation at this site is the pointed form, comprising 87% of the collection. The remainder of the collection consists of the nubbin form (7.5%), the round form (3.2%), the rolled rim form (1.1%) and one of unknown form (1.1%). All but 12 of the castellations have their decoration interrupted in the area of the castellation. The V-chevron

Figure 7. MacLeod Site Castellations

Decoration	Form: Pointed	Nubbin	Round	Rolled Rim	Unk	Total
Interrupted						
	48	1	1	1(/\)	-	51
	6	2	-	-	-	8
	4	-	-	-	-	4
	3	1	-	-	-	4
	2	-	1	-	-	3
	1	-	-	-	-	1
	1	-	-	-	-	1
	1	-	-	-	-	1
	1	-	-	-	-	1
	-	1	-	-	-	1
	-	-	-	-	1	1

Figure 7. MacLeod Site Castellations (cont'd)

Decoration	Pointed	Nubbin	Round	Rolled Rim	Unk	Total
Uninterrupted						
	4	1	-	-	-	5
	6	-	1	-	-	7
Plain	2	-	-	-	-	2
Unknown	2	1	-	-	-	3
Total	81	7	3	1	1	93

is the most common decorative motif (50 specimens), with an additional 5 examples of the V-chevron separated by either punctates or dashes and one example of a /\ chevron. The second most common decoration consists of one or two vertical rows of punctates underneath the castellation (8 examples). Four specimens show discontinuous oblique lines underneath the castellation and three specimens have oblique lines which change direction at the castellation. Two examples show a change from oblique to vertical lines at the castellation and one of these has this change separated by dashes. Two examples have vertical lines

underneath only the castellation and one of these has this set of vertical lines separated by dashes. The final specimen appears to be a stylized human face. In addition, two examples are undecorated and on two examples the exterior surface is broken so that the decoration is unknown.

Interior decoration appears in 47.3% of the castellations, however, there is no indication that this decoration is restricted to the area of the castellation and, in fact, it probably continues around the interior of the vessel in each case. The neck area is present in 59% of the castellations and, of these, 71% exhibit neck decoration. The rolled rim form of castellation is the only specimen which exhibits lip decoration.

The height of the castellations ranges from 1mm in the rounded form, to 26mm in the pointed form. The width of the lip may increase at the castellation. The difference in width ranges from 0mm to 6mm. Also, the base of the castellation may be thicker than the rest of the rim. The increase in base thickness ranges from no change at all to a 15mm increase in thickness.

Juvenile Ceramics

Twenty-four rimsherds representing twenty-four

vessels were classified as juvenile. These rimsherds were recognized as being produced by novices by their small size and the irregularity of the vessel construction and decorative motifs.

Of the 24 juvenile rimsherds, 21 are collared, 2 are collarless, and one is too fragmentary to determine this attribute. Several of the collared rimsherds exhibit collars which are not well developed. Vessel lip width ranges from 3 to 13mm and collar height ranges from 5 to 22mm. Eleven of the rims are straight, seven are convex and one is concave. This attribute could not be observed on five sherds. Twelve of the rimsherds exhibit simple incised decoration, six are plain, two have horizontal incised lines, one has a crossed motif and one has a complex motif of oblique lines crossed by a horizontal line. The decoration could not be observed on two rimsherds. Two of the rimsherds exhibit interior decoration and one rimsherd bears a castellation.

Reconstructed Vessel

One ceramic vessel was reconstructed by Scott Horvath. The measurements of the vessel are as follows:

Height: 28cm

Circumference at shoulder: 91cm

Circumference at rim: 71cm

Circumference at neck: 58cm

Collar height: 31.5mm

Body thickness: 6mm average

Collar thickness: 12.5mm

Lip thickness: 7.5mm

Castellation height: 4.5mm above lip

The rim decoration of the reconstructed vessel consists of oblique opposed lines interrupted by blank triangles. These triangles are outlined by punctates on all three sides. The neck decoration consists of horizontal lines above oblique opposed lines and the shoulder decoration is four horizontal lines above one zigzag line. Two castellations are present on the reconstructed vessel. Both are pointed in shape with interrupted V-chevron decoration underneath the castellation. It is interesting to note that while the collar decoration and the horizontal lines which form the upper part of the neck decoration both break underneath the castellations, the lower part of the neck decoration and the shoulder decoration are not interrupted. All of the fragments of this

reconstructed vessel were found in one unit, X11.

Gaming Discs

Two gaming discs were found at the MacLeod site. One is from Unit 31L7 and is 51mm in length, 48mm in width and 8mm in thickness. It is a plain body sherd with a smooth surface which has been ground around the edges to form a round disk. The second gaming disc is from Unit 33L6 and is 84mm in length, 57mm in width and 17mm in thickness. It is the lower portion of a collar and the upper portion of a neck. The collar is decorated with a simple decoration of oblique lines and the neck is plain. This piece has been ground around the edges to form an oval.

Miscellaneous

Three ceramic artifacts were found at the MacLeod site which do not fit into any of the above categories. The first, a small ceramic sphere with a diameter of 13mm, was found in Unit F14. The second item appears to be a fired piece of ceramic wastage. It is 36mm in length, 13.5mm in width and 11mm in thickness and has a small lip on one end. This artifact was uncovered in Unit X12. The third artifact is very unusual. It is circular in shape with a

diameter of 37.5mm and a thickness of 18.5mm. It has a hole in one side which does not quite reach through to the other side. This hole is 12.5mm in diameter and is surrounded by a circle of small square punctates. This artifact may be a pipe bowl fragment. It was recovered from Unit V15.

Pipes

Introduction

Ceramic pipes were common at the MacLeod site, numbering 770 fragmentary specimens. The five complete pipe bowls range in height from 48.5-73.5mm and in diameter from 31-56mm. Three-quarters of the pipe bowls have a smooth to very polished finish and the other one-quarter have a rough finish.

Most of the pipe stems from the MacLeod site are round and undecorated with eight exceptions which are discussed in detail in the pipe stem section below.

Pipe Bowls

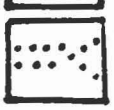
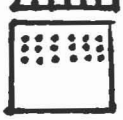
Of the 275 pipe bowl fragments from the MacLeod site, 209 are complete enough to be analyzed. The remaining 66 fragments are missing the rim portion of the bowl and offer no information on bowl shape. Pipe

bowls were analyzed according to the format set out by Emerson (1954) and Lennox et al (1986). In the MacLeod site pipe bowl assemblage, 74% are plain. Seventeen percent are encircled by horizontal 'rings', sometimes underlined by a row of punctates. A few bowls are more extensively decorated with oblique lines or punctate motifs, and two specimens are collared.
Brief descriptions are provided below (Figure 8).

Trumpet This pipe bowl form has a pronounced flare at the lip and tapers towards the elbow.

Trumpet pipes are the most common form at the MacLeod site, comprising 70% of the bowl assemblage. Eighty-seven percent of the bowls have smooth to very polished surfaces. One hundred and seventeen of the trumpet pipes are plain. Of the fifteen decorated trumpet pipes, four have horizontal parallel rings and one of these has a row of punctates underneath the rings, three have oblique lines, three have opposed lines, four have vertical lines with punctates underneath, and one has two horizontal rows of punctates which cross each other at one point on the bowl.

Figure 8. MacLeod Site Pipe Bowls

Form / Decoration	 Trump.	Con.	Vasi.	Barr.	Col.	?	Total
Plain	124*	12	2*	–	1	–	139
	1	13	–	–	–	–	14
	1	10	–	1	–	–	12
	2	4	–	–	–	–	6
	–	1	–	–	–	–	1
	3	–	–	–	–	–	3
	3	–	–	–	–	–	3
	4	–	–	–	–	–	4
	–	–	–	–	–	2	2
	–	–	–	–	1	–	1
	1	–	–	–	–	–	1
	–	–	1*	–	–	–	1
	–	–	–	–	–	1	1
Total	139	40	3	1	2	3	188

*including miniature pipes

Conical This pipe bowl form is virtually straight with no flaring or contraction at the rim.

The conical form is the second most common pipe form at the MacLeod site, comprising 21% of the pipe bowl collection. Twelve of the forty specimens are plain and the remaining 28 have horizontal rings. Of these, 13 have 2 to 5 rings with no punctates underneath and 10 have 2 to 6 rings with a row of punctates underneath. An additional four specimens have rings but they are too fragmentary to tell if there are punctates underneath the rings. The final specimen has three horizontal rings with a row of punctates underneath and one more ring underneath the punctates.

Vasiform This form is bulbous at the base, constricts in, and then flares out at the lip. Only one example of this form was found at the MacLeod site and it is undecorated.

Barrel This form has a convex exterior profile and is constricted at the rim. It is also very rare at the MacLeod site. Only one example was found and it is

decorated with three horizontal rings over a row of punctates.

Collared Two pipe bowls from the MacLeod site have collars. One is a plain pipe bowl with a 4mm collar. The other is decorated on the collar with vertical lines crossed by oblique lines and has three faint horizontal rings lower on the bowl. The collar on the second specimen is 8mm high.

Unknown Three pipe bowls from the MacLeod site are too fragmentary for the form to be determined. Two of the fragments are covered with rows of punctates, while the third has three rows of punctates.

Miniature pipes There were nine miniature pipes found at the MacLeod site. Seven are of the plain trumpet form, one is a plain vasiform shape and one is a decorated vasiform shape. The decoration on the vasiform bowl consists of one row of punctates over three horizontal lines over vertical lines.

In addition to the above forms, there is also a fragment of a reptile effigy pipe bowl present in the

collection. This could be a snake or a lizard effigy. Also, there are twenty fragments of small, crudely made pipe bowls. Eleven of the artifacts in the Small, Crudely Made category could be fragments of miniature pots rather than pipes.

Pipe stems

Of the 418 pipestem fragments in the MacLeod site assemblage, two are square stems and the rest are round. Diameters of the pipe stems decrease from elbow to mouthpiece and the maximum diameters range from 10 to 27mm. All of the bores appear to be smooth with one exception of a twisted fibre bore. Of the 64 mouthpieces in the collection, 20 have been reshaped by grinding (Lennox et al 1986: 61). The ground forms have diameters at the large end of the range. Three pipe stems have been ground into beads.

Six pipe stems have been decorated. One could represent a lizard effigy stem. It has two ridges on the side with digits at the end of them which could represent feet. It also has a ridge along the underside which could be a tail. The second decorated pipe stem has incised lines in a V-chevron pattern in two places on it. The third pipe stem is a mouthpiece and is an oval shape with rows of punctates on it .

Each row is separated by a single incised line. The fourth example is decorated with five incised parallel lines. The fifth decorated pipe stem appears to be part of the elbow and has two short incised lines on it. The final decorated stem also appears to be an elbow fragment and has a series of two rows of punctates separated by incised lines around the stem. This design has been found in the St. Lawrence Valley (P. Ramsden, personal communication, 1989).

In addition to the bowl and stem fragments described above, seventy-seven pipe fragments are also present in the collection. These fragments could only be identified as pipe, not as bowl or stem.

Lithics

The lithic tools and debitage from the MacLeod site consist of 965 chipped and ground stone artifacts (Table 6). Lithics account for 9.8% of the total artifact assemblage at this site (Table 1). Debitage from chipped lithic tool production comprises 74.9% of the lithic assemblage, while there are only 8 (0.83%) formal chipped lithic tools.

Table 6. MacLeod Site Lithics

Item	f	%
Debitage	723	74.9
Utilized flakes	62	6.4
Cores	17	1.8
Points	5	0.5
Scrapers	2	0.2
Biface	1	0.1
Celts and Celt Fragments	126	13.1
Stone Beads	10	1.0
Whetstone Fragments	8	0.8
Hammerstones	5	0.5
Abrader	1	0.1
Misc. Ground Stone	5	0.5
Total	965	99.8

Material Types

Identification of the material types of this collection was made possible through the assistance of

W. Fox of the Ministry of Culture and Communications, C. Ellis, University of Waterloo, and P. Ramsden and J. Fisher, McMaster University.

Onondaga chert from sources to the southwest of the site along the north shore of Lake Erie, and Trent chert from sources to the northeast of the site in the Trent Valley, make up 74.4% of the debitage collection. Locational and geological data for these chert types can be found in Eley and von Bitter (1989). The remainder of the materials are locally available pebble cherts from secondary deposits (W. Fox and C. Ellis, personal communications, 1990). The most noticeable of these locally available materials is a mustard coloured jasper similar to Pennsylvania Jasper but whose source is probably the Canadian Shield. This jasper is also present in this assemblage in its heated form which is a deep red colour. Gull River limestone from northeast of the site is also present in the collection and makes up 2.1% of the debitage material types (Table 7). It is interesting to note that all eight of the formal chipped lithic tools and 60 of the 62 utilized flakes are made from Onondaga chert.

Table 7. MacLeod Lithic Debitage Material Types

Material Type	f	%
Cherts		
Onondaga	498	68.9
Trent	40	5.5
Jasper	38	5.3
Quartz	26	3.6
Limestone	21	2.9
Gull River Limestone	15	2.1
Quartzite	8	1.1
Unidentified	77	10.6
Total	723	100.0

Debitage Analysis

The chipped lithic debitage collection at the MacLeod site was analyzed according to the morphological types defined by Lennox (1982:17-18) and Lennox et al (1986:79-82) to indicate the reduction stages present at the site. All non-utilized debitage was divided into the following categories (Table 8).

Table 8. MacLeod Site Debitage Flake Types

Type	f	%
Primary	97	13.4
Secondary	119	16.5
Bipolar	43	5.9
Shatter	283	39.1
Flake Fragments	108	14.9
Unknown	73	10.1
Total	723	99.9

Primary Flakes

Primary flakes are derived from cores and exhibit a striking platform-ventral surface angle of approximately 90 degrees. The dorsal surface may bear the remnants of the cortical nodule surface or the negative attributes of previously removed primary flakes. The striking platform may be on a cortical surface or an unmodified flake scar, or the platform may be crushed.

Primary flakes were found to comprise 13.4% of the debitage collection. Of these, 62.9% exhibited the cortical surface on the dorsal side. This indicates that complete chert nodules were brought to the site to be knapped. It is interesting to note that while 42.5% of the primary flakes of Onondaga chert exhibit cortical surface, 100% of the flakes of the Trent chert and the jasper exhibit cortical surface.

Secondary Flakes

Secondary flakes are the by-product of the process of thinning and shaping bifaces. They are smaller in size than primary flakes (Table 9) and the striking platform may be faceted by flake scars or it may be crushed. The dorsal surface generally exhibits scars of several small flakes which run parallel to the

longitudinal axis of the flake and cortical surface is rarely present. The ventral surface often has a diffuse bulb of percussion and the striking platform-ventral surface angle is obtuse.

The MacLeod site lithic debitage was found to contain 119 (16.5%) secondary flakes.

Table 9. MacLeod Site Flake Metrics

Variable	N	Mean	SD	Min	Max
Primary					
Length	64	32.04	20.52	10.65	96.10
Width	88	24.62	14.02	8.44	84.20
Thickness	97	7.07	4.22	2.00	26.66
Secondary					
Length	72	17.11	4.88	6.14	26.27
Width	110	11.91	3.76	4.04	24.53
Thickness	120	3.40	1.22	1.08	6.33
Bipolar					
Length	38	19.44	3.80	10.70	28.26
Width	40	13.86	3.59	7.88	21.28
Thickness	40	4.76	1.30	2.30	8.35

Bipolar Flakes

Bipolar flakes result from the bipolar core technique. The dorsal surface exhibits flake scars which parallel the longitudinal axis of the flake and may have arisen from either or both ends. Cortical

surface is rarely present on the dorsal side. Striking platforms are usually crushed.

There were found to be 43 (5.9%) bipolar flakes in this assemblage.

Shatter

Shatter is thought to be a result of primary flake production and a high incidence of shatter may be associated with the bipolar technique. It can result from uncontrolled breakage of the core along faults in the material and usually consists of thick, blocky pieces. Ventral flake surface attributes and striking platforms are usually absent.

Shatter comprises 39.1% of the debitage collection. This relatively high incidence could be due to the use of the bipolar technique as well as primary reduction on the site.

Flake Fragments

Distal flake fragments, which cannot be classified due to lack of observable characteristics, were placed in this category.

Flake fragments comprise 14.9% of the lithic debitage at the MacLeod site.

Cores

Sixteen cores and one core fragment were

recovered from the MacLeod site. This collection is comprised of seven each of the regular and bipolar type of cores, two irregular cores and one bipolar core fragment. The cores are generally small in size (Table 10). The majority (70.59%) are of Onondaga chert, with 2 (11.76%) of Trent chert and 1 each (5.88%) of jasper, Quartz and Quartzite (Table 11). It is interesting to note that while bipolar cores and core fragments comprise 47.1% of the core types, bipolar flakes only comprise 5.9% of the flake types.

None of the cores appear to have been utilized.

Table 10. MacLeod Core Metrics

Variable	N	Mean	SD	Min	Max
Regular					
Length	7	29.55	7.78	14.30	37.50
Width	7	25.84	13.75	13.75	52.95
Thickness	7	15.44	6.19	9.90	27.23
Irregular					
Length	2	28.12	2.80	26.14	30.10
Width	2	20.33	2.58	18.50	22.15
Thickness	2	13.97	0.16	13.85	14.08
Bipolar					
Length	7	23.96	5.13	19.02	32.90
Width	7	18.72	4.11	13.60	25.50
Thickness	7	7.58	2.29	5.30	12.20

Table 11. MacLeod Core Materials

Material	Core Type Reg.	Irreg.	Bipolar	Bip.Frag.	f	%
Onondaga	4	2	5	1	12	70.6
Trent	2	-	-	-	2	11.8
Jasper	-	-	1	-	1	5.9
Quartz	1	-	-	-	1	5.9
Quartzite	-	-	1	-	1	5.9
Totals	7	2	7	1	17	100.1

Utilized Flakes

There are 62 utilized flakes in the MacLeod site assemblage (Table 12). As described by Lennox et al (1986: 86), these utilized flakes "exhibit what is best regarded as use retouch consisting of flake scars measuring a millimetre or less in length." Use in a scraping function is suggested by the unifacial wear pattern, however, these flakes do not exhibit the continuous steep unifacial retouch of the formal scrapers. Sixty of the utilized flakes are of Onondaga chert, one is of jasper and one is of an unidentifiable chert. Of the 62 utilized flakes, 32.3% are primary flakes, 17.7% are bipolar flakes, 6.5% are secondary flakes, 1.6% are an unknown flake type and the remaining 41.9% are flake fragments. Thus, the mean measurements are between those of the primary flakes

Table 12. MacLeod Utilized Flakes

Prov.	Mat.	Flake Type	Flake Metrics (mm)			Utilized Edge		
			L	W	T	Loc.	Length	Shape
1. 105E75S	ON	P	25	19	8	LD&V	24	I
2. 130E50S	ON	B	30	21	9	LD	19	S
3. 165E45S	ON	S	23	17	4	LV	18	S
4. -22-23B	ON	B	27	24	8	LV	14	CC
5. -22B	ON	F	?	?	4	DV	16	S
6. -23CC	ON	B	35	18	5	PV	18	S
7. -23HH	ON	P	19	27	4	DV	28	S
8. 30E50S	ON	F	?	17	4	LV	17	S
9. 30E50S	ON	B	?	22	4	LD	26	CV
10.31L7	ON	P	24	13	2	LB	17	CV
11.32L9	ON	F	20	?	9	L&DD	25	I
12.34L9	ON	F	?	18	7	LV	13	S
13.35L9	ON	B	25	16	4	LV	22	S
14.C11	ON	B	34	28	9	LD	25	CV
15.E-1	ON	F	28	16	6	LV	21	CV
16.E-2	ON	F	?	19	4	2LD	18	S
17.E14	ON	B	28	?	5	LD	14	CV
18.H-4	ON	F	28	15	8	LD	20	I
19.I-4	ON	F	21	11	3	PV	11	I
20.K-4	ON	F	?	13	6	LD	16	S
21.K-4	ON	P	29	16	6	LD	22	I
22.N-4	ON	P	22	16	4	LD	18	CC
23.P0	ON	F	?	?	5	LV	11	S
24.P10	ON	F	19	20	4	PD	9	S
25.P2	ON	S	26	18	2	LD	22	S
26.P4	ON	P	27	21	5	LD	26	S
27.P5	ON	F	?	7	5	LV	17	CV
28.P6	ON	S	?	10	3	LD	12	S
29.R10	ON	F	31	12	5	LV	15	S
30.R9	ON	P	24	14	4	LV&D	21	S
31.S14	?	U	?	13	4	LV&D	18	S&I
32.SArB1A	ON	B	29	11	10	LV	27	CV
33.SArB1A	ON	B	24	24	8	LD	20	S
34.SArB1A	ON	F	?	26	6	LV	13	S
35.SArB1B	ON	P	16	11	3	LV	9	S
36.SArB1B	ON	F	?	9	3	LD	12	S
37.SArB1B	ON	F	?	?	5	LV	11	S
38.T9	ON	F	?	?	5	LV	10	S
39.Tr.2	ON	S	21	8	4	LD	21	S

Table 12. Continued.

40.Tr.2	ON	F	?	12	4	LV	16	S
41.Tr.3	ON	F	?	14	4	LD	15	S
42.Tr.3	ON	P	?	16	3	LV	18	I
43.Tr.4	ON	P	21	15	5	LD	15	CV
44.U13/V13	ON	P	22	10	6	LD	18	S
45.Unit I	ON	B	31	13	5	2LD	28	CV
46.Unit I	ON	P	?	17	6	LV	13	CV
47.Unit I	ON	P	27	14	4	LB	24	I
48.Unit II	ON	P	20	?	5	DV	19	S
49.Unit II	ON	P	24	16	5	LV	16	CV
50.Unk.	ON	F	?	32	6	LV	22	S
51.Unk.	ON	P	29	18	4	LD	14	S
52.Unk.	ON	P	28	20	4	LV	15	CV
53.W12	ON	F	?	26	5	LD&LV	35	S
54.W17	ON	P	55	44	11	DD	44	CC
55.X1	ON	F	15	19	3	LD	15	CV
56.X1	ON	P	14	?	4	LV	10	CC
57.X5	JA	B	29	16	4	LV	16	S
58.X6	ON	F	18	7	3	LV	11	CV
59.X13	ON	F	24	11	4	LD	14	S
60.X15	ON	F	?	16	5	LD	18	S
61.X19	ON	F	35	13	8	LV	19	S
62.X19	ON	P	37	17	7	LV	28	S

Abbreviations

Material Types

ON - Onondaga Chert
JA - Jasper
? - Unidentifiable Chert

Flake Types

P - Primary
S - Secondary
B - Bipolar
F - Flake Fragment
U - Unidentifiable

Utilized Edge Location

Edge	Face
P - Proximal	D - Dorsal
D - Distal	V - Ventral
L - Lateral	B - Bifacial
2L- Both Lateral Edges	

Utilized Edge Shape

S - Straight
CC - Concave
CV - Convex
I - Irregular

and those of the secondary flakes (Table 13). The mean length of the utilized edge is 18.33mm. Fifty-five of the utilized flakes exhibit unifacial-unilateral utilization, three flakes exhibit utilization on alternate faces, two flakes are unifacially and bilaterally utilized, one flake is utilized on both the lateral and distal edges, and one flake is utilized on both the dorsal and ventral faces of the same lateral edge but not in the same place (i.e. not bifacially utilized).

Table 13. MacLeod Utilized Flake Metrics

Variable	N	Mean	SD	Min	Max
Length	42	25.94	7.04	14.03	28.26
Width	54	16.86	6.52	6.60	43.62
Thickness	62	5.15	1.91	2.31	11.10
Length Util. Edge	62	18.33	6.35	8.86	43.62

Scrapers

There are only two artifacts from this category in the MacLeod site assemblage. Both are of Onondaga chert and exhibit steeply retouched edges. One is a thumbnail scraper of heated chert with retouch along

the distal edge which continues slightly along one lateral edge. It is broken on the proximal edge but is 17mm in width and 5mm in thickness.

The second artifact is a side scraper with retouch along the lateral dorsal edge. This scraper measures 53mm in length, 9.2mm in width and 4.5mm in thickness, with the retouched edge measuring 32.5mm.

Projectile Points

The MacLeod site lithic assemblage contains one complete projectile point, one almost complete point with the tip broken, two midsections of points and one point tip (Table 14). All are of Onondaga chert and one midsection has been heated. The complete point is a side-notched triangular point typical of the Middleport substage of the Late Middle Iroquoian period. This type continues into the early Late Iroquoian period in the Southern division (Wright 1966: 72). This point shows alternate bevelling on the lateral edges. The second almost complete point is an unnotched isosceles triangular point. This point type is common later in the Late Iroquoian and continues into the historic period (Wright 1966: 72). The heated midsection is a side-notched point with the tip and a

portion of the base broken off. The second midsection appears to be side-notched also, however, details are difficult to determine on this tiny fragment. The final example is a point tip measuring 31mm in length.

Table 14. MacLeod Projectile Points

	Unit	L	W	T	Stem L	Stem W	Notch L	Notch W	Mat.
1)Complete Pt.	P10	33	10.4	4.2	9	10	4.5 4.5	2.5 1.4	ON
2)Tip Missing	36L10	-	15	3.4	-	-	-	-	ON
3)Midsection	50L7	20	16	5.2	1	20	6.0 4.2	2.8 1.6	ONH
4)Midsection	50L9	-	12	3.4	-	-	-	-	ON
5)Tip	-22AA	-	-	5.0	-	-	-	-	ON

Biface Fragment

One biface fragment was found in the assemblage. It is of Onondaga chert and has been broken on the proximal and distal sides. It is 24mm in width and 6.3mm in thickness and comes from Unit 51L8.

Celts

Twenty-two ground stone artifacts from the MacLeod site are sufficiently complete to be called celts (Table 15). They appear to be made from polished amphibolite although some are very fine grained and may

be basalt (Prinz et al. 1978; J. Morton, personal communication). Seven are complete artifacts. No attempt was made to subdivide this artifact class into axes and adzes as has been done by other researchers due to the subjective nature of this classification. One artifact, #2 in Table 15, differs from the others in that it is more round in cross-section rather than rectangular. This may indicate a special hafting arrangement.

Table 15. MacLeod Celts

Provenience	Metrics (cm)						
	L	W Blade	W Pole	T	Bit Angle	Blade Angle	Longitudinal Section
1. 105E75S	9.5	-	2.8	1.8	-	55	Biconvex
2. 105E75S	11	3.2	1.6	1.4	-	-	Plano-Convex
3. 32L9	6.3	1.3	1.1	2.5	-	68	Biconvex
4. 35L7	13	1.7	1.4	3.75	-	53	Plano-Convex
5. K14	3.9	3.6	-	1.9	-	-	Biconvex
6. M-4	3.5	1.3	1.5	-	-	52	-
7. S14	7.1	2.8	-	1.3	-	30	Biconvex
8. SArB1A	7.5	3.8	-	-	-	-	-
9. Surface	9.1	3.2	3.6	2.8	86	53	Biconvex
10.Surface	10	-	-	3.7	83	49	Biconvex
11.Surface	7.2	3.6	-	-	-	-	-
12.T11	5.0	2.7	3.1	-	45	35	Biconvex
13.T14	4.9	3.8	-	1.0	-	-	Plano-Convex
14.Trench 1	9.3	2.3	-	-	-	50	Biconvex
15.Unit I	-	3.8	-	-	-	-	-
16.Unit II	5.8	3.2	3.3	1.0	-	47	Biconvex
17.Unit II	-	-	2.3	-	-	-	-
18.Unk.	6.2	-	-	2.4	78	53	Biconvex
19.Unk.	-	-	4.7	-	-	-	-
20.X5	8.1	2.8	2.7	1.4	-	45	Biconvex
21.X7	11	5.3	-	-	-	-	-
22.X10	6.8	3.4	3.7	1.4	55	37	Biconvex

In addition to the above 22 celts, 66 fragments of amphibolite exhibited grinding and polishing, indicating that these were celt fragments. A further 38 possible celt fragments of amphibolite were present, although they exhibited no evidence of polishing.

Stone Beads

Ten ground stone beads are present in the MacLeod site assemblage. Most are round and are of grey or black limestone, however, one appears to be a fossilized snail shell with a hole bored through it. All but two of the beads have holes bored through them. Eight of the beads are between 5 and 7mm in length and 10 and 13mm in width. The remaining two beads are slightly longer, measuring 13 and 15mm respectively. The bead which is 15mm long is also 7-sided and is one of the beads without a hole.

Whetstone Fragments

Eight fragments of whetstone were recovered from the MacLeod site. All fragments are flat, fine grained sandstones with extensive smoothing on one side with one exception. The exception is an amphibolite

cobble which is flat on one side and rounded on the other. The stones measure between 7 and 17mm in thickness with the exception of the amphibolite cobble which is 24mm thick.

Hammerstones

Three hammerstones and two possible hammerstones are among the assemblage at the MacLeod site. They are all granitic waterworn cobbles. Two of the hammerstones exhibit pitting on both sides and one exhibits pitting on one side only. These stones range in length from 60 to 81mm and in weight from 205 to 281 grams. Of the two possible hammerstones, one exhibits pitting on both sides and the other exhibits pitting on one side only. They are 115 and 67mm in length and 654 and 267 grams respectively.

Abrader

One abrader was recovered from Midden 1 of the MacLeod site. It measures 41mm in length, 34.5mm in width and 13mm in thickness. Extending down the middle of the stone is a 6.5mm wide and 2.5mm deep U-shaped groove, possibly resulting from abrading a cylindrical object such as an arrow or spear shaft.

Miscellaneous Ground Stone

Five of the ground stone artifacts from the MacLeod site did not fit into any of the above categories. One of the artifacts comes from Unit 35L8 and is a possible pendant. It is 39.5mm long, 26mm wide at one end and 14mm wide at the other end, 10.5mm thick and has a hole of 6.5mm in diameter bored into the wide end. The second artifact, also a possible pendant, comes from Unit X12. It is a smooth stone which is 47mm in length, 15mm in width, 7.5mm in thickness and has a groove encircling one end. The third artifact is from Unit W13 and is a tapered rough stone with striations encircling the narrow end. It is 69mm in length, 36.5mm in width at the wide end, 10.5mm at the narrow end and 26mm in thickness. The fourth artifact is a possible netsinker from Unit X16. It is a very rough stone with a length of 57mm, a width of 39mm and a thickness of 17mm and it has a notch out of one side. The final artifact is a hollowed out pebble from Unit X3. It is 31.5mm in length, 27mm in width and 8mm in thickness. It is possible that this is a natural formation, however, the hollowed out portion is very regular.

Worked Bone

A total of 196 bone artifacts were recovered from the MacLeod site (Table 16). These comprise 2.0% of the total artifacts from the site. The information presented here is from an analysis of the bone artifacts available at Scarborough Campus in 1990. It also includes information about bone artifacts which could not be relocated in 1990. These data were gathered from two analyses of the worked bone done by Michael Kerwin in 1972 and Maryjka Mychajlowycz in 1980 as well as information from Latta's 1972 site report.

Beads

Beads are the most numerous artifacts of worked bone found at the MacLeod site. Eighty-nine beads were recovered from the site, comprising 45.4% of the worked bone assemblage. There are 23 complete beads and 66 fragments in the collection. The average length of the complete beads is 23.8mm and the average diameter is 11.4mm. Seventy-four of the beads are ground and polished longbone midshafts from large avian species. Of the remaining 15 beads, three are from the midshafts of dog longbones, four are from mammal longbone midshafts and eight are from either bird or mammal longbone midshafts.

Table 16. Worked Bone, Shell and Teeth

Artifact	f	%
Bone Beads	89	45.4
Modified Deer Phalanges	28	14.3
Awls	21	10.7
Grooved & Snapped Longbones	8	4.1
Worked Rodent Incisors	6	3.1
Needles	4	2.0
Worked Fragments of Cortex	3	1.5
Unfinished or Broken Tools	3	1.5
Worked Antler Fragments	2	1.0
Spatulas	2	1.0
Worked Dog Phalanges	2	1.0
Incised Flat Bone Fragment	1	0.5
Shell Bead	1	0.5
Shell Disc	1	0.5
Pottery Marker	1	0.5
Worked Dog Radius	1	0.5
Worked Bear Incisor	1	0.5
Worked Dog Canine	1	0.5
Miscellaneous Tools	21	10.7
Total	196	99.8

Modified Deer Phalanges

A total of 28 worked deer phalanges were found at the MacLeod site. Eight of these are complete artifacts and 20 are fragments. This class of artifact has commonly been divided into two types by Iroquoian archaeologists. The modified deer phalanges have been described as either of the "cup and pin" type or the "toggle" type. McCullough (1978), in her study of the modified deer phalanges at the Draper site, found a much greater range of variation in these artifacts

which warranted a more detailed classification.

Sixteen of the 28 worked deer phalanges at the MacLeod site are complete enough to be placed into McCullough's classes (Table 17). It was found that the phalanges from the MacLeod site fit into five of McCullough's 24 classes.

Table 17. Modified Deer Phalanges

Class	Complete Frags.	Distal Frags.	Proximal Frags.	Lateral Frags.	Total
1	-	1	-	1	2
3	1	-	-	-	1
20	2	-	-	-	2
22	3	4	2	-	9
24	2	-	-	-	2
Total	8	5	2	1	16

Class 1

Diagnostic mode: Perforation of the articular ends (McCullough 1978: 17).

One distal fragment and one lateral fragment fit into this category. The distal fragment was burnt.

Class 3

Diagnostic modes: Perforation of the articular ends and ventral flattening (McCullough 1978: 19).

One complete specimen, a middle phalanx, fits into this class. The hole on the proximal articular surface measures 10mm by 7.2mm and the hole on the distal articular surface measures 4mm by 2.5mm.

Class 20

Diagnostic modes: Ventral flattening and exposure of the marrow cavity on the dorsal and ventral surfaces (McCullough 1978: 29).

Two complete specimens fit into this category. Both have two holes on the ventral surface, a larger one near the proximal end and a smaller one near the distal end. The holes on the ventral surface are a result of the extensive grinding to flatten the surface, whereas the holes on the dorsal surface are formed purposely by cutting and grinding.

Class 22

Diagnostic modes: Ventral flattening, exposure of the marrow cavity on the dorsal and ventral surfaces and dorsal grinding (McCullough 1978: 32).

This is the most numerous category at the MacLeod site as it was at the Draper site. It is composed of 9 specimens, three complete and six fragments. Of the complete specimens, two have two ventral holes while the third has two holes on both the

ventral and dorsal surfaces. One of the distal fragments has had the sides of the bone flattened also, so that the cross section is in the shape of a trapezoid. One of the proximal fragments shows burn marks at its broken end.

Class 24

Diagnostic modes: Ventral flattening, exposure of the marrow cavity on the dorsal and ventral surfaces, dorsal grinding and dorsal burn marking (McCullough 1978: 34).

This final class contains two complete specimens. One has three burn marks across the hole on the dorsal surface and it has two ventral holes. The second example has two burn marks on the dorsal surface and only one hole on the ventral surface.

Fragments

Twelve specimens were too fragmentary to put into McCullough's classes. Most were lateral fragments and it was impossible to determine if the marrow cavity was exposed. Of the 12 fragments, three are flattened ventrally, one has been flattened ventrally and had grinding on the distal end to form a wedge shape, and eight have been flattened both dorsally and ventrally. In the latter category, one example has two burn marks

on the dorsal surface and two examples are burnt.

As McCullough found at the Draper site, no patterns in provenience distribution of the worked deer phalanges were found at the MacLeod site beyond the fact that eleven of the 29 artifacts were found throughout the large road edge midden on the southeast corner of the intersection. Of the nine artifacts in Class 22, six are from this large midden. Two are from the same unit and level (X13 L3A), one is from the adjacent unit (X12 L2) and one is from the unit adjacent to X12 (W12 L1). The significance of this association is unknown since it is a midden area which has also been disturbed.

Following McCullough (1978: 105), it is hoped that with the publication of more detailed descriptions, distribution pattern data and associations with other artifacts, the purpose(s) behind the modification of the deer phalanx will become clear.

Of the traditionally defined types of worked deer phalanges, the toggle type appears to be the most chronologically and spatially significant. Since it is restricted to Southern Ontario in the Late Iroquoian period, its high frequency at the MacLeod site is not

unexpected.

It is interesting to note that of the 47 deer phalanges found at the MacLeod site, 28 or 59.6% of them are modified.

Awls

Twenty-one awls are among the bone artifact assemblage at the MacLeod site. There are eight complete awls and 13 fragments. Of the complete awls, the length ranges from 58mm to 119mm and the average is 87.7mm. One awl is made from a dog ulna, another is made from a cervidae metatarsal and the others are from mammal longbones. The largest awl differs from the rest in being completely polished and round in cross-section along the entire shaft. A deep groove encircles the butt end, so that it resembles the head of a nail. Kerwin suggests that this is likely a large needle, perhaps for fastening sinew. Of the twenty-one awls, only two are markedly carved, rather than ground down to size. These awls are rectangular in section rather than oval.

Grooved and Snapped Longbones

These eight artifacts show evidence on one end of being grooved and then snapped off. Usually the other end is wider and often it is an articular end.

Presumably these artifacts are the residue from bead production. The wider articular ends would have been disposed of to get to the more uniformly wide shaft of the longbone.

Worked Rodent Incisors

There are six worked rodent incisors from the MacLeod site collection. Five are beaver incisors and one is a porcupine incisor. The porcupine incisor could not be relocated, however, according to Kerwin, the base of the occlusal surface has been squared off and there are several wear marks diagonal to the long axis of the tooth. Two of the beaver incisors show grinding and polishing of the occlusal surface, one has been split longitudinally and shows cut marks on one end and the remaining two show a wearing away of the enamel surface.

Needles

Four fragments of needles were found; two are broken at the holes and two are small fragments. This type of artifact has been described as a 'netting needle' (Wright 1966: 189). In one specimen, the hole is round and has been drilled by rotating a pointed object. In this case, the length from the point to the hole is 47mm. In the other specimen where the hole is

present, it is an oval, made by cutting the marrow depression deep enough at the centre to penetrate the bottom of the needle. The length from the point to the hole in this case is 42mm.

Worked Fragments of Cortex

Three worked fragments of cortex are present in the collection. All three are mammal bone fragments and one is probably a cervid. This cervid fragment is 18mm long and is calcined. It is possibly an awl fragment. The second fragment is 11mm long and has been worked into an oval cross-section shape. It has been completely polished and is also a possible awl fragment. The third fragment is 42 by 5mm and it is a tubular section of a longbone cortex.

Unfinished or Broken Tools

Three unfinished or broken tools were found at the MacLeod site. One is a cervid metacarpal, measuring 75 by 14mm, which has been whittled. The second is a polished cervid metatarsal which measures 60 by 12mm. The third is a deer left metatarsal which has longitudinal wear marks and cuts. It measures 60 by 13mm and could possibly be the butt end of an awl.

Worked Antler Fragments

Two worked antler fragments were found in the collection. One is a 29mm long antler fragment which has been whittled and calcined and the second measures 126 by 27 by 19mm and appears to have been polished by handling.

Spatulas

One spatula is made from the limb bone of a large bird. One end is broken off square, while the other is bluntly rounded and flattened on both sides. Transverse scratches are found on both surfaces. The second artifact has been rounded and flattened on one end.

Worked Dog Bones

Four worked dog bones were recovered from the MacLeod site. Two of these are proximal phalanges. One has been flattened at both ends on the ventral surface and at the proximal end on the dorsal surface. The other may have been purposefully singed around the middle of the bone. The third worked dog bone is a right radius shaft. It measures 121mm in length and has been smoothed and polished. The fourth bone is a canine which has been broken longitudinally and shows

possible wear on the concave inner surface.

Incised Flat Bone Fragment

One incised flat bone fragment was found with a narrow, wavy design longitudinally along one side. The engraving was done with a fine, sharp tool. The fragment was polished all over and the top and bottom edges were smoothed off. It measures 23 mm in length, 15 mm in width and 2 mm in thickness.

Shell Artifacts

A shell bead and a shell disc were found. The bead is a cylindrical shape with a hole drilled through. It has a diameter of 10.5mm and a length of 9.5mm. The disc was cut from a section of mother-of-pearl and the edges were ground to form a circular shape. The diameter of the disc is 18.5mm and the thickness is 3mm.

Pottery Marker

The pottery marker is a section of bird bone with one end worked into a oval shape, perhaps for making punctates on the pottery. It is very smooth and regular.

Worked Bear Incisor

One worked bear incisor was found at the MacLeod site. It is broken longitudinally and shows

evidence of wear on the convex outer edge.

Miscellaneous Tools

The remaining twenty-one bone artifacts could not be placed into any of the above categories. Four fragments appear to have been sawn and are probably domestic animal bones from the historic component of the site. Two artifacts appear to have been purposefully broken on one end, five artifacts have been flattened and rounded to form blunt points on one end and one artifact is an incisor which appears to have been polished. One large mammal bone has been abraded flat on one end and one fragment shows striations on it. One artifact is a fish vertebrae which appears to be polished and may be a bead, and two fragments are highly polished. One fragment of a mammal bone shows evidence of whittling and one is a sliver of the shaft of a longbone. One artifact is a possible needle, however, no hole is present. Approximately halfway along the artifact it narrows from a width of 6.2mm to a width of 2.6mm towards the end with the point. The final artifact is a possible wedge. It is broken at one end and the other end flattens to a wedge shape with a blunted point. This artifact has a width of 6.8mm and a thickness of 3.2mm.

Native Copper

Two tools from the MacLeod site are made from native copper. The first, from Unit -22D on the northeast corner of the intersection, resembles a curved knife with a tang. The copper has been cold hammered and layering is visible in several places. The tang may have been used as a handle or for hafting to bone or wood. The measurements of the tool are as follows:

Length: 82mm

Width of blade: 13mm at point to 16mm near tang

Width of tang: 8mm

Length of blade: 50mm

Length of tang: 30mm

Thickness: 1-2.5mm

The second tool, found in Unit X9 in the midden area on the southeast corner of the intersection, is a curved hook with pointed ends. It is rectangular in section and has a rough and irregular surface. This tool also shows layering in places where the copper has been joined by hammering. The length of the tool is 56.5mm and the width varies from 2 to 4mm.

The first tool from Unit -22D was submitted to M. Van Oosten of the Department of Metallurgy and Materials Science, McMaster University, for testing by emission spectroscopy. It was confirmed to be 99.74% copper, however, the results of the trace element analysis were inconclusive as to whether it was native copper or European copper. Both artifacts were then submitted to L. Pavlish and R. Hancock of the Department of Physics, University of Toronto for analysis by neutron activation. These researchers have found that the trace elements of gold and silver together cause native copper and European copper to cluster separately. According to their analysis, the two artifacts are within the native copper field (Figure 9). They also found that there were no detectable amounts of indium in either tool. This further supports the conclusion that these tools are native copper since they have found no indium to date in other samples of native copper.

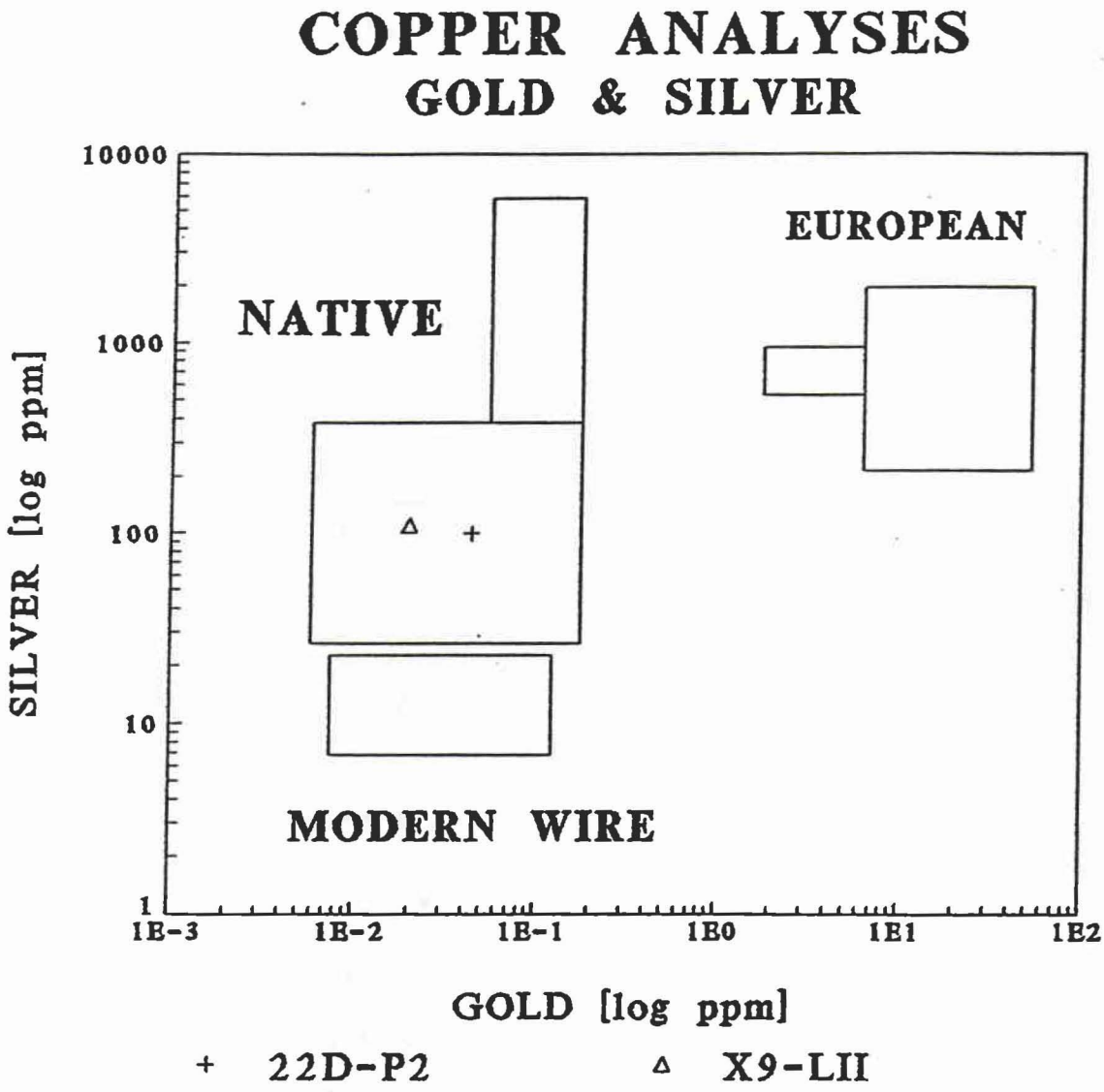


Figure 9. Analysis of Native Copper

Source: Pavlish and Hancock

Historic Artifacts

In addition to the prehistoric assemblage at the MacLeod site, 452 historic artifacts were found (Table 18). The metal category consists of artifacts of iron, mostly nails, with one exception of copper or brass. The glass category consists mostly of flat pieces; however, the top of an irregularly shaped, blown bottle is also present.

The historic material appears to cover a wide range of time from two early Kaolin pipe fragments to a plastic baseball bat. Ploughing of the site has caused considerable mixing of the material and historic material was found at all levels of the excavation.

One of the Kaolin pipe fragments is part of a bowl with the word THOMAS on it with the S next to the rim. The other Kaolin fragment is a pipe stem with a mouthpiece. There is no identification on this piece and the bore measures 2mm. The diameter of the stem is 5mm at the mouthpiece and 7mm at the other end.

Table 18. MacLeod Site Historic Artifacts

Material	f	%
Metal	157	34.7
Glass	126	27.9
Ceramic	124	27.4
Coal	25	5.5
Plastic	17	3.8
Slate Pencil	1	0.2
Slate Fragment	1	0.2
Shingle Fragment	1	0.2
Total	452	99.9

Chapter IV

Faunal and Floral Analyses

Faunal Analysis

Analysis of the faunal sample from the MacLeod site was carried out in 1980 by M. Mychajlowycz and in 1990 by M. Murray. The information presented below is a compilation of the two analyses which was provided by M. Murray. The faunal sample was collected from the ploughzone by trowelling in six inch (15.24cm) levels for most of the site, however, the areas of the two longhouses were cleared by bulldozer and then shovel shined and very little faunal material was recovered from these areas. Observations were made on 3373 elements, 1005 of which were identified to the zoological taxa of family or lower (Tables 19 and 20). These 1005 elements represent 29.8% of the total sample of analyzed bone. This small percentage is due to the fragmentary nature of the sample which may be attributed to extensive ploughing of the site and destruction by rodents and carnivores. It has also been suggested that the spiral fractures on many

Table 19. MacLeod Site Faunal Classes

Class	f	%
Mammalia	1693	50.19
Pelycepoda	450	13.34
Osteichthyes	432	12.81
Aves	393	11.65
Gastropoda	70	2.08
Reptilia	36	1.07
Amphibia	9	0.27
Anthozoa	1	0.03
Unidentifiable	289	8.57
Total	3373	100.01

Table 20. Elements Identified to Family or Lower

Class	f	%
Mammalia	686	68.26
Aves	125	12.44
Osteichthyes	70	6.97
Gastropoda	44	4.38
Reptilia	36	3.58
Pelycepoda	35	3.48
Amphibia	9	0.90
Total	1005	100.01

elements indicate breakage in order to facilitate marrow extraction (Murray 1990: 3).

As can be seen from Table 19, mammals dominate the faunal sample. This could be a result of the

recovery method employed at the MacLeod site. Lennox et al (1986) have shown that the frequencies of classes of faunal remains are greatly influenced by the recovery technique, the relative importance of fish remains increasing with the use of flotation. As has been found in other faunal assemblages, the apparent dominance of the mammal class at the MacLeod site may be due to the use of non-flotation recovery techniques.

Seven hundred and sixty-one elements were identified to species (Tables 21,24,26,28-30). This sample is dominated by mammals (75.7%) followed by birds (10.9%) and fish (4.2%), with smaller frequencies of the other faunal classes. The classes are discussed individually below. Also presented in these tables is a minimum number of individuals (MNI) count for each species. The figures were arrived at "by counting the most frequently occurring single element and then siding each" (Murray 1990: 3). For example, "12 elements of snowshoe hare were identified, two of which were left calcanei, therefore two individuals were identified" (Murray 1990: 3). MNI counts are presented with the caution that there has been criticism of this method. Lennox et al (1986: 101) has summarized drawbacks of the MNI technique. These drawbacks

include the fact that MNI is a function of sample size, MNI totals differ between faunal classes and MNI counts are not a reflection of the actual numbers of individuals present on the site.

Mammalia

Five hundred and seventy-six mammal elements were identified to species (Table 21). Twenty-one species were found with an MNI count of 47 individuals. The dominant species in terms of number of elements are domestic dog, white tailed deer, woodchuck and muskrat. The highest MNI counts are dog and muskrat (6), followed by woodchuck and eastern chipmunk (5) and white tailed deer (4).

Table 22 outlines the preferred habitats of the mammal species present in the faunal assemblage. This indicates access to diverse environments, from semi-open country (deer, fox, chipmunk, woodchuck) to aquatic areas (moose, beaver, otter, mink, muskrat and raccoon) to coniferous and deciduous forests (hare, skunk, squirrel, fisher and bear).

Body portions

Table 23 shows the portions of mammalian elements which are present in the MacLeod site faunal sample. Axial elements form the lowest percentage of

Table 21. MacLeod Site Identified Mammalia Elements

Zoological Name	Common Name	Total Elements	MNI	% of Total ID Bone	% of MNI Total
Alces americana	moose	1	1	0.10	0.70
Canis familiaris	dog	214	6	21.29	4.30
Castor canadensis	beaver	32	2	3.18	1.40
Cervus canadensis	elk/wapiti	2	1	0.20	0.70
Homo sapiens	human	11	1	1.09	0.70
Lepus americanus	snowshoe hare	12	2	1.19	1.40
Lontra canadensis	river otter	2	1	0.20	0.70
Marmota monax	woodchuck	53	5	5.27	3.60
Martes americana	marten	3	1	0.30	0.70
Martes pennanti	fisher	2	1	0.20	0.70
Mephitis mephitis	skunk	1	1	0.10	0.70
Mustela vison	mink	2	1	0.10	0.70
Odocoileus virginianus	white tail deer	108	4	10.75	2.80
Ondatra zibethicus	muskrat	36	6	3.58	4.30
Procyon lotor	raccoon	4	1	0.40	0.70
Sciurus carolinensis	grey squirrel	21	2	2.09	1.40
Tamias striatus	eastern chipmunk	25	5	2.49	3.60
Tamiasciurus hudsonicus	red squirrel	17	3	1.70	2.10
Urocyon cinereoargenteus	grey fox	6	1	0.60	0.70
Ursus americanus	black bear	18	1	1.79	0.70
Vulpes vulpes	red fox	6	1	0.60	0.70
Total		576	47	57.01	33.30

Table 22. Habitats of Identified Mammal Species

Species	Ave. Weight (Adult male)	Habitat
moose	725-1400kg	secondary growth of boreal forests, near rivers and lakes

Table 22. Continued.

beaver	15-35kg	marshes of forested regions & wetlands of swamps, slow moving streams; lakes
elk/wapiti	265-500kg	prefers open areas such as marshy meadows & river flats but also found in coniferous forests
snowshoe hare	1.5kg	mixed forests, swamps, riverside thickets
river otter	4.5-13.5kg	near lakes, rivers and marshes
woodchuck	3.5kg	rolling pastures, open woods, ravines
marten	995g	coniferous forests
fisher	3.7kg	heavy mixed forests
skunk	1.4-6.4kg	forests, brushy areas, hedgerows
mink	2.1kg	near water in brush & wood areas
whitetailed deer	85.5-95.9kg	secondary growth woods, cedar swamps
muskrat	0.7-1.8kg	near streams, marshes and lakes
raccoon	5.4-13.6kg	wooded areas near streams or lakes
grey squirrel	0.5kg	deciduous or mixed mature forests
eastern chipmunk	97g	hardwood forest, semi-open country

Table 22. Continued.

red squirrel	0.23kg	deciduous woodland, evergreen forests
grey fox	2.7-8.2kg	deciduous woods, especially near water
black bear	90-225kg	heavily wooded areas
red fox	2.7-7.3kg	brush fringes bordering meadows, semi-open country

Sources: Banfield (1977), Burt (1972), Cameron (1977), Euler (1977), Douglas & Strickland (1977) and McDonnel (1977) in Lennox et al (1986); Dagg (1974).

body portions, indicating that only smaller body portions were carried back to the site. This can be seen with the larger mammals such as deer, whereas all body parts are represented in the domestic dog remains. This is to be expected as dogs would be available at the site.

Cultural Alteration and Age

Twenty-one percent of the MacLeod site mammal sample was thermally altered. Only 0.5% of the mammalian elements have butchering marks on the surface of the bone. It is interesting to note that of the 108 white tailed deer elements recovered from the site, 47 (43.5%) are phalanges and of the phalanges, 28 (59.6%)

are worked.

Only 91 (15.8%) of the 576 mammal elements could be placed into age categories: adult (22.0%), immature (51.6%), sub-adult (5.5%) and juvenile (20.9%).

Two pathologies were found in the mammal sample from the MacLeod site. A hypercementosis was found on

Table 23. Proportions of Mammalian Elements

Portion	Element	f	Total #	%
cranial	skull/teeth	190	190	33.0
	clavicles	2		
	scapulae	9		
	humeri	15		
forelimb	ulna	17	102	17.7
	radii	16		
	carpals	7		
	metacarpals	36		
	sterna	1		
axial	vertebrae	41	72	12.5
	ribs	30		
	innominates	19		
	femora	32		
	patellae	1		
hindlimb	tibias	23	115	20.0
	fibulas	3		
	tarsals	3		
	metatarsals	16		
	calcanea	15		
	talus	3		
misc.	phalanges	97	97	16.8
Total		576		100.0

one deer molar. This is a minor pathology which consists of extra nodules of cementum on the exterior surface of the root. This occurs when cementum continues growing after the root has closed (Mychajlowycz 1980). A muskrat lower incisor is also thought to be pathological because "its occlusal end twists laterally more than seems normal, its surface is uneven in several places, and its orange-brown colour appears to be darker and more uniform than is usual" (Mychajlowycz 1980: 52). It was suggested to Mychajlowycz (1980: 52) that this could be the result of disease or nutritional deficiency.

Aves

Eighty-three avian elements were identified to 18 species and 22 individuals were isolated (Table 24). Passenger pigeon is the most common element found on the site, followed by wild turkey, pigeon hawk and Canada goose. The highest MNI count is passenger pigeon (4), followed by wild turkey (2). The remainder of the species have an MNI count of one.

The habitat and the range of the identified avian species are presented in Table 25. The majority are permanent residents, with a few such as the

Table 24. MacLeod Site Identified Aves Elements

Zoological Name	Common Name	Total Elements	MNI	% of Total ID Bone	% of MNI Total
Accipiter cooperi	cooper's hawk	1	1	0.10	0.70
Anas acuta	pintail	2	1	0.20	0.70
Anas rubripes	black duck	1	1	0.10	0.70
Aythya marila	greater scaup	2	1	0.20	0.70
Bonana umbellus	ruffed grouse	4	1	0.40	0.70
Branta canadensis	canada goose	10	1	1.00	0.70
Bucephala albeola	bufflehead	2	1	0.20	0.70
Buteo jamaicensis	red tail hawk	1	1	0.10	0.70
Cyanocitta cristata	blue jay	1	1	0.10	0.70
Dendrocopos villosus	hairy woodpecker	2	1	0.20	0.70
Ectopistes migratorius	passenger pigeon	22	4	2.20	2.80
Falco columbarius	pigeon hawk	11	1	1.09	0.70
Gavia immer	common loon	1	1	0.10	0.70
Grus canadensis	sandhill crane	1	1	0.10	0.70
Meleagris gallopavo	turkey	19	2	1.90	1.40
Mergus serrator	red breasted merganser	1	1	0.10	0.70
Podiceps grisgena	red necked grebe	1	1	0.10	0.70
Sternella magna	eastern meadowlark	1	1	0.10	0.70
Total		83	22	8.29	15.40

Table 25. Identified Avian Species

Species	Range	Habitat
Cooper's Hawk	permanent resident	coniferous & deciduous forests
Pintail	summer	marshes & ponds
Black Duck	permanent	marshes, lakes, streams, estuaries
Greater Scaup	winter	lakes, bays & ponds
Ruffed Grouse	permanent	deciduous forest, pasture
Canada Goose	permanent	lakes, bays, rivers, marshes
Bufflehead	winter	lakes & ponds
Red Tail Hawk	permanent	
Blue Jay	permanent	oak forests
Hairy Woodpecker	permanent	deciduous forests
Passenger Pigeon	summer	now extinct
Pigeon Hawk	permanent	coniferous forests
Common Loon	fall	forested lakes & rivers
Sandhill Crane	summer	freshwater marshes, ponds
Turkey	permanent	open woodlands
Red Breasted Merganser	winter	lakes & ponds
Red Necked Grebe	summer	ponds & lakes
Eastern Meadowlark	summer	meadows & pastures

Source: Godfrey (1986) in Murray (1990).

pintail, the passenger pigeon and the sandhill crane only available in the summer. The greater scaup, the bufflehead and the red breasted merganser are available in winter and the loon is available in the fall. Most of the species are available in aquatic environments with a few such as the cooper's hawk, the ruffed grouse, the woodpecker and the pigeon hawk available in coniferous or deciduous forests.

Four (4.8%) of the eighty-three avian elements are thermally altered and two (2.4%) show evidence of butchering. No pathologies are present in the avian sample. The age of the avian sample can only be described as immature or older with the exception of all eleven of the pigeon hawk elements which are identified as immature.

Osteichthyes

Thirty-two fish elements could be identified to 12 species and 15 individuals were isolated (Table 26). The highest number of elements found were of yellow perch, followed by brown bullhead, channel catfish and sauger. White sucker, channel catfish and yellow perch have an MNI count of two, while the rest of the species present have a count of one.

Table 27 outlines the habitat and the season

and location of spawning for the identified fish species. All of the species spawn in the spring to early summer and would be the most available at that time. All of the species would have been available in nearby Lake Ontario and some such as the catfish and the yellow perch may have been taken from Goodman Creek beside the site or downstream in the larger Oshawa Creek.

Table 26. MacLeod Site Identified Osteichthyes Elements

Zoological Name	Common Name	Total Elements	MNI	% of Total ID Bone	% of MNI Total
Amia calva	bowfin	2	1	0.20	0.70
Anguilla rostrata	american eel	2	1	0.20	0.70
Catostornus commersoni	white sucker	2	2	0.20	1.40
Esox masquinongy	muskellunge	1	1	0.10	0.70
Ictalurus nebulosis	brown bullhead	5	1	0.50	0.70
Ictalurus punctatus	channel catfish	4	2	0.40	1.40
Lepisisteus osseus	longnose gar	1	1	0.10	0.70
Micropterus dolornieui	smallmouth bass	2	1	0.20	0.70
Micropterus salmoides	largemouth bass	1	1	0.10	0.70
Moxostoma anisurum	silver redhorse	1	1	0.10	0.70
Perca flavescens	yellow perch	8	2	0.80	1.40
Stizostedion canadense	sauger	3	1	0.30	0.70
Total		32	15	3.20	10.50

Table 27. Habitat of Identified Fish Species

Species	Ave. Body Length (mm)	Habitat	*Season	Location
bowfin	457-610	shallow, weedy bays	P	shallow waters
american eel	610-915	mud-bottomed lakes & rivers		Atlantic Ocean
white sucker	305-508	warm, shallow lakes & bays	P	shallow streams
muskellunge	711-1220	warm, vegetated lakes & rivers	P	shallow water
brown bullhead	203-265	weedy, muddy lakes & ponds	P	mud bottomed lakes
channel catfish	0.9-1.8kg	cool, clear lakes & rivers	P/S	large rivers
longnose gar	915-1220	shallow, weedy lakes & streams	P/S	shallow water
smallmouth bass	203-381	moderately deep lakes & rivers	P	gravelly lakes & rivers
largemouth bass	203-381	small, shallow lakes & bays	P/S	muddy bottoms
silver redhorse	305-381	lakes & large rivers	P	swift streams
yellow perch	102-254	shallow lakes, quiet rivers	P	shallows of lakes & stream
sauger	0.45-0.9kg	lakes, large sluggish rivers	P	shallow water

Sources: Scott (1967) and Scott and Crossman (1973)
* P=Spring; S=Summer

A census of fish species specific to Goodman Creek has not yet been completed (Central Lake Ontario Conservation Authority (C.L.O.C.A.): personal communication). However, included in a list of the common fish of the C.L.O.C.A. watershed (C.L.O.C.A. n.d.) are the american eel, white sucker, brown bullhead, smallmouth and largemouth bass and yellow perch which have also all been found in the prehistoric sample from the MacLeod site. The C.L.O.C.A. watershed extends from the Town of Whitby on the west, through the City of Oshawa, to the Town of Newcastle on the east.

Also in the list of common fish of the C.L.O.C.A. watershed are many different species of minnows (C.L.O.C.A. n.d.). These species were not discovered in the archaeological sample, but this may be due to the recovery technique employed at the MacLeod site. Evidence of minnow species has been recovered from the Wiacek site where flotation was the major technique for the recovery of fish remains (Lennox et al 1986).

None of the fish elements show evidence of thermal alteration. While this has often been explained in terms of the ethnographically documented

taboo against throwing fish bones into a fire, it could also be explained in terms of the recovery techniques employed at the site. Lennox et al (1986: 129) state that faunal material recovered through trowelling, which was the technique employed at the MacLeod site, is biased in favour of non-calcined remains. Lennox et al (1986) found that 19% of the fish remains from the Wiacek site showed evidence of thermal alteration. While this may mean that the taboo was only in effect at fishing stations and not at the village, it may also be due to the fact that many of the fish remains at the Wiacek site were recovered through flotation.

Reptilia

All identified species of reptilia were turtle. Sixteen elements belonging to four species were identified (Table 28). The MNI count was one from each species for a total of four individuals. Turtles are seasonally available from April to mid September and are found in or near quiet water, ponds and slow streams. The map turtle prefers rivers and large bodies of water (Carr 1952 in Murray 1990).

One of the turtle elements shows thermal alteration.

Pelycepoda

In total, thirty-five elements of pelycepoda were identified to family or lower. Thirteen elements of two species of marine mollusc, the common oyster and the blue mussel, were found. These two species are a result of the historic occupation of the site. Of the

Table 28. MacLeod Site Identified Reptilia Elements

Zoological Name	Common Name	Total Elements	MNI	% of Total ID Bone	% of MNI Total
Chelydra serpentina	snapping turtle	4	1	0.40	0.70
Chrysyms picta	painted turtle	10	1	1.00	0.70
Emydoidea blandingi	blandings turtle	1	1	0.10	0.70
Graptemys geographica	map turtle	1	1	0.10	0.70
Total		16	4	1.60	2.80

Table 29. MacLeod Site Identified Pelycepoda Elements

Zoological Name	Common Name	Total Elements	MNI	% of Total ID Bone	% of MNI Total
Eliptio complanatus	eastern eliptio	8	3	0.80	2.10
Eliptio dilatus		1	1	0.10	0.70
Total		9	4	0.90	2.80

remaining sample, nine elements could be placed in two fresh water species, Eliptio complanatus and Eliptio dilatus, with a total MNI count of four (Table 29).

Gastropoda

Four species of terrestrial snail and two species of aquatic snail were identified. These elements are considered to be intrusive to the site and do not represent a food source. The terrestrial species are Anguispira alternata (9 elements), Triodopsis denotata (1 element), Triodopsis tridentata (3 elements) and Triodopsis albolabris (14 elements). The three species of Triodopsis are woodland residents and the Anguispira alternata is a widely spread land snail (Oughton 1948 in Murray 1990).

The two species of freshwater snail are Campeloma decisum (1 element) and Goniobasis livescens (5 elements). These two species inhabit the mud bottoms of lakes, rivers and streams.

Amphibia

Nine elements of amphibia were identified to Anura sp., the order of frogs and toads. One element could be identified to Bufo sp. (toad) and one element to Rana sp. (frog). As both frogs and toads hibernate in winter, they would have been seasonally available

from April to September.

Intrusive Species

In addition to the marine molluscs and the terrestrial and aquatic snails, two species of voles, one species of mice and four species of domestic farm animals were considered to be intrusive. Three elements each of the two species of voles, Microtus pennsylvanicus and Clethrionomys gapperi, were identified and one element of the mouse species, Peromyscus sp., was identified.

Forty-five elements of domestic farm animal were identified to four species: cow, horse, chicken and pig (Table 30). In addition, two elements which could be identified as domestic sheep or goat were found.

Table 30. MacLeod Site Domestic Farm Animals

Zoological Name	Common Name	Total Elements	MNI	% of Total ID Bone	% of MNI Total
Bos Taurus	cow	9	1	0.90	0.70
Equus sp.	horse	1	1	0.10	0.70
Gallus gallus	chicken	23	3	2.30	2.10
Sus scrofa	pig	12	1	1.20	0.70
Total		45	6	4.50	4.20

Human Remains

Eleven elements of human bone were present in the faunal sample from the MacLeod site. Five of these elements are teeth: one incisor, one premolar and three molars. One of the molars has a large caries on the middle third of the mesial surface. Mychajlowycz (1980: 53) states that it is so deep that the pulp cavity is exposed in one spot which would have made it very painful for the tooth's owner. Four cranial elements are also present, two occipital and two parietal. The final two elements are post-cranial, one scapula fragment and one phalanx fragment. The phalanx fragment has been thermally altered. The scapula fragment came from a unit in Alpha House and one molar came from Unit 4 in Beta House and the remainder of the elements came from the large roadside midden on the southeast corner of the intersection or the midden just to the west of Alpha House.

Scattered human remains on Iroquoian sites traditionally have been interpreted as an indication of cannibalism. A clear statement has not been made, however, on what exactly would constitute evidence for cannibalism. Some authors have seen the mere presence of scattered human remains to be suggestive of

cannibalism. Wintemberg (1928) has stated that the association of human remains with the remains of food animals may indicate the practice of ceremonial cannibalism. Noble (1975) and Wright (1974) have noted the presence of human remains in refuse contexts and have interpreted this as evidence of cannibalistic practices.

Other authors have required evidence of the alteration of the scattered human bone to indicate cannibalism. This alteration ranges from a "disarticulated and fragmented nature" (Pendergast 1984: 53) of human remains at the Beckstead site, to "the scorched, hacked, and cut bones that show traces of boiling" (Wintemberg 1937 :58) at the Lawson site, and the breaking and hacking of bones and evidence of boiling at the Roebuck site (Wintemberg 1936: 120). Burnt human bone and the presence of butchering marks also have been seen as evidence of cannibalism by Jamieson (1983). Molto et al (1986: 58) find no evidence for cannibalism at the Van Oordt site, however, they state that such evidence would take the form of "burned or shattered bone, longitudinal striae on long bone shafts, etc.".

Alternative, and perhaps more plausible,

interpretations than that of cannibalism are present in the literature. Pendergast (1984: 53), after suggesting that the disarticulated and fragmented nature of the human remains indicates the likelihood of cannibalism, then states that "nevertheless it seems likely that the mutilation may be, in part, post mortem and attributable to scavengers including village dogs whose remains occur in the faunal collection". This mutilation would have occurred "before the human remains were covered by the natural silting-in of the ditch and by the deposition of refuse" (Pendergast 1984: 53).

Other authors (Lennox et al 1986; Spence 1984; Jamieson n.d.) have suggested that certain elements, especially teeth and finger and toe bones, could easily have been lost during removal of primary burials to their secondary location, and the lost elements could have been swept into hearths or middens or remained in pits within the longhouse.

Burning and butchering marks could be evidence of alternative burial practices. For example, butchering marks could be evidence of the defleshing of the corpse. Tooker (1964) mentions ethnographic evidence of this practice among the Huron. She states

that if a person died by drowning or freezing, the body would be defleshed and "this flesh and the entrails were then thrown into the fire and the body, stripped of its flesh, was thrown into the ditch" (Tooker 1964: 132). Tooker also notes that if a Huron died a violent death, the body was burned or buried immediately and the bones were not reburied at the Feast of the Dead. Also, "if a person died outside of Huronia, the Indians burned the body and extracted the bones to take back with them" (Tooker 1964: 132). These alternative burial methods may account for some of the burnt bone and butchering marks found in scattered human remains.

Another alternative interpretation for the presence of stray human remains has been suggested by Wintemberg (1936: 120). At the Roebuck site, the presence of burials was noted in the refuse pits and Wintemberg states that the stray human bone may have been from the burials which were turned up by the plough. This also may be the case at other sites where the burials may not have been located.

Scattered human remains should be studied more carefully before an interpretation of cannibalism is made. The data that would constitute evidence for cannibalism should be clearly defined and the

alternative interpretations discussed above, as well as others, should be considered if they would better fit the data. Physical anthropologists should be consulted to gather more information from the data, such as whether the bone was dry, defleshed or covered with flesh when burning occurred (for example, see studies by Binford 1963 and Saunders and Keenleyside 1986), or whether butchering marks are likely to be indicative of defleshing. For being such a politically and emotionally loaded concept, the word "cannibalism" has been used too lightly and without adequate support from the data in Iroquoian archaeology.

Seasonal Exploitation

Murray (1990) suggests that the faunal sample from the MacLeod site indicates a year round pattern of exploitation. The species of pelycepoda, amphibia, reptilia and fish as well as grebes, passenger pigeon, meadowlark, woodchuck, chipmunk and skunk identified at the MacLeod site would have been seasonally available from early spring to mid fall. Species such as pintail duck and sandhill crane would have been hunted during their spring and fall migrations through the area.

Several species of duck such as scaups,

buffleheads and mergansers as well as fish would have been available during the winter. Species such as Canada geese, black duck, hawks, ruffed grouse, jays, woodpeckers, snowshoe hare, grey and red squirrels, beaver, muskrat, dog, bear, raccoon, mink, marten, otter and cervid species would have been obtainable year round. Murray (1990) points out that those species which are most frequent at MacLeod (dog, muskrat and white tailed deer) are available year round.

Floral Analysis

Analysis of the floral sample from the MacLeod site was carried out in 1990 by Stephen Monckton. Most of the sample was collected manually and consists of carbonized maize and bean remains, however, flotation samples from four units as well as six small vials of soil from Unit E-2 were also available for analysis. The bucket method of flotation was used to process the soil samples and a 425 micrometer screen was employed to collect the light fractions. In order to facilitate scanning of each sample under a stereoscope, the light fractions and small vials of soil were passed through a series of screens (Monckton 1990).

Floral remains from the MacLeod site are summarized in Tables 31 and 32. Charcoal dominates the sample by weight, followed by maize and bean remains (Table 31). In terms of absolute numbers, maize is the most numerous followed by bramble, chenopod and bean remains (Table 32).

Table 31. MacLeod Plant Remains
Component Weights (g)

Remains	Manually Collected	Flotation Samples	Soil Samples	Total
Wood	*	*	*	*
Charcoal	1.70	23.41	0.00	25.11
Maize	20.83	0.24	0.00	21.07
Cupules	3.00	0.37	0.00	3.37
Maize Stem	0.00	0.06	0.00	0.06
Bean	1.18	0.02	0.00	1.20
Unidentified	0.57	0.05	0.00	0.62
Total	27.28	24.15	0.00	51.43

* = <.01g

Table 32. MacLeod Plant Remains
Charred Seeds
Absolute Numbers

Remains	Manually Collected f	%	Flotation Samples f	%	Total f	%
Maize	265	95.32	2	2.50	267	74.58
Bean	13	4.68	1	1.25	14	3.91
Bramble	0	0.00	28	35.00	28	7.82
Black-nightshade	0	0.00	5	6.25	5	1.40
Pincherry	0	0.00	1	1.25	1	0.28
Chenopod	0	0.00	25	31.25	25	7.00
Knotweed	0	0.00	1	1.25	1	0.28
Sumac	0	0.00	2	2.50	2	0.56
Unknown	0	0.00	4	5.00	4	1.12
Unidentified	0	0.00	11	13.75	11	3.07
Total	278	100.00	80	100.00	358	100.02

Wood Charcoal

A total of 25.11g of wood charcoal was recovered from the MacLeod site sample. Evidence of maple, beech, elm and ash were found (Monckton 1990). All of these species are common in the Deciduous Forest Region of southern Ontario in which the MacLeod site is

located. As previously mentioned (Chapter I), an early survey report of the township of Whitby mentions the predominance of maple, beech and elm (Jones 1795). Maple and elm prefer moist soils such as those found on stream banks and valleys (Little 1980) and probably would have been available in the Goodman Creek valley to the east of the site. Maple and beech are characteristic of mature forests and elm and ash prefer mixed hardwood forests (Little 1980).

Cultigens

The majority of the floral sample from the MacLeod site consists of maize (Zea mays) kernels (21.07g). 265 kernels were collected manually and 2 kernels were found in the flotation samples. Monckton (1990) also found maize cupules (3.37g) and maize stem portions (0.06g). He states that the maize specimens are Eastern Eight Row (or Eastern Complex) which is the typical form in the northeast (Monckton 1990).

Of the 267 kernels found, 247 were recovered from Midden 3 along the east side of Thornton Road. Of these, 128 were found in one unit, Unit X10. All of the kernels from Midden 3 were manually collected. Eight kernels were found in Midden 2, one kernel was recovered from the northeast corner of the intersection

and the remainder were from the southeast corner of the intersection or from unknown provenience.

Fourteen bean (Phaseolus vulgaris) cotyledons, weighing 1.20 grams, were recovered from the floral sample at the MacLeod site. Thirteen of these were manually collected and one was recovered from a flotation sample from Unit E-2. Nine of these cotyledons were found in Midden 3, seven of these from Unit X10. One cotyledon was from Midden 2 and the remaining four had unknown provenience.

Wild Seeds

Seventy-seven wild seeds were recovered from the MacLeod site floral sample. All were found in the flotation samples.

Bramble are the most numerous seeds, comprising 35% of the seeds obtained from the flotation sample. Twenty-seven were found in Midden 2 and one was recovered from Unit I-4. Brambles include raspberries, dewberries and blackberries and may have been used as fruit or for tea (Peterson 1978).

Chenopod seeds account for 31.25% of the flotation sample. Monckton (1990) states that they are probably of the species Chenopodium berlandierii. The degree to which this plant was used is uncertain but it

was probably used as a green vegetable (Monckton 1990; Erichsen-Brown 1979). All 25 seeds were recovered from Midden 2.

Five black nightshade seeds were found in the flotation sample. Again, all were from Midden 2. Black nightshade is edible when ripe and could have been used as a fleshy fruit (Monckton 1990).

Two sumac seeds (Rhus typhina) were recovered from Midden 2. Among other uses, this plant can be used for medicine or beverages (Erichsen-Brown 1979).

One knotweed seed (Polygonum sp) was found in Midden 2. The young shoots may have been used as a vegetable and the plant also has a use as a medicine (Erichsen-Brown 1979; Peterson 1978).

A single pincherry seed was also recovered from Midden 2. This may have been used as a food, medicine or for beverages (Erichsen-Brown 1979).

Habitat Inference

The wild plants identified in the floral sample from the MacLeod site would have been available within the cultivated field areas. Chenopod, knotweed and black nightshade would have been found in the open, cultivated fields. Sumac, bramble and pincherry would have occupied the forest edges, between the forests and

the cultivated fields (Yarnell 1984).

The exploitation of disturbed and open areas is indicated by this floral sample.

Seasonality

The plant species in this floral sample would have been available from spring to fall. Bramble and sumac would have been available from June to September and pincherry from August to September. Young shoots of the knotweed and chenopod would have been available in the spring and the cultigens would have been harvested in the fall. A year round occupation could have been supported through the drying and storing of many of these species.

Chapter V

Interpretations

In this chapter, the rimsherd attribute analysis of the MacLeod site is compared to 30 other sites in southern Ontario, following Ramsden (1977). Shared characteristics of sites and groups of sites (as defined by Ramsden 1977) are noted and social and chronological relationships are discussed. A brief comparison of non-ceramic data is included in an attempt to overcome the bias of using only one artifact type in the analysis. A group called the Lake Ontario Iroquois is tentatively delineated based on similar frequencies of certain rimsherd attributes and similarities in the non-ceramic data.

Sites in the geographical area and of the same time period as the MacLeod site traditionally have been called Southern Division Huron sites. Wright (1966) has defined Northern and Southern Division Huron sites based largely on geographical position and frequency of certain ceramic types. He states that these divisions are "geographic variations within a common complex"

(1966: 66) and that the only means of effectively separating the two divisions is by the high frequency of the Lalonde High Collar ceramic type in the Northern division. The similarity between the two divisions is due to "their common Middleport antecedents as well as continued contacts with each other" (Wright 1966: 66).

The view of Late Ontario Iroquoian prehistory stated above has been criticized. First, there is disagreement with the broad use of the term 'Huron'. This term has been used archaeologically to define an assemblage based largely on the nature of its ceramics. It has been argued that the term 'Huron' has been misunderstood and that it may not have described a unified social or political group (Ramsden 1977). Ramsden believes that the group defined as 'Huron' was actually much more complex. Second, several authors have argued for the use of attribute analysis rather than typological analysis (Emerson 1968; Ramsden 1977; among others). Ramsden (1977) states that individual ceramic attributes are more sensitive indicators of the complex patterns which he believes are present in the group defined as 'Huron' than the more grossly formulated types. Therefore, Ramsden (1977: 27) recommends that

"we must make ourselves aware of the

> possible complexities of prehistoric time and space relationships and, in particular, we must recognise the heterogeneity within the prehistoric Huron, not in terms of two divisions, but of many..."

In order to study these complexities, Ramsden (1977) identified thirteen socially significant attributes on the basis of spatial clustering and bimodality independent of time. These attributes are: collarless plain ware, collarless decorated ware, collared plain ware, total stamping technique, opposed collar motif, hatched collar motif, neck decoration, interior decoration, lip decoration, frontal lip notching, sub-collar decoration, concave-convex interior rim profile, and high collars (Ramsden 1977: 158-165). To determine which sites are related socially, the sum of the differences of the frequencies of these thirteen attributes is calculated. The lower the number, the more closely related are the two ceramic samples. Groups of socially related sites are then produced through the technique of Single-link cluster analysis (Ramsden 1977:58-59).

Single-link or Nearest Neighbour cluster analysis is used in the present analysis following the methods described by Ramsden (1977: 59) and Lennox and Kenyon (1984: 19). It is an agglomerative heirarchical

clustering technique in which the most similar pair of units in the sample are joined. The unit with the next closest similarity to one of the units in this pair is joined next, and the procedure continues until a unit to be joined is already part of another group at a more similar level. At this point, entire groups are fused (Hodson 1969: 305; Everitt 1980: 25). Therefore, "the distance between groups is defined as the distance between their closest members" (Everitt 1980: 25).

Single-link cluster analysis is the simplest clustering technique in common use, and, for the small sample of units involved in this analysis, has no more disadvantages than the more complex techniques that are available (Hodson 1969). When Single-link cluster analysis and more complex clustering techniques have been utilized in the interpretation of archaeological data, very similar results have been produced (Engelbrecht 1974: 69). Iroquoian researchers have found that the clusters of sites that have been formed by Single-link cluster analysis do in fact reflect temporal, spatial and social groupings (Engelbrecht 1974; Ramsden 1977; Lennox and Kenyon 1984).

The sites can then be ordered chronologically within each group using temporally sensitive

attributes. Ramsden (1977) used the presence or absence of European trade goods to determine the relative date of sites, and then determined chronologically significant attributes by observing which attributes increased or decreased in frequency through time. The ten chronologically sensitive attributes are: simple collar motif, opposed collar motif, horizontal collar motif, neck decoration, interior decoration, sub-collar decoration, convex rim interior, concave rim interior, concave collar exterior and straight collar exterior (Ramsden 1977: 183-185).

The placement of clusters of sites into chronological sequences using individual attributes presented problems, including contradictory sequences, for Ramsden (1977). Smith (1983: 26-27) has criticized the use of individual attributes in chronological reconstructions. He states that the attribute is the lowest level entity recognized by archaeologists and thus contains the lowest level of information. Smith suggests that further analysis of attributes into attribute complexes, which are higher level entities, may have resolved some of the problems of the seriations for Ramsden (1977). Ramsden, however, argues that the problems of chronological ordering are

due to uncontrolled external factors and the complexity of the prehistoric situation.

MacLeod Site Social Relationships

Using the socially significant attributes defined by Ramsden (1977), the lowest measure of difference with the MacLeod site is the Reesor site (68.5). This is followed by Ramsden's (1977) smaller sample from the MacLeod site (73.7), the Bark site (83.4), the Quackenbush site (94.9), the Cobourg site (95.8), the Waupoos site (101.8) and the Hillier site (105.0) (Table 33). The measures of difference of twenty-six of the sites analyzed by Ramsden (1977), as well as the Bark, Wilson and Quackenbush sites analyzed by Sutton (1989), and the present analysis of the MacLeod and Cobourg sites are presented in Table 34 (see Figure 10 for locations of sites). The analysis of the Cobourg site is based on a very small sample and must be regarded as tentative. The Cobourg site rimsherd attributes are presented in Appendix A.

As stated above, the site with the smallest measure of difference to the MacLeod site is the Reesor site. Ramsden (1977: 172) also found this relationship in his analysis based on a smaller sample of MacLeod site rimsherds, and he named these two sites the

'MacLeod group'. Characteristics of this group are summarized in Table 35.

Table 33. Sites Which Are The Most Similar To MacLeod

Site	Measure of Difference
Reesor	68.5
(McLeod)	(73.7)
Bark	83.4
Quackenbush	94.9
Cobourg	95.8
Waupoos	101.8
Hillier	105.0
Hardrock	107.2
Payne	119.3
Lite	122.4

Figure 10. Location of Sites Referred to in the Text.

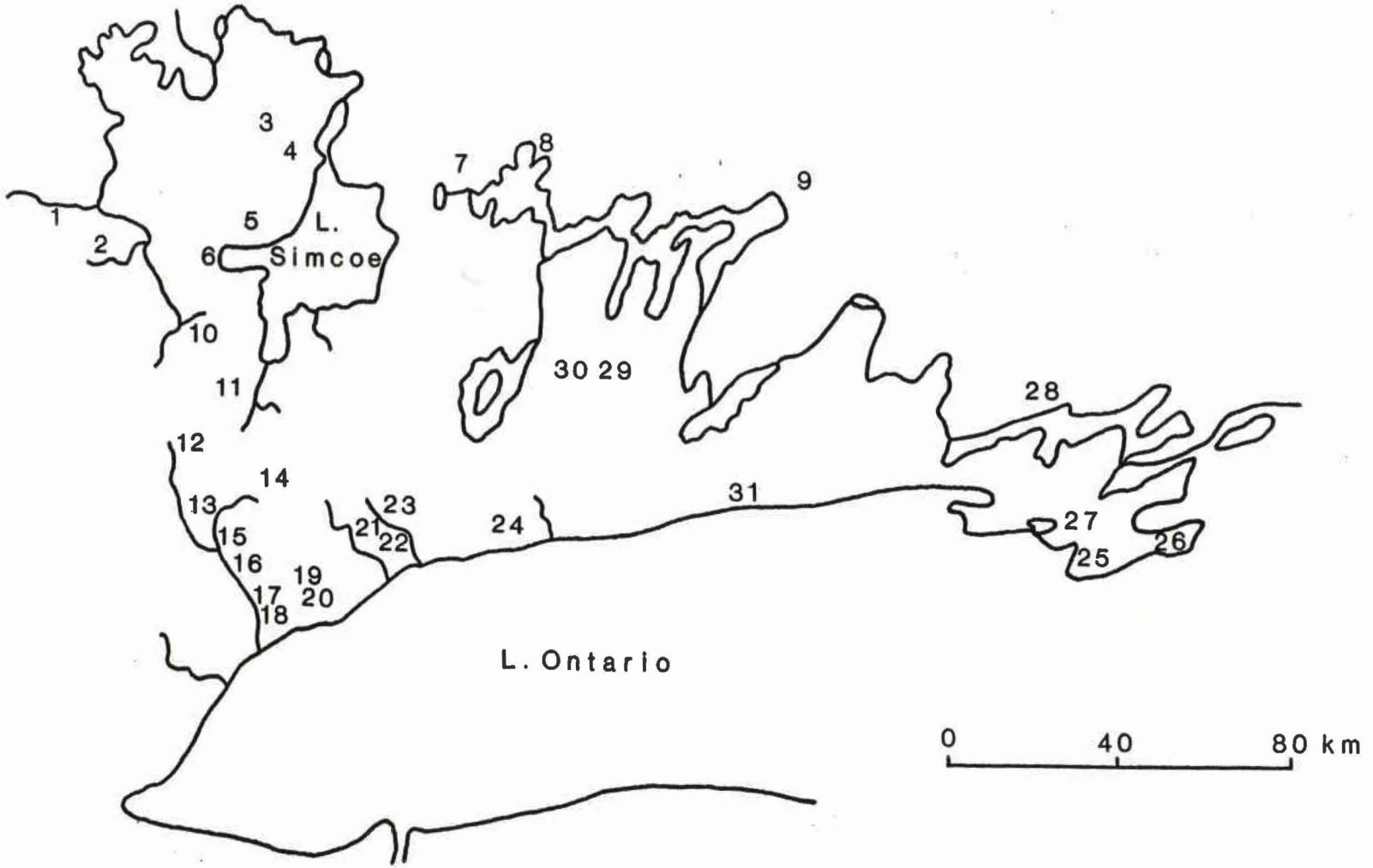


Figure 10. Key to site numbers.

1. MacMurchy
2. Sidey-MacKay
3. Warminster
4. Sopher
5. Ellesmere-Morrison
6. Beswetherick
7. Benson
8. Hardrock
9. Quackenbush
10. Graham-Rogers
11. Bosomworth
12. Beeton
13. Seed-Barker
14. Aurora
15. Boyd
16. McKenzie
17. Downsview
18. Black Creek
19. Parsons
20. Riseborough
21. Milroy
22. Reesor
23. Draper
24. MacLeod
25. Hillier
26. Waupoos
27. Payne
28. Lite
29. Wilson
30. Bark
31. Cobourg

Table 34. Table of Measures of Difference

	AUR	BTN	BES	BOS	BENS	B C	BD	DW
AUR	-	98.7	133.7	108.0	80.6	126.7	121.3	79.8
BTN		-	103.3	85.7	75.7	90.6	153.4	87.1
BES			-	165.6	139.4	138.3	226.9	143.4
BOS				-	57.0	90.9	170.6	93.9
BENS					-	84.7	168.5	92.2
B C						-	171.0	100.5
BD							-	134.3
DW								-
DR								
EM								
GR								
HK								
HR								
LI								
MACM								
MCK								
MACL								
MIL								
PS								
PN								
Q								
Rr								
RIS								
SB								
SM								
SO								
WAU								
WAR								
BARK								
WIL								
COB								

Table 34. Continued

	DR	EM	GR	HK	HR	LI	MACM	MCK
AUR	104.3	148.6	77.9	236.2	198.6	118.2	79.6	56.8
BTN	104.2	91.4	144.0	155.2	134.9	91.3	144.9	99.1
BES	109.5	78.4	175.3	145.4	127.6	99.0	152.0	151.6
BOS	121.3	131.0	152.2	178.0	157.4	116.8	148.6	127.6
BENS	105.9	118.5	109.7	185.4	160.8	100.6	101.2	98.6
B C	102.8	105.5	169.6	111.7	109.5	82.9	171.3	131.1
BD	179.0	206.8	120.8	270.3	249.7	217.9	138.5	96.0
DW	154.5	156.0	116.5	180.0	186.0	96.4	121.4	55.6
DR	-	98.9	146.6	170.9	157.5	149.5	139.3	125.3
EM		-	184.1	140.6	102.2	119.4	178.4	160.2
GR			-	279.1	241.5	164.9	48.7	78.7
HK				-	77.0	118.6	233.6	235.6
HR					-	93.6	242.6	211.8
LI						-	170.9	139.2
MACM							-	90.0
MCK								-
MACL								
MIL								
PS								
PN								
Q								
Rr								
RIS								
SB								
SM								
SO								
WAU								
WAR								
BARK								
WIL								
COB								

Table 34. Continued

	MACL	MIL	PS	PN	Q	Rr	RIS	SB
AUR	233.6	144.7	88.7	153.5	258.7	194.1	110.1	102.2
BTN	185.5	117.8	54.9	120.4	218.2	135.2	122.5	170.3
BES	138.8	72.1	108.5	140.9	164.7	110.7	127.0	215.0
BOS	188.6	156.7	86.3	136.9	222.3	154.2	115.0	185.4
BENS	182.6	129.9	51.9	130.1	216.5	159.1	90.0	139.2
B C	151.7	118.4	67.8	85.2	159.2	107.6	123.7	196.5
BD	309.5	218.6	156.4	226.4	287.8	159.6	178.7	73.5
DW	209.4	127.7	84.1	135.3	234.9	155.3	81.0	132.6
DR	167.9	124.4	118.9	156.2	213.0	143.6	172.7	205.1
EM	148.0	125.5	107.3	137.1	154.9	118.9	178.6	220.6
GR	279.3	185.6	135.2	199.2	299.0	237.0	167.1	130.3
HK	107.2	165.0	155.5	94.7	82.1	100.7	212.4	305.6
HR	105.0	142.7	127.3	62.5	98.5	111.3	183.0	170.0
LI	122.4	95.3	57.9	55.3	146.9	106.9	107.8	191.2
MACM	264.4	167.7	136.5	208.6	297.9	238.5	121.3	151.4
MCK	257.4	151.5	106.7	164.7	280.3	198.7	112.2	108.4
MACL	-	142.3	159.3	119.3	94.9	68.5	193.0	300.4
MIL		-	76.8	137.6	173.6	114.6	112.6	207.3
PS			-	102.8	192.4	144.2	94.7	152.3
PN				-	133.8	169.4	158.5	224.3
Q					-	136.7	239.1	325.9
Rr						-	167.3	276.1
RIS							-	162.2
SB								-
SM								
SO								
WAU								
WAR								
BARK								
WIL								
COB								

Table 34. Continued

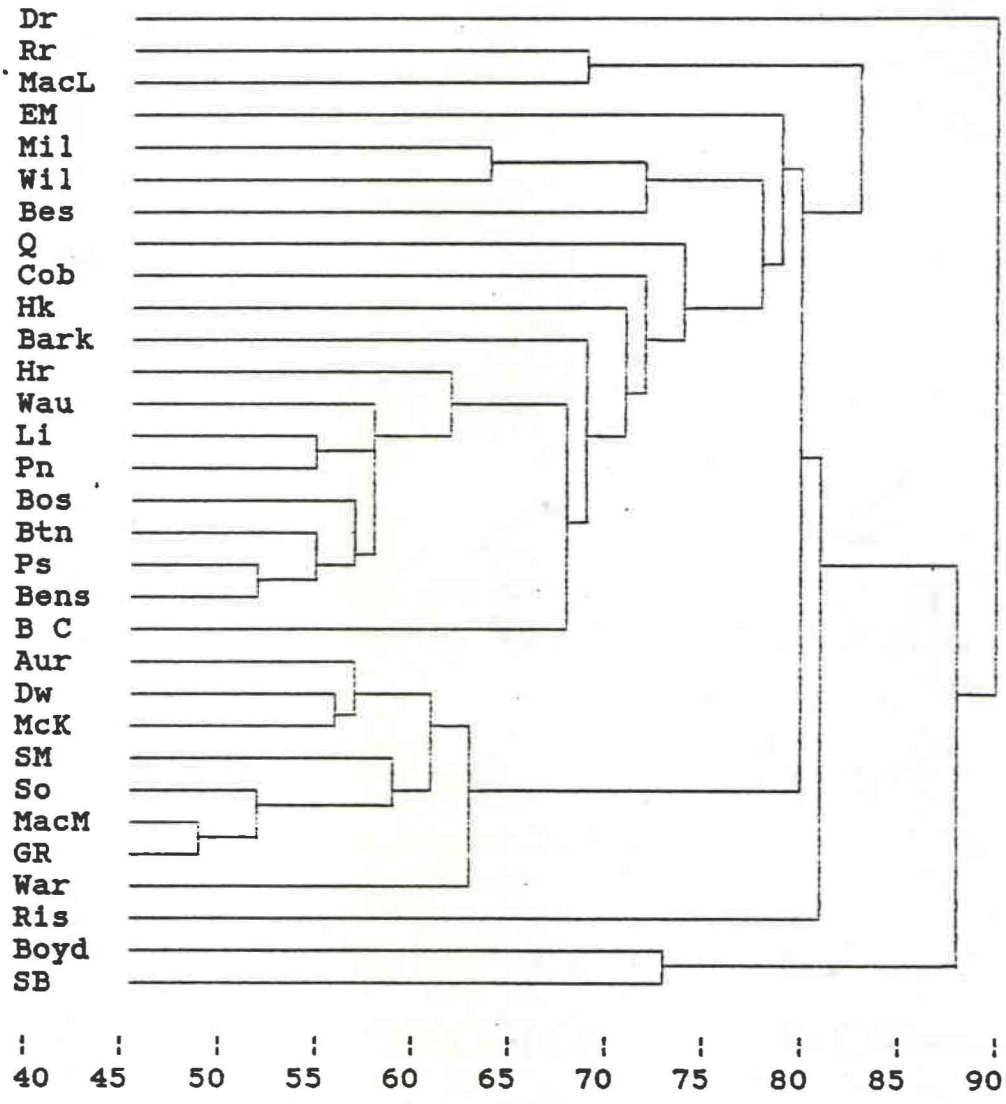
	SM	SO	WAU	WAR	BARK	WIL	COB
AUR	89.6	98.5	194.8	69.3	189.0	160.7	246.6
BTN	117.7	136.8	131.8	96.4	150.3	116.2	196.9
BES	169.2	169.6	154.6	155.9	109.6	86.7	152.2
BOS	133.0	154.5	135.6	102.5	155.4	164.9	208.4
BENS	92.8	114.3	142.4	79.3	157.0	134.3	198.6
B C	144.7	177.4	96.5	157.6	108.7	102.6	162.7
BD	87.9	147.6	222.1	130.6	262.7	192.2	296.3
DW	94.0	113.1	159.2	102.7	157.2	126.7	221.6
DR	131.6	154.2	153.1	118.0	140.3	133.1	190.8
EM	161.2	184.5	132.6	154.3	135.2	120.3	151.4
GR	65.1	84.6	136.3	78.0	226.1	198.0	286.1
HK	262.0	286.7	85.3	248.5	71.0	105.5	91.6
HR	226.0	251.1	61.5	208.3	82.4	97.0	126.0
LI	147.6	183.5	79.4	149.9	101.1	90.0	137.0
MACM	74.7	51.5	240.4	63.3	227.8	200.1	271.8
MCK	61.0	79.3	203.0	65.3	207.4	164.5	267.4
MACL	247.8	276.5	101.8	245.1	83.4	122.7	95.8
MIL	160.3	163.6	166.9	155.2	93.7	64.0	144.7
PS	98.7	132.2	119.7	107.2	127.7	95.4	168.5
PN	191.9	201.6	57.5	191.0	68.7	97.1	125.9
Q	280.3	315.6	106.1	290.8	74.3	125.8	84.5
Rr	228.8	250.4	117.7	212.6	89.1	114.4	147.9
RIS	124.8	107.3	178.0	122.3	168.0	144.1	211.6
SB	104.5	141.3	263.2	128.7	260.2	207.3	309.2
SM	-	58.9	209.6	75.4	217.0	159.3	259.0
SO		-	228.7	78.8	239.5	201.0	283.1
WAU			-	208.3	103.4	114.1	129.8
WAR				-	220.1	186.8	268.1
BARK					-	81.1	72.4
WIL						-	117.5
COB							-

Table 34. Key to Site Name Abbreviations

AUR	Aurora
BTN	Beeton
BES	Beswetherick
BOS	Bosomworth
BENS	Benson
B C	Black Creek
BD	Boyd
DW	Downsview
DR	Draper
EM	Ellesmere-Morrison
GR	Graham-Rogers
HK	Hardrock
HR	Hillier
LI	Lite
MACM	MacMurchy
MCK	McKenzie
MACL	*MacLeod
MIL	Millroy
PS	Parsons
PN	Payne
Q	+Quackenbush
Rr	Reesor
RIS	Riseborough
SB	Seed-Barker
SM	Sidey-Mackay
SO	Sopher
WAU	Waupoos
WAR	Warminster
BARK	+Bark
WIL	+Wilson
COB	*Cobourg

Sources: * present analysis
+ Sutton 1989
The remainder are from Ramsden (1977)

Figure 11. Cluster Analysis Dendrogram



The temporally sensitive attributes are not unanimous in their chronological ordering of these two sites. The attributes of simple and horizontal collar motif, neck decoration and lip decoration indicate an order from Reesor to MacLeod, while the remainder of the chronologically sensitive attributes suggest an order from MacLeod to Reesor. Ramsden (1977: 207) believes that Reesor is the earlier and recalls that some of the rims from this site have Middleport attributes (Ramsden, personal communication).

Table 35. Shared Ceramic Characteristics MacLeod, Hardrock and Payne Groups

Groups	Shared Characteristics
MacLeod (MacLeod & Reesor)	High frequencies of collared decorated ware, simple collar motif, neck decoration, interior & sub-collar decoration and concave interior profiles.
Hardrock and MacLeod	High frequencies of collared decorated ware, simple and opposed collar motifs, neck decoration and interior & sub-collar decoration.
Payne, Hardrock and MacLeod	High frequencies of collared decorated ware, simple collar motifs, neck decoration and interior & sub-collar decoration.

The MacLeod group is the most similar to the Hardrock group, in the Trent River area, as defined by Ramsden (1977: 174) (Table 33). Ramsden includes the Hardrock and Quackenbush sites in the Hardrock group and the Bark site can also be included. Chronological indicators suggest an ordering from Quackenbush to Hardrock but are inconclusive on the temporal position of the Bark site.

Shared characteristics of these two groups (MacLeod and Hardrock) are summarized in Table 35. Ramsden (1977: 234) suggests that the MacLeod and Hardrock groups diverged from a common source, and that the small measure of difference between the later Hardrock and MacLeod sites reflects similarity due to contact between the two groups. In the present analysis, larger samples from the MacLeod and Quackenbush sites were available and the MacLeod site now has a smaller measure of difference with the Quackenbush site than with the Hardrock site. The smallest measure of difference between the sites of the MacLeod group and any site in the Hardrock group is with the Bark site (Table 36). This may indicate a closer relationship between the MacLeod group and the earlier sites in the Hardrock group (Quackenbush and

Bark) and less contact between the MacLeod group and the later Hardrock site, as time and geographical distance separated these two groups from their common source.

Table 36. Measures of Difference

MacLeod and Hardrock Groups

	Hardrock	Quackenbush	Bark
MacLeod	107.2	94.9	83.4
Reesor	100.7	136.7	89.1

The Payne group, as defined by Ramsden (1977: 171), has the smallest measure of difference with the MacLeod and Hardrock groups. Shared characteristics of these groups are summarized in Table 35. The Payne group, in chronological order, consists of the Hillier, Payne and Lite sites at the eastern end of Lake Ontario. The Waupoos site is also included and may be lineally related to the Hillier site. However, Ramsden (1977: 238) notes that it has strong ceramic similarities with the St. Lawrence Iroquois. The later sites of the MacLeod and Hardrock groups are the most closely related to the earlier sites of the Payne group

(Table 37). Also, Ramsden (1977: 236) notes that the early sites of the MacLeod and Hardrock groups show the same relative order of similarity to the sites of the Payne group and the present analysis concurs. Ramsden (1977: 236) suggests that this indicates a sequential ordering "in which the earliest site in the Payne group follows the latest sites in the Hardrock and McLeod groups". Ramsden (1977: 236) further states that the Hillier site, which is the earliest of the Payne group sites, has a common origin with the MacLeod group and may be derived from a late stage of this group.

Table 37. Measures of Difference
MacLeod, Hardrock and Payne Groups

	Hillier	Waupoos	Payne	Lite
MacLeod	105.0	101.8	119.3	122.4
Reesor	111.3	117.7	169.4	106.9
Hardrock	77.0	85.3	94.7	118.6
Quackenbush	98.5	106.1	133.8	146.9
Bark	82.4	103.4	68.7	101.1

As mentioned above, the Waupoos site ceramics indicate a strong link with the St. Lawrence Iroquois.

Ramsden (1977: 258) has also found evidence of ceramic connections to the St. Lawrence Iroquois in other sites of the Payne group. The Lite site has an unusually high frequency of stamping technique but lacks other elements of the St. Lawrence Iroquois ceramics. Ramsden also feels that stylistic imitation may be indicated at the Payne site in the high frequency of basal notching. Thus, he feels that trade and stylistic borrowing from the St. Lawrence Iroquois is evident in sites of the Payne group. However, Ramsden (1977: 258) does not believe that this evidence would "support the suggestion of a population movement from the St. Lawrence area into any of the communities in Prince Edward County represented in our sample".

The MacLeod site, therefore, is the most closely related to the Reesor site in the Rouge valley and these two sites form what Ramsden has called the 'MacLeod group'. This group is ceramically similar to the Payne group in Prince Edward County and this relationship between the two groups will be elaborated on following the next section. The MacLeod and Payne groups are also closely connected to the sites of the Hardrock group in the Trent valley.

Discussion of Non-Ceramic Data

The relationships stated above have been inferred solely from the analysis of rimsherd data. In the section that follows, the relationships of other artifact and settlement data among sites of the MacLeod group and sites of other groups will be considered briefly.

Unfortunately, few data are available from excavations at the Reesor site. Ramsden (1977: 288) mentions that pipes at this site consist of plain conical, plain trumpet and ring varieties. This is similar to the pipe assemblage at the MacLeod site. Information is not available for other artifact categories or settlement patterns at the Reesor site.

Turning to sites of the Payne group, a report of the Hillier site was not available, but reports of the other three sites have been published. As with sites of the MacLeod group, the most common pipe type on all sites of the Payne group is the plain trumpet. Frequencies of this pipe type range from 29% at the Payne site to 71.4% at the Waupoos site and 76.9% at the Lite site (Emerson 1966; Pendergast 1964a; Pendergast 1972).

The chipped lithic assemblages are sparse on

the three sites of this group. Three triangular, stemmed side-notched projectile points are present in the Payne assemblage, but points are absent from the Lite and Waupoos collections. One stone bead was found on each of the Lite and Waupoos sites. Stone beads are also present at the MacLeod site. The collection from the Waupoos site contains one thumb-nail scraper and the Lite site assemblage has one chert knife (Emerson 1966; Pendergast 1964a; Pendergast 1972).

Ramsden (1977) states that the worked bone assemblage at Hillier is sparse. Bone projectile points are present at the Hillier, Lite and Waupoos sites. Bone awls and beads are common on all sites, as are worked deer phalanges. The toggle type of worked deer phalanx is the most common, ranging in frequency from 80% at the Waupoos site to 94.2% at the Lite site (in comparison to the rare 'cup and pin' type). Also present at the Lite and Payne sites are fish gorges, worked deer mandibles and decorated bone tubes. A polished bone tube is present in the small collection from the Cobourg site, but it is not decorated. The worked bone assemblage from the Payne group sites is similar to that found at the MacLeod site. In addition, a bead of native copper was found at the

Payne site. Two pieces of native copper are present in the collection from the MacLeod site.

Data on structures are not available from any of the sites of the Payne group. Scattered post moulds were present on the Payne and Waupoos sites, but no pattern was discernable (Pendergast 1964a; 1964b). All of the sites are situated on hillsides or slopes close to springs and range in size from 1.5 acres for the Waupoos site (Pendergast 1964a) to 2 to 3 acres for the Payne site (Pendergast 1964b) to approximately 6 acres for the Lite site (Pendergast 1972).

Sites of the Hardrock group show similarities to the MacLeod and Payne groups in the other artifactual and settlement data. Unfortunately, little information has been published from the Quackenbush site, but reports of the Hardrock and Bark sites are available. As with the Payne and MacLeod groups, the plain trumpet is the most common pipe type at the Quackenbush and Hardrock sites and conical and trumpet pipes are the most numerous at the Bark site (Sweetman 1955; Emerson 1954; Sutton 1989).

Sweetman (1955: 110) reports that "stone tools, both finished and rejects, were abundantly evident upon the surface of the ground" at the Quackenbush site, but

he does not describe or quantify these artifacts. The assemblage from the Hardrock site contains two notched projectile points but no drills or scrapers were recovered (Emerson 1954). The chipped lithic collection from the Bark site contains no projectile points and is not very abundant (Sutton 1989). This scarcity of chipped lithic artifacts is consistent with the assemblages from the MacLeod and Payne groups.

No worked bone is mentioned in the short description of the Quackenbush site (Sweetman 1955). Awls, beads, needles and deer phalanges of both types are common at the Hardrock site (Emerson 1954). In addition, bone projectile points are numerous as are beaver incisor tools and worked canine objects. A decorated bone tube was also present in this assemblage. The worked bone assemblage from the Bark site also contains beads, awls and worked deer phalanges of the toggle type. From what information can be obtained, the worked bone assemblages from the Hardrock and Bark sites are similar to that found in the MacLeod and Payne groups.

No settlement pattern data have been reported from the Quackenbush site. One longhouse has been reported from the Hardrock site. It is one hundred and

fifty feet long and twenty-four feet wide. Emerson (1954) suggests that it may originally have been one hundred and twenty feet long with a thirty-foot addition constructed later. It has four central hearths, one side doorway and a possible storage room at the north end. Ramsden (1977) suggests that the presence of benches at the MacLeod site and their absence from the longhouse at the Hardrock site may indicate a separate origin for the two sequences. One possible longhouse was partially excavated at the Bark site as were portions of a palisade. No measurements are available as the house was not completely uncovered.

The Quackenbush site is located on a slope near a spring as are the sites of the MacLeod and Payne groups. The Hardrock site, however, is atypical in that it is situated on a sandy lake shore. The two sites vary greatly in size. The Quackenbush site is reported to be from 8 to 10 acres (Sweetman 1955) and the Hardrock site is slightly larger than one acre (Emerson 1954). The Bark site is located on a creek valley floor near the base of a gently sloping drumlin and it covers approximately .7 to .9 hectares or 1.7 to 2.2 acres (Sutton 1989).

Ramsden (1977) believes that the pipe types, the sparse lithic assemblage and the worked bone assemblage are consistent with the suggestion of the possible ancestral relationship of the MacLeod and Hardrock groups to the Payne group.

The sites to the west of the MacLeod group, in Toronto, appear to show differences from the MacLeod, Payne and Hardrock groups in some of the non-rimsherd data considered. The Boyd and Seed-Barker sites show connections to the Neutrals. The pipes of the Boyd site are ring barrel, coronet, and animal effigy forms which appear on the Neutral Walker site. Boyd also has a large amount of animal bone on the site which is characteristic of Neutral sites. Clam shell scrapers are found at both the Boyd and Seed-Barker sites but they are absent from the nearby McKenzie group. The Kleinberg ossuary, which may be associated to the Seed-Barker site, has divisions of nearly sterile soil separating the bone deposit. This is similar to Neutral ossuaries near Hamilton. Ramsden (1977) believes that these sites represent Neutral communities which migrated into the Humber valley area.

Sites of the McKenzie group (Downsview, McKenzie and Aurora) have ringed and trumpet pipe types

in their assemblages. The coronet pipe is present at the McKenzie site. Prolific lithic assemblages, particularly scrapers, are present at all of the sites of the McKenzie group. This is the opposite of the sites of the MacLeod and Payne groups. Middens are restricted to the periphery of the sites in the McKenzie group, whereas internal middens are present at the MacLeod site. These sites, however, are also later than sites of the MacLeod and Payne groups (Ramsden 1977) and the differences between them may be a function of time. Therefore, sites in the Toronto area which are contemporaneous to the MacLeod and Payne groups must also be considered.

Sites in the Toronto area which are closer in time to the MacLeod and Payne groups also show differences in the artifact assemblages from these groups. The Parsons site assemblage appears to be quite different from the MacLeod and Payne groups. The pipe assemblage contains ringed bowl trumpet pipes, conical pipes and stone pipes. The lithic assemblage is very large and contains large numbers of end scrapers, large utilized flakes, bifacial knives, drills, and notched and triangular projectile points. This, along with the presence of slate pebble pendants,

suggests similarities to Neutral sites (Ramsden 1977: 282).

The Black Creek site is more similar to the MacLeod and Payne groups, however, there are still distinct differences. The pipe assemblage is dominated by the trumpet variety but the percentage of this variety is much lower than it is on sites of the MacLeod and Payne groups. Elongated ring pipes are the second most common type at the Black Creek site. This type is rare or absent from sites of the MacLeod and Payne groups. Human effigy pipes are also present at the Black Creek site. The lithic industry at the Black Creek site is sparse, as it is at the MacLeod and Payne group sites. However, a greater variety and quantity of projectile points are present at the Black Creek site. The typical awls, needles and tubular beads are present in the worked bone collection of the Black Creek site. Also present are harpoon points and side notched bone projectile points (Emerson 1954) which are absent from the MacLeod and Payne group assemblages. Both the Black Creek and Parsons sites are reported to be palisaded. Black Creek has peripheral middens while Parsons has both internal and peripheral middens. The size of Black Creek is approximately five acres and

Parsons is seven acres in extent. Both sites are located on flat ground bordering a creek (Ramsden 1977). The Black Creek site is situated on the river flats at the edge of Black Creek (Emerson 1954). This differs from the locations of sites of the MacLeod and Payne groups which are on slopes or hillsides near springs.

One other aspect of settlement patterns warrants discussion. According to Kapches (1980), the following sites included in the present analysis exhibit wall trenches: MacLeod, Draper, Milroy, Riseborough, Seed-Barker, and McKenzie. Wall trenches do not appear to cluster into one of Ramsden's (1977) ceramically defined groups. This construction technique may be more widespread than is reported in Kapches (1980) study, as wall trenches were not recognized as such until about the time of the excavations at the MacLeod site. Therefore, sites which were excavated before that time may have had wall trenches which were not noticed or recorded.

This is a very brief consideration of the other artifactual and settlement pattern data in order to attempt to overcome the bias of only using one artifact type in the analysis. This discussion has been

hampered in places by a lack of information from some sites such as Reesor, Quackenbush and Hillier. I believe that it would be valuable for students to look again at earlier collections, as has been done in this thesis, and reanalyse using different formats, or in some cases, complete the analyses of these collections. I believe that much information can be gathered from previously existing collections and that this should be a priority for Master's students over the excavation of further unthreatened sites.

Lake Ontario Iroquois

Since Ramsden (1977: 27) has recommended that the complexities of Late Iroquoian prehistory be recognized and that the archaeologically defined 'Huron' consisted of more than just two divisions, I would suggest the existence of a distinct group to be named the Lake Ontario Iroquois. This name was first used by Latta (1990: 164) but the group defined here differs from Latta's concept in the sites that it encompasses. The Lake Ontario Iroquois, as defined by this author, extended along the north shore of Lake Ontario from the Rouge River in the west to Prince Edward County in the east and included the sites of the

MacLeod and Payne groups as defined by Ramsden (1977). The Lake Ontario Iroquois ceramics are characterized by high frequencies of neck decoration, interior decoration and sub-collar decoration and a low frequency of lip decoration.

This group has close connections to the sites of the Hardrock group in the Trent valley which show high frequencies of the same attributes and may have shared a common source (Ramsden 1977).

Few Late Iroquoian sites have been reported yet along the north shore of Lake Ontario between Oshawa and Prince Edward County but the small sample analyzed of the Cobourg site shows the same trends in frequencies of attributes as other sites of the Lake Ontario Iroquois.

The Draper site has not been included in this group for the present analysis as its position is unclear. In more recent excavations, it has been discovered that this site was occupied over a long time period and is more complex than was previously known. Ramsden's (1977) analysis could not take this into account. Therefore, a study which separated the ceramics into the times of occupation of the site will be more useful in elucidating the relationship of the

Draper site to other sites in the Lake Ontario Iroquois group.

The White site, a Late Ontario Iroquois site on the West Duffin Creek in the Town of Pickering, was not included in the study of the measures of difference as not all of the frequencies of the thirteen socially significant attributes were presented in Tripp's (n.d.) report. Tripp's analysis shows that the White site rimsherd assemblage has a high frequency of neck decoration, similar to sites of the Lake Ontario Iroquois group, but the frequencies of interior and sub-collar decoration are much lower. This site may be similar to the Draper site in that it was occupied over a long time span and a comparison of the assemblage as a whole may not be appropriate.

The sites of the Lake Ontario Iroquois differ from sites to the west in the Toronto area, such as Parsons and Riseborough and those along the Humber River, in that the Toronto area sites have lower frequencies of neck decoration, interior decoration and sub-collar decoration. A problem arises, however, in that these attributes are also chronologically significant, and thus it may be that the Lake Ontario Iroquois sites are simply earlier than the Toronto

sites. The Parsons site produced two small pieces of copper that Ramsden (1977: 73) identified as European and trace element analysis confirmed this identification (Latta, personal communication). However, this need not indicate a date of much later than A.D. 1500 (Ramsden 1977: 41).

On the other hand, European material was absent from the Black Creek site assemblage, and this, along with the absence of any Middleport-like traits, suggests an occupation in the mid to late 15th century. Therefore, within the limitations of Iroquoian chronological methods, the Black Creek site can be considered approximately contemporaneous with the MacLeod site. The Parsons site, if not contemporaneous, is probably not much later. As the Black Creek and Parsons ceramic assemblages do not exhibit the high frequencies of neck decoration, interior decoration and sub-collar decoration that are found at the MacLeod site and other sites of the Lake Ontario Iroquois, these attributes can be considered to demonstrate social significance in this region. In addition, the sites of the Lake Ontario Iroquois do not show the relationship to the Neutral sites that Ramsden (1977) has suggested for the Boyd and Seed-Barker

sites.

The non-rimsherd data appear to be consistent among the group defined here as the Lake Ontario Iroquois. The plain trumpet pipe is the most common pipe type at all of the sites. Lithic assemblages are sparse and worked bone assemblages contain numerous beads, awls and worked deer phalanges. The toggle type of worked deer phalange outnumbers the 'cup and pin' type at all sites. Settlement pattern data is too scarce for comparative purposes. All sites are located on slopes or hillsides near springs and range in size from 1.5 to approximately 6 acres.

At this point, it may be valuable to speculate about the social and political nature of the Lake Ontario Iroquois group which has been defined here. Tooker (1964: 9) describes the historic Huron as "a league of four nations [tribes] sharing a common language, but each retaining its own traditions". The Lake Ontario Iroquois may have been a group similar to these historically described Huron tribes. The first known occurrence of the Lake Ontario Iroquois is at the early Reesor site in the Rouge Valley and, as stated above, there is evidence that the group moved east to the sites of the Payne group in Prince Edward County.

No attempt will be made here to trace the Lake Ontario Iroquois to one of the historic Huron tribes. Ramsden (1977: 296) has cautioned against tracing the historic tribes back in time. He believes that his study shows the prehistoric development of the 'Huron' has been characterized by "fissionings, alliances and mergers" and that it would not be valid to assume the existence of the historic tribes in prehistoric times.

The Lake Ontario Iroquois, however, may have been a tribe-like group. Similar ceramic attribute frequencies indicate the possibility of a source of related women passing on their ceramic designs and techniques to the next generation. This aspect has complexities which have not yet been adequately addressed by archaeologists. Trigger (1981) notes that the ethnohistoric record states only that pots were made by women. Trigger (1981: 28) raises the following questions about the production of pots: "whether the same women made and used them or, if not, how they were transferred from maker to user, how much they were used, how long they lasted, or how many pots the average woman possessed". He hypothesizes that if only a couple of new pots were needed each year, then "these may have been made by a relatively small number of

skilled women rather than by each woman for her own use". This could be determined by a detailed analysis of the distribution of ceramics on a site and the study of markers on the ceramics which may indicate individual potters, such as idiosyncrasies of design or technique. Therefore, while the similarity of ceramic designs such as those found in the Lake Ontario Iroquois may indicate a source of women passing on their knowledge, the complexities of this issue have yet to be fully analyzed by archaeologists.

The similarity of the pipe assemblages among sites of the Lake Ontario Iroquois indicates a continuity of male members as well, as pipes are considered to have been manufactured by men. Trigger (1981: 29-30) also points out the complexities of this aspect. He states that the ethnohistoric evidence that men made the pipes is limited and it is not clear if this referred to all pipes or only to stone pipes. He further suggests that "if pottery vessels and pipes were each made by semispecialists, the interpretation that traditions of manufacture correlate with sex differences need not hold" (1981: 30). Therefore, while the similarities of the ceramic and pipe assemblages indicate a continuity of the manufacturers

of these objects in the Lake Ontario Iroquois, further research is required from sites excavated in more detail than those used in this study to follow the complex processes involved.

The people of the Lake Ontario Iroquois appear to have had a close alliance with the people of the Hardrock group in the Trent valley. The similarities in ceramic and pipe assemblages indicate a possible common origin for the two groups and continued exchange of products, people or ideas. The later sites of the Lake Ontario Iroquois in Prince Edward County show evidence of interaction with the St. Lawrence Iroquois to the east.

The Lake Ontario Iroquois group is tentatively defined as sites of the Late Ontario Iroquois time period which occur along the north shore of Lake Ontario from the Rouge valley to Prince Edward County and share similar frequencies of certain ceramic attributes and certain similarities in their non-ceramic assemblages. The Lake Ontario Iroquois may have formed a group similar to the historically described tribes of the Huron. The earliest known occurrence of this group is in the Rouge Valley at the Reesor site and it is hypothesized here that the group

moved to the east to the sites of the Payne group in Prince Edward County. With further study, more sites may be uncovered in this area and the hypothesis of a distinct group called the Lake Ontario Iroquois can be reevaluated.

Chapter VI

Summary and Conclusions

The MacLeod site is a Late Ontario Iroquois site located in the northwest corner of the city of Oshawa, Ontario. It is bordered on the east by Goodman Creek and is approximately 6.6 kilometres north of Lake Ontario. The site was discovered in 1967 and excavations occurred between 1968 and 1972. The excavation history is rather complex and is presented in detail in Chapter I. The excavated area covers approximately 4 acres or 1.6 hectares.

Excavations revealed two longhouse patterns, three midden areas and many external features and post moulds. Alpha house measures 190ft (58m) in length and 27ft (8.2m) in width. Beta house was not completely excavated. The length of the excavated portion measures 105ft (32m) in length and 27ft (8.2m) in width. There is evidence of a discontinuous wall trench on the west wall of Beta house.

The rimsherds from the MacLeod site have been studied in this thesis using attribute analysis

following Ramsden (1977). Latta (1972) commented on the odd shape of the site and suggested that two of the areas of excavation may have uncovered two different sites. Frequencies of attributes from these two areas were compared using the Chi Square test and no significant difference was found. Therefore, it was concluded that these two areas probably formed two parts of the same site. The remainder of the ceramics are described in Chapter II. Six body sherds from the collection appear to be decorated with pigment. Painted ceramics are not often recorded for Iroquoian sites so this would be an interesting area for further research.

Trumpet types are the most common pipe form at the MacLeod site, followed by the conical form. Onondaga chert is the most common material found in the chipped lithic assemblage. Formal tools are scarce, with only one complete projectile point and four fragments, two scrapers and one biface fragment present in the collection. In the ground stone assemblage, celts are very common and ten ground stone beads are present. The most numerous worked bone artifact at the MacLeod site is the bead. The second most common bone artifact is the modified deer phalanx. These worked

deer phalanges have been analyzed according to the classification system set out by McCullough (1978). Bone awls, worked rodent incisors, needles and an incised flat bone fragment are also among the worked bone collection at the site. Two artifacts made from native copper are present in the artifact assemblage from the MacLeod site.

The mammal class dominates the faunal assemblage from this site, followed by fish and birds. The most common mammals are dog, white-tailed deer, woodchuck, and muskrat. The fish sample is dominated by yellow perch, brown bullhead and channel catfish and the most common birds are passenger pigeon, wild turkey and Canada goose. The dominance of the mammal class over the fish class may be due to the recovery technique employed at the site. Most of the faunal sample was collected by trowelling in six inch levels and this may have biased the sample in favour of the larger mammal bone. A small sample of scattered human remains was found at the MacLeod site. While samples such as this have traditionally been interpreted as an indication of cannibalism, no clear definition has ever been given as to exactly what would constitute evidence for cannibalism. Alternatives are suggested and a

challenge to support the interpretation of cannibalism with adequate data is given. This is one example of a larger problem with the use of the ethnohistoric record in the interpretation of prehistoric Ontario sites. Other aspects of this problem are discussed in Chapter V.

In Chapter V, the rimsherd attribute analysis of the MacLeod site is compared to the attribute analysis of thirty other Iroquoian sites in Ontario following Ramsden (1977). The site which is ceramically the most similar to the MacLeod site is the Reesor site. These sites are closely related to the Payne group of sites at the east end of Lake Ontario and also to the Hardrock group in the Trent Valley.

Ramsden (1977) has criticized the use of the ethnohistoric word 'Huron' to refer to a broad group of prehistoric sites. He has also stated that the prehistory of the Huron is much more complex than the two divisions defined by Wright (1966). Therefore, an attempt has been made here to define a group called the Lake Ontario Iroquois. This group was located along the north shore of Lake Ontario and extended from the Rouge River on the west to Prince Edward County on the east. It is hypothesized that the Lake Ontario

Iroquois formed a group similar to the historically described tribes of the Huron. In terms of rimsherd attributes, the group is characterized by high frequencies of neck decoration, interior decoration and sub-collar decoration and a low frequency of lip decoration.

A brief comparison of non-ceramic data from the sites was also included and it was found that sites of the Lake Ontario Iroquois have the following characteristics: the plain trumpet pipe is the most common pipe type; lithic assemblages are sparse; the most common worked bone artifacts are beads, awls and worked deer phalanges. Settlement pattern data are rare and, therefore, could not be included in the comparison. The sites vary greatly in size but they are all located on slopes or hillsides near springs.

Future Research

This thesis contains a very preliminary definition of the group called the Lake Ontario Iroquois. Little is known of Late Iroquoian sites between Oshawa and Prince Edward County. With further research in this area, more sites may be uncovered and the existence of a distinct group along the north shore of Lake Ontario can be reevaluated.

It was also noted in this thesis that non-ceramic information was not available from some of the sites used in the comparison. It was suggested that it would be valuable for Master's students to study these earlier collections to make available all possible information before excavating more sites. A great deal of data can be extracted from previously excavated sites and these data can be used to aid in the interpretation and evaluation of hypotheses such as the definition of a Lake Ontario Iroquois group.

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Appendix A. Cobourg Site Rimsherd Attributes

Attribute	f	% of Observable	# of Observable
A. Collarless Plain	0	0.0	8
B. Collarless Decorated	0	0.0	8
C. Collared Plain	0	0.0	8
D. Collared Decorated	8	100.0	8
a. Incised	15	100.0	15
b. Stamped	0	0.0	15
c. Mixed	0	0.0	15
d. Other	0	0.0	15
E. Collar Motifs			
a. Simple	5	33.3	15
b. Opposed	3	20.0	15
c. Crossed	0	0.0	15
d. Hatched	0	0.0	15
e. Horizontal	7	46.7	15
f. Complex	0	0.0	15
h. Interrupted	0	0.0	15
i. Other	0	0.0	15
F. Neck Decoration			
a. Total	5	62.5	8
b. Horizontal	0	0.0	8
c. Horizontal/?	1	12.5	8
d. Oblique	0	0.0	8
e. Opposed	2	25.0	8
f. Hor/Obl	0	0.0	8
g. Oblique/?	2	25.0	8
h. Plain	3	37.5	8
i. Other	0	0.0	8
G. Secondary Decoration			
a. Interior	9	69.2	13
b. Lip	1	7.7	13
c. Frontal Lip	0	0.0	13
d. Upper Punctates	0	0.0	13
e. Lower Punctates	0	0.0	8
f. Dividing Punctates	0	0.0	10
g. Basal Punctates	0	0.0	8
h. Sub-collar dec.	2	25.0	8
H. Interior Profile			
a. Convex	3	60.0	5
b. Concave	1	20.0	5
c. Straight	0	0.0	5
d. Convex-Concave	1	20.0	5
I. Exterior Collar Form			
a. Convex	0	0.0	6
b. Concave	3	50.0	6
c. Straight	3	50.0	6
J. High Collars	2	28.6	7

PLATE I

Reconstructed Pot

PLATE II

top left - end scraper

top right- side scraper

remainder- projectile points

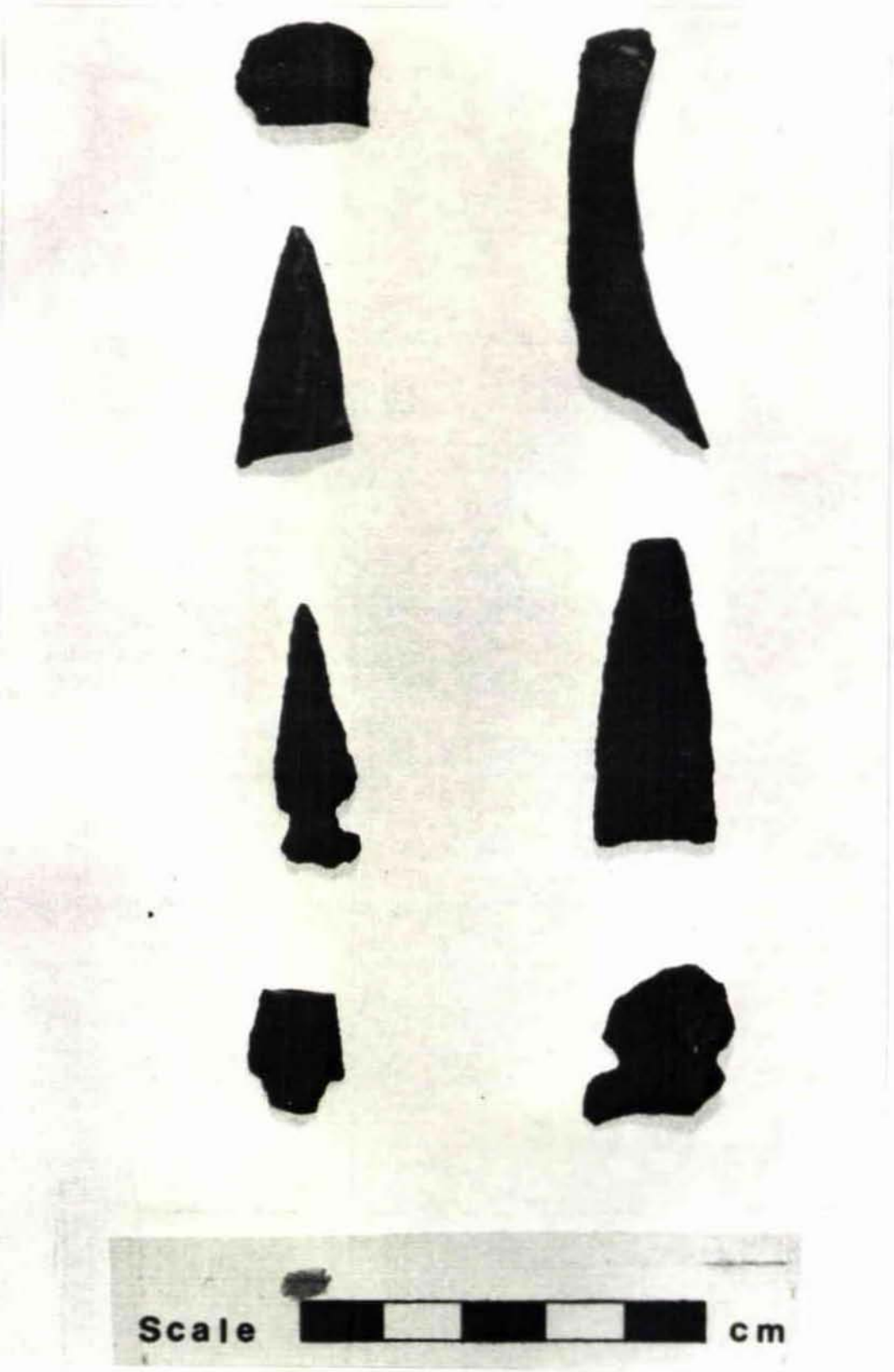

Scale
cm

PLATE III

left side - bone beads

centre - bone awls

right, top & bottom-worked deer phalanges

right, centre - bone needle

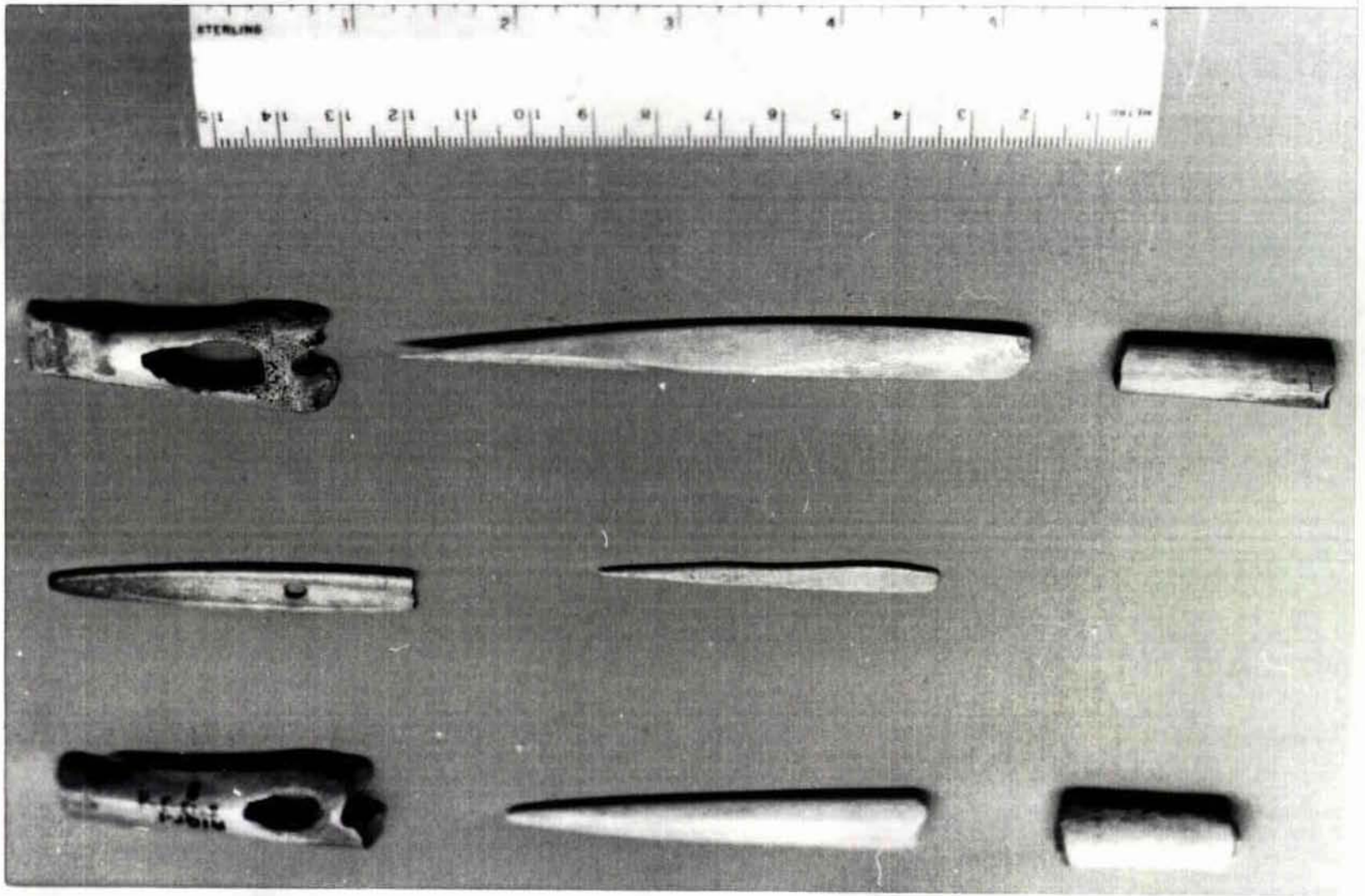
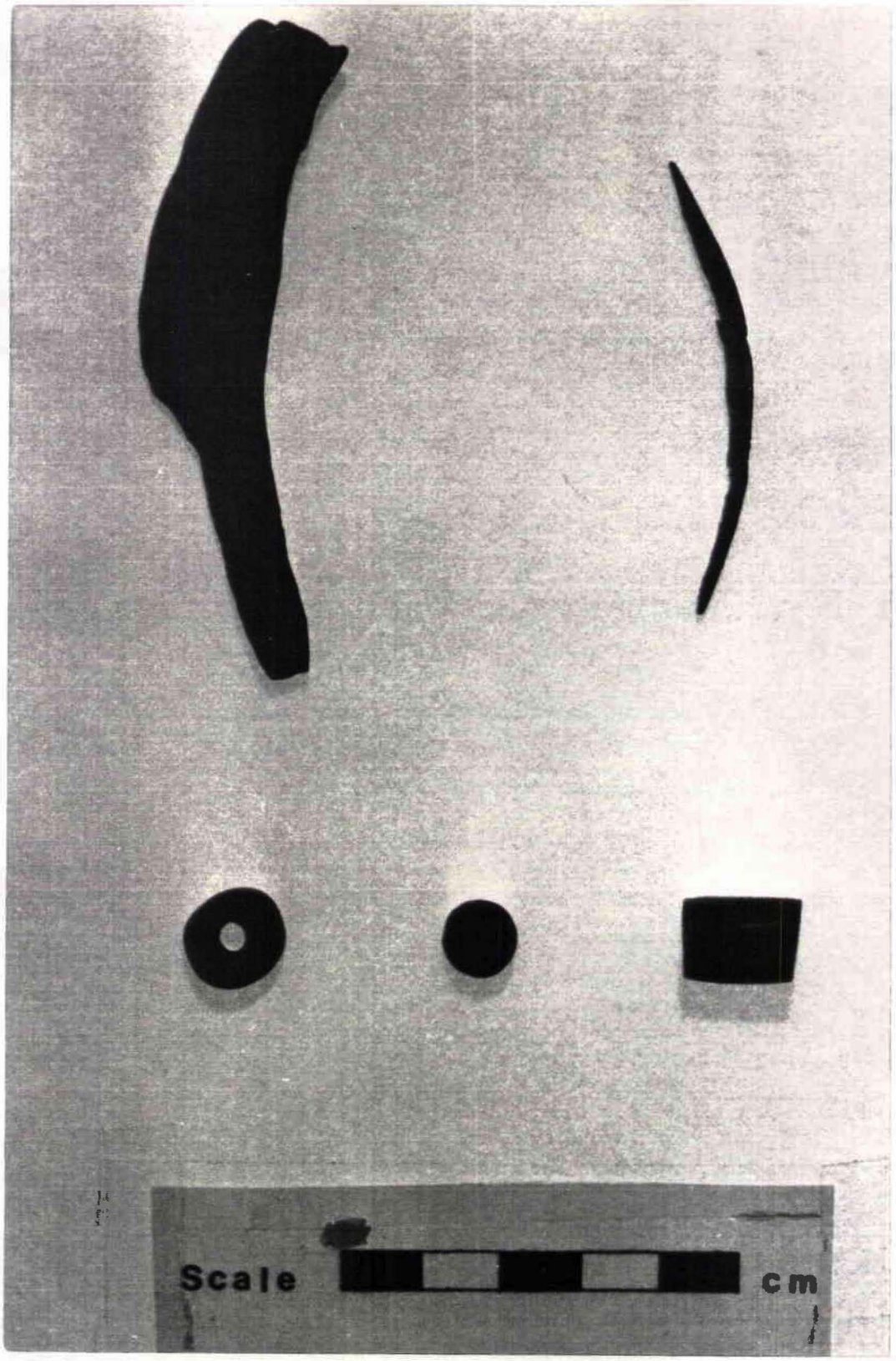

STERLING

PLATE IV

top - native copper

bottom - stone beads


Scale
cm