WHERE EAGLES FLY

WHERE EAGLES FLY: AN ARCHAEOLOGICAL SURVEY OF LAKE NIPISSING

by

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A Thesis

Submitted to the School of Graduate Studies

in Partial Fulfilment of the Requirements

for the degree

Master of Arts

McMaster University

1980

MASTER OF ARTS (1979) McMASTER UNIVERSITY
(Anthropology) Hamilton, Ontario

TITLE: Where Eagles Fly: An Archaeological Survey of Lake Nipissing.

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SUPERVISOR: Professor W.C. Noble.

NUMBER OF PAGES

ABSTRACT

This thesis is an attempt to initiate a detailed understanding of the culture history of the Nipissing Indians. To do so, a description, analysis; and interpretation of three stratified sites, Campbell Bay, Frank Ridley, and Frank Bay, is presented. Generally speaking, the material culture retrieved spans 5000 years of prehistory and is characterized by a number of imported exotic and utilitarian items, as well as, locally manufactured goods. It is suggested that the one theme which permeated this cultural tradition was the inherent mobility and exchange of goods and ideas that took place between the Nipissings and her allies. Specifically, the "middleman role" that characterized the Nipissings during the early Contact period is seen as an amplification of an existing traditional exchange system based on reciprocity. Changes in the direction and magnitude of the exchange system are considered particularly as itapplies to the inception and proliferation of prehistoric trade based on horticultural products.

ACKNOWLEDGEMENTS

This thesis could not have been initiated nor completed had it not been for the kind help extended to me by a number of people and institutions. At this time, I would like to express my sincere thanks to them.

Sponsorship of the project was undertaken by the Ontario Heritage Foundation, who generously funded the field project. The grant was administered by Mr. Bill Russell of the Ministry of Culture and Recreation. McMaster University provided laboratory space and financial assistance, and the Dokis Band gave unstintingly of its resources. Dr. Roscoe Wilmeth, Archaeological Survey of Canada, kindly processed seven radio carbon samples which significantly improved dating a cultural sequence on Lake Nipissing.

Moral support for the project was inspired by Frank Ridley who pioneered research in northern Ontario, Professor Helen Devereux, who captured this pioneering spirit and passed it on to her students, and Alan Tyyska, whose presence is always felt.

A special thanks is offered to Dr. Willian C. Noble, who as my thesis supervisor, not only edited this work to make it readable, but also offered helpful suggestions to improve its content. The other committee member, Dr. Peter Ramsden and Professor Helen Devereux also offered constructive criticisms.

Also, I would like to thank my fellow graduate students, and in particular Leo Waisberg and David Christianson, for providing a refreshing and stimulating environment for doing research.

A number of specialists helped in accurately identifying faunal, floral, and cultural remains, and their time and expertise is most appreciated. They are: Dr. Howard Savage, faunal remains; Rudy Fecteau, seed remains; Lana Kammenof and Nancy Herman, charcoal remains; Dr. Henry Shwartz, minerals; William Fox, lithic remains; and Ken Buchanan, ceramic remains. Both Ida Hobb and Chief Camille Chiblow, Mississagi Reserve, allowed me to view their personal artifact collections.

Members of the Dokis Band, Nicole Restoule, the late Wilford Dokis, Gordon Restoule, Joe Dokis and Richard Restoule, provided encouragement and logistic support which enabled the successful completion of the field endevours.

To the members of the crew comprised of Graham Medley, Tom Bertulli, Jill Restoule, Jack Restoule, Lynn Madigin, and Margaret Bertulli, I owe a special debt of gratitude for they gave untiringly of their time and their friendship.

Finally, Caroline Gosselin had the tiresome task of typing this thesis.

CONTENTS

ILLUSTRATIONS

TABLES

MAPS

There is a moment just at sun rise when it appears that the sun hesitates at the horizon before entering the morning sky. At the moment of hesitation, the Eagle soars high in the sky to check and see if Algonkian camp fires still burn. Upon seeing the smoke, the Eagle allows the sun to rise thereby bringing life to his people.

(Anonymous 1979)

CHAPTER ONE

INTRODUCTION

Purpose

Within a culture history paradigm, this thesis attempts to elucidate and identify "who were the Nipissing Indians?" As an historic Algonkian group who resided on Lake Nipissing in north central Ontario, the Nipissings are best known for their middleman role between the Algonkians, Hurons, and the French during the early Canadian fur trade (A.D. 1600 to A.D.1650).

The aim of this thesis is to explicate whether the middleman role that characterized the Nipissings historically was the result of the fur trade or whether it was an amplification of an existing prehistoric exchange system. To illuminate the prehistoric context three quest ions are asked: (1) what were their ultimate origins? (2) What changes, if any, occurred in their seasonal round of subsistence and settlement pattern? And (3), were there any major and long-lived relationships between the Nipissings and other native groups, and if so, did they change through time?

To define the cultural and geographic boundaries of the Nipissings prehistorically and historically is problematic because of the fluid and vacillating nature of Algonkian societies. For instance, it is known that historic Algonkian groups fluctuated in size, composition and movement over seasons and years depending on game populations and distribution, demographic changes in population, individual leadership qualities, and other historical factors (Smith 1974:18). Members of a group could also splinter and move to new localities to join another group or form their own new group (Rogers 1962, Day 1978). Since the Nipissings exemplified these characteristics, this study must remain incomplete in that it can only focus on those people whose place of residence was Lake Nipissing. One of our major problems is to determine whether this residence was strictly seasonal or not.

Background

The data from which inferences are elicited come from two sources - archaeology and ethnohistory. Until recently the only archaeological research undertaken on Lake Nipissing come from Frank Ridley's pioneering 1950-1953 excavation of the Frank Bay site (Ridley 1954). At that time, he was able to delineate a sparse but persistent sequence of cultural occupation extending from the late Archaic to the Historic periods. Some stratigraphy, not always clear, was present.

It was not until 1972-73, when A.E. Tyyska and J. A. Burns (1973) surveyed the Trout Lake - Mattawa River system, that additional research commenced in the region, Notable features examined by Tyyska (1976) in the two years were two rock structures - Camp Island and Palframan, two sites presumed by the author to have a ceremonial significance attached to them.

In 1974, Philip and Mary Wright (1975) continued curvey along the Mattawa River. Their explorations revealed the occurrence of several prehistoric campsites presumably of Algonkian affinity, and the persistence of enigmatic rock structures in the region.

During the summer of 1978, the author conducted an archaeological survey on the French River - Lake Nipissing drainage system. Two stratified sites - Campbell Bay and Frank Ridley were located, and another portion of the stratified Frank Bay site was excavated.

Certainly a major problem concerning Nipissing ancestry is the establishment of a reliable cultural chronology for the people and the delineation of their homeland. Seriation of artifacts, C-14 dating, and comparisons with other areal chronologies helped establish a cultural sequence from the transitional middle Woodland to the Historic period, while critical data concerning the Paleo - Archaic - middle Woodland period is fragmentary. The Contact material is well represented at the Frank Bay and Frank Ridley sites, however, the problem to be resolved is whether the material culture retrieved belongs to the historically known Nipissings?

The problem of ethnic identification of sites is discussed by Mason (1976), who distinguishes between site unit ethnicity and territorial ethnicity. The first referring to an historically known site, the second to a presumed general residential area. Implicit within both terms is the ability to define archaeologically the geographic location of an historic group, and to demonstrate how they differ from other named groups. Thus, if the sites under discussion can be identified as Nipissing, a foundation is laid for comparative analysis.

Lalemont's (J.R. 23:209-229) description of the Feast of the Dead ceremony held on Lake Nipissing in 1642 is the only historic reference that may aid in actually identifying one of the three sites as Nipissing. According to Lalemont, the ceremony was held on a large bay; the sandy beach, where two thousand people gathered, was surrounded by granitic bedrock. These attributes can only be applied to one of four bays - Frank, Cache, South or Callendar. Three of the bays, Cache South and Callendar, have not been surveyed. Hence, there is ~~a 25% chance that the ceremony was held at Frank Bay.~~ The Frank Bay material culture dating to 1640 is interesting, and could certainly be interpreted as belonging to this festive occasion (Brizinski 1979).

The lack of an absolute correlation between an archaeologcial site and an historic reference is frustrating, however, both cartographic (Champlain 1632, Sanson 1650, Brssani 1657, and Gallinee 1670) and early historic accounts (Champlain, Sagard, Lalemont, Lejeune, Pijard, Menard, and Nicolet) are particularly explicit in delineating the entire lake to be the residential area occupied by the Nipissings.

Further, the absence of any other named group other than sporadic traders from the earliest documents supports the contention that any historic site located on Lake Nipissing has a high probability of having been occupied by the Nipissing Indians. The major problem is in delineating how far the boundaries, if indeed there are any, can be drawn around Lake Nipissing.

Documentation concerning the early Contact period is confined primarily to the Jesuit Relations and specifically to Fathers Claude Pijart, Rene Menard, and Charles Raymbaut, who established the Mission of the Holy Ghost on Lake Nipissing in 1640. An invaluable account of Nipissing life from 1628 to 1636, as described by Jean Nicollet (a translator and trader who lived with the Nipissing for eight years), is apparently lost. Other accounts of Nipissing lifeways that do not appear in the Relations are described incidently or very briefly in the journals of later traders and explorers. Although the ethnohistoric data are not overwhelming, they do provide nuances about the character, behavior, and day to day problems facing the native Nipissings.

These observations, when added to the archaeological record, provide and enhance the anthropological perspective of the Nipissings. Although the ultimate origins of the native residents can only be resolved archaeologically, those aspects of culture, such as language (J.R. 21:245), cosmology (Blair v-1:62), and religion (J.R. 5:233), that were mentioned historically place these people unequivocally within a northeastern Algonkian culture group (Day 1978, Day and Trigger 1978). These elements of culture, when compared with the material culture of the Nipissings, point out the complexities of interaction and diffusion that have occurred probably from time immemorial between and within Algonkian groups and other disparte cultural groups, such as the northern Iroquoians.

Because of problems in preservation in the Boreal forest, and inadequate floral and faunal samples, it is nearly impossible to detect seasonal subsistence pursuits on a site. For these reasons, the accounts and experiences of those Jesuits who tried to convert the Nipissings to Catholicsm provide a valuable sketch of what the annual seasonal cycle of the resident groups might have been prehistorically. In spring, most families would return to Lake Nipissing from their wintering areas and probably reside in kin related groups (J.R. 23:123). At this time, some Nipissing men would journey northward (probably to the Lake Abitibi area) to trade with the Cree (J.R. 11:197), while most groups would congregate at favorable locations to take advantage of the spawning fish and to procure resources from hunting activities.

Summer residence was not confined to Lake Nipissing, and group size was variable. According to Lalemont (J.R. 27:47):

> They (Pijart and Manard) remained there (lake Nipissing) from the month of April to the month of September; or rather, during all that time they followed those homeless people in the woods and on the rivers, over the rocks, and across the lakes - having for shelter but a hut; for flooring, but the damp earth or the slope of some uneven rock, which served as a table, seat, bedroom, ketchen, cellar, garret, chapel, and all.(Brackets mine).

At this time, food resources would not only be abundant but varied as well.

In Autumn, the Nipissings would congregate again, in large groups to take advantage of seasonally profuse food resources, and partake in a number of festive activities, the Feast of the Dead ceremony being one. Shortly after, they would have to decide to either spend the winter with their allies, the Huron, or disperse themselves throughout the surrounding environs (J.R. 30:125; J.R. 23:227).

A major problem discussed in Chapter six is determining when the Nipissing winter dispersal to Huronia occurred. It is assummed that the inception and proliferation of the pattern would have important ramifications in understanding the changes in the Nipissing exchange system.

To understand archaeologically certain aspects of the sociopolitical and economic structures that interrelate the Nipissings with other groups, a model can be constructed from the brief historic accounts. The extent that such a framework can be extrapolated back in time rests on the assumptions made on the archaeological record; that is the belief that the assemblages do mirror various elements of society. Before accepting the validity of these constructs Rogers (1978:762) advises:

> the regrouping of peoples, often of diverse origins, disrupted the sociopolitical organization, and the continued recurrence of reamalgamations throughout the period (early Contact Period) hampered the development of new structures. Moreover, attempts were often made by Europeans to gain political control over the Indians, and this had a tendency to suppress any native political organization that might have emerged. (Brackets mine).

If Champlain's (1922 1936 v-3:40) population estimate of 700 to 800 Nipissings is correct, then it seems reasonable to assume that the name Nipissing was applied to a number of scattered Algonkian groups (bands) that resided in the vicinity of Lake Nipissing. From the ethnographic records, the size and membership of these groups varied throughout the year based on a number of factors (see page 1 and 2).

Although marriage patterns and kinship networks were not discussed in the early records, there are two instances recorded that indicate that exogamy was practiced. The first is, the case of a Nipissing man who married a Montgnais woman (J.R. 25:153), and the second is of two Algonkian men (Oupenengous, they resided on the eastern shore of Georgian Bay) who married two Nipissing women (J.R. 60:vii). Exogamy is one method which allows family members access to assistance and resources of distant group during times of stress.

On a larger political scale, alliances between ethnic groups were formalized during the Feast of the Dead ceremony (J.R. 23:209-223). At this time, invited guests would come from around the region to discuss and negotiate trade relationships and offer military assistance with one another. The Nipissings had as their allies the Huron, Cree, Ottawas, and various southeastern Ojibwa groups. Occasionally disputes or blood feuds arose between groups as exemplified by the bitter dislike the Nipissings had for the Allumettes. Usually these vendettas would be settled rationally and within a short while, however, with the Allumettes it appears to have been sustained for a lengthy period (J.R. 10:75, J.R. 13:211).

The Jesuits, who believed that some trade routes had a long antiquity associated with them, describe the Nipissings as playing a middleman role between the swidden horticulturalists in southern Ontario (Huron), and the hunters-trappers of northern Ontario (Cree) (J.R. 8:115, 11:197; 13:249; 18:229; 27:27; 31:209; 33:67; 45:239). Lejeune and Lalemont state that horticultral products, such as corn, fishing nets, and probably tobacco, were shipped northward and may have eventually reached the Crees, while in exchange the Crees presumably supplied the Nipissings with furs and handicrafts which in turn would be dealt to the Huron. It is primary concern of this thesis to validate Lejeune's and Lalemont's observation with archaeological evidence.

With this background in mind, the remainder of the thesis is concerned with the description, analysis, and synthesis of the material culture of the Nipissing Indians.

In Chapter two, the reader is provided with a general description of the relief and changes in the environment over time; a specific description of the area surveyed and the sites investigated; and outlines the methodology employed to analyze the artifacts.

Contained within Chapters three, four, and five are the analyses of three multi - component archaeological sites - Campbell Bay, Frank Ridley, and Frank Bay. The Campbell Bay site is characterized by two disparate occupations, Archaic and late prehistoric - contact, which are radio carbon dated to 3255 B.C ± 85 (S - 1682) and A.D. 1475 ± 55 (S - 1683) respectively. A+ the Frank Ridley site two distinct cultural strata are noticeable, and while no diagnostic cultural material was retrieved from the lowest stratum, charcoal from a hearth dated the level to A.D. 960 ± 40 (S - 1688). Historic artifacts in direct association with aboriginal debris suggested the uppermost stratum date from A.D. 1620 to A.D. 1660. It is inferred from a comparison with other areal chronologies, the seriation of artifacts, and five radio carbon dates, 930 B.C. (Byers 1959:253), A.D 560 $\pm$ 40 (S-1684), A.D. 955 $\pm$ 50 (S-1685), A.D. 1055 $\pm$ 60 (S-1686), A.D. 1065 $\pm$ (S-1687), that the multi - component Frank Bay site was occupied intermittenly from 2000 B.C. to A.D. 1900.

The evidence,although fragmentary, does suggest that a cultural sequence extending from 3255 B.C. to A.D. 1900 can be demonstrated for the Nipissing district.

Chapter six synthesizes and interprets the archaeological and ethnohistorical data that bear on our initial research questions concerning (1) the ultimate origins, (2) seasonal rounds (3) and the inter-relationships, if any, of the Nipissing Indians to other named groups, and places the origins of the historic middleman role in a prehistoric context.

CHAPTER TWO

ENVIRONMENT, AREA SURVEYED, AND METHODOLOGY

Environment

Throughout Northern Ontario, the Precambrian Shield is characterized by large undulating mountains. But faulting or tectonism which occurred during late Precambrian times (Lumbers 1971:65) have given the Nipissing region a rugged and craggy appearance. Especially imposing are the sheared megalithic mountain blocks that parallel the banks of numerous rivers and check the movement of maninto the dense decidous and coniferous forests of the interior.

Within this glacially scarred and wrinkled terrain are endless numbers of streams, rivers and lakes that radiate outward like the spokes of a wheel from Lake Nipissing. These aquatic environs are characterized by unique floral communities and host a proliferation of faunal species. Naturally, these niche areas provide man with seasonally abundant food resources. The recognition of this ecological relationship is embodied in Algonkian folklore. According to Algonkian mythology (Blair v1:62), the French River--Lake Nipissing frainage system was formed by the actions of the Great Beaver, the legendary ancestor of the Amikouas. To briefly paraphrase the myth, a giant beaver left Lake Huron and moved up the French River by constructing a series of dams which later formed treacherous rapids along the lakes and rivers between Lake Nipissing and the Ottawa River. Provisions for his people were ensured when the Great Beaver populated the small streams with numerous fecund beaver. Upon completion of the waterway, the Great Beaver retraced his steps and died near Lake Nipissing.

The myth, although not correct in the actual formation of the drainage system, does personify the importance the waterway had in affecting the livelihood of the people who occupied its shores. On one hand, the lake and rivers provided the people with a major source of sustenance (fish and aquatic mammals), and on the other, it has guided their history by acting as a major communication link between Indian groups located in the Upper Great Lakes region.

The Wisconsin glaciation caused two changes in the environment that have affected man's occupation of the Nipissing region. One is the change in drainage patterns, the other is the climate. The Laurentide ice sheet, which covered most of eastern Canada, began to retreat around 10,000years ago. The resulting melt waters, which formed glacial Lake Algonquin in the upper Great Lake basins, had its discharge pass through the French River fault and down the Mattawa and Ottawa Valleys into the Champlain Sea (Hough 1963). This reversal in drainage from the present system lasted for approximately 5,500 years and is termed the Nipissing transgression. All that remains of the glacial shorelines are the sand and gravel terraces found in the outlying plains surrounding Lake Nipissing (Lumbers 1971:59). It is on these terraces that presumed Paleo and Early to Middly Archaic occupations would be found.

Because of iso-static rebound of the land, the Mattawa Valley outlet ceased to function, and the entire discharge shifted southward through the Lake St. Clair outlet approximately 2500 years ago (Lumbers 1971:59). Downcutting of the St. Clair outlet caused water levels to drop to the approximate level of the present Great Lakes (Hough 1963). If Dr. C. Courtin (personal communication 1978) is correct in suggesting that this dramatic event happened within a short period of time (less than two months), I wonder what the impact that such an environmental shock would have had on the people who occupied its shorelines?

Although significant climatic changes have occured prehistorically (Bryson 1966, Bryson and Wendland 1967), the documentation or impact that these changes had within the Nipissing District in enigmatic. Terasmae (1960), working with pollen profiles, has indicated that changes in vegetation have occurred which inturn may reflect changes in temperature. By 8,000 B.C., the Laurentide glacier retreated and the denuded land fell prey to tundra type plants and presumably animals. This environment lasted for only a few centuries (Saarnistoe 1974) before being engulfed by the boreal forest. At 7000 B.C., the boreal forest was pushed northward by a general warming trend occurring over much of North America, and was replaced by a deciduous-pine forest. Generally, the vegetation has remained the same from 3000 B.C. to the present.

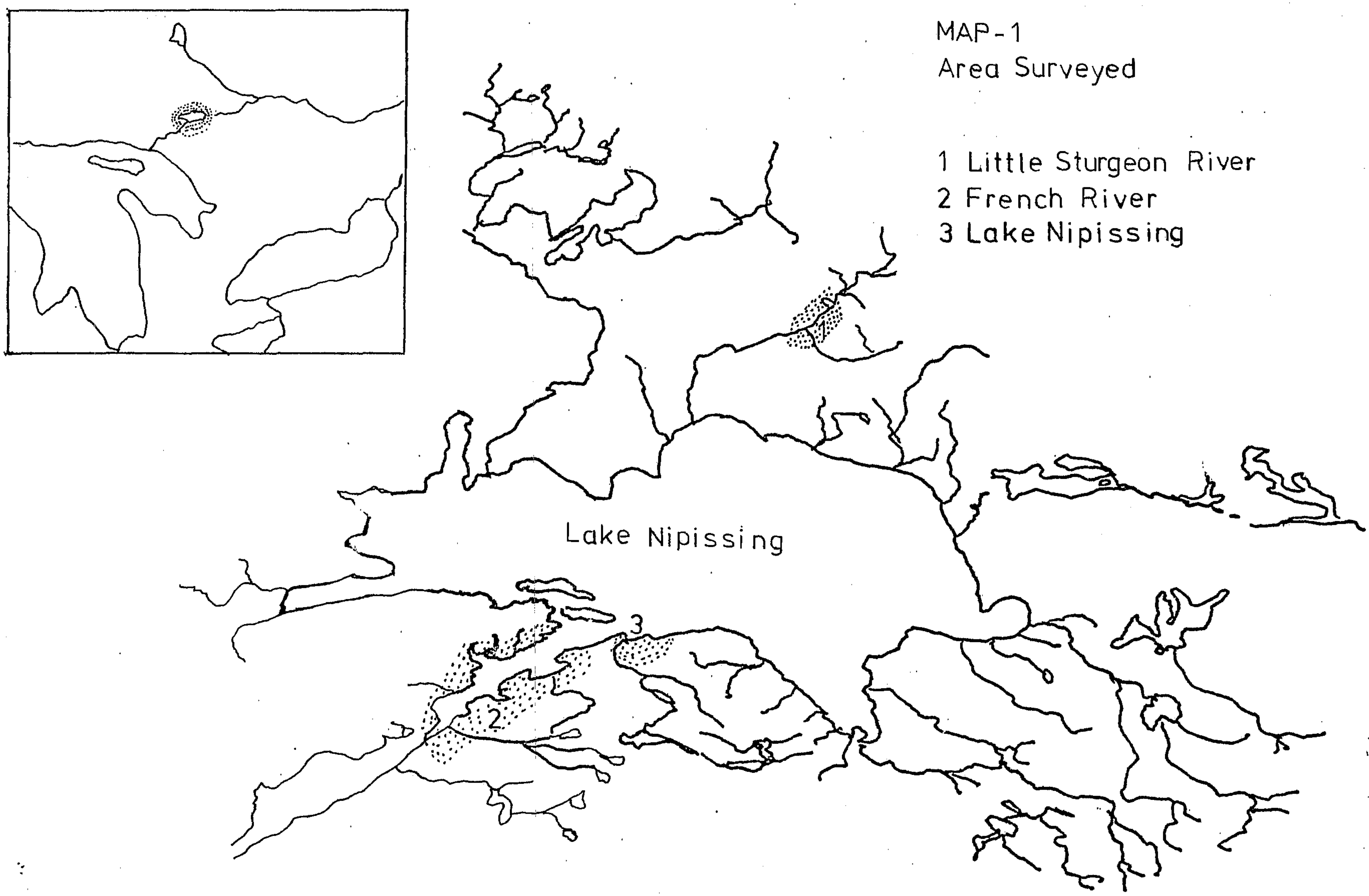
Area Surveyed

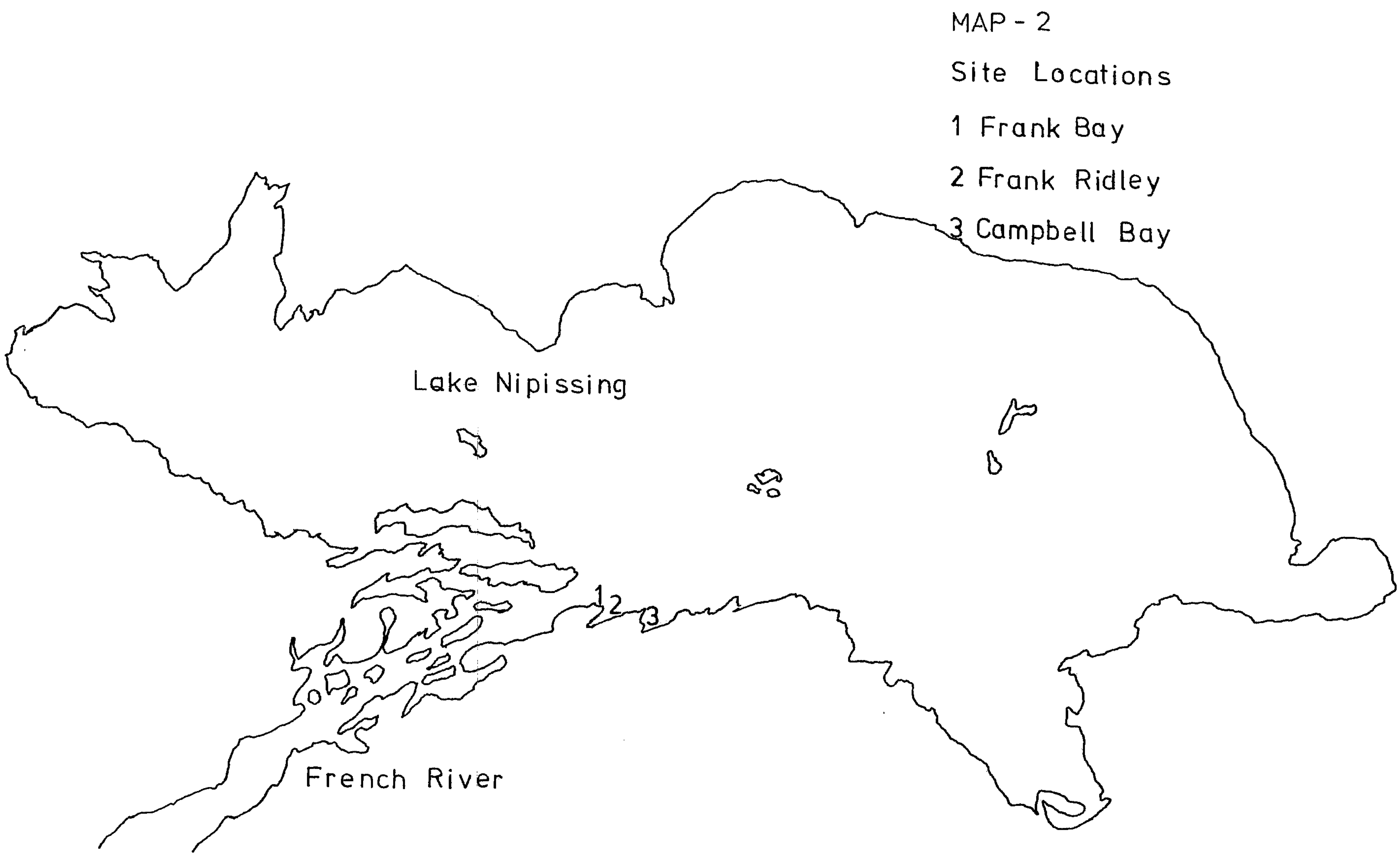
During the summer of 1978, the survey confined its investigation to three areas within the Nipissing drainage system-the Little Sturgeon River, the French River, and the southern shore of Lake Nipissing (see Map 1). The volume of water that flows through the Little Sturgeon River varies considerably from season to season. In spring, the discharge of water is abundant as the river swells its banks, but during the hot summer months the river flow is reduced to a trickle. The prominent fossil ridges that paralled its banks suggest it may have been a primary tributary of glacial Lake Nipissing. For this reason, a crew of five people randomly test pitted an area three miles in length and thirty feet in width along the fossil river banks in hopes of discovering paleo settlements. No evidence of human occupation was uncovered.

Twisted cedar and pine trees that try to eek out an existence on the exposed bedrock of the Precambrian Shield characterize the terrain along the French River system. Sand beaches occur approximately every 13 miles from each other along this Voyageur route, and it was assummed that these areas would have been likely camp areas prehistorically. Although two sites, Commanada Bay, and Island Bay, were intensively investigated, the results were disappointing since no diagnostic artifacts were recovered. It seems reasonable to assume that these sites represent over night camp spots of prehistoric traders who travelled the Upper Great Lakes region.

Along the Southern shore of Lake Nipissing, the survey located two terminal Woodland/Early Historic sites-Campbell Bay and Frank Ridley, and excavated a portion of

MAP-1
Area Surveyed




MAP - 2
Site Locations
1 Frank Bay
2 Frank Ridley
3 Campbell Bay
Lake Nipissing
French River
1
2
3

the Frank Bay site (see Map 2). The material recovered form the three sites comprise the body of descriptive data for this thesis.

Methodology Employed

Keeping in mind that the purpose of the survey was to delineate the site boundaries and to define the cultural content of a site, the sites were randomly test pitted to define the extremities, and then a small number of 2 by 2m squares were placed in areas where the majority of artifacts were encountered. The squares were excavated by trowel and brush in 4cm levels to subsoil. Backdirt was screened through 3/8 inch mesh, while feature material was "floated' through 1/16 inch mesh. The ecofacts collected were analyzed by Dr. H. Savage (faunal material) Mr. R. Fecteau (seed remains) and Ms. L.Kammenof and N. Herman (charcoal).

With an absence of settlment pattern data, cultural groups in northern Ontario are defined on the recoveries of ceramic and lithic detritus. To analyze the ceramic collections, the basic unit of comparison was the vessel. All rims were mended and tallied according to minumum number of vessels represented on the site. Where possible body sherds were included in the vessel descriptions. The vessels were, then, placed into groups corresponding to their regional or cultural affiliation (for example Penninsular Woodland, Iroquoian or Blackduck pottery). Finally, sixteen attributes were selected as the mode of comparison within and between vessel groups. These include four metric attributes - lip and collar thickness, collar height (if present) and vessel diameter. The calculated rim diameter (the rims were placed on a chart of concentric circles) is considered reliable where the sector length exceeds 4 cm. Two techno-functional attributes - temper (composition and size) and colour - were employed to discern fabrication and firing procedures. Because of the immense difference in sample sizes between Algonkian and Iroquoian assemblages some stylistic attributes were "lumped" together to facilitate comparisons. Specifically, the ten attributes recorded were: type of decorative technique and the motif produced on the neck and collar; the presence or absence of decoration on the interior surface and the lip; the presence or absence of secondary decorative techniques such as encircling punctates or bosses, lip notching, and shoulder decorations; and finally the form or profile of the interior and exterior surface of the rim.

Analysis of the lithic assemblage followed two steps. Initially, the source location of the reduced material was identified; and second, a general lithic reduction scheme was formulated to facilitate comparisons between statistically small samples. Material knapped at the site was either derived locally or imported.

I <u>Local</u>

a) Quartz: Omninscient to the area as a result of glaciation and geological intrusions in various rock formations is quartz. It was a primary source of material utilized by the Nipissings.

b) Slate: Slate is locally abundant, however, cultural modification of this material is difficult to discern. Its presence on the sites can only be accounted for by cultural selection.

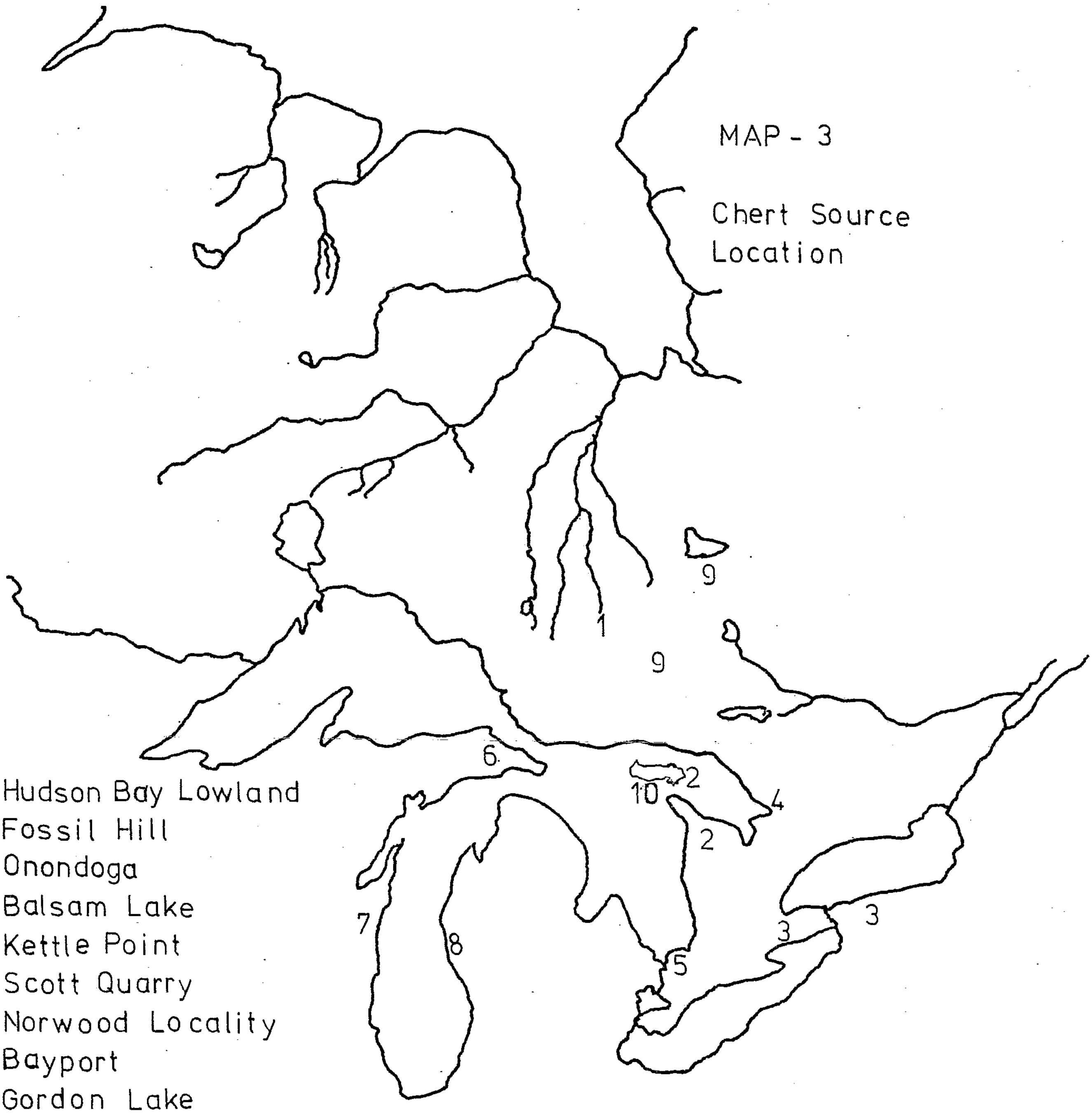
c) Cobblestones and Pebbles: Along the Nipissing shoreline, cobblestone beaches are a natural phenomena. These cobblestones are usually comprised of gabbros and basalts. Occuring on the site and available along the sand beaches are quartz and quartzite pebbles.

d) Hematite: Outcrops of hematite are found on several islands (Iron Island for example; H. Shwartz p.c. 1979) on Lake Nipissing.

e) Andasite: Two fragments of a round reddish fossilized stone were recovered. Dr. Shwartz suggests that they are local to the area. No cultural modification was noted on them.

II Imported

The initial identification of cherts was carried out by Mr. William Fox (Ministry of Culture and Recreation, London Ontario) and Dr. R. Rowe (Laurentian University) and then the assemblage compared with collections housed at McMaster and Laurentian University. The source locations of the cherts are recorded on Map .



MAP - 3

Chert Source Location

1 Hudson Bay Lowland
2 Fossil Hill
3 Onondoga
4 Balsam Lake
5 Kettle Point
6 Scott Quarry
7 Norwood Locality
8 Bayport
9 Gordon Lake
10 Lorraine Quartzite

a) Northern Palaeozoic Cherts: The Hudson Bay Lowland chert is a glacially derived cobble chert from the Palaeozoic Ekwan River, Severn River, and/or Stooping River formations in the Hudson Bay Lowlands (Sanford, Norris, and Bostock 1968). The chert varies in colour, the dominant colour is grey, but hues of light green, blue, yellow, and red may be present. The chert has a glossy overall appearance and inclusions are not characteristic of it. Hudosn Bay Lowland chert is derived from areas historically occupied by Cree and Ojibwa groups.

b) Southern Palaeozoic Cherts: Cherts, that could be identified as to source, were placed into two categories - southern Ontario and Michigan. Generally speaking, cherts from southern Ontario correspond to areas inhabited by Iroquoian groups, while Michigan samples are corrolated with Algonkian speakers.

b1) Manitoulin Island: Manitoulin Island chert is derived from the Palaeozoic Fossil Hill Formation found on the island (Dr. D. Pearson personal communication 1978). The mottled white and grey colours are caracteristic, but can be confused with chert originating from Campbell Quarry in Michigan or from the Coolingwoood area. Because of the proximity of Manitoulin Island to Lake Nipissing, the chert recoveries have been attributed to this locale. Historically, the island was occupied by the Ottawas.

bii) Onondoga: Used as a primary source of raw material by the Neutral Indians, Onondoga chert outcrops in Devonian deposts along the north shore of Lake Erie (Ritchie 1965). It is characterized by a range of mottled colours from grey to brown.

biii) Balsam Lake; As the name implies, Balsam Lake chert outcrops in the vicinity of that lake located in the Lake Simcoe - Trent valley waterway system (Dr. P. Ramsden personal communication 1979). It is a poor qulity chert characterized by a bluish - white colour with numerous black (biotite) inclusions. The area was historically occupied by the Huron.

biv) Kettle Point: Sometimes referred to as Port Franks chert, Kettle Point chert is characterized by a slightly translucent bluish - grey colour, contains fine partilces of siderite (iron oxide), and possess excellent flaking characteristics. It is found in boulder and cobble from along the southeastern shore of Lake Huron in the Kettle Point region.

bv) Scott Quarry: Part of the Cordell formation, Scott Quarry is approximately 170 miles from Lake Nipissing. Chert from this formation ranges in colour from a very dark brown (Munsell 10YR 2/2) to a greyish brown (Munsell 10YR 5/2). Inclusions are present and range in size from one to 5mm.

bvi) Norwood Locality: Part of the Petoskey Formation, the Norwood Locality cherts (including Eastport) outcrop on the western shores of Lake Michigan (McPherron 1967). The distinctive characteristic of the chert is the layering or banding extending throughout the body.

bvii) Bayport: The Bayport chert nodules were formed in the Upper Grand Rapids or Bayport limestone formations (Dustin 1935:466) with outcrops in Arenac, Huron, and Tuscola counties. The nodules are small with the vast majority being less than four inches in diameter.. They are marked by a series of concentric lines of formation. Quartz inclusions occur and fossils are frequent.

The Bayport chert is blue -- grey in colour but varies, from a white chalky material found on the outer surface of the nodules, to a dense dark grey often found near

the center of the nodules (Fitting et al 1966:18).
c) Precambrian Cherts and Quartzites: Within the collection, and primarily in the tool kit, a large amount of material could not be identified to a specific source. The chert is a poor quality (slightly granular appearance) and highly patinated. Similarities with material from Larder Lake (Dr. W.C. Noble p.c.) suggests a source location in that vicinity. Quartzites of varies hues (green to grey are also belived (Fox p.c.) to be derived from the Abitibi - Timiskaming drainage system, an area historically occupied by the Cree.
ci) Gordon Lake Chert: Three major outcrops of Gordon Lake chert, Flack and Cobra Lake (Mississagi Provincial Park, Brizinski 1978), Smoothwater Lake (near Kirkland Lake, Pollock 1976), and Lake Abitibi (Ridley 1966:8) are known to exist. The glacial cobbles of Gordon Lake chert are found in the vicinity of the bedrock formation. This coarse grain chert varies in colour from orange to green; however, the dominant colour utilized is dark green. Material exported from bedrock formations appear to have been utilized during the middle Archaic period by Algonkian groups.

cii) Lorraine Quartzite: White and slightly granular in appearance, the utilization of Lorraine quartzite was made famous by Thomas Lee (1954) when he excavated the stratified Sheguianda site on Manitoulin Island. The quartzite also exists in glacial till located in Mississagi Provincial Park (Brizinski 1978:9). Its utilization was popular during the Archaic periods.

To account for the variability within the debitage assemblage, as well as to enable the manipulation of the data in a meanful fashion, a classification scheme that considered technological, fuctional and stylistic variables was established. Generally, the artifacts recovered were separated into two families: conchoidally fractured material and non-conchoidally fractured material or rough stones. The conchoidal material was divided into a number of categories, which in turn were sub-divided into various types of artifacts. Depending on various attributes, some artifact types were placed into several varieties. The rough stone were placed into individual categories. The scheme is presented in Table 1.

Table 1. Classification scheme for lithic debitage.

A: <u>Conchoidal Fractured Material</u>

1. Detritus
   - a) Flakes
     - i) pressure or retouch
     - ii) secondary
     - iii) primary
     - iv) chips
   - b) Cores
     - i) shatter
     - ii) block
     - iii) nodular
     - iv) bipolar

2. Utilized Artifacts
   - a) Unmodified Flakes
   - b) Retouched Tools
     - i) unifacial tools
       - A) scrapers
         - 1) end
         - 2) side
         - 3) Multiple
       - B) unifaces
       - C) spokeshaves
       - D) burins
       - E) other
     - ii) bifacial tools
       - A) preforms
       - B) bifaces
       - C) projectile points
     - iii) core tools
       - A) bipolar
         - 1) wedge or end
         - 2) side
         - 3) multiple
       - B) core tools

Table 1: continued

B: <u>Non Conchoidally Fractured Material or Rough Stones</u>

1: Hammerstones

2: Ground Stone

3: Slate Detritus

4: Other

The detrital specimens were divided into two categories: flakes and cores. The flakes were subdivided into four general types: pressure or retouch, secondary, primary, and chips; while shatter fragments, tabular, nodular, bipolar, exhausted, and random were assigned to the category of cores.

Pressure or retouch flakes are defined as those flakes that were removed to sharpen or resharpen a tool. They are characterized by their small size (less than a 1cm in length) and weight (less than 0.1gm); while in form they are characterized by flat profiles, slightly crushed platforms, parallel sides, and a feather termination.

Secondary flakes refers to those flakes removed from either a preform, biface, or core in order to shape or sharpen the tool. Obviously, this type could be further subdivided to accomodate those differences in tool types. For example, if the platform angle is acute, one can infer it was removed from a biface. The basic characteristic of these flakes is the flake scars on the dorsal surface, and rather diffuse bulbs of percussion. The ventral surfaces of these flakes are usually concave and they very in weight from 0.1gms to 0.6gms.

Primary Flakes are defined as those flakes initially removed from the core, which would indicate the inception of tool manufacture. The dorsal surface of these flakes is usually covered with cortical material, while platforms tend to be faceted and at a 90° angle to the ventral face. These flakes are generally flat in profile, but a slight concave curvature may occur on the ventral surface. They usually weight more than 0.6gms.

Chips refer specifically to quartz and quartzite flakes which do not have the diagnostic attributes of a flake-platform, bulb of percussion, shatter rays, and undulations; but have the general form of a secondary flake.

Shatter fragments are defined as any fragment exhibiting angular structure without any characteristics of a platform or bulb of percussion. They are a result of a percussion blow to the core resulting in the removal of a flake(s) and shatter detritus.

Cores, that are to be reduced, originate either in bedrock formations or are found as nodules in glacial till. Those cores that have a blocky or angular appearance are inferred to originate from a primary source and are referred to as block cores (White 1966). Those cores which have a rounded appearance are inferred to originate from the glacial till and are called nodular cores (Lennox 1977:36).

A bipolar core refers to the reduction of the core by a technique of hammering a core while it is placed on an anvil. The resultant blow forms two diametrically opposed crushed platforms. It is a technique used to either further remove flakes from an exhausted core; or to sharpen the core so that it may be used as a tool; or the result of a core having been used as a wedge.

The utilized specimens were divided into two categories: unmodified flakes and modified tools. The unmodified flakes are not subdivided and are referred to in the thesis as utilized flakes. The modified tools are divided into three types: unifacial tools, bifacial tools, and cores.

Utilized flakes exhibit a worked marginal edge caused by utility rather than technology. These flakes show no signs of either ventral or dorsal retouch.

As the name implies, unifacial tools are retouched only on one surface, which is usually the dorsal surface. This category is subdivided into several types: scrapers, unifaces, or other varieties, which in turn can be further segregated, if desired.

Tools that are flaked on both ventral and dorsal surfaces are termed bifacial tools. These tools are classified into three types: preforms, bifaces, and projectile points. To this classification, additional categories may be included.

Core tools are not only the most neglected tool category that archaeologists have overlooked, but they are also the most confusing to identify. The case in point is illustrated by the conceptions of what a bipolar tool is to different researchers working in the Upper Great Lakes.

The bipolar category was recognized initially by Binford and Quimby (1972) in 1963. The authors posited that there were five distinct types of bipolar cores with each type related to different stages of core reduction.

No functional interpretation for the core types was hypothesized.

McPherron (1967), working with Woodland materials from the Juntenun site, suggested that only three types need to be distinguished. He interpreted two types as representing different types of shatter from bipolar hammering, while a third, was presumed to have functioned as a "gouge".

Wright (196), on the other hand, inferred from experimentation that the bipolar tools or "wedges" were used in a number of bone or wood working activities such as gouging and incising. I believe that both McPherron and Wright are correct in the functional interpretation of some bipolar cores, and from my own observation of Upper Great Lakes collections deduce three reasons for reducing a core bipolarily: First, to obtain large flakes from a core that could not be hand held. The flakes represent efficient cutting tools. Second, as McPherron and Wright have suggested, the end of the core be used as a tool, presumably in a gouging and incising activity. Third, to sharpen the sides of the core so that they may be used probably as a spokeshave or some related cutting function. Evidence for this inference rests on the concave or side deteriorated edges on bipolar tools recovered from the Morrison site (Brizinski and Buchanan 1977) and the Renard site (Bertulli and Kilpatrick 1977). If this assertion is correct, then three types of bipolar cores need to be recognized in any classification: detritus, gouges or wedges, and the worked side of bipolar cores.

In the process of core reduction, the knapper may decide that, rather than require a finished tool, the edge of the core is adequate for a specified purpose. This tool is simply called a core tool.

CHAPTER THREE

THE CAMPBELL BAY SITE (BbGw--2)

Summary

Located on Lake Nipissing and named after the bay on which it rests, the Cambpell Bay site (BbGw-2) was briefly surveyed and tested during July and August of 1978. The site had been disturbed by cottagers and is threatened presently by indiscriminant summer campers and tourists attracted to the area by its scenic surroundings and bountiful resources.

Two distinct cultural components, Archaic and late prehistoric-contact, are disbursed within the site boundaries. The Archaic component is represented by three bifaces, a side notched projectile manufactured from a poor grade quartzite, and one hearth. Charcoal fragments from the hearth dated to 3255 ± 85 B.C.(S-1682) making this component the earliest known for the Nipissing district.

Based upon a second radio carbon date of A.D. 1475 ± 55 (S-1683), ceramic seriation, and the presence of an historic glass bead, it is suggested that Campbell Bay was occupied seasonally from A.D. 1500 to A.D. 1630 by ancestral Nipissing Indians.

This site, then, is one of the few on Lake Nipissing that offers us the possiblility of determining the ultimate origins of the Nipissings and impact of European contact on Native Nipissing culture.

Excavation and Stratigraphy

Situated on the western shore of Campbell Bay, the site is sheltered by a sheared megalithic outcrop of granite on the northern periphery and an undulating boulder pavement around the western and sourthern edges. Poplar, birch, maple, oak, with sporadic clusters of white pine, jack pine, and white spruce cover the site. It is presumed that similar environmental conditions were present at the time of native occupation. The site is approximately ½ an acre in size, and lies between two beach terraces. From the water edge to the first terrace the slope rises 1.6m. Ten meters from the first terrace is a second terrace which is 2.6m above water level. The first terrace forms the storm berm for current Lake Nipissing whose waters are held at 640 feet A.M.S.L. by a Minsitry of Natural Resources dam located at the Chaudier dam.

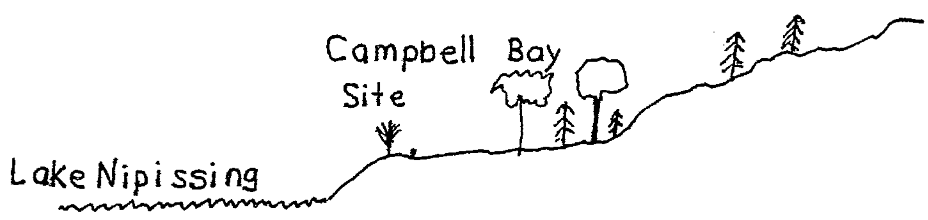


Fig. 1: Schematic profile of the Campbell Bay site.

During the summer, the site was arbritarily test pitted to determine the perimeter and range of cultural occupation, then four 2m X 2m test squares and one 1m X 2m square (a total of 162 square feet) were excavated using standard techniques of trowelling and screening. A 2" X 2" wooden stake monument was placed in a cl eared area of the site, and used as the NOEO point on the grid map.

Since no cultural or physical stratigraphy could be discerned, excavation preceeded at 4cm levels from surface to subsoil. Cultural refuse occurred immediately below the rotting humus in a medium fine sandy grey podzol matrix. It extends approximately 20cm from the humus to the yellow subsoil, and at times, cultural features penetrated the sterile subsoil to depths of 30cm to 50cm. Judging from the water-rolled pebbles and sand in the lower levels of the soil matrix, it is obvious that this level was part of the original beach deposit. The upper levels, including the area encompassing the cultural refuse, is suspected to be water deposited as well, but no conclusive evidence can be presented at this time (Figure 2).

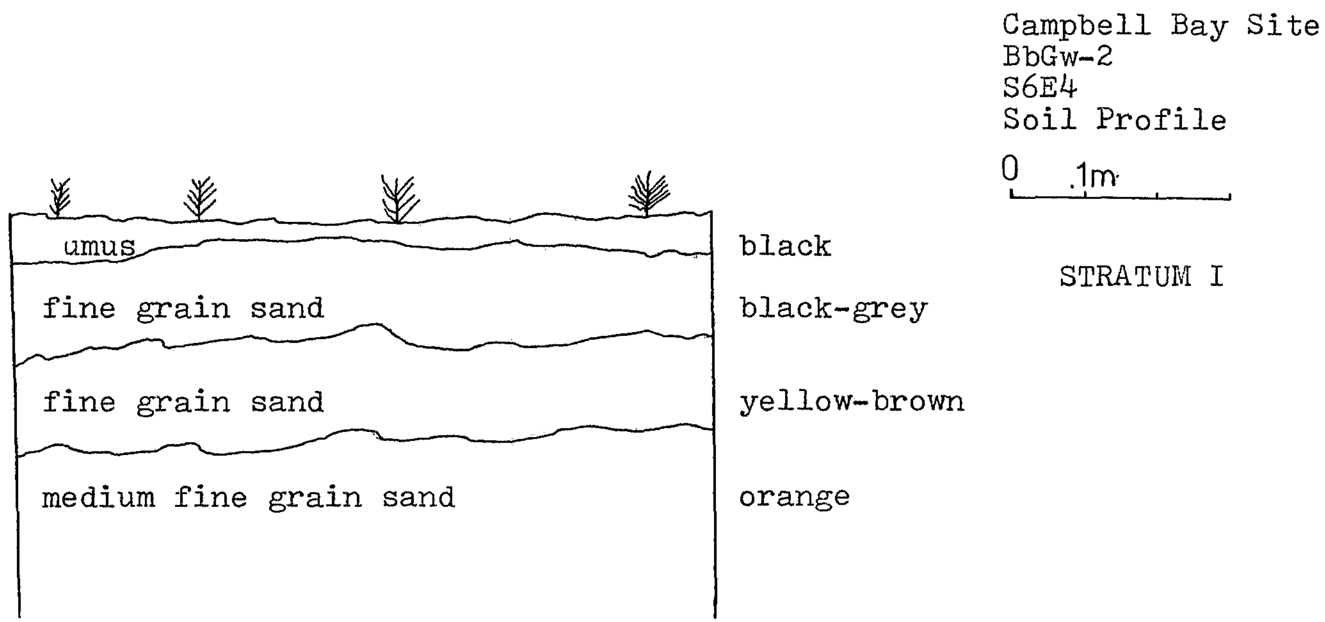


Fig. 2: Typical soil profile of BbGw-2

Site Features

As at most archaeological sites in northern Ontario, artifacts at Campbell Bay are associated with features of various forms and inferred functions. Functionally, the thirteen features have been defined as ten hearths, one refuse pit, and two post moulds, and are spacially related to one anothers as seen in the following floor plan (Figure 3).

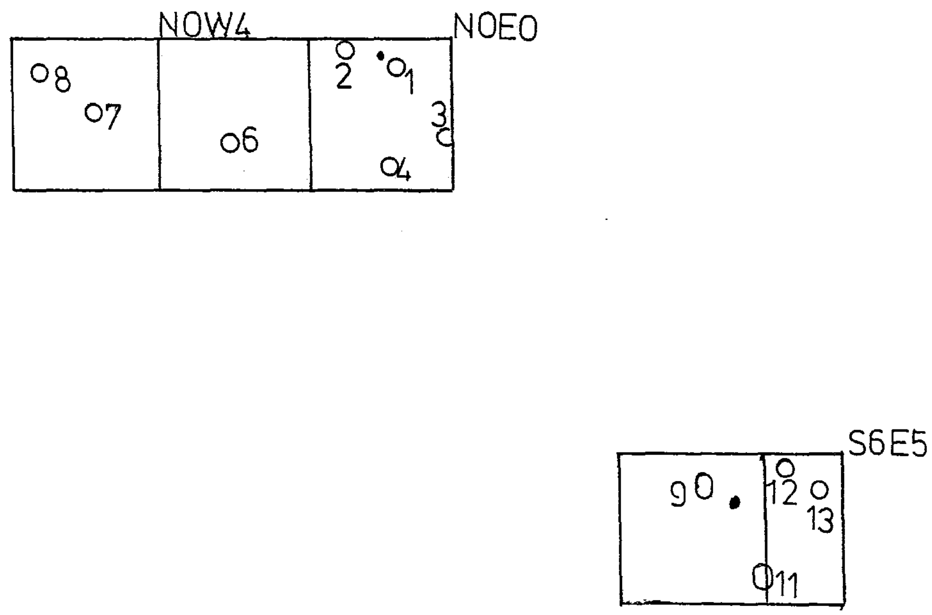


Figure 3 : Campbell Bay Floor Plan

Hearths (f:10, %:76.9) - Two types of hearths have been distinguished on the site: shallow and sunken (Fig. 4). In plan, the four shallow hearths (features numbers 1.3.4.9) are circular, having an average diameter of 25cm, while in profile they concave slightly, and have no defined walls. They are characteristically filled with charcoal, fire cracked rock, charred bone fragments, and have a higher frequency of ceramics than lithic detritus which is confined to small retouch flakes. More often than not the closest artifact cluster to these features is pottery. The shallow hearths most probably served as cooking areas attended to by females, although a general heating purpose is also conceivable. From the analysis of charcoal recovered from these features (undertaken by Lanna Kammenof and Nancy Herman), the selected woods were pine and spruce.

By contrast, the six sunken or pit hearths (Features 6,7,8,11,12,13) are oval to circular in shape and range in length and width from 30cm to 40cm with depths from 30cm to 50cm. Inprofile (Figure 4), they have round bottoms and usually one wall slopes steeply. The sunken hearths are filled with fire cracked rock (more so than shallow hearths), charcoal, charred bone, ceramics and lithics. Closely associated with these features are a generalized assortment of ceramic vessels, and lithic detritus and tools. A heating and cooking function, particularly roasting, is inferred for these features. Support for this assertion if derived from the recovery of a charred corn kernel from feature six (R. Fecteau 1979: personal communication) and two unidentifiable seed remains. The charred seeds may imply a summer's seasonal residence. The analysis of charcoal indicates that deciduous (oak, beech, elm, maple, ash) and coniferous trees (spruce, pine, and juniper) were used for fuel.

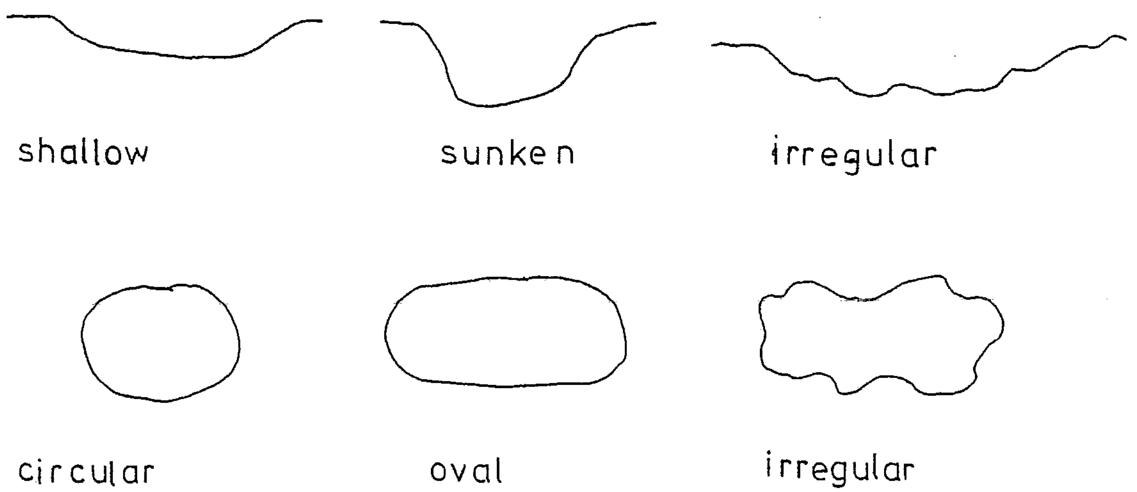


Fig. 4: Feature Plan and Profile Shapes of BbGw-2

Charcoal samples from features one and eight were submitted to Dr. Roscoe Wilmeth, Archaeological Survey of Canada, for processing. In close association to feature eight were two Lalonde vessels (one and two) whose stylistic attributes can be seriated to the sixteenth century A.D. The date derived from the hearth sample was A.D. 1475 ± 55 (S - 1683) and is considered acceptable.

The charcoal sample from feature one dated to 3255 ± 85 B.C. (S - 1682). The stylistic attributes of a closely associated biface no. 796 along with two archaic bifaces, no.2103 and 936 and a projectile point, no. 937, suggest the date derived is reasonable, and it too is considered acceptable.

Refuse Pit: (f:1, 7.7%) - A single refuse pit, feature 2, was found at Campbell Bay. It is similar in plan to the shallow hearths and had a bucket shaped profile (Fig.4). Within the pit were bits and pieces of fire cracked rock, charcoal, small amounts of pottery, and lithic detritus. This fill was mixed with the surrounding soil which in turn created a mottled effect of yealow, grey, and black stain. The pit measured 23cm long by 19cm wide, and attained a depth of 33cm.

Post Moulds: (f:2, 15.4%) Only two post moulds were found at site , 6 and 10cm in diameter and ranging from 20 to 30cm deep. While they do not form any recognizable pattern, it can be noted that both posts be contiguous to a shallow hearth (Fig.3).

The absence of any discernable house structure or clearly defined feature patterning is related to the small units of excavation. Worthy of note, though, is the circular arrangement of three sunken hearths, (Features 11,12,13) in Area B, and the alignment of three sunken hearths (Features 6,7,8) in Area A.

Artifacts

The Campbell Bay site produce 1097 specimens, of which 54 or 5% represent finished items (Table 2). Such low yields of finished artifacts are typical of northern Ontario sites, but nonetheless, enough representative items are available for comparisons. An Archaic component, dated to 3255 $\pm$ 85 B.C. (S - 1682), is represented by three bifaces and one projectile point. The artifact styles and material used in their manufacture have a shield Archaic flavour reminiscent of the technology employed at Shequiandah. For the contact period the pottery proves interesting for the presence of Huron, Algonkian , and "imitation" wares appears in the sample. Also, the lithic detritus, while skewing the sample (95%) provides valuable insights into raw resource procurement and the subsequent reduction sequences of the Nipissing Indians.

Table 2: Artifacts from Campbell Bay

Item	N	%
Pottery (756)		
Body Sherds	643	58.6
Necks	40	3.6
Rims	39	3.6
Shoulders	34	3.1
Pipes	2	.2
Lithics (338)		
Flakes	204	18.6
Cores	120	10.7
Bipolar Core Tools	4	.3
Scrapers	4	.4
Projectile Points	2	.2
Bifaces	2	.2
Preform	1	.1
Core Tool	1	.1
Historic Items (1)		
Bead	1	.1
Total	1097	199.9

<u>Pottery</u>

From the sample of 756 sherds recovered (Tables 2and 3), it was possible to isolate 18 ceramic vessels and two ceramic pipes. The large percentage (89%) of Huron-like pottery (sherds that would be lost in any Iroquoian assemblage), and their mode of manufacture suggest the Nipissing women shared or copied the ceramic technology of their historic allies - the Huron.(Note: imitation Huron pottery refers to the poor execution in forming the Huron design elements).

to analyze the collection, eighteen attributes were employed (see Chapter Two). The meteric measurements recorded (Table 4) indicate that the overall size of the vessels were small (oriface diameter ranges between 14cm to 20cm). Also, the presence of charred encrustations on most of the interiorvessel walls suggest that the pots were used for cooking gruels.

Table 3: Ceramic detritus recovered from BbGw-2

Square Number	Vessel Number	Cultural Affiliation	Rims	Necks	Shoulders	Body	Totals
N0W4	1	Huron-like	1	2	4	3	10
N0W4	2	Huron-like	9	10	0	76	95
N0W2	3	Huron-like	2	0	0	0	2
N0W2	4	Huron-like	3	3	3	57	66
S6E5	5	Huron-like	5	2	5	6	18
N0W0	6	Huron-like	1	5	5	13	24
N0W2	7	Huron-like	1	1	0	7	9
S6E4	8	Huron-like	2	0	0	1	3
S6E4	9	Huron-like	1	0	0	0	1
S6E4	10	Huron-like	1	4	0	25	30
S6E4	11	Huron-like	1	0	0	1	2
S6E4	12	Huron-like	1	0	0	2	3
N0W4	13	Huron-like	1	0	0	0	1
S6E4	14	Huron-like	1	0	2	13	16
N0W0	15	Huron-like	2	0	0	4	6
N0W0	16	Huron-like	1	0	0	0	1
N0W0	17	Imitation	3	7	14	164	188
N0W0	18	Algonkian	2	2	1	13	18
Unanalyzable			1	4	0	256	263
Totals			39	40	34	643	756

Table 4 Metric attributes of vessels recovered from BbGw-2

Vessel No.	Collar Thickness (cm)	Lip Width	Collar Height	Lip to Shoulder Height	Pot Oriface
1	n/a	0.6	n/a	n/a	n/a
2	1.0	0.6	5.4	8.1	11.0
3	0.9	0.7	1.4	3.1	16.0
4	0.6	0.4	.9	4.3	12.0
5	0.9	0.6	1.4	5.2	14.0+
6	1.0	0.6	1.3	n/a	16.0
7	n/p	0.8	n/p	2.5	12.0
8	1.0	0.8	1.5	3.8	14.0+
9	1.1	0.9	1.0	n/a	15.0
10	1.2	0.9	1.4	n/a	15.0
11	1.0	0.8	1.4	4.1	11.0+
12	1.0	0.8	1.3	3.7	19.0+
13	1.0	1.0	1.4	n/a	16.0
14	1.0	0.6	1.0	4.4	n/a
15	n/a	0.6	n/a	n/a	n/a
16	n/a	0.3	n/p	2.6	n/a
17	n/a	0.9	n/p	5.1	20.0+
18	1.0	0.8	2.3	3.2	10.0+
$\bar{X}$	0.9	0.7	1.7	4.2	15.0

n/a--Not available

n/p--Not present

+--Reliable measurements based upon rim sectors greater than 4.0cm long

Within the collection, the overall design pattern appears to be aligned with ceramics originating in southern Ontario (assuming the French River arbritarily divides Ontario into north and south), and specifically to Huronia. The "Huron-like" styles are comprised of two high collars (vessels 1 and 2) fourteen low collars (vessels 3 to 16), and one imitation vessel (vessel 17). Vessel 18 has the attributes that remind me of Penninsular Wookland pottery, but according to Dr. W. Noble (Personal Communication: 1979) could be ascribed to the Petun. A summary of the nonmetric attributes is given in Table 5.

Table 5: Summary of Non Metric Ceramic Attributes from BbGw-2

Attribute	Presence	Absence	Form	Technique	Design
Collar	88%	12%		incised 82% stamped 18%	simple 76% complex 24%
Neck	33%	77%			
Interior	0%	100%			
Lip	31%	69%			
Lip Notching	17%	83%			
Sub Collar	12%	88%			
Shoulder	75%	25%			
Interior			convex 40% concave 27% straight 33%		
Exterior			concave 13% straight 87%		

Of the two Lalonde vessels recovered from the site (see Fig. 5 and Plate), no encrustations were observed along the vessel interiors. The poor quality clay and the near association with a pit suggests that vessel 1 was used as a storage container. Vessel 2, on the other hand, was directly associated with a hearth from which was removed a boiling stone. Perhaps this vessel was employed as a kettle.

From a microscopic inspection of the clay and temper, vessel 1 was constructed from a sandy clay to which fine particles (0.2cm) of quartzite and felspathic materials were added. These tempering agents comprised about 15% of the vessel. Although the clay was meticulously applied by using a paddle and anvil technique to form the walls (as indicated by the thin laminations), the vessel broke into small retangular sherds. The colour varied on the exterior and interior surface from a brownish yellow (6/8) to a reddish yellow (6/6); however, the colour was consistent within the sherd. This may indicate that the vessel was fired in a kiln (Emerson 1967:147).

The source area of the clay could not be determined for vessel 2; but it was appreciably finer grained than vessel 1, in that the temper for vessel 2 was a course grained (o.6cm) quartzite and microcline, and roughly comprised 10% of the vessel. The daubs of clay used in constructing the vessel were thicker and longer than in vessel 1. The oulour gradient between the exterior and interior surface differed between body sherds and rim sherds. The body sherds were coloured a dark grey to black in the central region. In other words, the carbonaceous impurities in the clay had not been completely oxidized. This would suggest that vessel 2 was fired in an upright position which is unusual. According to Emerson (1967:147) and Buchanan(Brizinski and Buchanan 1977:180), the trend in firing an Iroquoian or Algonkian pot was in an inverted position.

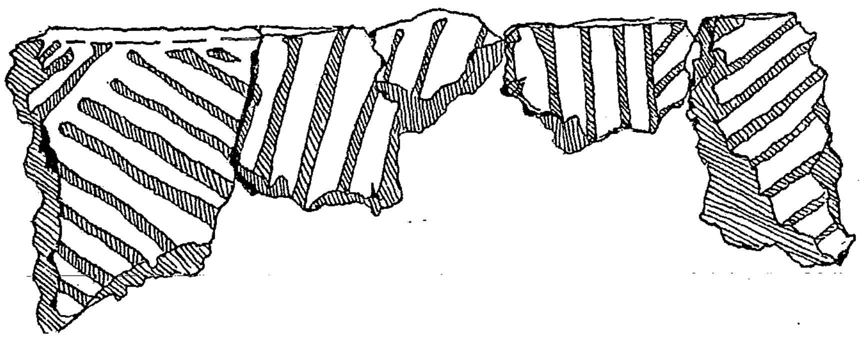
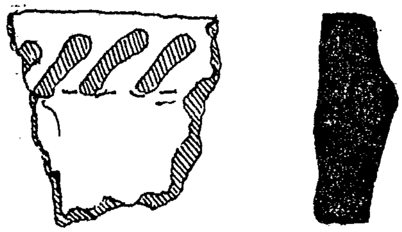


Fig. 5: BbGw-2 vessel 2.

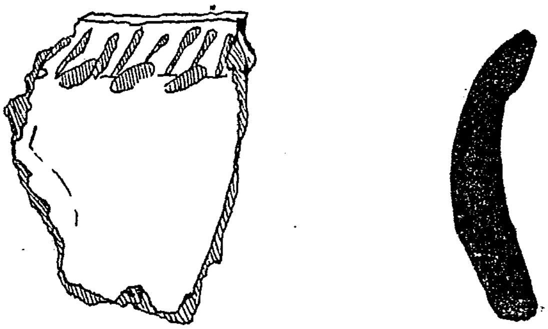
By far the most numerous vessel variety (14 vessels of a total of 18) is the low or incipient collared vessels (fig.6). As the name implies the general characteristic of these vessels is the incipient or poorly pronounced collar. Within the collection the collar thichness is 1cm while the collar length ranged between 0.89cm to 1.51cm, and a standard deviation of 0.14cm from the mean. The preferred decorative pattern is an impressed or incised design inscribed along the collar. Neck, lip, or shoulder decorations, when present, occur in combination with a collar decoration. The interior surface is never decorated, and the exterior body surface is always smoothed.

As indicated by the encrustations found on the exterior and interior surfaces, eight vessels (numbers 3, 6,7,8,9,11,13,16) were used to cook a gruel. Because of the clean interior and exterior surfaces of the remaining six vessels, a functional interpretation is tenuous. It would seem that two of these six vessels (Numbers 10, 12) has not seen use, but were shattered in the firing process. This speculation is based on the roughened or exfoliated interior surface (a condition perhaps caused by an insufficient "soak" or drying time), and the uneven colouration found within the same sherds. The remaining four vessels (Numbers 4,5,14,15) were not directly associated with any features and may have been used as storage or trade vessels.

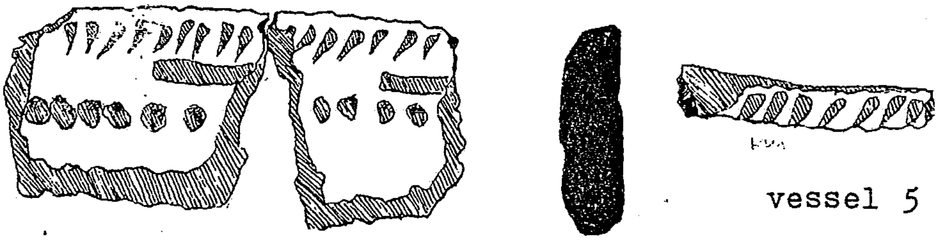
Although X-ray techniques are necessary to distinguish between sources of clay, a macroscopic inspection of the



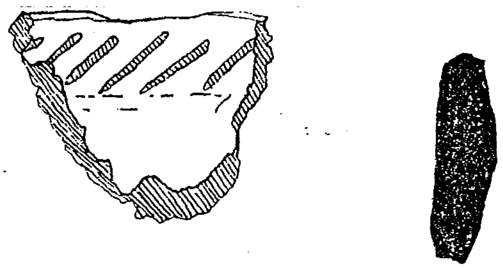
vessel 3



vessel 4



vessel 5



vessel 6

Fig. 6: Vessel illustrations from 3 to 16,(BbGw-2)

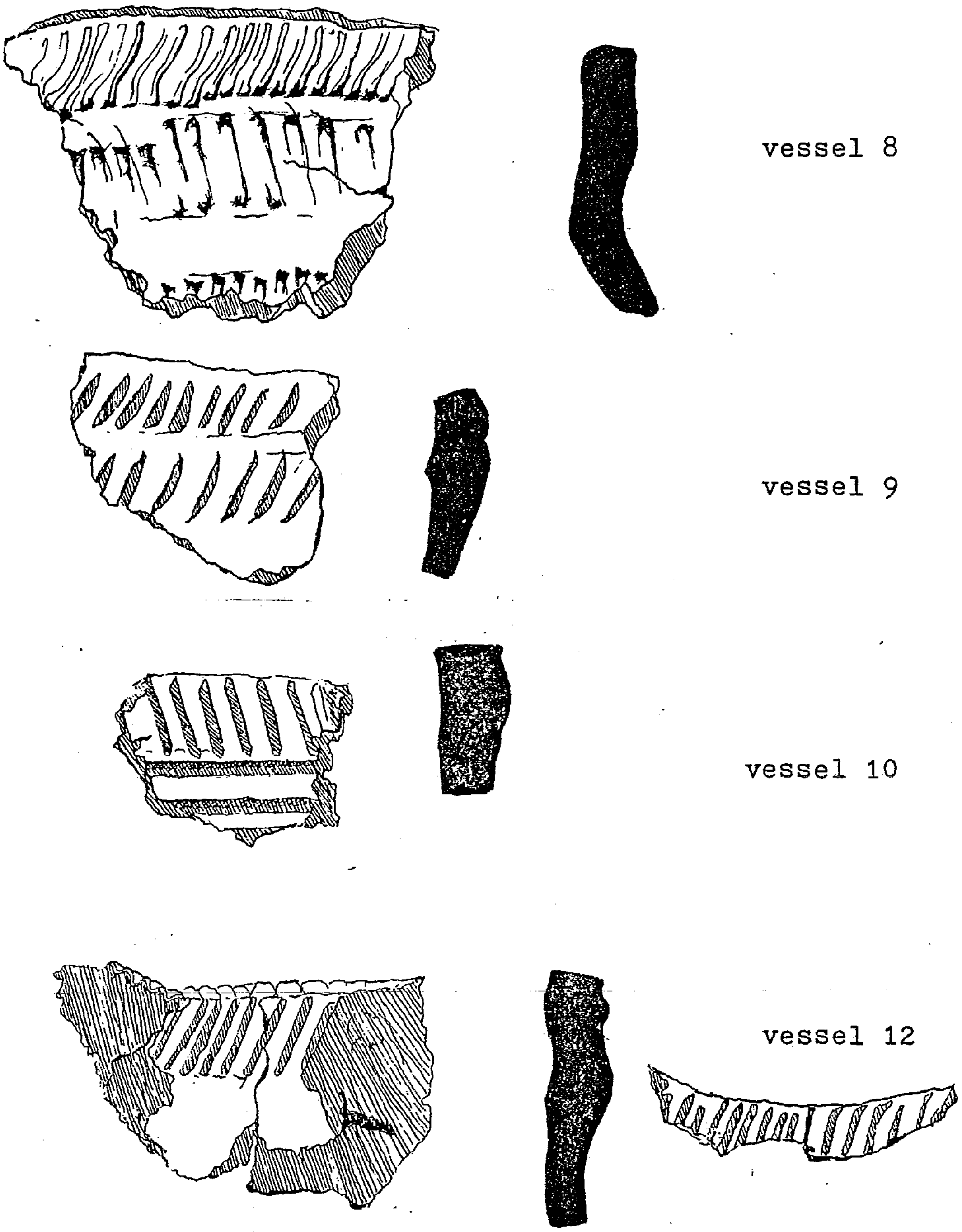
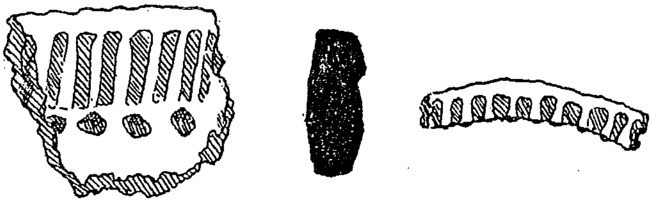
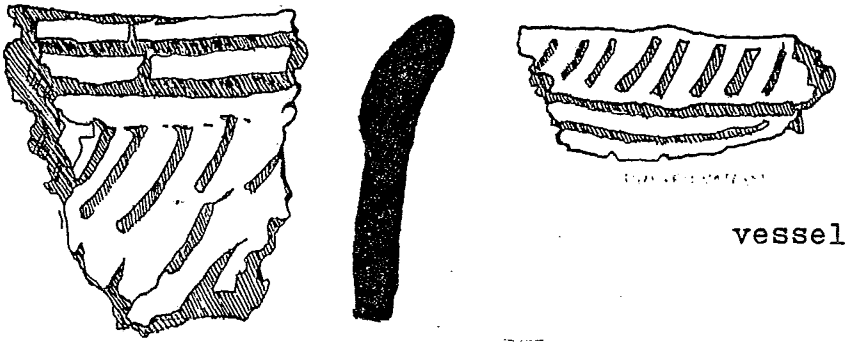


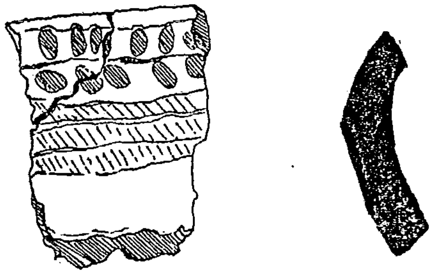
Fig. 6: continued



vessel 11



vessel 13



vessel 16

Fig. 6: continued

vessels suggest differences in the composition of the clay. These differences, which are the presence or absence of sand particles and iron oxide, are attributed to either disparate sources of clay, or different methods for separating and "cleaning" the clay for its utilization in ceramic manufacture.

The tempering agents employed appear to be confined to quartz, quartzite, and felspathic materials; and again X-ray techniques are warranted to bear this assertion out. Of the 14 vessels, ten contained temper particles that were less than 2mm in size, while the temper size for the remaining vessels were conspicously larger ranging up to 6mm.

Correlated with the differences in temper size was the manner in which the daubs of clay were applied to the vessel walls. The smaller the temper the more meticulous the application as indicated by the thinner (where the laminations were distinct, 9 foliations were counted within the 1cm thickness) and more numerous lamination. Conversely, the larger the temper the wider and longer the daubs of clay (within a 1cm thickness 6 or less laminations were counted). Because of the small sample, comparisons with other attributes showed no significant trends.

Judging by the consistent colouring from exterior to interior, and the absence of carbonaceous impurities within the centre of the sherds, all of the vessels were well fired. No features were found on the site that might corraborate the supposition that the pots were fired in a kiln.

In summary, stylistically speaking each of the fourteen vessels is unique; but are comparable to Iroquoian vessels from southern Ontario that date from A.D. 1450 to A.D. 1650. The clay containers were employed primarily for cooking, while use for storage or trade of food is implied. If the fabrication of the clay vessels is considered, the pots could be grouped as the type and quantity of clay and temper selected. All the vessels appear to have been fired in a similar procedure.

Vessel 17 (fig.7) has all of the attributes of an Iroquoian vessel, geometric incising, a castelation or nubin; a smoothed body; but it does not have the artistic execution of true "Iroquoian" pots. As such, Dr. P. Ramsden (personal communication 1978) termed it an "imitation". Whether it is an Algonkian women imitating an Iroquoian style or just an adolescent attempt in constructing a vessel, the dominating influence from southern Ontario is apparent. Manufactured from a fine grained clay, and small (less than 2mm) temper particles of quartzite and felspar (which comprised about 10% of the pot); the vessel was meticulously constructed. Judging by the incrustations found on the interior surface, this container was used in cooking gruel. The poorly pronounced nubin is characteristic of pottery circa A.D. 1580 (Noble personal communication 1979).

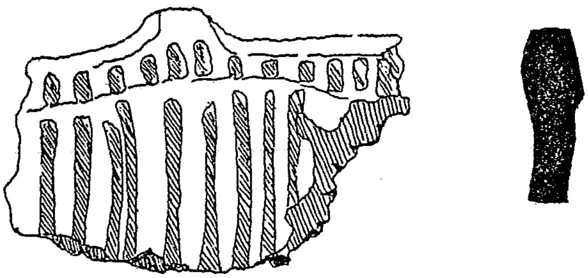


Fig. 7, BbGw-2, Vessel no. 17

In Michigan and Wisconsin, the term Penninsular Woodland (Mason 1976:178) refers to grit termpered, usually cordmarked (smoother necks and rims) pottery with everted rims and scalloped lips and has been ascribed to an Oneota cultural group. In Ontario, the term is applied to everted rimed vessels and has been implicitly associated with Algonkian groups. Using Mason's (1976:178) definition of Penninsular Woodland, I would consider vessel 18 (Fig.8) to be an example of such a type. The problem is that, although it has the prescribed vessel profile and lip decoration, Iroquoian attributes, such as a smoothed body and incised vertical neck design; are present as well. Since similar attributes were associated with Soper ceramics, Dr. Noble suggests it may belong to a Petun ceramic tradition.

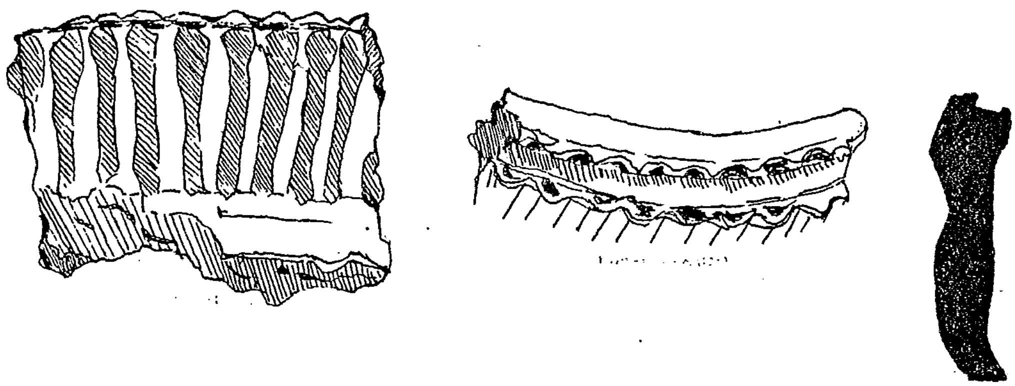


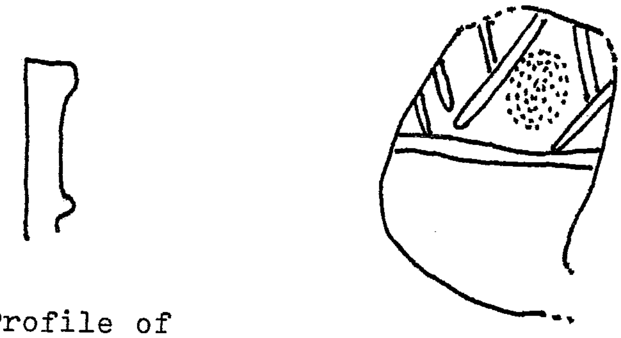
Fig. 8, BbGw-2, Vessel No. 18

As with vessel 17, this container was manufactured from a fined grained clay; but the amount of temper added to the clay was approximately 8%, the lowest quantity for the entire collection. No functional interpretation can be ascribed to it.

<u>Pipes</u> (see Fig.9)

Of the two ceramic pipes collected from the site, only a small portion of each bowl was preserved. No macroscopic tempering agents were observed for either pipe, and no indication of utility was noticed on the interior surface of the bowl. Pipe 1 may have been a collared pipe (Emerson 1954) as indicated by the insloping curvature noted on the broken edge. Decoration is confined to two raised linear surfaces. The first is a result of a slightly rolled lip that has been squared as it meets the rim of the bowl. A similar effect, circumscribing the collar, has been achieved 2cm down from the lip.

Decorated on the bowl of pipe two are several trailed oblique lines that meet a horizontal trailed line 1.7cm from the lip.



Profile of
Pipe 1

Pipe 2

Fig. 9, BbGw-2, pipes.

Lithics

Only four artifacts, three bifacial tools and one projectile point, from the entire collection, are assigned to the Archaic component. The remaining assemblage is assumed to belong to the late prehistoric component and is discussed separately.

A charcoal sample from a hearth is near association with three Archaic tools was dated to 3255 ± 85 B.C. (S - 1682), and is considered acceptable. The assemblage, then is the earliest known for the Nipissing district.

The utensils were manufactured from poor quality cherts and quartzites, but the source of these materials is undetermined. General characteristics, such as grain size, mineral content, and colour suggest a location in north-eastern Ontario.

Preform: Diamond shape in cross section and broken in midsection, No. 2103 is termed a preform because of the heavily patinated dorsal surface, and slightly exposed cherty ventral surface. Utility is inferred from the hinge fractures present on the widely serrated edge. Table 6 summarizes the attributes recorded.

Bifaces: (Fig.10, Plate 5). There is no basic similarity between the two bifaces in form and presumable function, although both are manufactured from the same poor quality Precambrian chert. Biface No. 796 is triangular in cross section and has two regular serrated edges (three serrates in a 1cm length). These edges, reminiscent of a saw blade, may have been used in fishing activities (such as scaling a fish). This assumption is based on the presence of similar tools at the Falls site (Bertulli: in preparation), a Mississagi fishing station.

The second biface, No. 936, is oval in cross section, and the slightly worn side (indented from the lancelolate shape and numerous hinge fractures) suggests a cutting function for this tool. The Attributes recorded are summarized in Table 6.

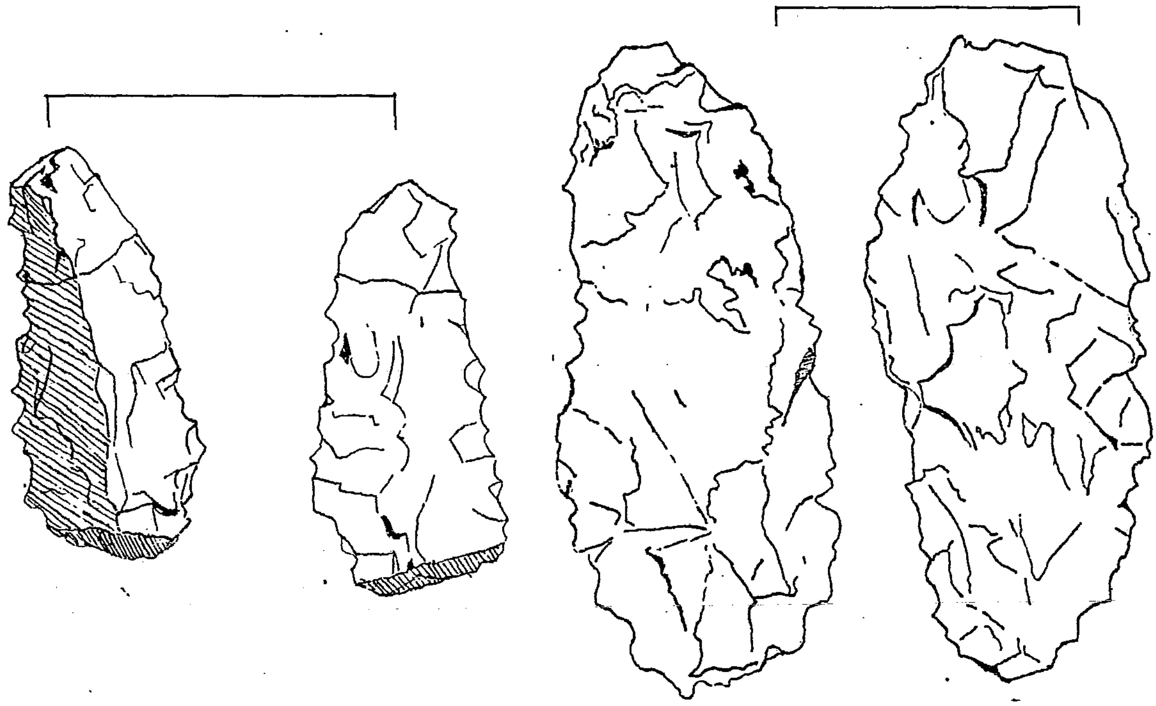


Fig. 10: Bifacial tools nos. 796 and 936

Projectile Point: (Fig.11 and Plate no.5) Projectile point no.937 shares characteristic of Archaic point styles both earlier sheguianda (Wright 1978:68), and later, Dustin (Fitting 1970:71). These include: side notches, manufactured from a cherty-quartzite, derived from a bifacial preform, and has a relatively large lenght to width ratio (1:3). It is illustrated in fugure 11 and the attributes recorded are summarized in Table 6.

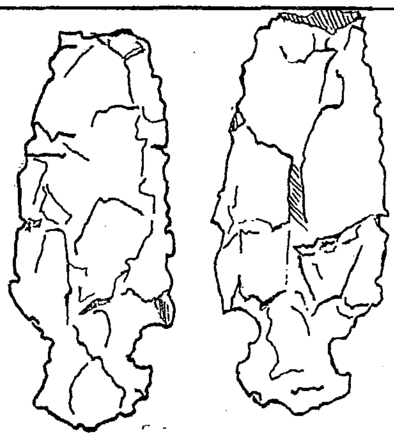


Fig. 11: Projectile point no. 937.

Table 6: Selected attributes of bifacial tools from BbGw-2

Attributes	No. 796	No. 936	No. 2103	No.937
Type	Biface	Biface	Preform	Projectile
Location	NOEO	S6E4	S6E5	S6E4
Lenght(cm)	5.5	8.5	n/a	n/a
Width	2.4	3.6	3.7	2.4
Thickness	1.8	0.8	1.3	1.2
Weight(gm)	21.0	30.6	15.5	10.1

Woodland Assemblage

As seen in Table 2, the woodland lithics are dominated by flake detritus comprised of local and imported materials. By far, (both in numbers and weight) the most dominant material utilized is quartz, a local available product. Imported materials are confined to cherts which were utilized as unifacial and bifacial tools.

From the detrital material, it is obvious that the only tools manufactured on the site were derived from quartz, while unifacial and bifacial tools of chert were resharpened. The small numbers of unifacial and bifacial tools recovered from the site, and the abundance of poor quality flaking material suggests that imported chaer was at premium.

Raw Material

1) Local: Characteristic of Nipissing assemblages is the utilization of locally abundant quartz and slate. Cultural modification of slate is difficult to discern but its presence on the site can only be accounted for by cultural selection. Interesting is the recovery of two fragments of andasite, a reddish fossilized stone. No cultural modification was noted on them, but their recovery near a shallow hearth (Feature 4) suggests some functional or perhaps ritual use for the items.

Imported: Those imported cherts, that could be identified to their source, originate from northern Ontario and Michigan. The presence of these materials at Campbell Bay (Table 7) correlates well with the historic trading pattern of the Nipissing Indians in which trade goods of either Huron or European origin were traded to the Cree and Ojibwa in exchange for furs. The presence of "Iroquoian" cherts, such as Onondoga, Kettle Point, and Balsam Lake, at the later dated Frank Ridley site and their absence at Campbell Bay may reflect increased commercial interests between ethnic groups on Lake Nipissing.

Table 7: The distribution of raw material recovered from BbGw-2

Classification	N	%	Wt.	%
Local				
slate	14	3.4	1036.4	39.6
quartz	280	67.3	911.4	34.8
pebbles	69	16.6	476.5	18.2
cobblestones	1	0.2	67.8	2.6
andesite	1	0.2	46.5	1.8
hematite	2	0.5	0.6	0.0
Inported				
Hudson Bay Lowland	7	1.7	14.3	0.5
Manitoulin	5	1.2	13.3	0.5
Bayport	1	0.2	4.0	0.2
unknown	36	8.7	45.0	1.7
Total	416	100.0	2615.5	99.9

Description of Lithic Artifacts

As presented in chapter two, the lithic artifacts recovered were separated into two families: conchoidally fractured material and non-choidally fractured material or rough stones. Of all the material that fractured conchoidally, local quartz dominated the entire collection as illustrated in Table 8.

Table 8: The distribution of conchoidally fractured material from BbGw-2

Classification	Wt. (gm)	%
Quartz	911.4	92.2
Hudson Bay Lowland	14.3	1.4
Manitoulin Island	13.0	1.3
Slate	4.0	0.4
Unknown	45.1	4.7
Total	989.2	100.0

All conchoidally fractured material was further classified into two major groups: detritus, and utilized artifacts. For the Campbell Bay Site, the distribution of the individual materials is described in Table 9.

Table 9: The distribution of raw materials for detrital and utilized groups.

Classification	Detritus Wt.	Detritus %	Utilized Wt.	Utilized %
Quartz	836.7	84.6	74.4	7.6
Hudson Bay Lowland	14.3	1.4	0.0	0.0
Manitoulin Island	7.1	0.7	5.4	0.5
Bayport	0.0	0.0	4.0	0.4
Slate	1.4	0.1	0.0	0.0
Unknown	31.4	3.2	13.8	1.4
Total	890.9	90.0	98.4	9.9

Only 8% of the total quartz was utilized. This statistic is comparable to the Frank Ridley site and may suggest a manufacturing rate in converting this natural into a usable form. The absence of Hudson Bay Lowland chert (H.B.L.)tools, but its presence in detritus suggests that this material was brought to the site in an unmodified form and reduced on the site. A similar interpretation is suggested for the Manitoulin Island chert. Alternately, the presence of Michigan derived Bayport chert in the Tool category only, may imply that tools or people may have been exchanged along the travel route.

In comparing the detrital categories (see Table 10), there is an overwhelming amount of core detritus as opposed to flake detritus, probably because of the local abundance of quartz and a preference for reducing the material by bipolar hammering

Table 10: A comparison between detrital categories at BbGw-2

Classification	N	%	Wt.	%
Flake detritus	204	63.4	160.8	18.0
Core detritus	120	36.6	730.1	82.0
Total	324	100.0	890.9	100.0

1a) Flakes

The flake detritus is summarized in Table 11, and here again all categories are dominated by quartz.

Table 11: Summary of flake detritus recovered at BbGw-2

Classification	Type of Material	N	%	Wt.	%
Pressure	quartz	44	21.6	6.6	4.1
	slate	1	0.5	0.1	0.0
	unknown	17	8.3	3.72	2.3
Secondary	quartz	3	1.9	2.75	1.7
	Manitoulin	3	1.9	1.95	1.2
	slate	2	1.0	1.32	0.8
Primary	quartz	1	0.5	2.8	1.7
	H.B.L.	3	1.9	5.32	3.3
	Unknown	10	4.9	20.93	13.0
	Manitoulin	1	0.5	5.15	3.2
Chips	quartz	119	58.3	110.2	68.5
TOTAL		204	99.4	160.8	99.8

The absence of large numbers of chert tools from the site, and the presence of a significant percentage of pressure flakes (when compared to secondary and primary flakes) suggests the presence of an undisclosed number of tools that were sharpened or resharpened; but were not manufactured nor were they thinned or shaped on the site. On the other hand, it would appear that tools derived from quartz were manufactured, shaped, and sharpened on the site. The absence of significant numbers of quartz tools, and the over abundance of chips instead of secondary flakes suggests that tool manufacture was generally unsuccessful with this local material.

Although only three slate flakes were recovered from the entire site, their presence may indicate that the copious slate fragments recovered were reduced, if possible, by flaking and then grinding to form a tool.

1b) <u>Cores</u>

From the core detritus (see Table 12), a similar interpretation, regarding the reduction process, can be inferred. That is, imported materials were not reduced, while quartz was used to manufacture stone tools on the site.

Table 12: Summary of core detritus at Campbell Bay.

Classification	Type of Material	N	%	Wt.(gm)	%
Shatter	quartz	93	77.5	371.7	50.9
	H.B.L.	3	2.5	3.1	0.4
	unknown	6	5.0	6.7	0.9
Block	quartz	3	2.5	209.9	28.7
Nodular	quartz	1	0.8	46.9	6.4
Bipolar	quartz	13	10.8	85.9	11.8
	H.B.L.	1	0.8	5.9	0.8
Total		120	99.9	730.1	99.9

Utilized Artifacts

Because tool inventories are generally low in number from northern sites, initial comparisons, that may denote seasonal activities, were based on a generalized reduction scheme. The framework considered both technological and functional elements. The Campbell Bay utensils were assigned to one of three categories: unifacial, bifacial, or core tools. (see Table 13).

In comparing the utilized categories (Table 13) core tools predominate, followed by unifacial tools with bifacial tools representing the lowest number by frequency and weight. This trend is contradicted to a certain extent by the detrital material, where one would predict the major category represented would be core tools (the fact that it does not dominate all other categories may be a factor of the poor quality material available to the knappers), followed by bifacial and unifacial utensils. Obviously, if subsistence activities are to be inferred from the utensils present on the site, then consideration must be given to those produced and not only to those discarded.

Table 13: A comparison between utilized categories at the Campbell Bay Site.

Classification	Type of Material	N	%	Wt.	%
Unifacial Tools	quartz	2	20	13.5	15.5
	Bayport	1	10	4.0	4.6
	unknown	1	10	2.4	2.7
Bifacial Tools	unknown	1	10	0.3	0.3
Core Tools	quartz	4	40	61.2	70.1
	Manitoulin	1	10	5.9	6.8
Total		10	100	87.3	100

2bi) Unifacial Tools

Scrapers : The only variety of unifacial tools recovered are four flake scrapers. Following Wilmsen (1969), the attributes used to describe them are summarized in Table 14. Of the four scrapers recovered, three were located in close proximity to each other (Square NOW2), and near a shallow hearth, perhaps indicating a specialized activity on the site carried out by females. The fact that two of the scrapers had more than one scraping face suggests that this tool type was a necessary part of the Nipissing tool kit.

2bii) Projectile Point

A point fragment is all that remains of the triangular late Woodland projectile No. 792. It was manufactured from a chert. The maximum width, thickness, and weight of it are 1.7 cm, 0.6 cm, and 0.3 gm respectively.

Table 14: Selected Attributes of four scrapers from the Campbell Bay Site.

Attribute	No.192	No. 158	No. 2075	No. 498
Location	NOW2	NOW2	NOW2	S6E4
Platform Thickness	N/A	0.45	N/A	N/A
Platform Angle	N/A	90°	N/A	N/A
Max. Length	3.47	1.9	1.95	2.2
Max. Width	2.3	2.05	1.82	2.9
Max. Thickness	0.98	1.1	0.6	1.0
Weight				
Raw Material	Quartz	thermally altered quartz	chert	Bayport
Face Height	0.6	1.1	0.6	0.35
Face Length	3.0	2.1	1.9	2.9
Face Angle	68°	75°	76°	66°
More than 1 face	No	Yes	Yes	Yes
Angle right	N/P	30°	75°	84°
left	N/P	N/P	70°	N/P
Type of Face Wear				
Front Face	marginal	continuous	continuous	focused
Right Face	N/P	continuous	continuous	continuous
Left Face	N/P	N/P	continuous	N/P
Dorsal Surface	platform removed	flake removal at platform	platform removed	platform removed
Ventral Surface	no wear	flake removed	flake removed	no wear

2iii) Core Tools

Of the five core tools recovered, whose attributes are recorded in Table 15, three are the "gouge or wedge" type proposed by McPherron and Wright, one is a side bipolar tool and the last is a large core tool. The bipolar core tools are relatively uniform in terms of most metric attributes and correspond closely (Table 15), with recoveries from the Morrison, Renard and Chiblow sites.

The triangular outline and profile, as well as a battered pointed-end suggests that the core tool No.943 functioned as a chisel.

Table 15: Core tool attributes from BbGw-2

Attributes	No.836	No.832	No. 2178	No. 2163	No.943
Type of Tool	"wedge"	"wedge"	"wedge"	side bipolar	chisel
Location	NOW2	NOW2	S6W5	S6W5	NOW4
Max. Lenght	2.8	2.9	3.0	N/A	7.2
Max. Width	2.0	2.3	1.7	1.9	5.1
Max. Thickness	1.3	1.1	1.2	0.8	4.0
Type of Material	quartz	quartz	Manitoulin	quartz	quartz
Length of Wear	1.5	1.7	1.6	1.2	1.2
Angle	40°	50°	45°	55°	70°

B1) Cobblestone

One oval cobblestone weighing 67.8 gms was recovered. It is presumed the artifact was used as a boiling stone because of its association with a ceramic cluster and hearth feature.

BII) Slate

No function can be discerned from the ubiquitous slate recoveries. Because of the presence of slate flakes, perhaps the material which was suitable for reduction was used in making tools.

Historic Artifacts

Of the historic artifacts recovered, only one - an historic trade bead, is of concern to us. The remaining artifacts nails, china, glass, are intrusive to the site and probably date to the 1960's.

The blue grass embroidary bead is an 11a40RStr Robin's Egg Blue, following Kidd's (1970:70) typology, and ranges in date from A.D. 1300 to A.D. 1900. Because of the abundance of identical glass beads at the Frank Bay site which may date to A.D. 1640, a date of between A.D. 1600 to A.D. 1650 is expected for this article.

CHAPTER FOUR
FRANK RIDLEY SITE (BbGw-3)

Summary

The Frank Ridley site is named in honour of that pioneer in northern Ontario archaeology.

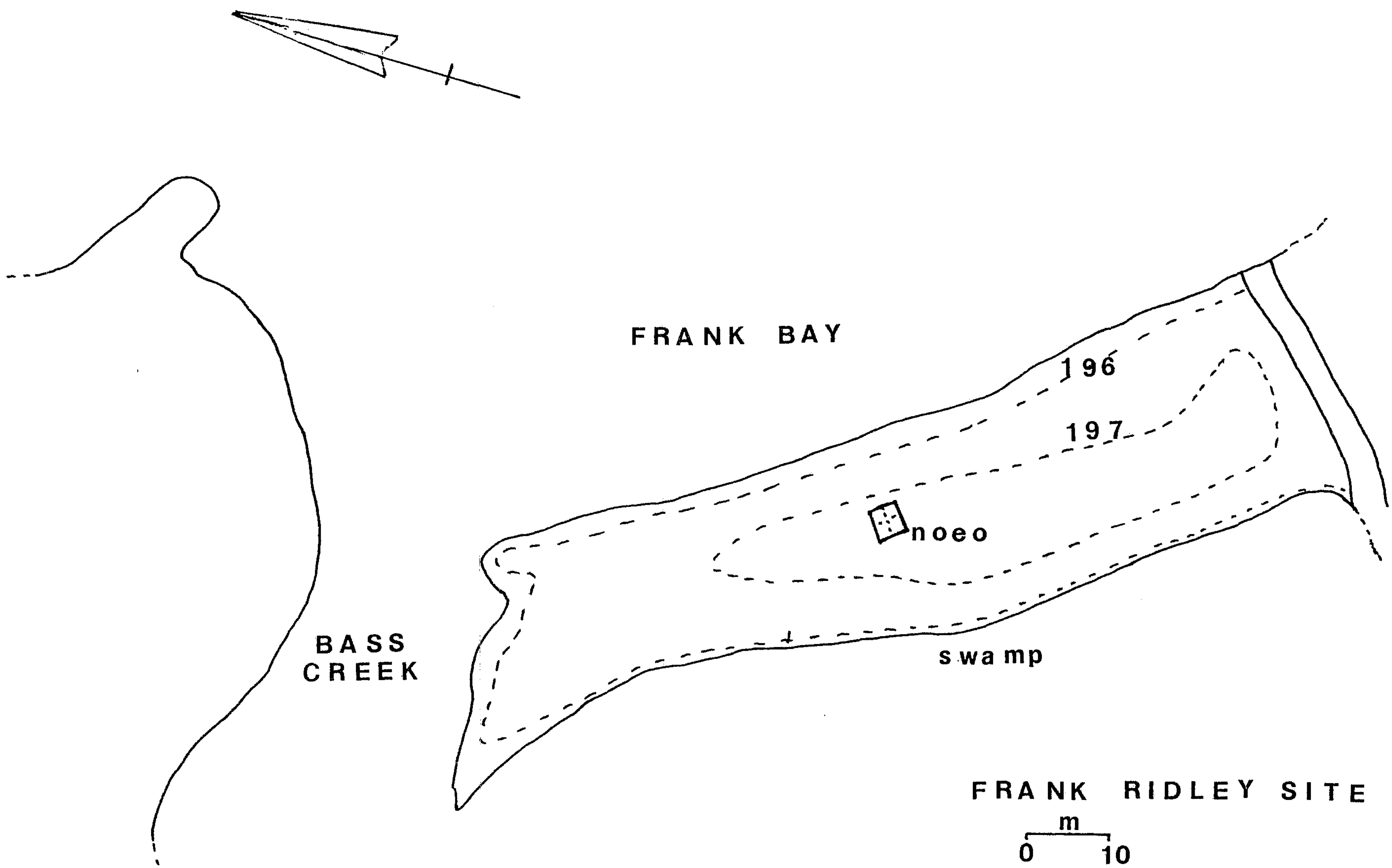
During this summer of 1978, this stratified site was briefly surveyed and tested. Based on the recovery of European artifacts such as glass trade beads, iron shot, and brass fragments, and by the seriation of aboriginal stratum one has been assigned a range of dates from A.D. 1580 to A.D. 1660, while a probable date of occupation A.D. 1630 $\pm$ 10 is expected. No diagostic artifacts were recovered from the second stratum, but a charcoal sample from feature five dated this stratum to A.D. 960 $\pm$ 40 (S - 1688).

In the analysis to follow it is proposed that the site was seasonally occupied during the summer months by campers and traders who journeyed to the Frank Bay Site.

Excavation and Stratigraphy

Facing north towards Lake Nipissing, the site is situated on a narrow sand spit that abuts the enbrouchure of Bass Creek into Frank Bay. V egetation on the sand terrace is sporadic with clumps of white birch, scrub brush, and the odd red pine peppering the site. To the east, the elevation rises quickly as outcrops of the Canadian Shield and beach ridges, the remnants of glacial Lake Nipissing, guard the entry to the site. In the opposite direction and across Bass Creek lies the historic Frank Bay site. Immediately behind the site, a marsh area persists that provides a luxurious environment for several species of grasses, birds aquatic and terrestial mammals, and countless numbers of loathsome insects.

Because the natural topography delimits the cultural boundaries of the site, test pitting was unnecessary. Four squares were excavated in an area that would soon be disturbed by the horde of holidayers who visit the site daily during the hot summer months. The 2mX 2m squares were trowelled in 4cm levels from surface to stratum two. From stratum two to water level, the site was shovel shinned with no cultural features or artifacts interrupting the sterile subsoil. Backdirt was screened through 3/8" wire mesh. The site was professionally surveyed by Mr. G. Medley (Onaping, Ontario), whos results are illustrated in Figure 12.

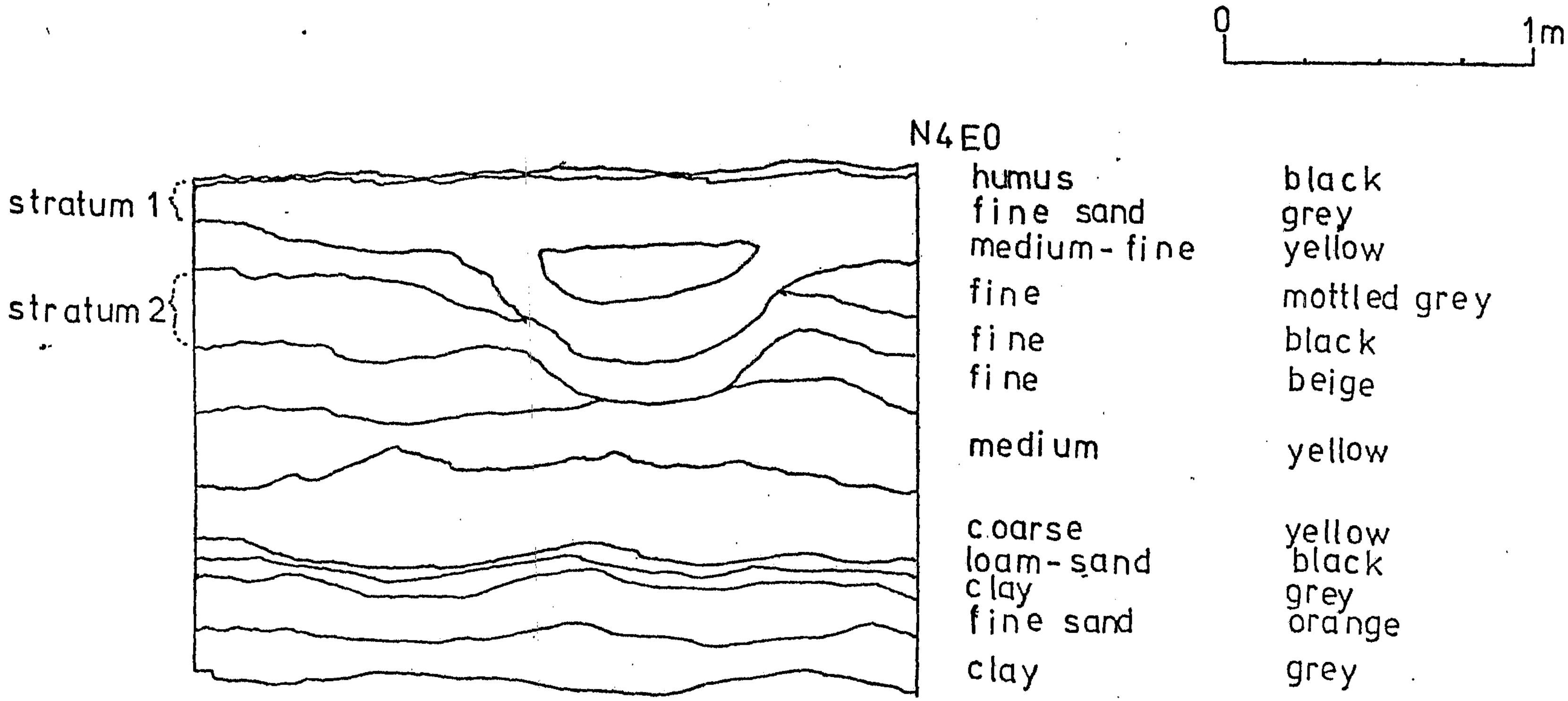

FRANK BAY
196
197
noeo
swamp
BASS
CREEK
FRANK RIDLEY SITE
m
0 10

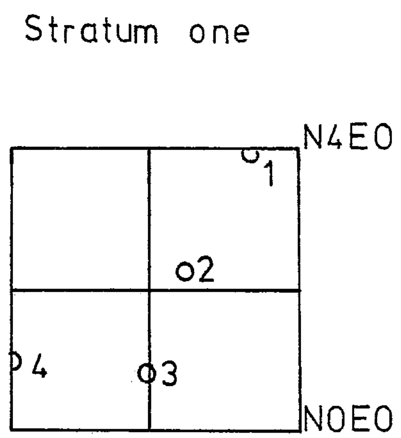
Cultural refuse occurred immediately below the grass-humus turf in a fine sandy grey soil matrix (see Figure 13). It extends for approximately 20cm from the humus to a sterile yellow fine - medium sand horizon. The yellow lense is variable in width and disappears as one moves further from the beach. In some areas of the site, stratum two is distinctive beneath the yellow sterile lense. But when the sterile lense is oblivious, or is interrupted by cultural features from stratum one, some confusion in identity with stratum one exists. Beneath stratum two are a number of fluvial deposited sand and clay horizons that extend to water level.

Features

Two shallow and two sunken hearths were uncovered in stratum one, while a shallow hearth and perhaps a smudge pit were delineated in stratum two. The distribution of these features and their recorded attributes are summarized in Figure 14, and Table 16.

Figure 13
Frank Ridley Site
Wall Profile





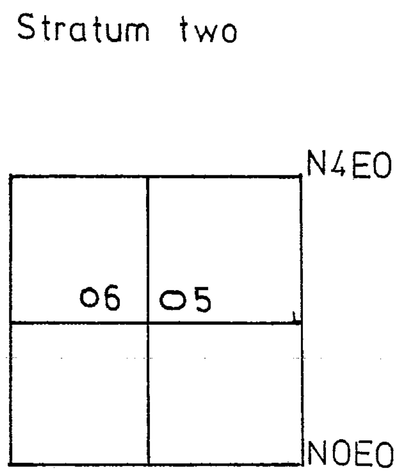
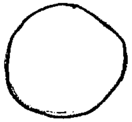
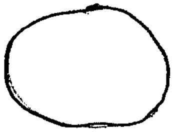
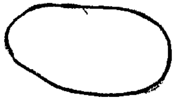
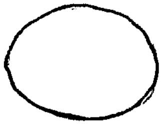


Fig. 14 BbGw-3 floor plans

Table 16 : Feature Attributes from the Frank Ridley Site.

Feature	Plan	Profile	L	W	D	Fill	Association	Interpretation
1			66	72	34	FCR, bone charcoal, ceramics, lithics	general assortment of artifacts	deep hearth
2			60	88	10	primarily FCR, charcoal bone, with some ceramics and lithics	few artifacts	shallow hearth
3			75	50	23	FCR, quartz ceramics, slate	general assortment of artifacts	deep hearth
4			50	60	10	FCR, ceramics	general assortment of artifacts	shallow hearth
5			12	18	20	charcoal	few artifacts	smudge pit
6			30	20	10	FCR, charcoal bone	few artifacts	shallow hearth

Hearth: (f:5,%:83.3) The correlation between shallow and sunken hearths at the Campbell Bay site, that is, shallow hearths are associated primarily with bone and ceramic detritus, while deep hearths have a general assortment of ecofacts and artifacts surrounding them, appears valid for the Frank Ridley site as well. However, the sample from both sites is meagre. The recovery of three unidentifiable charred seeds from feature two may indicate a seasonal occupation during the summer.

Pit: (f:1,%:16.7) The absence of numerous artifacts and faunal material, and the peculiar shape and fill of feature six suggests a function different from that of a shallow or deep hearth. The fill, primarily incompletely combusted charcoal and an absence of fire cracked rock, may indicate that a low temperature heat was desired. Considering the endless numbers of insects present during the summer, feature five may have been used as a smudge pit.

It was from feature five that a charcoal sample was sent to Dr. Roscoe Wilmeth, Archaeological Survey of Canada, for processing. Although no diagostic artifacts were associated with stratum two, a date of A.D. 960 ± 40 (S - 1688) is interesting since it should date the Blackduck - Pickering transition which is demonstrated at the Frank Bay site. Further excavation of the site is warranted to substantiate the assertion.

Artifacts

The Frank Ridley site produced 901 specimens, of which 39 or 4% represent finished items (Table 17). The similarity of the material culture to the Campbell Bay site is evident. But the slight differences between the assemblages may reflect the differences in time between the arrival of European goods and the Europeans themselves to the area. For this reason, both sites should be extensively excavated to substantiate or refute this impression.

Table 17: Artifacts from the Frank Ridley site

Item	N	%
Pottery (509)		
Body Sherds	469	52.0
Rims	14	1.6
Shoulders	14	1.6
Necks	9	1.0
Pipes	3	.3
Lithics (373)		
Flakes	238	26.4
Cores	110	12.2
Scrapers	4	.4
Projectile Points	2	.2
Bipolar Core Tools	15	1.7
Utilized Flakes	1	.1
Spokeshave	1	.1
Seriate Flake	1	.1
Other	2	.2

Table 17 con'd

Item	N	%
European Goods (5)		
Beads	2	.2
Brass	2	.2
Iron	1	.1
Modern Items (14)		
Glass	8	.9
Nails	4	.4
Line Sinkers	2	.2
Total	901	99.9

<u>Ceramics</u> (Table 18)

In all, 10 vessels, 108 unanalyzable sherds and three pipe fragments were recovered from the site. As with the Campbell Bay site, the ceramic assemblage contains an admixture of Iroquoian an Algonkian wares. The seven Huron like vessels may be attributable to a combination of factors: the presence of Iroquoian women on the site, trade vessels, or a shared ceramic technology between ethnic groups.

Table 18: Ceramic sherds recovered from the Frank Ridley site.

Vessel No.	Cultural Affiliation	Rims	Necks	Shoulders	Body	Total
1	Algonkian	1	0	1	155	157
2	Huron - like	2	0	0	2	7
3	Huron - like	1	0	0	0	1
4	Huron - like	1	0	0	0	1
5	Huron - like	1	1	4	65	71
6	Algonkian	1	1	0	50	52
7	Unknown	2	0	2	1	5
8	Huron - like	2	5	2	19	28
9	Huron - like	2	0	1	71	74
10	Huron - like	1	0	0	1	2
Unanalyzable sherds		0	2	1	105	108
Pipe Bowl						1
Pipe Stems						2
Total		14	9	14	469	509

The metric measurements of each vessel are recorded in Table 19, while the non metric units are summarized in Table 20.

Table 19: Metric attributes of BbGw-3

Vessel No.	Lip Width (cm)	Collar Thickness	Collar Height	Shoulder Height	Pot Oriface
1	0.8	1.0	1.8	N/A	N/A
2	0.6	N/A	N/A	N/A	N/A
3	0.8	1.1	1.5	N/A	N/A
4	0.4	0.8	0.9	5.1	N/A
5	0.7	0.8	1.6	N/A	N/A
6	N/A	N/P	N/P	N/A	N/A
7	0.6	0.7	1.4	3.3	9+
8	0.6	0.8	0.7	N/A	N/A
9	N/A	0.6	N/A	N/A	N/A
10	N/A	N/A	0.9	N/A	N/A
Mean	0.64	0.74	0.91		
st. dev.	0.14	0.18	0.31		

N/A= not available
N/P= not present
+= reliable measurements based upon rim sectors greater than 4.0cm long.

Utilizing a medium to fine grain sand for temper, which comprised 20% of the container, Vessel 1 was crudely constructed. The split and wrinkled internal surface of the

Table 20: Non metric ceramic attributes for BbGw-3 vessels

Attribute	Present(%)	Absent(%)	Technique(%)	Design(%)	Form(%)
Collar	78	12	incised 80	simple 75	
			plain 20	complex 25	
Neck Dec.	25	75			
Interior	11	89			
Lip	33	67			
Lip notching	0	100			
Sub-collar	13	87			
Shoulder	80	20			
Interior shape					convex 38
					concave 25
					straight 25
					convex-concave 12
Exterior shape					convex 10
					concave 50
					straight 40

sherds suggests that the vessel exploded during a firing or cooking activity. Vessel 2, (Fig.15) on the other hand, was fabricated with a very fine to fine grained quartzite and felspathic temper and a fine grade clay in a ratio of 1:10. No encrustations were present on the interior surface.

Similar in ratio of temper to clay as Vessel 2, Vessel 3, contained a fine to medium grade of quartzite and felspathic minerals. The angular structure of the temper in this vessel, as opposed to the rounded sand temper in Vessel1, indicated the variation that can occur in craftsmanship between individuals. No functional interpretation can be inferred from the sherd.

Comprised of fine temper (10%) and clay, Vessel 4 (Fig.15) cooked at least one dinner as indicated by the encrusted interior surfaces. The expert method of construction, exemplified by the thin daubs of clay, possibly, ensured its utility during the season. Similar in composition, although different in design to Vessel 4, Vessel 5, (Fig.15) lacks and characteristic of function.

The crudely decorated and poorly constructed, Vessel 6, appears to have been manufactured by a child or adolescent. Like Vessel 1, it may have cracked during the "soak" or firing

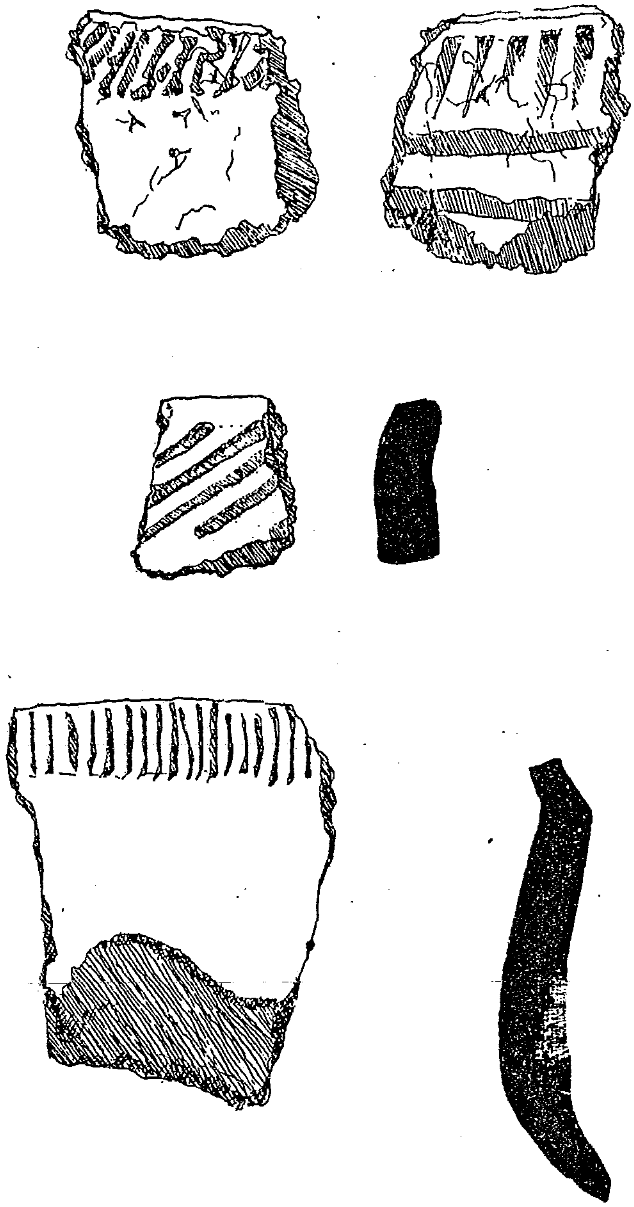
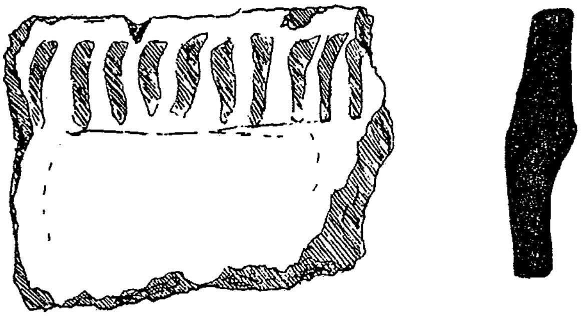


Fig. 15: Vessels 1, 2, and 4 from the Frank Ridley site.



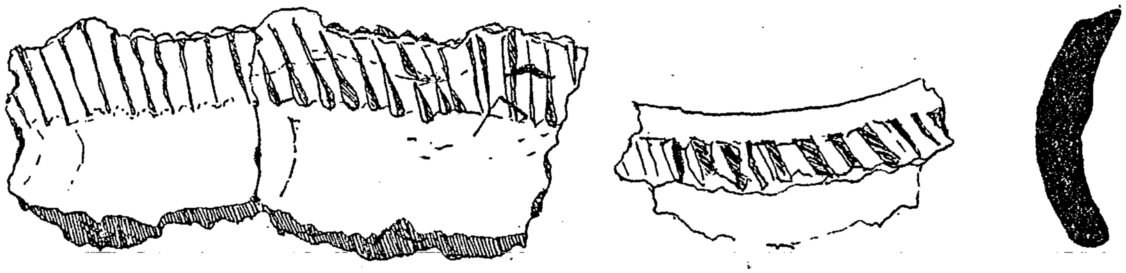


Fig. 15: Vessels 5 and 7 from BbGw 3

period.

Although incomplete, the extrapolated size of Vessel 7 (Fig.15) is comparable to a mug which may signify its function. It was fabricated from a fine grain temper and clay in a ratio of 1:10.

Constructed in a similar manner to Vessel 4, Vessel 8 appears to have an iron oxide compound added to the clay. No encrustations were found in the surface.

Three small rim fragments are all that remain of Vessels 9 and 10. Both were manufactured from a medium-fine ground temper of quartzite and felspar and a fine grade of clay concocted into a ratio of 1:7.

All of the vessels are somewhat homogenuous in colour from the exterior to interior surface and exhibit a similar degree of hardness, which may indicate that they were first fired in a parallel manner.

Pipe Fragments

Two undecorated stems and a fragment of clay pipe bowl were recovered. The lip length, width, and hole diameter for stem 1 are, 1.1cm, 0.4cm respectively. The lip is absent from stem 2, but the maximum and minimum length, width, and hole diameter are, 1.3, 1.75, 1.2, 1.6, 0.35, 0.4.

The pipe bowl fragment is undecorated, but appears to be a conical variety. In summary, because of the small sample size and the poorly preserved condition of the sherds, inferences resulting from comparisons made within and between collections remain tenuous.

Based on the absence of such traits as a rolled rim, trailed horizontal lines, body decoration and the presence of simple incised collar decorations, the sample is assigned a range of dates from A.D. 1500 to A.D.1670.

Lithics

The lithic artifacts from the Frank Ridley site are comprised of local and imported materials. By far (both in numbers and weight), the most dominant material utilized is quartz, a local available product. Imported materials are confined to cherts which were utilized as unifacial, bifacial, and core tools. The presence of a significant number of chert detritus and tools from areas associated with Iroquoian and Algonkian groups suggests their arrival at Lake Nipissing through and extensive trade system that was primarily operational during the summer months. The Iroquoian projectile points recovered from the site are diagnostic of the Late Woodland-Contact Period.

Raw Material (see Table 21)

Local

All locally derived materials, quarz, schist, slate, and hematite, are abundant and accessible to the Frank Ridley occupants. The presence of yellow and red ochre' suggests a ritual or ceremonial activity being enacted on the site or at the adjacent Frank Bay site.

Imported

The description and source locations of imported material was presented in Chapter two. The distribution of raw material is presented in Table 21.

Table 21: The distribution of raw material at BbGw-3

Classification	Wt. (gms)	%
Local		
Quartz	646.3	73.0
Schist	46.5	5.3
Slate	20.6	2.3
Hematite (red)	9.9	1.1
(yellow)	16.4	1.9
Imported		
Hudson Bay Lowland	76.5	8.6
Onondoga	11.5	1.3
Manitoulin	9.2	1.0
Precambrian	4.9	0.6
Norwood	4.4	0.5
Gordon Lake	3.6	0.4
Balsam Lake	2.0	0.2
Scott Quarry	1.0	0.1
Unknown	32.2	3.6
Total	885.0	99.9

Description of Artifacts

A Conchoidally Fractured Material

As with the Campbell Bay collection, local quartz dominated the entire collection as illustrated in Table 22. However, the diversity in number of cherts types present is interesting and may reflect a trade network with different ethnic groups.

Table 22: Distribution of fractured material at BbGw-3

Classification	Number	%	Wt.(gms)	%
Quartz	297	79.2	646.3	81.4
H.B.L.	14	3.7	76.5	9.6
Onondoga	2	0.8	11.5	1.5
Manitoulin	2	0.5	9.2	1.2
Precambrian	2	0.5	4.9	0.6
Norwood	3	0.5	4.4	0.6
Gordon Lake	1	0.8	3.6	0.5
Balsam Lake	1	0.3	2.0	0.3
Slate	1	0.3	1.8	0.2
Scott Quarry	1	0.3	1.0	0.1
Unknown	50	13.3	32.3	4.1
Total	375	100.0	793.8	100.0

All conchoidally fractured material was sub-divided into two major groups: detrital and utilized artifacts. For the Frank Ridley site, the distribution of the individual materials is described in Table 23.

Table 23: Distribution of detrital and utilized categories at BbGw-3

Material	Detritus (gms)	%	Utilized (gms)	%
Quartz	590.7	74.4	55.6	7.0
Hudson Bay	43.9	5.5	32.6	4.1
Manitoulin	9.2	1.2	0.0	0.0
Scott	1.0	0.1	0.0	0.0
Norwood	2.0	0.3	2.4	0.3
Onondoga	0.0	0.0	11.8	1.5
Balsam Lake	0.0	0.0	2.0	0.3
Precambrian	4.9	0.6	0.0	0.0
Gordon Lake	0.0	0.0	3.6	0.5
Slate	1.8	0.2	0.0	0.0
Unknown	29.5	3.7	2.8	0.4
Total	683.0	86.0	110.8	14.0

From Table 23, local quartz and quartzites dominate the detrital group, but its appearance in the utilized category is on par with imported materials. A similar situation to the Campbell Bay is noted; but the greater diversity in imported chert material at the Ridley site is evident. If the Campbell Bay site was occupied at an earlier date, then the diversity in imported materials may be related to increased trade relationships facilitated by European contact.

Group I: Detritus

The detrital specimens were divided into two categories: flakes and cores. The flakes were subdivided into four general types: pressure or retouch, secondary, primary, and chips; while shatter fragment, tabular, nodular, bipolar, exhausted, and random were assigned to the category of cores.

In comparing the detrital categories (see Table 24), there is an overwhelming amount of core detritus as opposed to flake detritus.

Table 24: Distribution of detritus at BbGw-3

Material	Flakes	%	Cores	%
Quartz	141.7	20.7	449.0	65.7
Hudson Bay	4.1	0.6	39.8	5.8
Manitoulin	0.0	0.0	9.2	1.3
Scott	1.0	0.1	0.0	0.0
Norwood	2.0	0.3	0.0	0.0
Onondoga	0.0	0.0	0.0	0.0
Precambrian	4.9	0.7	0.0	0.0
Gordon Lake	0.0	0.0	0.0	0.0
Slate	1.8	0.3	0.0	0.0
Unknown	25.6	3.7	3.9	0.6
Total	181.1	26.4	501.9	73.4

This trend is interesting since similar results were obtained at the Campbell Bay, Morrison site, and Chiblow-2, which were interpreted to seasonally occupied from spring to fall.

Ia) Flakes

The flake detritus is summarized in Table 25, and here again all categories are dominated by quartz.

It would appear that tools derived from quartz were manufactured, shaped, and sharpened on the site, wile edge and shape alterations occurred on imported chert utensils.

Although only two slate flakes were recovered from the site, their presence may indicate that slate tools were either initially shaped or sharpened by a percusion technique.

1b) Cores

Table 26 summarizes the distribution of materials by the various core types.

Table 25: Distribution of flakes at BbGw-3

Material	Pressure Wt.	Pressure %	Secondary Wt.	Secondary %	Primary Wt.	Primary %	Chips Wt.	Chips %
Quartz	10.4	5.7	1.1	0.6	0.0	0.0	130.2	71.9
Hudson Bay	0.0	0.0	4.1	2.3	0.0	0.0	0.0	0.0
Norwood	0.0	0.0	2.0	1.1	0.0	0.0	0.0	0.0
Scott	0.0	0.0	1.0	0.6	0.0	0.0	0.0	0.0
Precambrian	0.0	0.0	0.0	0.0	4.9	2.7	0.0	0.0
Slate	0.0	0.0	1.8	1.0	0.0	0.0	0.0	0.0
Unknown	3.2	1.8	15.8	8.7	6.6	3.6	0.0	0.0
Total	13.6	7.5	25.8	14.3	11.5	6.3	130.2	71.9

Table 26: Distribution of cores at BbGw-3

Material	Shatter Wt.	Shatter %	Block Wt.	Block %	Nodular Wt.	Nodular %	Bipolar Wt.	Bipolar %
Quartz	132.4	26.3	181.4	36.1	30.4	6.1	104.8	20.9
H.B.L.	0.0	0.0	0.0	0.0	0.0	0.0	39.8	7.9
Manitoulin	0.0	0.0	0.0	0.0	0.0	0.0	9.2	1.8
Unknown	3.9	0.8	0.0	0.0	0.0	0.0	0.0	0.0
Total	136.3	27.1	181.4	36.1	30.4	6.1	153.8	30.6

The overwhelming quantity of quartz that was discarded suggest that it was ubiquitous in the local environment and it is generally a poor quality material to work. A high percentage of chert detritus was reduced by the bipolar technique which probably reflects the workability of the material (occurs in small nodules), and possibly the desire to produce bipolar tools.

<u>Group 2</u>: <u>Utilized Artifacts</u>

The utilized specimens were divided into two categories: unmodified flakes and modified tools. The unmodified flakes are not subdivided and are referred to in the thesis as utilized flakes. The modified tools are divided into three types: unifacial tools, bifacial tools, and core tools. The recoveries for each category are summarized in Table 27.

Table 27: The distribution of artifacts at BbGw-3

Material	Unmodified Wt.	Unmodified %	Modified Wt.	Modified %
Quartz	0.0	0.0	55.6	48.3
H.B.L.	0.0	0.0	32.6	28.3
Onondoga	4.3	3.7	7.5	10.3
Gordon Lake	0.0	0.0	3.6	3.1
Norwood	0.0	0.0	2.4	2.1
Balsam Lake	0.0	0.0	2.0	1.7
Unknown	0.0	0.0	2.8	2.3
Total	4.3	3.7	1.6.5	96.1

Although minor in quantity, the presence of Onondoga and Balsam Lake chert in the modified category is interesting since the source location of these cherts is correlated with Neutral and Huron occupations. Its occurance at the Ridley site may be indicative of the historic trade network that existed between the Nipissing and Huron Indians. The equal proportion between local quartz to diverse imported cherts suggests that, when compared to the Campbell Bay site, the Ridley occupants were more accessible (either by trade or travel) to the distant sources. The near absence of unmodified flakes suggests that a fine cutting activity was unnecessary at the Ridley site.

Unmodified Flakes: Only one utilized flake was recovered from the site which was derived from Onondoga chert. The slightly seriated edge and the acute edge angle (20°) suggests that it was used for a soft cutting purpose. The following attributes are noted: Length=2.7cm, width=2.4cm, thickness=0.8cm, weight=4.3gms.

Retouched Tools: Incomparing the retouched categories (see Table 28), core tools dominate the collection, followed by unifacial tools, and finally bifaces.

Table 28: Distribution of retouched tools at BbGw-3

Material	Unfacial Wt. (gms)	%	Bifacial Wt. (gms)	%	Core Tools Wt. (gms)	%	Other Wt. (gms)	%
Quartz	14.7	4.4	0.0	0.0	49.0	46.0	1.9	1.8
H.B.L.	1.7	1.6	0.0	0.0	30.9	29.0	0.0	0.0
Onondoga	0.0	0.0	3.1	2.9	4.4	4.1	0.0	0.0
Gordon Lake	3.6	3.4	0.0	0.0	0.0	0.0	0.0	0.0
Norwood	0.0	0.0	0.0	0.0	2.4	2.3	0.0	0.0
Balsam Lake	2.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0
Unknown	2.8	2.5	0.0	0.0	0.0	0.0	0.0	0.0
Total	14.8	13.9	3.1	2.9	86.7	81.4	1.9	1.8

The presence of secondary and primary chert flakes in the dertital category, and the near absence of such types from the Campbell Bay site is intriguing, especially when one considers the source of the chert used in manufacturing the Ridley tools. This conspicous consumption of chert is also incongruous when one considers the immediate surroundings of the site. The area available for occupation is small and its location on a sand spit in fromt of a marsh would have meant endless numbers of biting insects during the summer months. To account for this inconsistency, one has to consider the contemporaneous activities at the Frank Bay site. If the Frank Bay site (which is a stone's throw away from the Ridley site) is an area where extensive trade was carried out with different ethnic groups, then the Frank Ridley site might be considered as an overflow station when conditions became crowded at Frank Bay.

Unifacial Tools: Although only 6 unifacial tools were recovered, the group is subdivided into several varieties: multifaced scrapers, side scrapers, spokeshave, seriate, and other.

Multifaced Scrapers: Only one multibevelled flake (No.163), commonly called a thumb nail scraper, represents this variety. The small size of the flake and the heavy wear pattern on the three bevelled edges may indicate that the flake was exhausted and could no longer be resharpened. The attributed measured are recorded in Table 29.

Side Scraper: As the name implies a bevelled edge was retouched along the side of the flake, which is commonly termed a side scraper. A total of three such scrapers (No. 904,5,83), were recovered whose attributes are recorded in Table 29.

Spokeshave: Pronounced wear, as indicated by an indented surface covered with step fractures, along the edge of flake No. 765, suggests this tool functioned as a plane or draw knife. The attributes are summarized in Table 29.

Seriated Flake: Slight retouching occurred along one side of quartz flake No. 95 to create a seriated effect. According to Wilmsen (1969), such an edge represents an efficient cutting tool. See Table 29 for metric measurements noted.

Other: A small discarded rectangular flake (no. 799) (probably exposed to heat) was retouched along the distal edge. Whether the flake was removed to resharpen a tool, or whether it was used as a tool, cannot as yet be determined. See Table 29 for attributes recorded.

Table, 29: Unifacial tools from the Frank Ridley site

Attribute	No.163	No. 904	No. 5	No. 83	No. 765	No. 95	No. 799
Location	N4E0	N4W2	N4W2	N4E0	N4W2	N2W0	N4E0
Platform th.	n/a	n/a	0.3	n/a	n/a	0.4	n/a
Platform L	n/a	n/a	165°	n/a	n/a	65°	n/a
Lenght (cm)	1.6	2.0	2.9	3.2	2.1	2.3	2.3
Thickness	0.5	0.5	0.5	0.6	0.6	0.4	0.4
Weight (gm)	1.7	3.6	1.9	3.2	2.0	1.5	0.9
Material	H.B.L.	Gordon	unknown	quartz	Balsam	quartz	unknown
Face height	0.5	0.3	0.3	0.3	0.3	0.4	0.2
Face lenght	1.3	2.0	3.0	1.0	1.6	2.4	0.6
Face angle	75°	80°	60°	70°	70°	30°	60°
No. faces	3	1	1	1	2	1	1

Bifacial Tools (Fig.17)

The two bifaces recovered are typical late Woodland - Iroquoian projectile points. Although both were manufactured from Onondoga chert, one is a triangular - concave based point, while the other is a side notched - convex based point. The attributes are recorded in Table 30.

Table 30: Metrics for two projectile points at BbGw-3

Attributes	NO. 794	NO. 795
Location	N4E0	N4Eo
Length	2.8	3.5
Width	2.1	1.4
Thickness	0.3	0.4
Width of Neck	1.3	N/A
Width of Notch (R,L)	0.5, 0.6	N/A
Depth of Notch (R,L)	0.3, 0.4	N/A
Distance of Notch to Corner (R,L)	0.2, 0.4	N/A
Basal Width	1.7	1.4
Weight	1.8	1.3
Type of Material	Onondoga	Onondoga

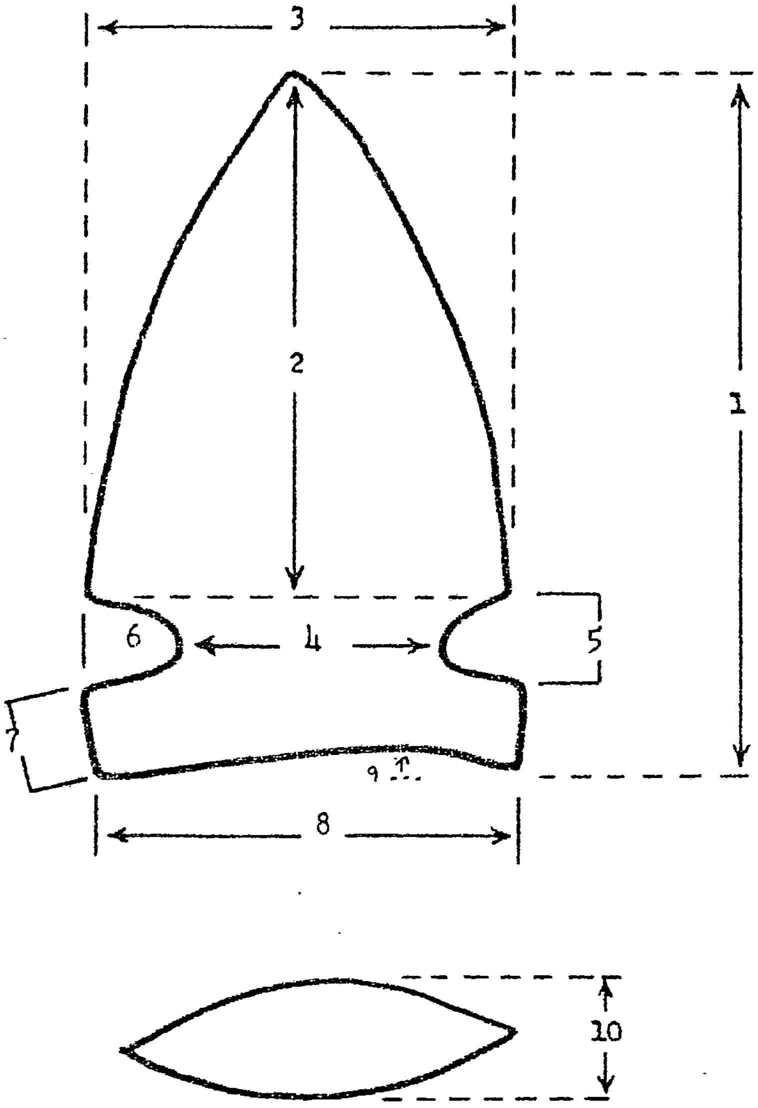


Fig. 16 Attributes selected to measure projectiles

Key:

(1) Overall length
(2) Length of blade
(3) Maximum width of blade
(4) Width at neck
(5) Width of notch (left, right)
(6) Depth of notch (left, right)
(7) Distance, notch to corner (left, right)
(8) Basal width
(9) Depth, basal concavity
(10) Maximum thickness

Fig. 17: Frank Ridley projectile points.

Core Tools (Fig. 18)

All tools(Table 31) except one core fragment were reduced by the bipolar technique. Of the 15 bipolar tools, the side edges of nene showed signs of utilization. In one instance, the side of the core was retouched to create a bevelled edge and probably functioned as a scraping tool (Fig. 20). The acute angle of the remaining side deteriorated bipolar tools range between 25^{o} to 45^{o}, which according to Wilmsen (1969) provides an effective cutting edge. The remaining six bipolar tools are "gouged" out at the distal surface of the tool which Wright (1969) infers was functional as an incising or gouging tool. The attributes recorded for each are summarized in Table 31.

Derived from Hudson Bay Lowland chert, core fragment No. 946, is retouched along the side edge creating an edge angle of 50°. The lack of substantial step fractures, may indicate that the tool was used as a knife rather than a scraper

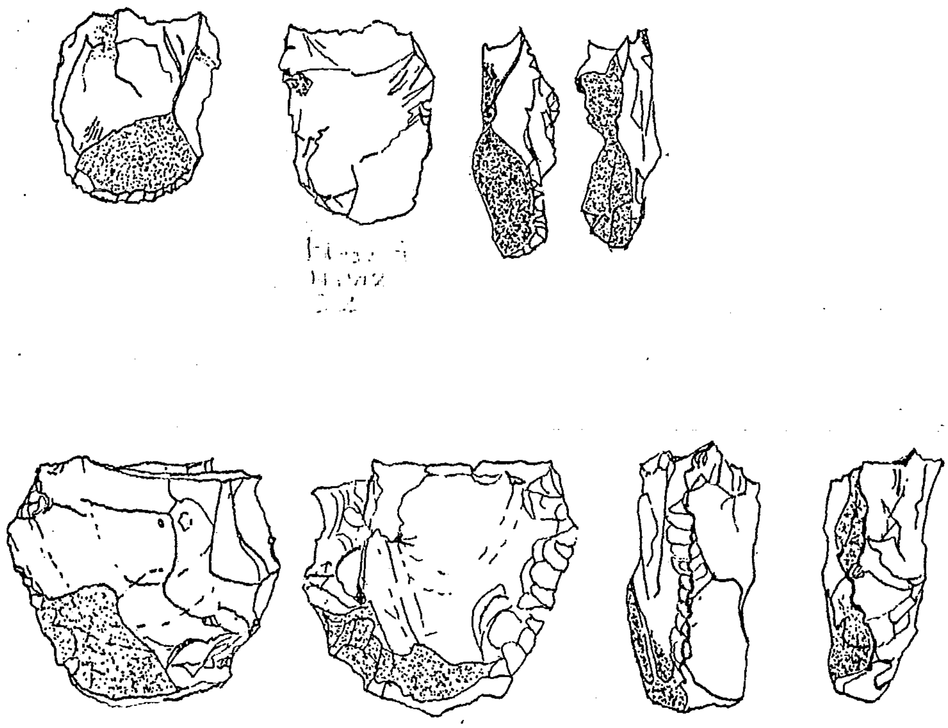


Fig. 18: Wedges recovered from BbGw-3

Table 31: An attribute summary of bipolar tools

No.	Wear	Lenght	Width	Thickness	Weight	Material
6	end	2.0	1.8	0.7	2.4	norwood
762	end	2.8	1.8	0.6	4.4	onondoga
80	end	2.1	1.4	0.8	2.6	hudson bay
758	end	3.1	2.0	1.3	9.1	quartz
974	end	3.4	2.4	0.8	7.2	quartz
973	end	2.3	2.5	0.9	5.7	quartz
18	end	2.7	1.7	0.9	5.1	quartz
mean		2.6	1.9	0.8	5.2	
standard dev.		0.5	0.4	0.2	2.4	
761	side	2.6	1.8	0.8	4.8	hudson bay
759	side	2.7	2.2	0.8	4.6	hudson bay
1150	side	2.6	2.4	1.1	5.5	quartz
1110	side	2.8	1.3	0.7	2.9	quartz
969	side	2.9	2.1	0.8	5.9	quartz
823	side	2.1	1.2	0.7	2.5	quartz
160	side	2.3	1.3	0.8	2.1	quartz
987	side	2.7	1.6	0.9	2.6	quartz
mean		2.6	1.7	0.8	3.9	
standard dev.		0.3	0.5	0.1	1.5	
946	knife	3.4	3.4	1.3	12.4	hudson bay

Other

Within this catchall category is one retouched clear quartz crystal. No wear pattern could be detected, but the side edges of the tool are extremely sharp, which may imply a puncturing or piercing utility for the object. On the other hand the artifact may have had some sort of ritual significance attached to it.

Historic Goods

As a result of present day camping excursions, modern manufactured goods such as glass, nails, line sinkers are a common characteristic of the archaeological record. However, those goods that can be related to the early Historic - Contact Period are two glass trade beads, one piece of iron shot, and two brass fragments.

Beads

The two glass embroidery beads recovered are coloured robin's egg blue and white respectively. These colours appear to be a popular type among the Algonkian Indians.

Iron Shot

One piece of iron shot, or what is commonly termed bird shot, was retrieved. It is 0.65cm in diameter and wieghs 1.3gms.

Copper

Two fragments of European copper were salvaged. One fragment is bisected by a seam which is unusual if the copper was derived from European kettles.

Chapter Five C

The Frank Bay Site (~~B~~bGw-1)

Summary

Initial investigations of the site by Frank Ridley began in 1950 and lasted for three years. At that time, Ridley (1954) delineated a sparse but persistent sequence of cultural occupation extending from the late Archaic to the Historic periods. For this reason, Frank Bay attained an historic significance among archaeologists by allowing them to compare and order regional chronologies throughout the North East.

Even today, the importance of Frank Bay cannot be underestimated for it is from this site primarily that inferences concerning the origins, subsistence - settlement pattern, and the cultural interrelationships of the native Nipissings are postulated.

Of particular interest is the return of four radio carbon dates. It is suggested that a date of A.D. 560 reflect a late Laurel occupation on the site, while a mean date of A.D. 1025 from three charcoal samples reflect the time when corn was first introduced into Lake Nipissing. Worthy of note as well is the ceremonial internment of six dogs that are presumably associated with the contact stratum.

The Site

Named after the bay on which the site is located, the Frank Bay site is situated on Lake Nipissing near the headwaters of the French River. At present, the site is privately owned by Mr. Wm. Smith of North Bay, who like his father 25 years earlier gave permission to excavate and help protect the site.

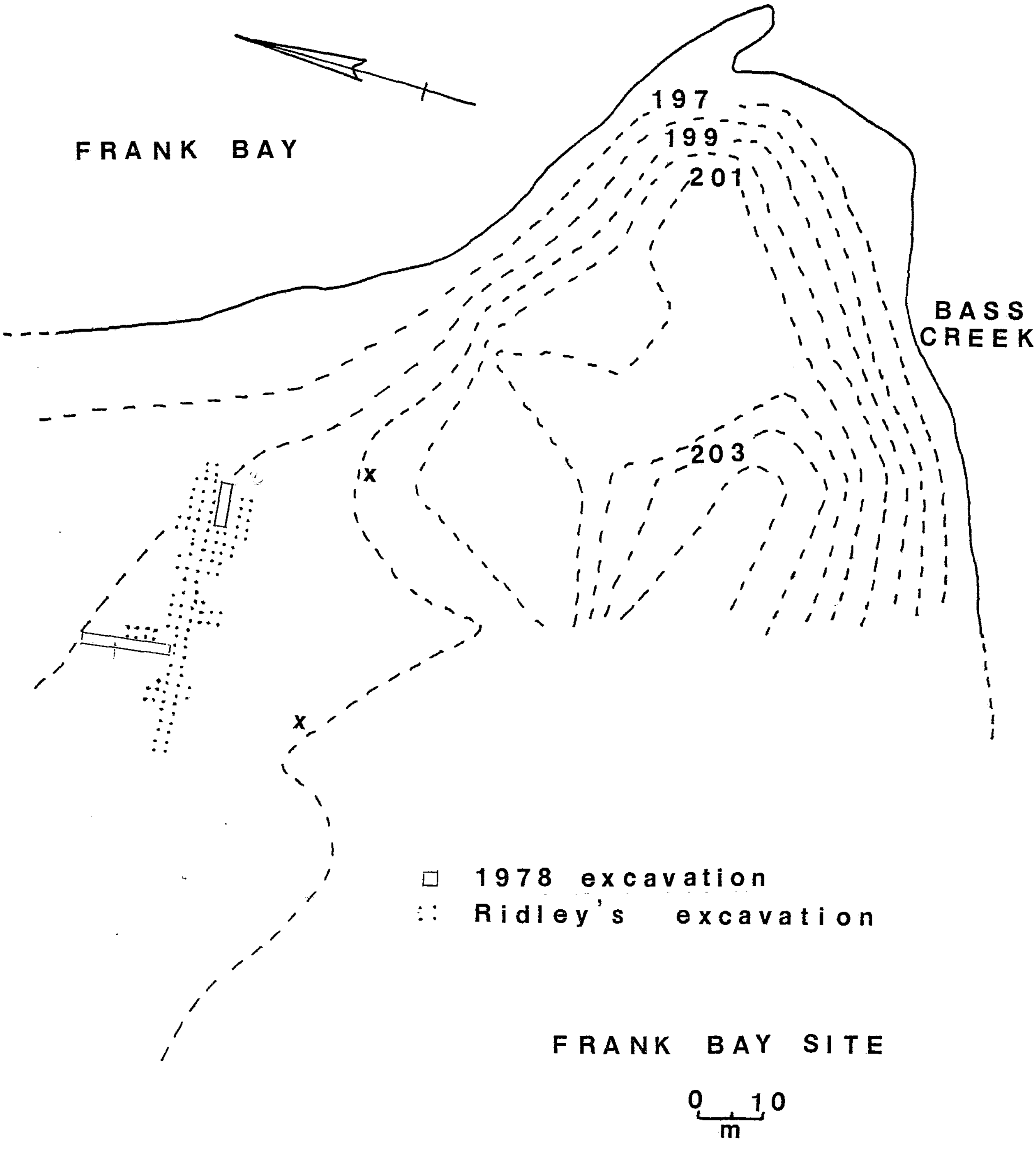
In 1978, the Frank Bay site was re-investigated for three reasons: to assess the damage done by pot hunters and natural agencies, to map the site and locate Ridley's previous area of excavation; and to provide an artifact sample for comparative purposes. The threat to destroy the site by pot hunters is real as evidenced by looting practices carried out by local towns people even when the author was on the site. In addition, woodchucks have churned the soil so badly in certain areas of the site, that no cultural stratigraphy could possibly be distinguished. For these reasons the site should be totally excavated in the near future.

As a result of problems encountered in locating Ridley's monument and trench, more time was spent on the site than was anticipated. Initially, a trench 1X 14m was placed in an area that should have bisected Ridley's trench, but did not. This first test trench is referred in this thesis as Area A. Fortunately, further testing was unnecessary since the permanent markers, that Ridley chiseled in the rock, were found. This allowed Mr. G. Medley, a professional surveyor, the opportunity to compute the location of the monument using basic surveying principles. It was then possible to incorporate Ridley's previous area of excavation into the 1978 grid map. (see Figure 19)

To gain as rich an artifact sample as possible within the limited time interval, four 5 foot squares were placed in between Ridley's area of excavation. These squares are referred to as Area B. According to Ridley's fieldnotes this locus provided discernable stratigraphy as well as a large number of artifacts.

Stratigraphy

The origin of the sandy beach knoll on which the site is located is primarily the result of centuries of sand



FRANK BAY SITE

and silt deposition caused by river (Bass Creek) and Lake (Lake Nipissing) flooding. Occasional blowouts, two thousand years of pedestrian movement and cultural activities, animal burrows, and horizontal limits of some lenses have destorted and in some cases obliterated much of the physical stratigraphy.

The cultural deposition for Area A is confined to a depth of 24cm. (see Figure 20). A silty-sand characterizes the texture of the soil at this depth and it changes in intensity of colour as one proceeds downward from black to grey. From the 24cm depth to ground water the soil is culturally sterile and is characterized by a yellow to orange coloured beach sand.

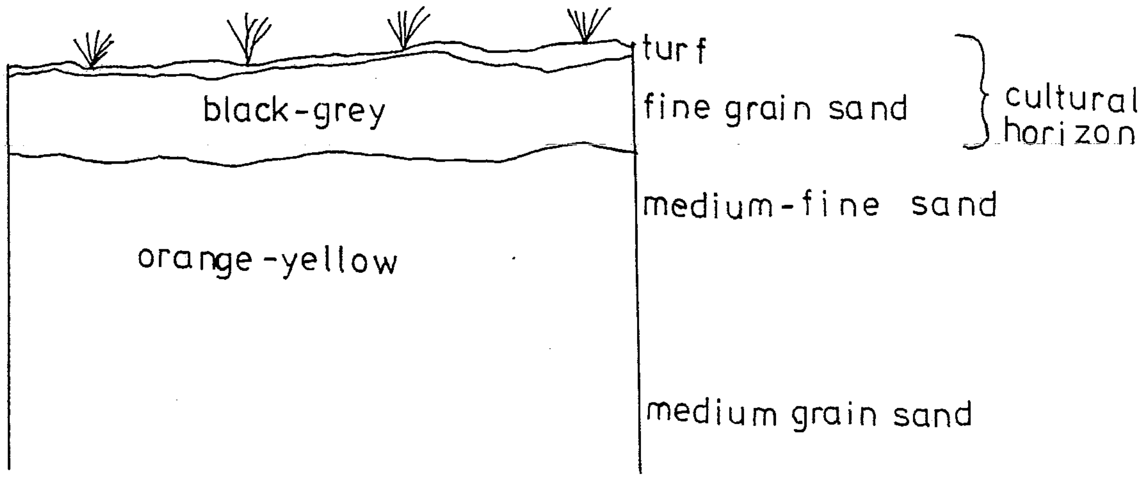


Figure 20. Soil profile of Area A .

The texture of the soil for Area B from the surface to approximately 48cm of depth is a fine silty-sand that is mottled black-grey in colour. Within this matrix, other lenses of various texture and/or colour interdigitate with one another but fade out rather quickly. The entire cultural sequence from Pickering to Contact is represented within this zone. Unlike Ridley, I was unable to distinquish any physical stratigraphy for this time period. However, because the site was excavated in 4cm levels, it was possible to discern in the lab an orderly progression between vertical depth of an artifact and its estimated age. In other words, the lower the depth of an artifact, the older the antiquity of an artifact.

Beneath zone 1 and for a depth of 12cms lies a yellow slightly coarser sand lens. The few artifacts, recovered, were assigned to the Pickering and Blackduck culture.

The yellow lens is followed by a similar textured soil, but has a mottled reddish-black appearance. Artifacts belonging to the Laurel tradition were associated with it.

From the Laurel lens to ground water, the soil was characterized by a yellow beach sand. Dispersed throughout this lens were artifacts manufactured by the late Archaic peoples.

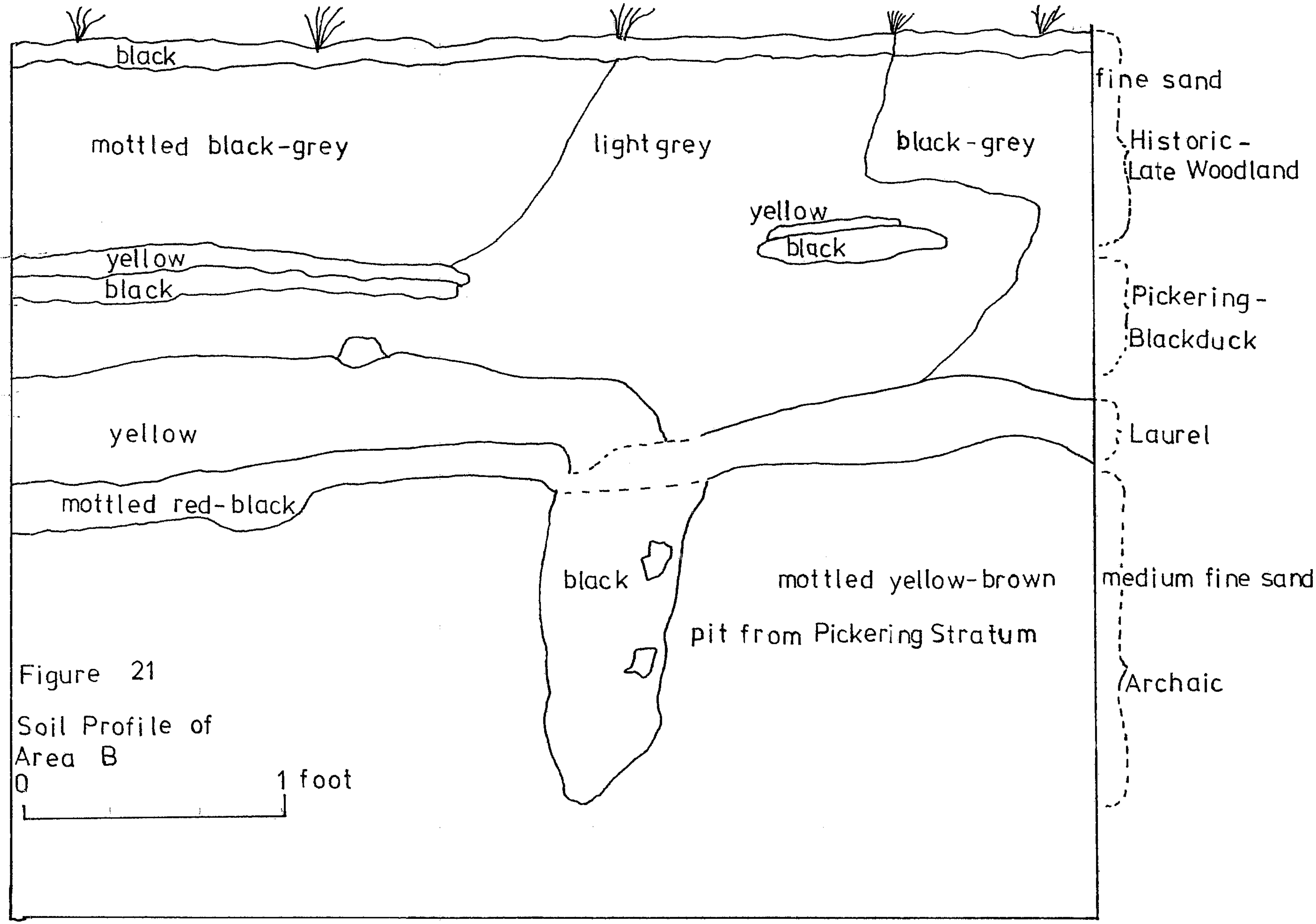


Figure 21

Soil Profile of Area B

Features

Encountered in the field were the following feature types: 31 post moulds, 24 hearths, 3 pits, and 6 dog burials. Interpretations derived from the settlement data are hampered because of the small area excavated in 1978. Ridley (field notes) delineated an alignment of post moulds that may have been derived from a long house, but the lack of physical stratigraphy made it impossible to assign all of the post moulds to a single occupation.

Five hearth varieties are defined and their utility may reflect different types of heating activities on the site. Charcoal samples from four hearths were submitted to Dr. R. Wilmeth for radio carbon dating. A hearth, directly associated with late Laurel ceramics, dated to A.D. 560 ± 40(S-1684), and is considered acceptable. Three samples from level eleven dated to A.D. 955 ± 50 (S-1685), A.D. 1055 ± 60 (S-1686) and A.D. 1065 ± 65 (S-1687). The clustering of dates and associated Blackduck - Pickering ceramics from this level suggests that level 11 can convincingly be dated to A.D. 1025. This date is significant since it is from one of the dated hearths that two charred corn kernels were recovered.

Worthy of note,as well,is the ritual internment of six dogs and their associated grave goods. It is inferred that they were buried during a ceremonial activity held in the seventeenth century.

Post Moulds: All 31 post moulds were confined to Area B. The post moulds range in diameter from 6cm to 24cm with a mean of 13.2c. and range in depth from 6cm to 37c, with a mean depth of 18cm. The area excavated was not large enough to delimit any house patterns nor was it possible to associate any of the post moulds to a single component. Of interest was the placement of two large posts (18cm and 20cm diameter, 30cm and 37cm depth respectively)beside two dog burials. According to ethnographic records (Blair 1906:60) such a practise was usual.

Hearths (f:24; 41.4%)

As the name implies, hearths presumably functioned in cooking/heating activities. But the variablity in shape and fill between varieties suggests that there may be more than functional similarity associated with them. Unfortuanately, artifact associations for individual features could not be emploued because of the confused nature of the archaeological record. The hearth varieties include: 7 shallow, 9 cunken, 3 nipple shaped, 4 irregular and 1 rock lined. Both shallow and sunken hearth characteristics, which comprise 29.2% and 37.5% respectively of the total hearth features, have been discussed in the Campbell Bay site report. Important to note is the recovery of charred corn kernels (Fecteau; personal communication 1979) from two shallow hearths. The presence of corn on Lake Nipissing should not be considered unusual since the Jesuits

(J.R. 8:77; 21:123; 30:117) noted the Nipissings planted corn as well as used corn as a medium of exchange between their trading allies - the Huron and the Cree. What is significant though is that one of the hearths dates to A.D. 955 (S-1685), making it the earliest known date for corn on a Shield site.

Is the date reliable? The A.D. 955 date is verified by its stratigraphic position (level 11) where only Mackinac and Pickering rims were recovered, and two additional charcoal samples from the same level dated to A.D. 1055 (S-1686) and A.D. 1065 (S-1687) respectively. The relative closeness of the dates suggest that level 11 can be dated reliably to A.D. 1025 (the mean of the three damples).

Is the corn intrusive? Intruding over top of feature 4 was dog burial 1 which may imply that the two kernels were intrusive. But, the fact that corn was not recovered from any of the other dog burials, that the burials themselves were uncharred, and that the corn was recovered from beneath the burials all suggests that the corn was directly associated with the hearth material.

Nipple Shaped Hearths (f:3, 12.5%): In plan, nipple shape hearths are irregular and have an approximate diameter of 32cm. The profile of these hearths (they have an average depth of 22cm) are depressed near the center for some unknown reason. They are characteristically filled with fire cracked rock, charcoal, ceramic and lithic debris, as well as charred bone fragments.

Irregular Shaped Hearths (f:4, 16.7%): As the name implies, there is no geometric shape to describe irregular hearths in plan or profile. Of all the hearth varieties, irregular shaped hearths are the largest in plan having an approximate diameter of 55cm. Conversely, they are one of the shallowest in profile having an average depth of 12cm. They have a higher than average amount of fire cracked rock, while charcoal, lithic and ceramic debris is minimally present.

Rock Lined Hearths (f:1, 4.2%): An unusual feature excavated in Area A was a pavement of fire cracked rock that extended 1.3m in length and 0.8m in width. Beneath the rocks was delineated an irregular shaped hearth 33cm in lenght, 31cm in width, and 15cm in depth.

Charcoal was relatively abundant, with ceramic and lithic detritus present as well. Judging by the quantity of rocks present within the hearth area, a prolonged heat would have been sustained. Such a feature could provide a range of functions.

Pits (f:3, 5.2%): One large bell or pot bellied shaped pit and two small sunken pit features were identified. The large pit feature, which measured 38cm in length, 30cm in width, and 90cm in depth, contained a number of charred seed and bone fragments as well as ceramic and lithic debris. The soil throughout the lower portion of the pit wasmottled, while in the upper portion of the pit it was homogenous. Perhaps this feature was used as a refuse pit.

The two sunken pits are circular in plan, while the walls are steeply sloped. The pit fill was characterized by charcoal fragments throughout while, absent was cultural debris and fire cracked rock. Perhaps the pits functioned as smudge or smoke pits?

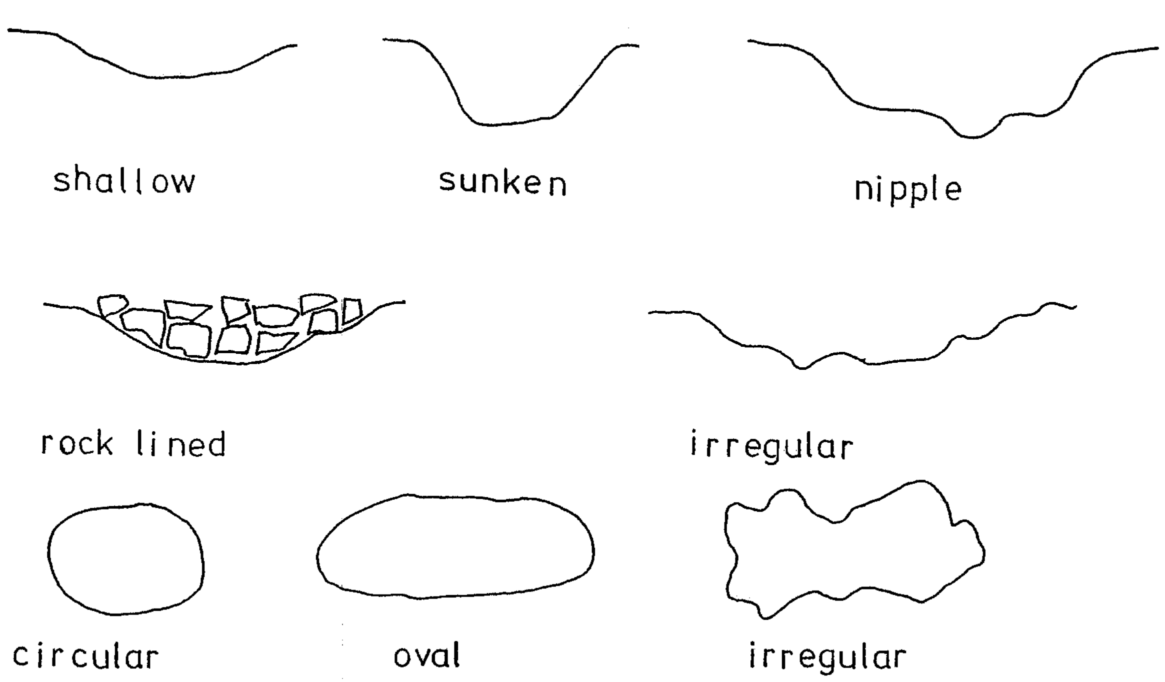


Fig. 22: Plan and profiles of features

Dog Burials

Recovered from a confined area (squares 10-R55 and 10-R60, see Fig. 23) were six dog burials. These specimens may not be all that unusual for Frank Bay since Ridley noted the presence of three dog burials from his field endevours. The six dogs were submitted to Dr. Howard Savage for his inspection, and below is presented his laboratory findings.

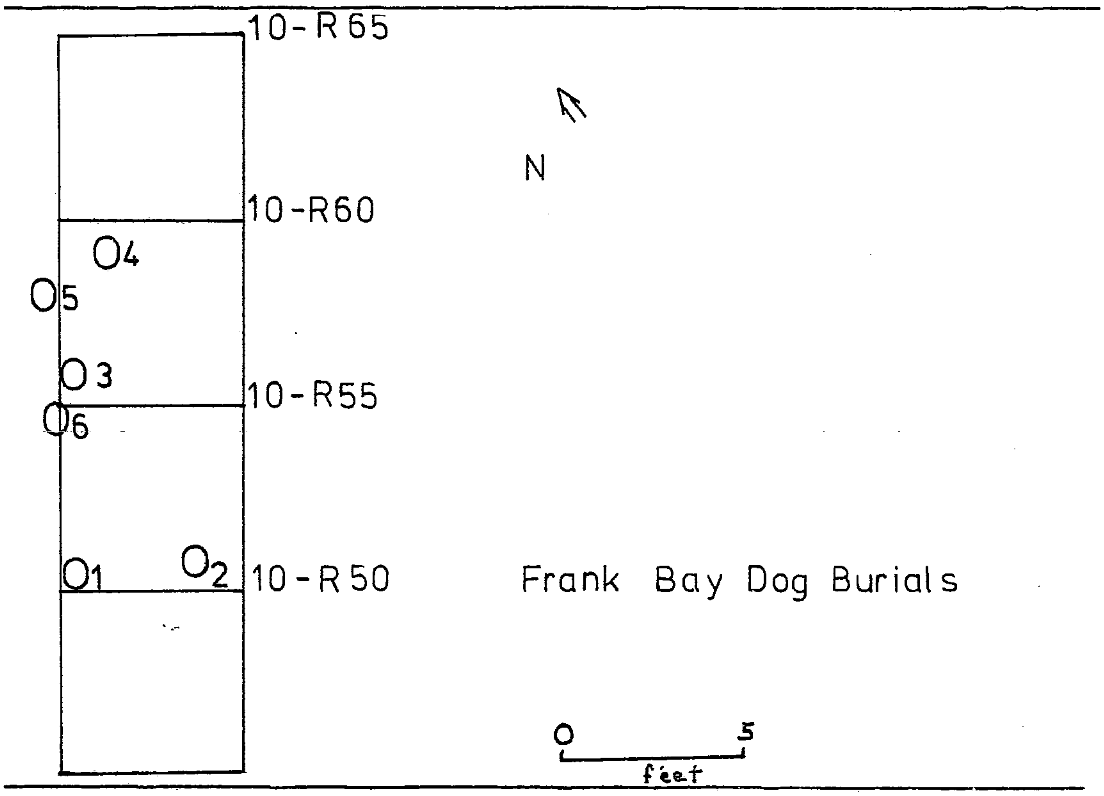


Fig. 23: Location of the Frank Bay dog burials

Skeletal Analysis of the Dog Burials by Dr. Howard Savage

Major portions of the skeletons of six dogs are in the faunal material recovered. A few bone specimens from large mammal species (not domestic dogs) are also present. While these elements in general fragment easily, the few calcined and charred findings are particularly fragile. The dog assemblages, except for a single vertebral body, are not charred or calcined.

Evidence of butchering is present on the bones of five dogs (No. 1,3,4,5, and 6). Only Rex (No. 2), an immature individual represented by several distal extremity bones, one cervical vertebra and a number of other bone fragments, fails to show butchering marks.

The most striking evidence of bone alteration by sharp edged tools (J. Tomonchuk, personal communication 1979) are the cut-marks on the atlas of Rover, (No. 1) the axis of Bowzer,(No. 5) the axis and fourth cervical vertebrae of Fifi, (NO. 4) and the axis of Brutus (No. 6). In all four dogs, the cut-marks lie traversely on the ventral surface of the body or a lateral process of the vertebra. The axis of Brutus shows numerous cut-marks and sectioning off of the posterior surface of the axis. The ventral surface of the body of the axis of Bowzer shows numerous cut-marks ventrally, on the elevated mid-line and both left and right borders; some of these marks line up, as if made by the same stroke of the blade. Moreover, on the ventral surface of the body, there are a number of irregular pits in the bone surface, appearing to be gouges, as resulting from the use of a somewhat dull point having been dug into the bone. In addition, there are cut-marks on both the left and right lateral surfaces of the body of the axis. Dr. Savage suggests that the cut-marks could only have been made in determined use of a blade to cut down on the sides of the axis. The axis of Fifi shows three cut-markson its left border and one on the right border. Its fourth cervical vertebra has the tip of its left transverse process sectioned off. Bruno (No. 3) has two cut-marks on the ventral surface of its atlas.

Other cut-marks include evidence of butchering to remove the head of the right femur from its socket in Bruno, and of the head of the right femur from its hip socket in Bowzer. Other significant cut-marks occur near the angle of a rib in Rover, and just above the right knee in Fifi.

The evidence for use of a sharp edged tool on the necks of four out of six dogs in a similiar manner, makes consideration of the reasons for so doing important. Separation of the head from the neck during dismemberment of a dog beforecooking would best be accomplished by laying the dog on its back and then probing forcefully with the edge of the blade through the thick layers of neck muscles for a space between adjacent neck vertebrae. On the other hand, the cut-marks on the neck vertebrae could have resulted from cutting across the great blood vessels of the neck in order to kill the dog. The similarity of the vertebral cut-marks also suggests a ritual method of killing.

In review, the major portion of six dog skeltons were found at the Frank Bay site, and only one bone showed charring or calcination. Four of the dogs, however, exhibit similiar cut-marks on their neck vertebrae, and this suggests a ritual killing rather than them simply being food resources.

Archaeological Association of the Dog Burials.

All of the dogs were found in a disarticulated uncharred condition. The presence of birch bark in close association with two of the burials suggests that they were buried in containers manufactured from this material. Stratigraphically, the dogs initially appeared at level six (20-24cm below datum), and persisted to a level 11(40-44cm). In direct association with several of the burials were what I would consider "exotic or ceremonial goods", red ochre and an exquisitely formed quartz crystal. In near association with several of the burials at level six were a cache of glass trade beads from several necklaces or what the Jesuits termed collars, and two brass Christmas tree shaped arrowheads, and a projectile paint manufactured from Onondoga chert. Finally, two of the burials were placed either by chance or by choice beside two large posts as indicated by the large stains in the soil. In direct association with the dog burials were numerous charred bones which is unusual considering the poor preservation of faunal material from adjacent sites. A superficial field inspection of these charred bones suggests the consumption of aquatic mammals such as beaver and muskrat.

Dating the Dog Burials

A conflict exists in dating the communally buried dogs. The stratigraphic and artifactual association of the internments initially lead me to believe that the dogs dated to the mid seventeenth century. But, when I received the results from three charcoal samples from Dr. Rosoe Wilmeth, I was surprised that the dates averaged to A.D. 1025. The six hundred year discrepancy required a reinspection of the data to establish the source of error.

Three charcoal samples, from beneath burials one, two, and a combined sample from burials three and four, were sent to Wilmeth for processing. The results were an impressive clustering of dates circa A.D. 1025: A.D. 955± 50 (S- 1685), A.D. 1055± 60(S - 1686), and A.D. 1065± 65 (S - 1687). The dates are reinforced by the presence of Pickering-Mackinac pottery at level 11 and 12, the same levels from which the charcoal was recovered. The problem is that the date must also be applied to the uppermost level- six, where the dogs were first visible. If this is the case then the close juxtaposition between the artifact sequence and vertical depth must be considered coincidental. This deduction does not seem plausible, especially, when one considers that each artifact class reinforces the other in correlating it to vertical depth (see figure 24).

Level	Ceramics	Lithics	European Goods	Proposed Date	Dog Burials	Dates Derived
1			iron	A.D.1900		
2	Huron	triangular proj.pts.	trade items	1670		
3	"		"			
4	"	"	"			
5	"	"	"			
6	"	"	"	1590		
7	Middleport			1500		
8	"	steatite pipe		1400		
9	Uren			1300		
10	Pickering	side scrapers		1250		
11	Mackinac + Pickering	"		1100		A.D.1025
12		"		800		
13	Laurel	end scrapers		600		A.D. 560
14	Laurel	"		200		
15	Laurel	"		10 B.C.		
16	Laurel	"		200		
+		bifacial tools		900		970
		rhyolitic flakes		2000		

Fig. 24: Stratigraphic sequence at Frank Bay

To explain the radio carbon dates, I would suggest that the charcoal recovered was not part of the burial complex but was part of the Pickering - Blackduck horizon overwhich the dogs were placed.

On the other hand, the evidence to support a seventeenth century date included stratigraphy, artifact association, and the uncharred and relatively well preserved nature of the bones. Since physical stratigraphy of the pertinent zone was indistinct, temporal segments were ascribed to the arbitrarily excavated levels by the seriation of artifacts (see figure 24). Level six marked the final appearance of European goods, Huron Ceramics and Iroquoian projectile points, while levels seven, eight and nine contained Middleport and Vnen pottery and a Middleport steatite pipe. Associated with levels ten, eleven, and twelve were Pickering and Blackduck vessels and side scrapers. Since the dogs were visible between levels six and eleven, it was assumed that the Contact-Huron horizon would be the earliest possible time that they could be buried. However, if the dogs do date to the first millenium, it follows that there is a greater variability and disturbance of the cultural horizons than indicated by the technique of excavation and analysis. For the moment, the near association of European goods, but the absence of direct association hinders the dating of the bones themselves. If the cultural disturbance is as great as the C-14 dates would indicate, then the near association of European artifacts can not be considered a part of the burial complex. The probability that the bones were incised with a metal knife rather than a stone tool adds support for an historic ocntext.

When one considers the rate of deterioration of bone in northern Ontario, the fact that the bones, except for one, were uncharred and were in relatively good condition is unusual. From adjacent sites, dating to the contact period, preservation of even charred bone was extremely poor. Thus if the bones dated to A.D. 1025, then some unknown factor must have aided in their preservation. Perhaps it may have been the birch bark which encased the burials.

In summary, although I favour an A.D. 1600"s date for the ceremonial internment of the six Frank Bay dogs, a date of A.D. 1025 cannot as yet be discounted. Currently, a dog bone sample is being processed to resolve the issue.

Floral Remains

Both seed (analysis by R. Fecteau) and charcoal (analysis by L.Kammenof and N. Herman) were identified as to their genus/species affilitation. Although the analysis is not yet complete, Table 32 summarizes the range of floral material present.

Table 32: Identification of seed and charcoal remains.

Type	Season of availability
Zea mays (corn northern flint)	August, September
Prunus Pensylvanica (pin cherry)	July, August
Rhus sp.(sumac seed)	July
Picea glacia (white spruce)	
Pinus resinosa (red pine)	
Pinus strobus (white pine)	
Abies (fir)	
Larix (larch)	
Quercus ruba (red oak)	
Quercus alba (white oak)	
Acer saccharum (sugar maple)	
Tilia americana (basswood)	
Fraxinus americana (white ash)	

Artifacts Recovered

The artifact assemblage presents a unique blend of exotic, imported utilitarian goods, and locally manufactured items which are found throughout the chronological sequence and are presumed to be the defining characteristics of the Nipissing Indians. The one theme which permeated this cultural tradition was the inherent mobility and exchange of goods and ideas that took place between the Nipissings and her allies. In other words, the "middleman role" that characterized the Nipissings during the early Contact period is seen not as an adaptation to new social conditions brought on by European contact, but as an amplification of an existing traditional exchange system.

Table 33 : Artifacts recovered

Item	N	%
Pottery		
Bodys	1344	33.4
Rims	56	1.4
Necks	4	0.1
Lithics		
Flakes	1710	42.5
Cores	743	18.5
Utilized Flakes	30	0.7
Scrapers	24	0.6
Burins	2	0.0
Spokeshaves	2	0.0
Serrated Flake	1	0.0
Projectile Points	8	0.2
Biface	1	0.0
Bipolar Tools	48	1.2

Table 33 : Con't

Items	N	%
Pipes	5	0.1
Native Copper	3	0.0
European Items		
Glass Beads	26	0.6
Brass-cones	5	0.1
Projectile points	2	0.0
Beads	1	0.0
Other	1	0.0
Iron-Clasp Knife	1	0.0
Dagger guard	1	0.0
Awls	2	0.0
Lead-musket Shot	2	0.0
Graphite	1	0.0
Total	402	99.4

Ceramics

As originally reported by Ridley (1954) and redefined by Wright (1966), the ceramic containers present at Frank Bay belong to the following cultural traditions: Laurel, Point Penninsula, Mackinac, Blackduck, Juntenun, as well as the entire Iroquoian sequence. A sample from each cultural tradition is represented within the 1978 collection. Where possible all rims were mended which accounted for a total of 54 vessels. Body sherds were ignored since vessel association was tenuous at the best of times.

A continuity of Nipissing culture during the Terminal Woodland period is demonstrated by ceramic seriation, while for the Middle Woodland period the sequence remains ill-defined. The predominance of Iroquoian pottery through time suggest the Nipissings shared a ceramic technology with her Iroq uoian neighbours - the Huron.

Table 34: Summary of ceramic detritus recovered from Frank Bay

Vessel Group		Ridley Collection N	%	1978 Sample N	%	Total N	%
Laurel		7	5.7	4	3.3	11	9.0
Point Penn.		3	2.5	0	0	3	2.5
Mackinac		5	4.1	4	3.3	9	7.4
Blackduck		2	1.6	1	0.8	3	2.5
Pickering	1	12	9.8	5	4.1	17	13.9
	2	5	4.1	5	4.1	10	8.2
Juntenun	3	4	3.3	4	3.3	8	6.6
	4	0	0	7	5.7	7	5.7
Uren		3	2.5	7	5.7	10	8.2
Middleport		1	0.8	6	4.9	7	5.7
Huron		20	16.4	8	6.6	28	23.0
Pipes		6	4.9	3	2.5	9	7.4
Sub-total		68	55.7	54	44.3	122	100
unanalyzable rims		-	-	5	0.4		
neck sherds		-	-	4	0.3		
mended rims		-	-	54	3.8		
body sherds		-	-	1344	95.5		
Total				1407	100.0		

<u>Laurel</u> (fig. 25).

Four Laurel vessels were excavated and a summary of their attributes are presented in Tables 35,36,37. The recovery of nineteen body sherds associated with vessel 1 indicated that the body of this vessel was manufactured using both the paddle and anvil and coil technique of manufacture.

All rims were molded by the paddle technique with the interior surface being wiped clean with a surface having the texture of a coarse grass. Decoration was absent on all body sherds, while the rims were decorated with a dentate stamp producing either a pseudo-scallop shell or lightly punctated motif (see Figure 25).

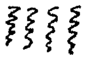
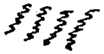
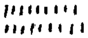
Table 35 : Summary of Laurel Vessels

Vessel No.	Rims	Necks	Body	Total
1	5	6	19	30
2	5	0	0	5
3	1	0	0	1
4	0	5	0	5

Table 36 : Rim metrics of Laurel Vessels

Vessel No.	Thickness lip	Thickness rim	Diameter	Sector Lenght
1	0.6	0.7	18.0	8.0
2	0.7	0.7	--	4.5
3	0.4	0.6	--	2.0
4	--	0.7	N/A	N/A

Table 37: Non-metric attributes of Laurel vessels

Vessel no.	Rim tool	technique	motif	Neck tool	technique	motif	Lip	Interior
1	dentate	stamp		dentate	stamp		absent	present
2	dentate	stamp		n/a	n/a	n/a	present	absent
3	dentate	stamp		n/a	n/a	n/a	absent	absent
4	dentate	stamp		dentate	stamp		n/a	n/a

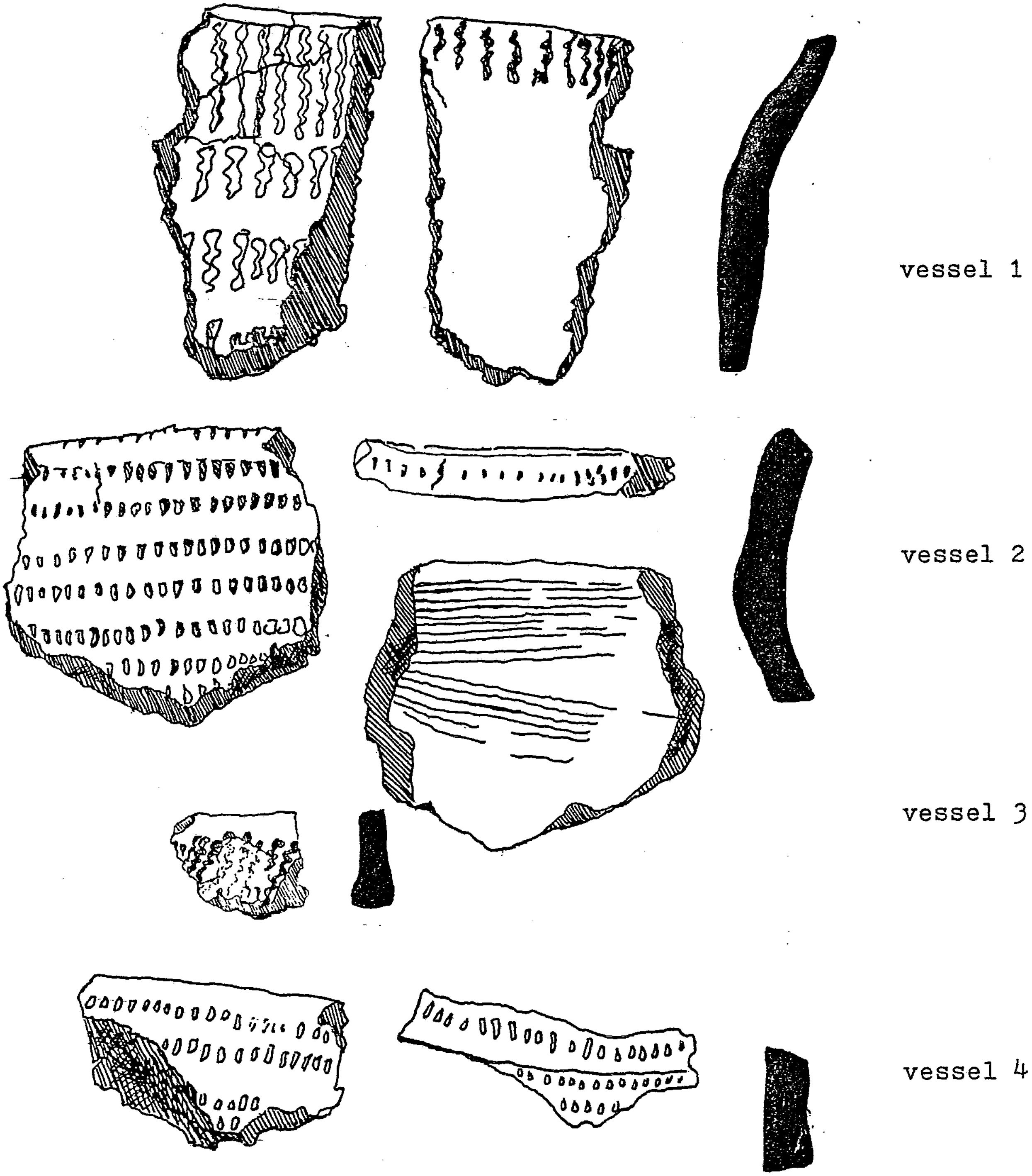


Fig. 25: Laurel vessels from the Frank Bay site.

Mackinac (Fig. 26)

Three Mackinac punctated rims and one Mackinac cord impressed rim were recovered. The exterior surface of the punctated surfaces were either fabric impressed or plain,but all were decorated with encircling punctates. The lips were cord wrapped stick impressed while bosses were noticeable on the interior surface.

A double twisted cord impression on the exterior surface characterizes the forth Mackinac rim. The interior surface appears to be impressed with a stylus in an ad hoc fashion. Both types have apopular distributuion circa A.D. 800 - 1200 in the Upper Michigan - Sault Ste. Marie area (McPerron 1967:90).

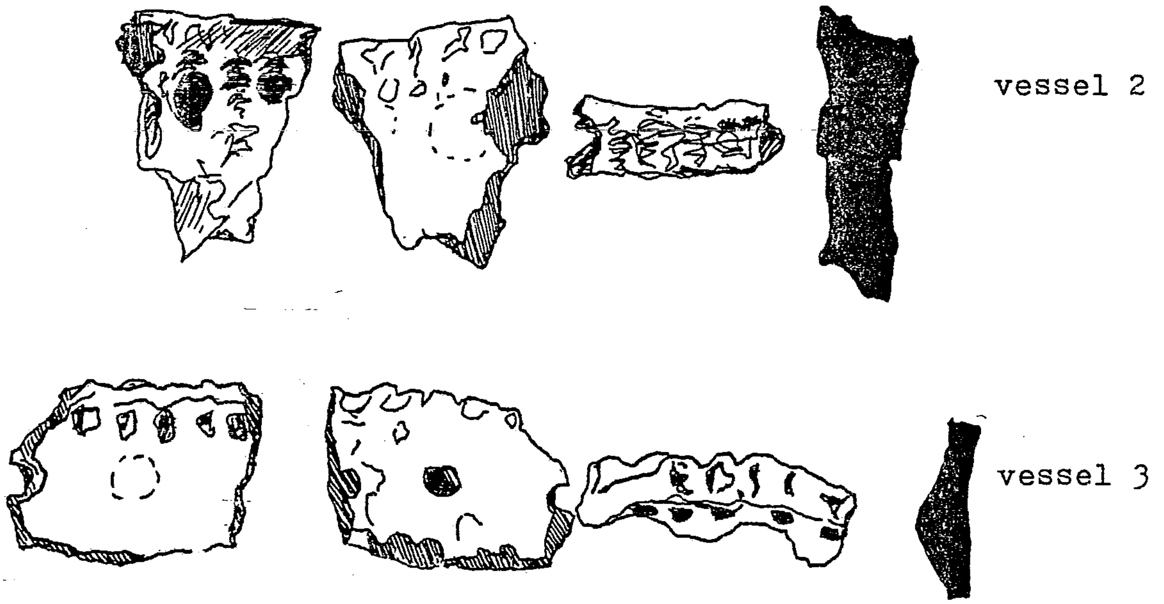


Fig. 26: Mackinac vessels

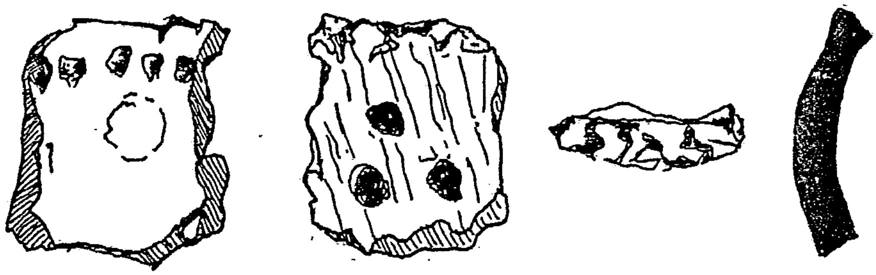


Fig. 26: continued

Blackduck (Fig.27)

The Blackduck culture is represented by a single vessel from the 1978 excavation and two rims from Ridley's excavation. The diagnostic attributes of this group is the cord wrapped stick with encircling punctates decoration. The exterior surface of vessel 1 (see figure 27) is decorated by one row of oblique, followed by three rows of horizontal, followed by a chevron pattern of cord wrapped stick impressions. Encircling exterior punctates, 1cm apart, were placed directly below the decorated cord wrapped stick impressed lip. Bosses and an oblique row of cord wrapped stick impressions were found on the interior surface. The body of the vessel was cord wrapped paddle impressed.

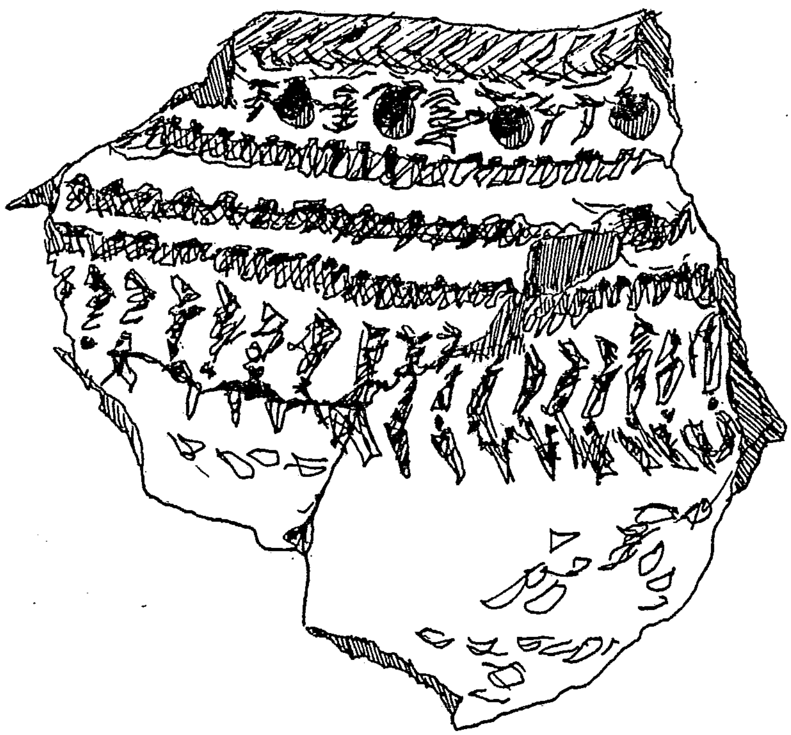


Fig 27: Blackduck vessel

The Ontario Iroquois sequence

According to Wright (1966:49), the early Ontario Iroquois sequence is characterized by:

> dentate stamped oblique motifs, one to three rows of closely spaced exterior bosses on an incipient channelled or straight rim profile; linear punctate horizontal motifs; one row of closely spaced exterior bosses on a channelled rim profile; the same motifs and rim shapes as the preceeding but with the push-pull technique replacing linear punctates, and the absence of bosses resulting in the formation of the dominant Middle Ontario Iroquois stage rim types.

Wright's analysis was based primarily on the seriation of

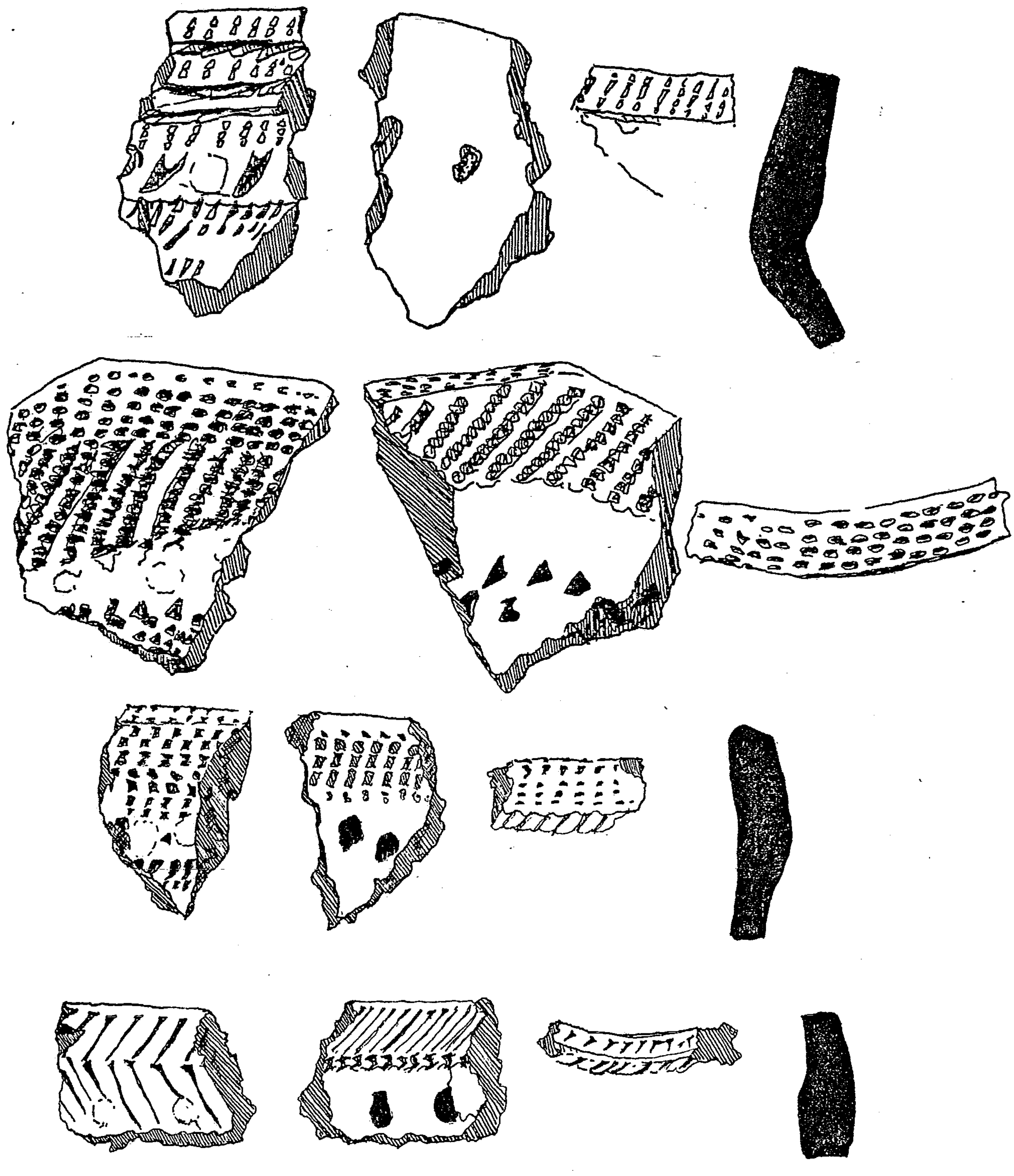


Fig. 28: Pickering 1 vessels

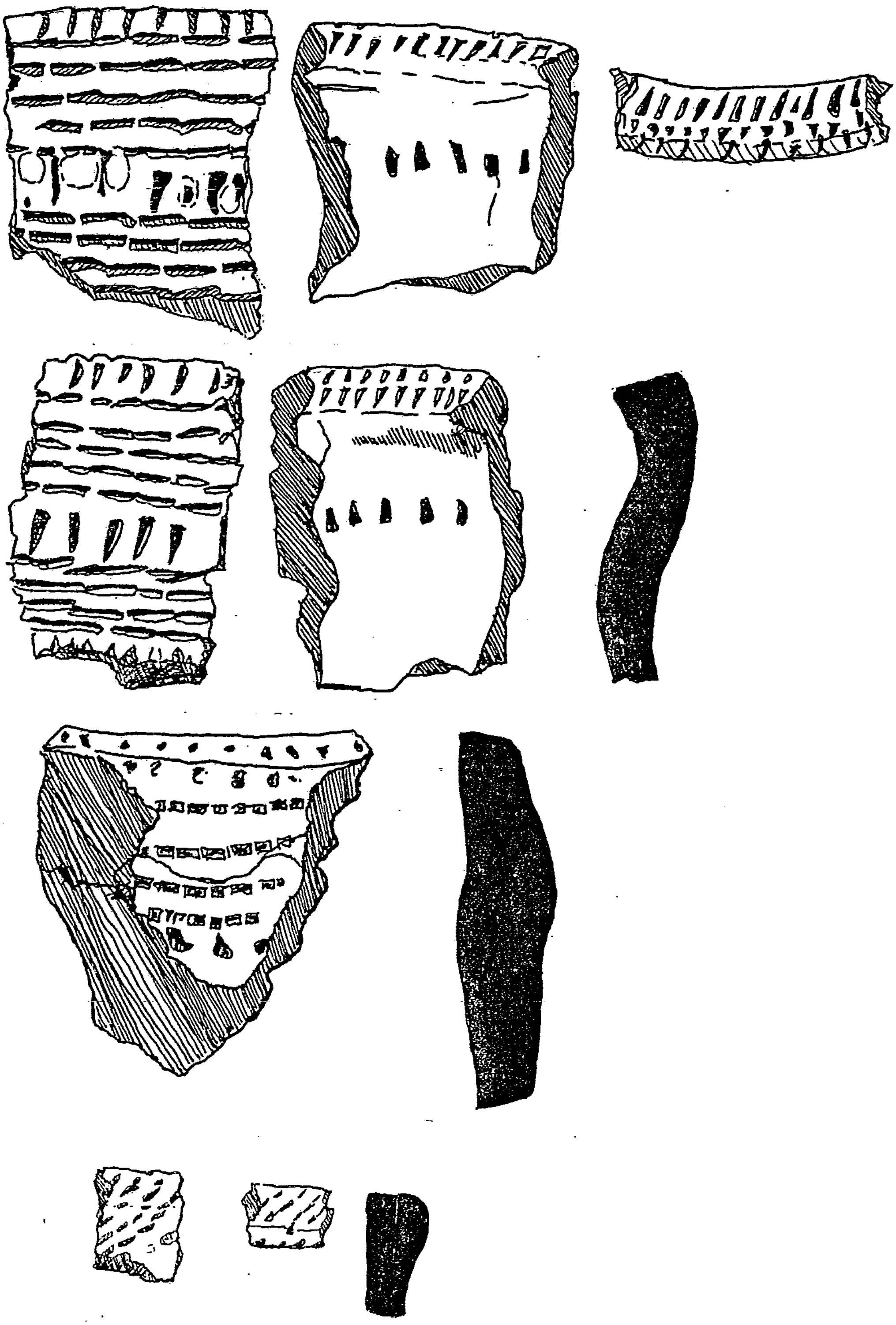


Fig. 28: Pickering 1 and 2 vessels

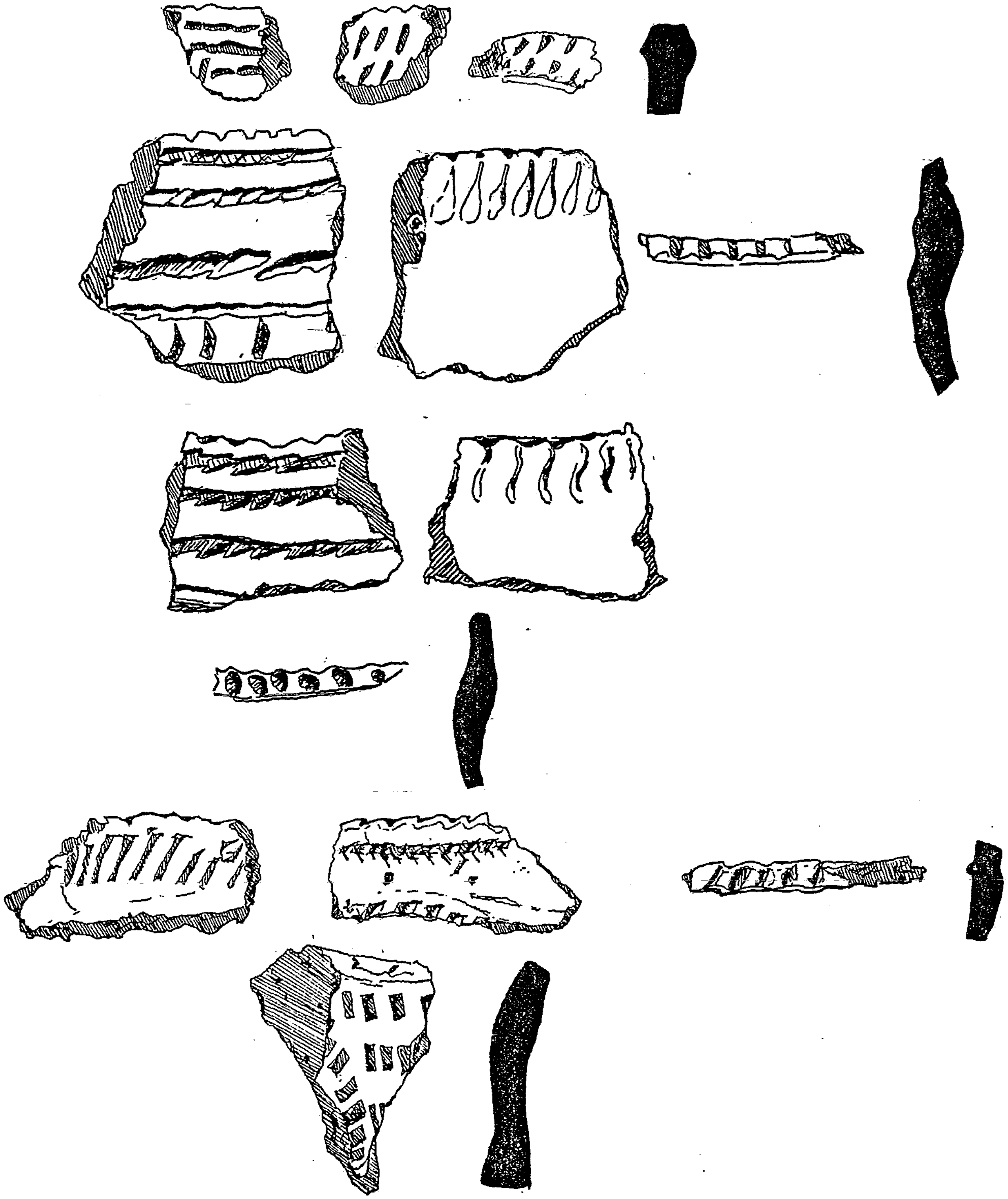


Fig. 28: Pickering 2 and 3 vessels

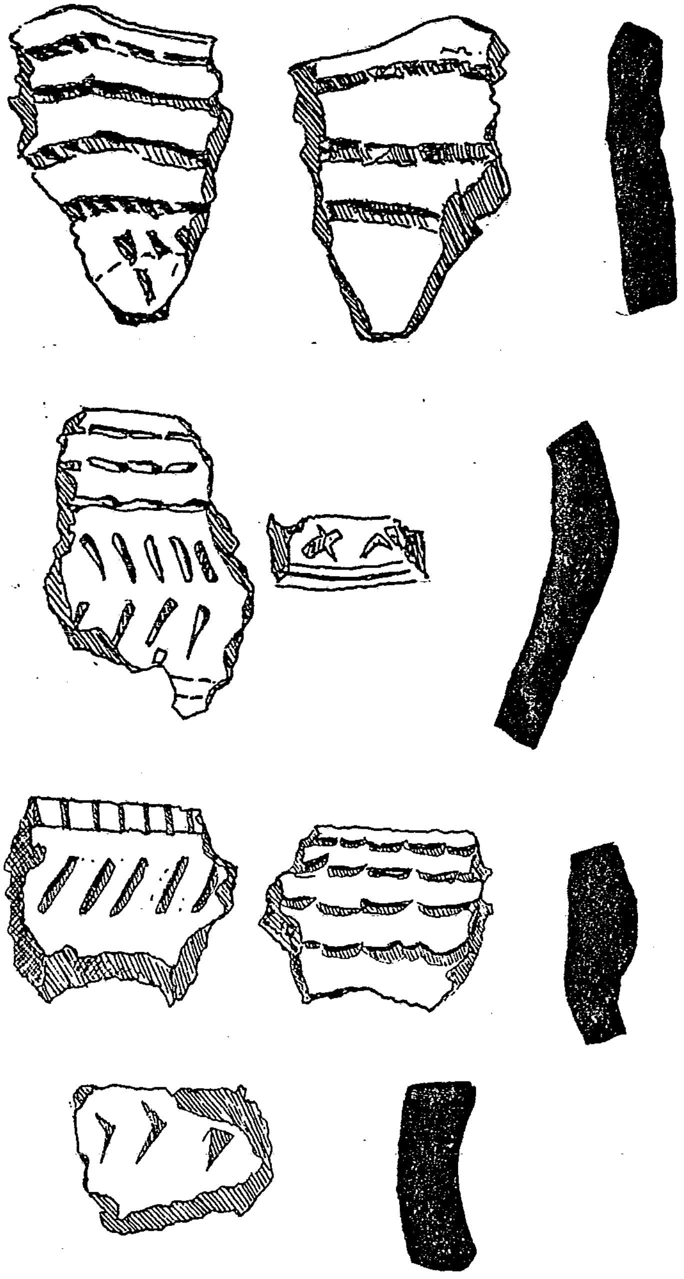


Fig. 28: Pickering 3 and 4 vessels

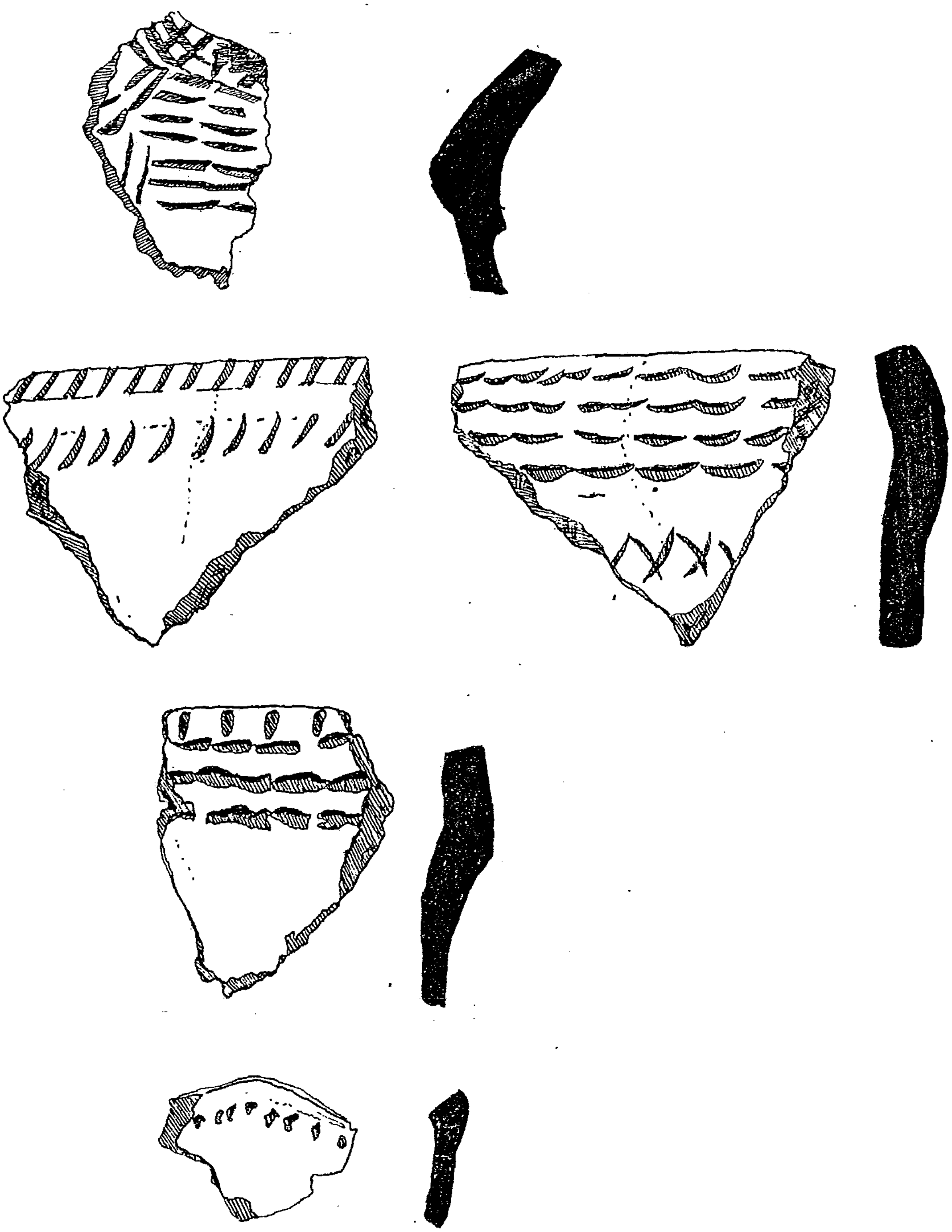


Fig. 28: Pickering 4 vessels

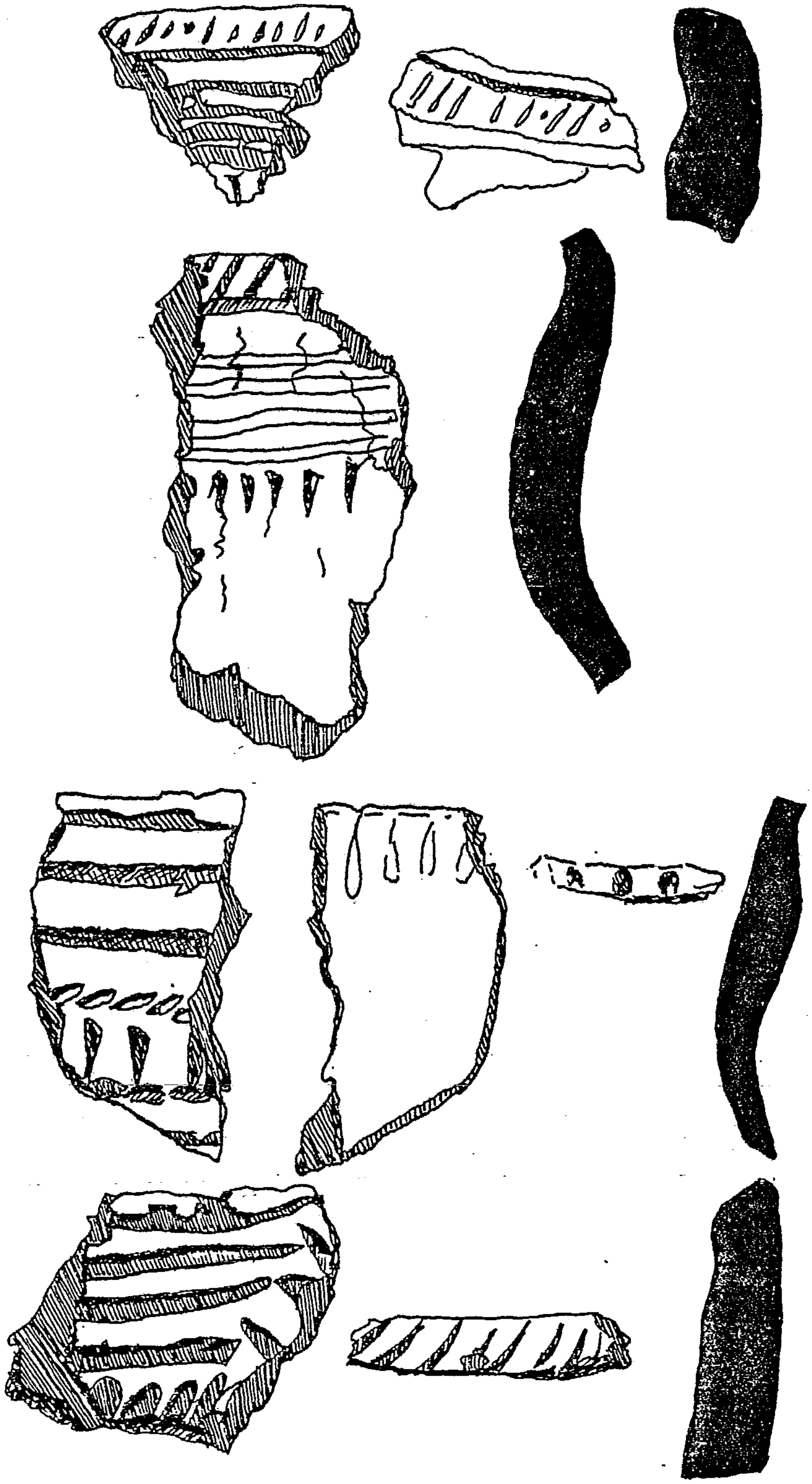


Fig. 28: Uren and Middleport vessels

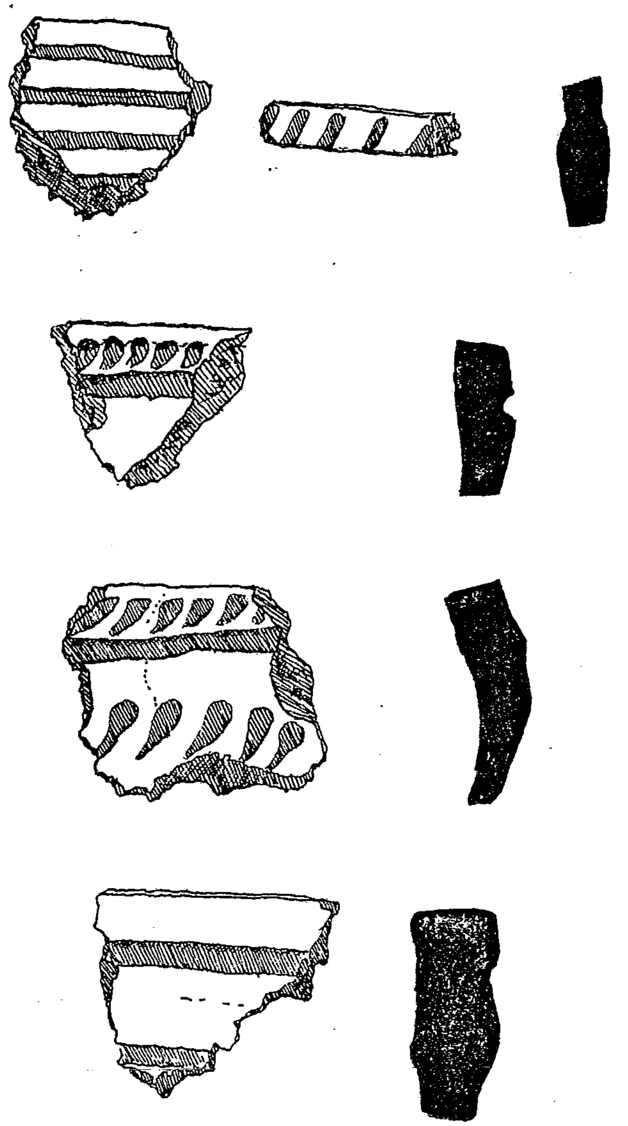


Fig. 28: Uren and Middleport vessels

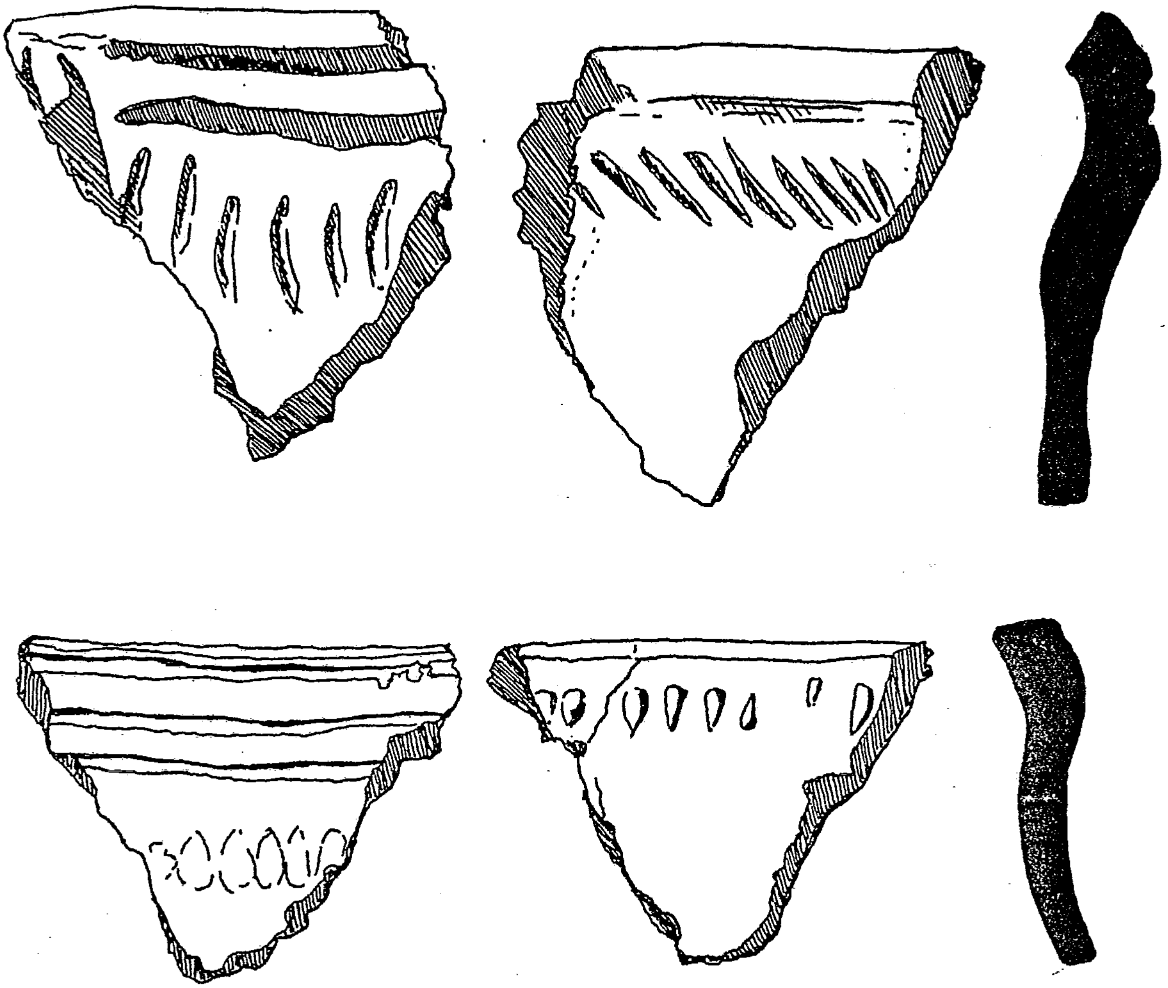


Fig. 28: Middleport vessels

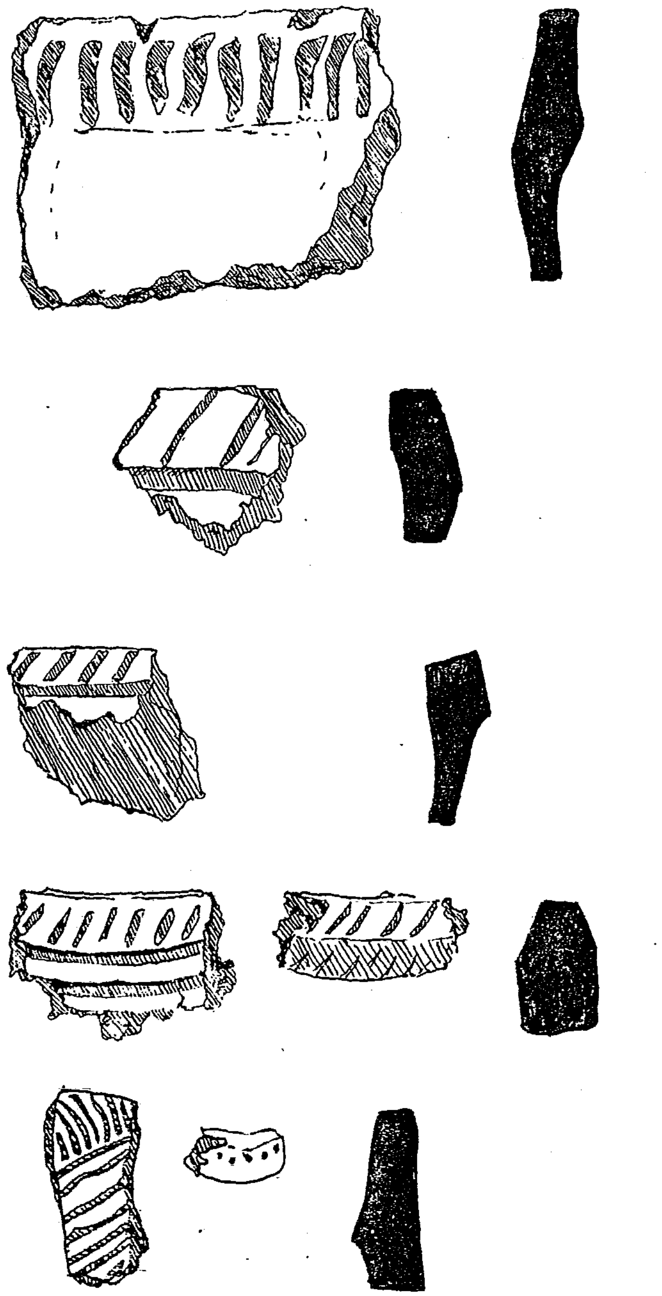


Fig. 28: Huron vessels

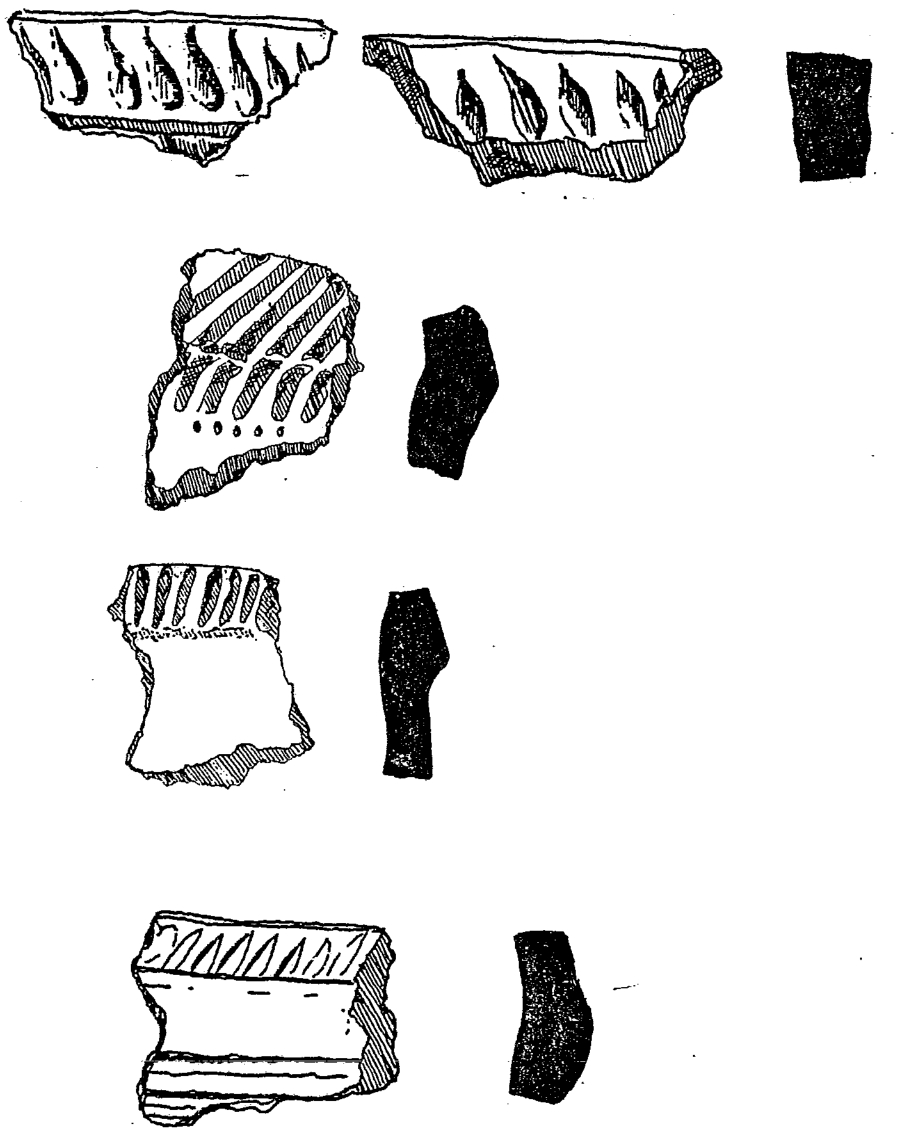


Fig. 28: Huron vessels

of types and secondly on changes in ceramic modes. However, based on the seriation of single and multiple attributes within the Frank Bay collection, the order in which one style succeeds another differs slightly from Wright's interpretation. Specifically, albeit a small sample, the decorative technique of push-pull should logically preceed linear punctating. Based on secondary decorative elements such as neck, interior, and lip decoration, as well as the rim profile, the push-pull rims are closely aligned with the dentate stamp rims of early Pickering rather than the incised rims of Uren. Conversely linear punctated rims stylistically resemble the Uren rims rather than the early Pickering. Except for this one discrpancy, the remainder of the ceramic styles follow Wright's original sequence. A vessel summary for the stylistic changes through time is presented in Table 38.

Table 38: Changes of Iroquoian vessel types through time at BbGw-1

Vessel type	Attribute	Comments
Pickering 1 (5 rims)	exterior decoration	complex dentate stamp producing oblique and geometric motifs on rim and neck
	secondary decoration	presence of punctates and bosses, castellations

Table 38: continued

Vessel type	Attribute	Comments
		lip and interior surface are decorated
	profile	the interior surface tends to be concave, while the exterior surface tends to be convex
Pickering II (5 rims)	exterior decoration	complex dentate stamp producing oblique and vertical motifs
	secondary decoration	absence of punctates or bosses; the lip is decorated, while there is a tendency to decorate the interior surface
	profile	the interior surface tends to be either straight or concave, while exterior surface tends to be convex
Pickering III (4 rims)	exterior decoration	the decorative technique changes to push-pull producing a complex horizontal linear motif
	secondary decoration	presence of castellations, and both lip and interior surface are decorated
	profile	the interior surface is either straight or concave-convex, while the exterior surface varies between straight and convex.

Table 38: continued

Pickering IV (7 rims)	exterior decoration	the decorative technique changes to linear punctating producing horizontal motifs with a tendency of not decorating the neck
	secondary decoration	the lip is decorated, while the interior surface tends to be undecorated
	profile	the interior surface is concave, while the exterior surface is convex
Uren (7 rims)	exterior decoration	incising is the dominant decorative technique, while the motifs produced are poorly executed incised horizontal lines place below a linear punctates that abut the lip, The necks are decorated with a stamped vertical impression
	secondary decoration	both lip and interior surface tend to be undecorated
	profile	the interior surface is generally concave, while the exterior surface is convex
Middleport (6 rims)	exterior decoration	well excuted wide horizontal incised lines on a rolled collar are the dominant motif. The necks have a stamp or incised decoration
	secondary decoration	both lip and interior surface tend to be undecorated

Table 38: continued

	profile	the interior surface is concave while the exterior is convex
Huron (8 rims)	exterior decoration	incised lines are no longer horizontally placed on the rim; neck decorations, when apparent are usually incised in an oblique fashion
	secondary decoration	a tendency towards not decorating the lip and interior surface
	profile	presence of a well defined collar, both the interior and exterior surface tend to be straight

Lithics

Although Frank Bay is remarkable in demonstrating the changes within the ceramic sequence, the identification of a similar develement concerning the lithic reduction sequence is problematic. The reasons for this is the absence of diagnostic lithic artifacts and the lack of physical stratigraphy. To cope with these problems the analysis deals with the non diagnostic artifacts within a general lithic reduction shceme and assigns the 4cm levels to defined cultural horizons. Intra site comparisons to examine changes through time were confined to Area B. Area A lacked the necessary sample size and defined ceramic sequence to demonstrate any changes.

Total Site Recoveries

Raw Material (see Table 39)

Local

The use and abundance of locally derived quartz appears to be a key characteristic of the lithic assemblages on Lake Nipissing. Quartz dominates every defined horizon from Archaic to the Contact period. The amount of hematite (red and yellow ochre) present throughout the sequence may suggest an antiquity for Frank Bay as a ritual or ceremonial site.

Imported

The diversity of locations from which raw material was imported to the site may have economic significance attached to it. If chert was used in trade relations, then the origins of the raw material may mirror trade contacts (either directly or indirectly) between the Nipissing Indians and people living in the vicinity of the chert outcrops. For the most part, the imported chert to Frank Bay appears to be restricted to Ontario, specifically the Lake Abitibi-Timiskaming region, Manitoulin Island, and southern Ontario, with an assortment of Michigan cherts present as well.

Table 39: Summary of the total raw material recovered

Make	Type	Wt(gm)	%
Local	quartz	3413.2	69.8
	shist	65.5	1.3
	slate	337.0	6.9
	hematite (red)	85.6	1.8
	(yellow)	102.4	2.1
Imported	H.B.L.	87.9	1.8
	Manitoulin	56.8	1.2
	Onondoga	31.4	0.6
	Balsam	1.8	0.0
	Kettle Pt.	14.3	0.3
	Scott	32.3	0.7
	Norwood	12.3	0.3
	Bayprt	3.1	0.0
	Precambrian	94.4	1.9
	Lorraine	120.8	2.5
	unknown cherts	408.2	8.4
	steatite	21.5	0.4
Total		4888.4	100.0

Area A

Although Area A was stratified, no individual cultural or physical stratum could be discerned. Ceramic vessels and pipes recovered from the unit include Laurel, Middleport, and Huron. The raw materials recovered compare favourably with those from Area B.

Table 40 : Raw Material Recovered From Area A

Type	All inclusive levels Wt.	%
Quartz	190.7	41.5
H.B.L.	3.7	0.8
Manitoulin	19.4	4.3
Onondog	1.6	0.3
Balsam	0	0
Scott	12.1	2.6
Norwood	0	0
Precambrain	35.7	7.8
Gordon Lake	0	0
Lorraine	1.6	0.3
Slate	67.9	14.8
Unknown	126.8	27.8
Total	459.5	99.9

Area B

Since no diagnostic artifacts were found at any particular level, the lithic recoveries from Area B were assigned to cultural horizons corresponding to their vertical depth. The horizons, Contact-Huron, Middleport-Uren, Pickering-Mackinac, Laurel, Archaic, were assigned to the following respective levels 1-6,7-9,10-12,13-15,16+, based on the frequency of diagonstic rim types within the range of levels. The immediate question after placing the lithic assemblage into the arbitrarily defined horizons is to what degree are the results artificial? The only method available to test the reality of the articulated lithic horizons is to compare the Frank Bay artifacts with temporally discrete sites within the Nipissing drainage systems. In this regard, the Campbell Bay and Frank Ridley sites provide supporting evidence in that both date to the Huron horizon at Frank Bay and all three have a parallel distribution in regards to raw material utilized and types of artifacts produced. Comparisons with other lithic horizons at Frank Bay must await future excavations on Lake Nipissing.

Table 41: Raw material recovered from Area B

Type	Huron (gms)	Middleport Uren	Pickering Mackinac	Laurel	Archaic	Total
Quartz	966.5	800.3	275.2	72.4	108.1	2222.5
Slate	98.3	82.5	70.4	14.5	3.4	269.1
Lorraine	4.6	110.1	2.3	2.2	0.0	119.1
H.B.L.	13.8	27.5	25.6	17.3	0.0	84.2
Precambrian	0.0	0.7	0.0	8.0	50.0	58.7
Manitoulin	4.1	17.5	0.0	0.0	15.8	37.4
Onondoga	3.4	21.2	0.0	2.9	2.6	30.1
Steatite	0.0	21.5	0.0	0.0	0.0	21.5
Scott	4.9	3.0	2.1	7.8	2.3	20.1
Kettle Pt.	1.7	0.0	0.0	0.0	12.6	14.3
Norwood	0.0	0.0	0.0	0.0	12.3	12.3
Gordon L.	0.6	3.4	0.0	0.0	1.9	5.9
Bayport	0.0	0.0	0.0	2.1	1.0	3.1
Balsam L.	0.0	0.0	1.8	0.0	0.0	1.8
Unknown	86.8	101.5	67.5	19.1	6.5	281.4
Total	1184.7	1189.2	444.9	146.3	216.5	3181.6

The overwhelming utilization of local quartz by the Nipissings tends to mask any observable trends through time of other types of material. To compensate for the large quartz sample in Huron and Middleport times, comparisons were based on imported materials. Table 42 tabulates the results.

Table 42 : Imported material to Frank Bay

Type	Huron (%-by wt.)	Middleport-Uren	Pickering-Blackduck	laurel	Archaic
Lorraine	3.8	35.9	2.3	3.7	0.0
H.B.L.	11.5	9.0	25.8	29.1	0.0
Precambrian	0.0	0.2	0.0	13.5	47.6
Manitoulin	3.4	5.2	0.0	0.0	15.0
Onondoga	2.8	6.9	0.0	4.9	2.5
Steatite	0.0	7.0	0.0	0.0	0.0
Scott	4.1	1.0	2.1	13.1	2.2
Kettle Pt.	1.4	0.0	0.0	0.0	12.0
Norwood	0.0	0.0	0.0	0.0	11.7
Gordon L.	0.5	1.1	0.0	0.0	1.8
Bayport	0.0	0.0	0.0	3.5	1.0
Balsam L.	0.0	0.0	1.8	0.0	0.0
Unknown	72.4	33.1	68.0	32.2	6.2
Total	99.9	99.9	100.0	100.0	100.0

A distinctive trend noticeable within the series is the strong expression of Precambrian material (rhyolite) in the Archaic horizon. The presence of the large rhyolitic bifacial flakes and the occurence of a large biface (Devereux p.c.) near Lake Nipissing suggests that the large biface industry that characterized the Lake Timiskaming-Lake Abitibi region (Pollock 1977, Knight 1978) during the late Archaic period is delineated at Lake Nipissing as well.

Because of the small lithic sample recovered from each horizon, no significant changes were noticed in the Woodland sequence. The preceived quantitative order in which Palaeozoic cherts were imported to the site is northern Ontario Hudson Bay Lowland chert, followed by southern Ontario cherts- specifically Onondoga, Balsam Lake, Kettle Point, with minor occurences of Michigan cherts such as Scott Quarry, Norwood Locality, and Bayport.

Conchoidally Fractured Material

A summary of the total site distribution of lithic types is presented in Table 42 .

The high percentage of detritus (85%) is attributed to the overwhelming abundance of local quartz. For this reason conservation techniques in knapping this material would be unnecessary, and the poor workability of quartz results in considerable wastage. The poor knapping qualities of quartz as well as the small size of nodultes imported to Frank Bay may account for the use of bipolar hammering as the primary lithic reduction technique on the site.

Table 43: Artifact types recovered from BbGw-1

Type	N	%	Wt.(gm)	%
pressure	543	23.3	151.9	4.5
secondary	208	9.0	168.3	5.0
primary	38	1.6	137.3	4.1
chips	747	32.1	576.7	17.3
shatter	530	22.8	634.4	19.0
bipolar	137	5.9	668.0	20.0
nodular	10	0.4	297.5	8.9
block	7	0.3	209.7	6.3
utilized flakes	30	1.3	72.7	2.2
unifacial tools	29	1.2	57.6	1.7
bifacial tools	9	0.4	192.1	5.7
core tools	39	1.7	179.5	5.4
Total	2328	100.0	3345.7	100.1

Tabulated in Table 44 is the percentage distribution by wight of lithic types recovered from Area A. The high percentage of utilized material excavated when compared to Area B is attributed to the recovery of a large chert biface and the small sample size. The biface was the only one retrieved from the site.

Table 44: Artifacts recovered from Area A

Type	Wt.(gm)	%
pressure	8.5	1.9
secondary	21.9	4.8
primary	36.6	8.0
chips	32.2	7.0
shatter	75.4	16.4
bipolar	70.8	15.4
utilized flakes	5.8	1.3
unifacial tools	12.3	2.7
bifacial tools	172.1	37.5
core tools	23.9	5.2
Total	459.5	100.2

As in the comparison of raw material, the distribution of lithic types from Area B was assigned to arbitrary levels. The quantified results are expressed in Table 45. On problem in comparing the horizons is the larger samples availabe in the Huron and Middleport horizons. The Ridley collection was incoporated in the comparison (figure 32) to compensate for this problem where larger samples existed - primarily in the tool category. The arbitrariness of such an analysis cannot be avoided, and can only be covercome when discrete components are investigated some time in the future.

The distribution of artifacts as illustrated in Figure 32 does show some interesting trends through time: (a) an increase in detrital material from Laurel to Huron times; (b) an increase in core detritus from Pickering to Middleport times; (c) a rapid increase in core tools from Pickering to Middleport times; (d) a rapid decrease in bifacial tools from Archaic to Laurel times; and (e) the predominance of unifacial tools only in Laurel times.

Table 45: Distribution of lithic artifacts for Area B

Type	Levels Huron	Middleport	Mackinac	Laurel	Archaic
pressure	59.3	57.6	15.8	7.4	3.3
secondary	51.0	23.3	28.3	14.1	29.7
primary	22.3	26.0	18.6	10.0	23.8
chips	232.9	193.9	78.0	21.1	15.6
shatter	209.1	271.7	63.7	13.6	0.9
bipolar	256.9	213.3	58.5	26.5	42.0
nodular	78.7	154.2	3.4	0.0	61.2
block	124.6	41.6	43.5	0.0	0.0
utilized flakes	3.5	37.1	11.9	9.4	5.0
unifacial tools	6.2	15.4	15.2	7.1	1.4
bifacial tools	5.4	5.0	9.0	0.6	0.0
core tools	36.5	41.4	28.7	21.8	27.2
Total	1086.4	1080.5	374.6	131.6	213.1

Horizon Type	Huron (%)	Middleport	Pickering	Laurel	Archaic
Detritus	95	91	83	70	84
Utilized	5	9	17	30	16
Flakes	35	31	45	27	42
Cores	65	69	55	73	58
Unmodified tools	27	37	18	24	15
Modified tools	73	63	82	76	85
Unifacial tools*	13	25	29	43	10
Bifacial tools*	11	0	17	12	39
Core tools*	76	75	54	45	51

Figure 32: Distribution of Lithic Categories for Area B.(* Ridley collection incorporated)

Utilized Artifacts

The utilized specimens were divided into two categories: unmodified flakes and modified tools (see Table 44). The 30 unmodified flakes are not subdivided and are referred to in this thesis as utilized flakes. The modified tools are comprised of 29 unifacial tools, 9 bifacial tools, and 48 core tools. The variability in shape and form and small sample sizes not only limits inter-site comparisons but restricts the documentation of attribute changes through time. The exception to the rule were the bipolar tools. They exhibited remarkable homogeneity in size and shape through time. An interesting comparison is that while bipolar tools were derived primarily from local quartz, the majority of the other lithic implements were imported to the site. The origins of the imported chert tools correspond closely to the trade routes described by the Jesuits (J.R. 11:97; 18:229), where the Nipissings assumed a middleman role between the southern horticulturalists and the northern hunters and trappers. The unique too styles and the cosmopolitan nature of the raw material are characteristic of Algonkian assemblages.

Utilized Flakes: The 30 flakes included in this category exhibited a worked marginal edge. Although many had flake scars, there were no signs of intentional retouching on the dorsal or ventral surfaces. When compared to the unutilized flakes, these flakes were found to be larger in all proportions. This difference was best expressed by weight where utilized flakes were approximately four times the weight of primary percussion flakes. The utilized flakes were reduced by both freehand percussion and bipolar hammering. Simple to produce, a rather surprising percentage (73%) of flakes were manufactured from imported cherts. This situation suggests that precious little material was wasted, if it was brought to the site from any great distance. Although the sample is too small to detect attribute changes through time, a detailed description of the attributes measured is presented in Table 46.

Table 46: Utilized flakes compared through time.

Attribute		Huron	Middleport	Mackinac	Laurel	Archaic	Total
Length	no.	3	11	4	6	2	26
	range	1.9-2.0	1.4-4.6	2.7-4.2	1.8-4.9	2.5-2.9	1.4-4.9
	mean	2.0	3.0	3.5	2.9	2.7	2.8
	st.dev.	0.1	1.0	0.8	1.0	0.2	1.0
Width	no.	3	11	4	6	2	26
	range	0.6-2.2	1.4-2.7	1.3-1.9	0.9-2.3	1.3-1.6	0.6-2.7
	mean	1.6	1.9	1.6	1.7	1.5	1.8
	st.dev.	0.8	0.5	0.3	0.6	0.2	0.5
Thick.	no.	3	11	4	6	2	26
	range	0.2-0.3	0.3-0.8	0.5	0.3-0.7	0.4-0.5	0.2-0.8
	mean	0.2	0.5	0.5	0.5	0.5	0.5
	st.dev.	0.1	0.2	0.0	0.1	0.1	0.2
Wt.	no.	3	11	4	6	2	26
	range	0.7-1.5	0.9-10.6	2.5-3.4	1.1-3.8	0.9-1.7	0.7-10.6
	mean	1.2	3.2	3.0	2.8	1.3	2.6
	st.dev.	0.5	3.0	0.5	1.2	0.4	2.0

28% and 17% of this total respectively.

Side Scrapers: Although only two side scrapers were recovered from Area A, they appear to be characteristic of the Late Woodland sequence (Wright 1967). They are similar in design to end scrapers except that they are retouched along one of the lateral edges. Both are derived from imported material.

Multi-faced Scrapers: Multi-faced scrapers have more than one bevelled edge (and within the present collection all have two faces). The four multi-faced scrapers recovered from the site were associated with the Pickering horizon. The utilization for which these artifacts were used was important, and that the imported material from which the artifacts were manufactured from was at a premium.

Spokeshaves: The term spokeshave is applied to two artifacts that are characterized by concavities that have numerous

Unifacial Tools

The most popular unifacial tools recovered were 24 scrapers (end, side and multi-faced) followed by two spoke-shaves, two burins, and a serrated blade. Because of the small sample size within each variety, no temporal trends were noted. As with utilized flakes, the majority of unifacial tools (83%) were manufactured from imported material. This factor perhaps emphasizes the importance of unifacial tools, and particularily end scrapers within the Nipissing tool kit. Attributes recorded for unifacial tools are summarized in Table .

End Scrapers: A total of 18 end scrapers were recovered from the site. Generally, all were primary flakes that had been retouched along the distal end. The face or bit angle ranges from 40° to 90° with a mean of 65°. Wear along the face varies from light to moderate and would seem certain that all scrapers were hafted. Of the total number, 78% of the end scrapers are derived from imported chert, with Michigan cherts and Hudson Bay Lowland chert comprising

Table 47: Attributes recorded for scraping tools

Type	Horizon	Length	Width	Thick.	Wt.	Material	Face Ht.	Face L.	Face °
end scraper	Huron	1.4	1.7	0.4	1.3	H.B.L.	0.2	1.7	45
	"	2.2	2.6	0.7	3.5	quartz	0.4	2.5	45
	Middleport	2.8	1.0	0.5	2.9	quartz	0.1	0.6	60
	"	1.9	1.9	0.7	2.7	quartz	0.3	1.9	80
	"	2.3	1.4	0.4	1.7	H.B.L.	0.4	1.3	40
	"	2.5	1.6	0.6	3.1	quartz	0.3	1.5	60
	Mackinac	2.2	2.3	0.4	2.1	unknown	0.4	2.3	65
	"	2.8	2.8	0.7	4.5	unknown	0.4	2.8	75
	Laurel	2.4	1.9	0.5	2.1	Bayport	0.4	1.8	55
	"	2.5	2.4	0.6	2.6	H.B.L.	0.3	2.4	70
	"	1.5	1.2	0.7	1.1	Scotts	0.5	1.0	70
	"	1.8	1.5	0.4	1.3	Onondoga	0.2	1.4	70
	unknown	1.7	2.1	0.5	1.0	unknown	0.4	2.0	80
	"	1.7	1.8	0.5	1.8	Manitoulin	0.4	1.8	65
	"	2.6	2.4	0.6	2.8	Scott	0.5	2.2	75
	"	2.1	2.0	0.7	2.6	Scott	0.4	1.9	60
Mean		2.2	1.9	0.6	2.3		0.4	1.8	63
Standard Deviation		0.4	0.5	0.1	1.0		0.1	0.6	12

Table 47: continued

Type	Horizon	Length	Width	Thick.	Wt.	Material	Face Ht.	Face L.	Face °
side scraper	unknown	2.4	1.7	0.4	2.2	H.B.L.	0.3	2.3	30
	"	2.9	1.4	0.4	0.9	Lorraine	0.1	0.9	30
Mean		2.7	1.6	0.4	1.5		0.2	1.6	30
Standard Deviation		0.3	0.2	0.0	0.6		0.1	0.7	00
multi-faced scraper	Huron	1.8	1.4	0.3	1.1	unknown	0.1	1.4	35
	Mackinac	1.5	2.2	0.7	2.5	unknown	0.5	2.2	65
	"	1.8	1.3	0.4	0.8	H.B.L.	0.4	1.7	40
	"	2.6	2.6	0.6	1.9	unknown	0.3	2.6	45
	"	2.1	1.8	0.5	2.3	H.B.L.	0.3	2.0	40
	Archaic	1.4	1.9	0.6	1.4	Scotts	0.4	1.9	55
Mean		1.9	1.9	0.5	1.7		0.3	2.0	47
Standard Deviation		0.4	0.5	0.1	0.7		0.1	0.4	11

step fractures associated with them. The term implies the tools were used as a plaine or draw knife to smooth or shape a roughened surface. Spokeshaves no.1783 and 3059 weigh 1.1 and 4.6 gms, and have length, width, and thickness dimensions of 3.0, 2.5cm; 1.1 and 0.9 cm; 0.6, 0.3cm.No. 1783 was recovered from the Mackinac horizon, while no. 3059 was recovered from the Middleport horizon.

Burins: Only two burins were recovered from the site. The use of burins is thought to be related to bone working and shaping activities. Their respective length, width, thickness and weight dimensions are no. 2433= 2.2cm, 0.8cm 0.5cm, 1.2gm; and no. 4162 = 1.7, 0.6, 0.2, 0.7.

Serrated Flake: only one serrated flake was recovered from the site. Fox(1972:5) suggested that they were used in processing vegetable matter and in the production of marine shell ornaments. I have noticed that in northeastern Ontario they occur on sites that have been defined as fishing stations. This may imply that they perhaps functioned as scaling devices. Its length, width, thickness and weight dimensions are 2.3cm, 0.6cm, 0.7cm, and 1.5gm.

Bifacial Tools

Projectile Points: (Plate) Within the bifacial category were recovered 8 projectile points and one biface. Each projectile point is unique in design and manufacture. With the exception of one point, all were derived from material originating from northern Ontario. The one exception (NO.2537) is a triangular (concave based) projectile point manufactured from Onondoga chert. It was found in association with a burial that presumably dates to the Contact period. The metric measurements of each point are summarized in Table 48 .

Biface: (Fig. 33) The only biface (NO.630) recovered from the site was from Area A. The material from which it is derived is problematic as to source. It is characterized by numerous fossil inclusions, a dull lustre, and a green to white appearance, and Fox (p.c.) speculates that it may originate from the Montreal River area. A retouched edge angle of 45° and slight hinge fractures along its side suggests the tool functioned as a knife.

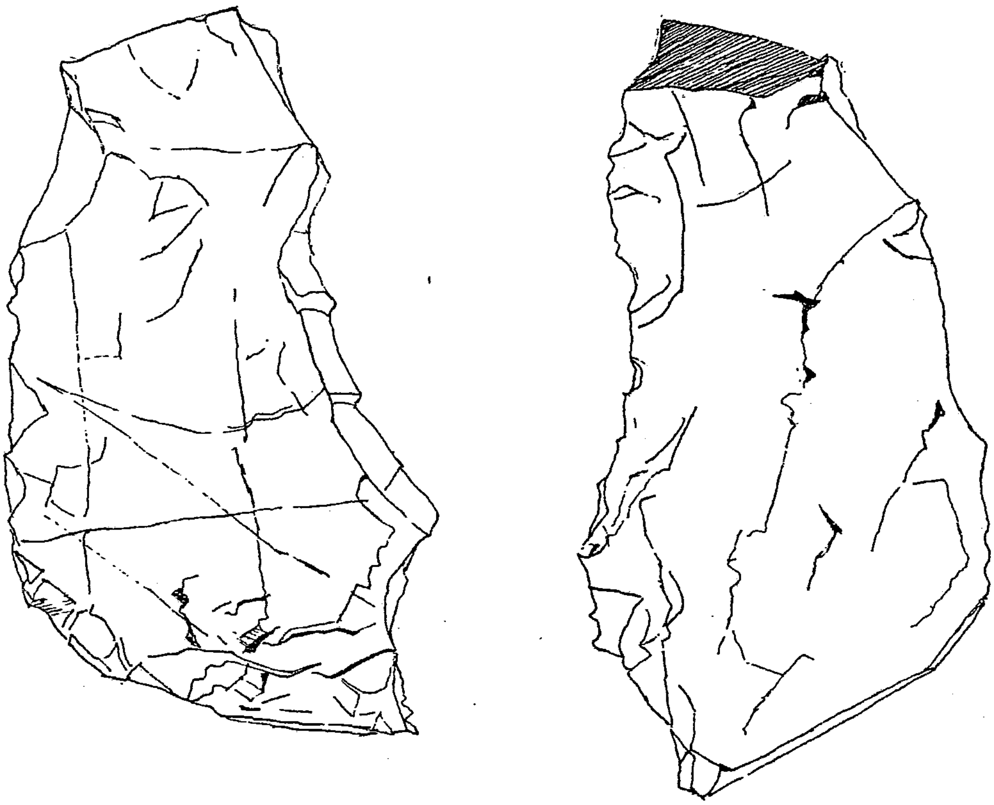


Fig. 33: Biface no. 630 from Area A

Table 48: Attributes Selected for Protectile Points

No.	Horizon	Type	Length	Width	Thick	Width of Neck	Width of Notch	Depth of Notch	Dist.of Notch to Corner(R,L)	Basal Width	Weight	Material
3907	Pickering	side notched	4.5	1.7	0.6	1.0	0.3(R) 0.3(L)	0.2(R) 0.3(L)	0.4(R) 0.5(L)	1.7	9.0	Unknown
771	Huron	triangular	2.0	1.4	0.3	N/A	N/A	N/A	N/A	N/A	0.8	Manitoulin
2176	Middleport	triangular	N/A	1.3	0.3	N/A	N/A	N/A	N/A	N/A	0.1	Manitoulin
3442	Middleport	side notched	2.6	1.3	0.3	N/A	0.3(R) N.P.(L)	0.2(R) N.P.(L)	0.3(R) N.P.(L)	N.P.	1.7	Unknown
4038	Laurel	stemmed	1.8	0.9	0.3	0.6	0.3(R) 0.2(L)	0.3(R) 0.3(L)	).5(R) 0.4(L)	0.8	0.6	Lorraine Quartzite
522	N10E1	stemmed	2.5	0.9	0.4	N/A	N/A	N/A	N/A	N/A	0.9	Manitoulin
169	N8E1	side notched	5.0	1.9	0.5	1.1	0.2(R) 0.2(L)	0.3(R) 0.3(L)	0.6(R) 0.5(L)	1.5	4.2	Scott
2537	Huron	triangular	4.5	2.9	0.5	N/A	N/A	N/A	N/A	N/A	1.6	Onondoga
630	N12E1	biface	10.1	5.8	1.4	N/A	N/A	N/A	N/A	N/A	106.4	Unknown

Core Tools

Tools that were reduced by the bipolar technique are placed in this category. The pebble core tools manufactured at the site are the most popular lithic class of artifact discovered for all horizons. The popularity of this artifact type may be due to the abundance of local quartz which for the most part can only be reduced effectively by bipolar hammering. The wear patterns and edge angles of these tools suggests they were used as gouges, wedges and cutting instruments. Although the sample is small, it appears that there is little or no difference in manufacturing these tools through time. This is not to assume a conservative lithic tradition, but rather may imply that the technique was restricted to a particular size of nodule. The attributes measured are summarized in Table 49 .

Figure 34 : Wedge from Frank Bay

Table 49: Bipolar tools campared through time.

Attribute		Huron	Middleport	Mackinac	Laurel	Archaic	Unknown
Length	no.	11	15	5	5	3	9
	range	2.1-3.4	1.8-3.0	2.8-3.8	1.5-4.0	2.5-4.9	1.8-4.7
	mean	2.6	2.3	3.3	2.4	3.7	2.7
	st.dev.	0.5	0.3	0.4	1.0	1.2	0.9
Width	no.	11	15	5	5	3	9
	range	1.2-3.1	1.2-2.1	1.6-2.4	0.6-2.0	2.0-2.3	1.4-3.0
	mean	1.9	1.8	2.0	1.1	2.7	2.0
	st.dev.	0.6	0.3	0.3	0.4	0.2	0.5
Thick.	no.	11	15	5	5	3	9
	range	0.3-1.1	0.3-1.8	0.7-1.2	0.5-1.2	0.4-1.7	0.6-1.6
	mean	0.7	0.8	0.9	0.7	1.1	0.9
	st.dev.	0.2	0.4	0.2	0.3	0.8	0.4
Wt.	no.	11	15	5	5	3	9
	range	1.4-7.4	0.9-8.7	2.6-7.3	0.8-8.2	2.7-12.3	1.1-14.8
	mean	3.2	1.7	5.0	2.9	7.8	4.5
	st.dev.	1.7	1.7	2.0	2.7	5.4	4.1

Pipes

Three ceramic pipe fragments, one steatite pipe stem, and on sandstone pipe bowl were recovered from the site. A bulbous Middleport pipe bowl is characterized by a series of finely executed diagonal and horizontal lines. The small size of the fragment restricts the metric measurements to only the lip which is 6mm in width.

Excavated from the Middleport horizon, the steatite pipe stem is exquiste in its manufacture and design. Smoothly polished, the stem is flat on the ventral surface, while the dorsal surface is round. The design motifs are incised and form two triangular figures that are illustrated below.

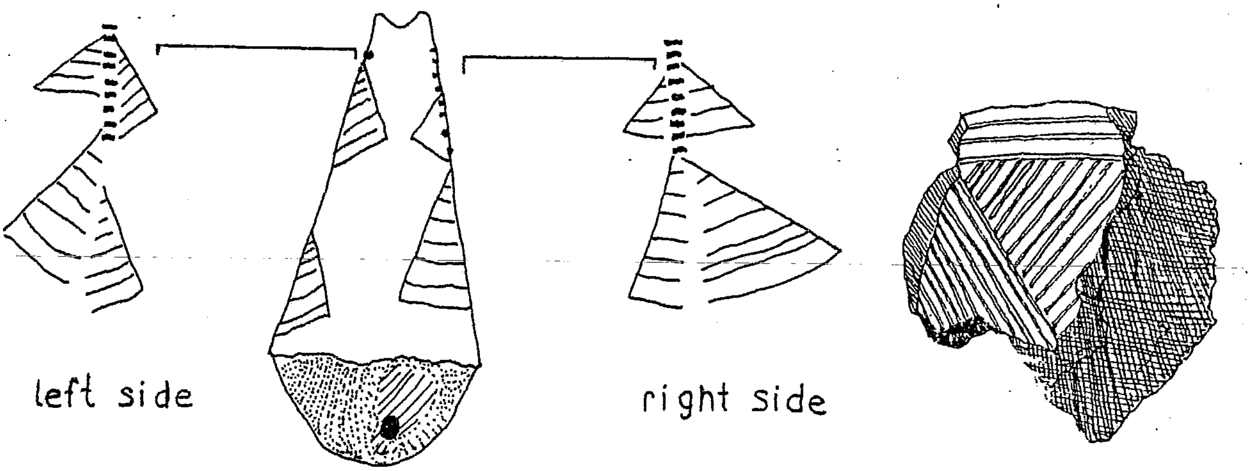


Figure 35: Steatite Pipe Bowl with incised stick figures and Middleport pipe bowl.

The Huron-Contact period is characterized by two ceramic pipes and one sandstone pipe. One ceramic pipe bowl fragment is incised on the exterior surface and punctated on the lip. The motif on the bowl is composed of oblique lines, while encircling punctates bisect the lip. The lip is 5mm in width.

Horizontal trailed lines decorate the second "Huron" ceramic pipe bowl fragment. The lip is 5mm in width.

Figure 36 : "Huron" Pipe Bowls

A distinctively formed sandstone pipe was found in near association with a dog burial. The fragile appearance of the pipe and the uncharred bowl suggest is was unused. Quimby (1966:130) refers to the pipe style as Micmac and it dates between 1670 to 1700. The pipes recovered in Michigan were associated with an Indian cemetery.

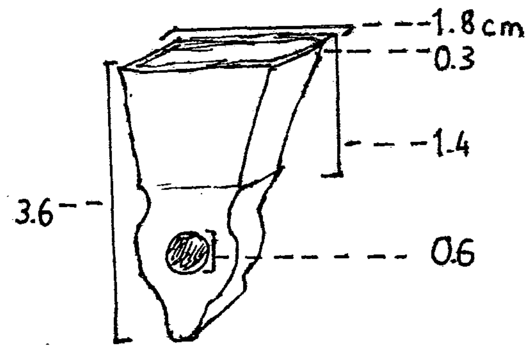


Fig. 37: Sandstone pipe

Copper Artifacts

Three copper artifacts, two awls and one fragment, perhaps of an awl, were manufactured from North American copper (presumably from the Lake Superior region. All three were found at levels that would date to the prehistoric period. Awl no. 953 is bipointed and was recovered from the Uren-Middleport horizon. Metric measurements include: length 102mm, width 5mm, thichness 3mm. The fragment of a copper awl or perhaps needle point and possibly the body of a third awl were recovered from the Mackinac horizon. Metric measurements include: length 28mm, 26mm; width 3mm, 7mm; thickness 2mm, 4mm.

European Trade Goods

The European trade goods are itemized in Table . A sample of 77 glass beads from Frank Bay is the largest known for an Algonkian site in northeastern Ontario. It is by the seriation of glass beads that most Contact sites are dated. The range and value of metallic items retreived indicate the strong middleman position that characterized the Nipissings during the early Contact period. It is the middleman role that perhaps personify the Nipissing Indians through time and across space.

Glass Beads

During the 1978 field season 26 glass trade beads were recovered from the contact stratum. This total, added to the 51 beads Kenyon (1969) has analyzed from the Ridley collection , makes the Frank Bay sample the largest recovered for an Algonkian site in northeastern Ontario. The beads are described following Kidd's (1970) (see Table 50) classification scheme, while a date derived for each bead type follows Kenyon's of beads from Iroquoian sites (see Table 51). Of all the beads recovered none were wire wound.

Table 50 : Trade Beads

Description	Classification (Kidd 1970)	Frequency	Length Range	Length $\overline{X}$	Width Range	Width $\overline{X}$	Diameter Range	Diameter $\overline{X}$
Round Turquoise Opaque	IIa -	13					4-5	4.8
Red Round Opaque	IIa1	2					6-7	6.5
Opaque Red Pound Green Clear Core	1Va5	1						6
Black Round	IIa6	4					3-10	6.5
Red Flattened with Blue/ White Stripes	IIbb2	1	12		8			4
White Football Opaque	IIa15	1	7					5
Opaque (Indigo) Round	IIa46	1						4
Blue Oblong/Round with Red/White Stripes	IIbb25	1	7					
Rose Wine Football Clear	IIa60	1	11					4
Clear Blue/Round	IIa	1						7
Total		26						

Table 51: Date Seriated for Glass Trade Beads

Description	Ridley Collection	1978 Sample	Pratt	Kenyon
Tr. Turquoise Blue	6	13	1625-1710	1580-1650 ESP. 1635
Tr. Indigo Blue	1	0	1570-1670	1620 ±
Op. White Round	2	0	1637-1642	1600-1630
Dark Indigo Round	2	1	-	1600-1620
Op. White Football	31	1	-	1600-1620
White Op. Tubular	11	-	-	1600-1620
Op. Red with White And Blue Stripes	0	1	1570-1595	1620-1635
Op. Red Round	0	2	1625-1637	1600-1650ESP. 1630
Clear/Op. Red/Cl. Core	0	1	1640-1710	1600-1650 ESP. 1630
Op. Black Round	0	4	1570-1670 1710-1745	1635-1650
Intense Blue (CL)	0	1	1570-1595	1620-1635
Blue Round with Red/White Stripes	0	1		
Rose Wine Football	0	1		

*Key to abbreviations: Tr - Translucent
Op - Opaque
Cl - Clear
/ - Over
ESP - especially

Within the Frank Bay collections, two trends are noticeable. First, the most popular colours among the Nipissing are white and blue. These colours appear to be popular types for other Algonkian groups as well. This impression is augmented by Sagard's reference when he states:

> "for when we tried to give them red glass beads in exchange they took no interest in them, quite unlike other kinds."

Second, if Kenyon's seriation of bead types is correct, then glass beads were first introduced to Lake Nipissing circa A.D. 1600 and persisted up to A.D. 1650. From A.D. 1650 to A.D.1670, no recognized bead types appear at Frank Bay. Eighteen glass beads analyzed by Kenyon (1969:14) and one from the 1978 collection characterized the period from A.D. 1670 to A.D. 1700.

Before accepting these absolute dates, certain weakness within Kenyon's analysis should be exposed. First, his analysis has yet to be tested with new comparative material from other Algonkian and Iroquoian sites. Second, the selection of beads recovered from sites was biased for three reasons: (1) surface collections were presumed to be representative of a site; (2) in some cases sample sizes were small; (3) beads from burials or ossuarys were included in the sample.

The problem presented is that on one hand the seriation of the Frank Bay beads supports the ethnographic record concerning the historical events of the 17th century on Lake Nipissing, but on the other hand, the technique of analysis may be in doubt.

Copper and Brass Artifacts

The metal artifacts appear to be reworked fragments from worn kettles. Recovered from the site were five copper tinkling cones, two brass Christmas tree shaped arrow heads, one copper bead, and one brass strip. The copper tinkling cones can be subdivided into two varieties based on the difference in length. Three cones range in length between 14cm and 16cm and have a mean of 15cm. Their mean diameter is 5.3cm. The remaining two cones are 44cm and 50cm in length and have an average diameter of 7.5cm. All edges of the cone were smooth suggesting that the final process in cutting the copper was sanding or abrading and then polishing.

The two Christmas tree arrow heads were found in close association with a dog burial. Both showed signs of utility prior to their deposition in the soil. The stem of point no. 1036 is broken perhaps indicating use; and the side edges of both points were sharpened in a parappel fashion (//).

For points no. 1036 and no. 1067, metric measurements include: length 28mm, 37mm; width 13mm, 19mm; thickness 1m, 1m; respectively.

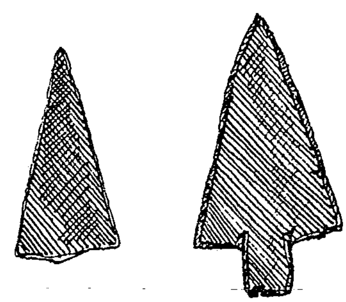


Fig. 36: Christmas tree arrowheads from BbGw-1

Only one rolled copper bead was recovered from the site. It is 2mm in diameter and 22mm in length.

The brass strip has been cut (either by chisel or perhaps scoring) along three sides. The forth side has been snapped. Metric measurements include: length 72mm, width 13mm, thickness 2mm.

<u>Iron</u>

Iron artifacts recovered from the site included material that dated to the Historic Contact period as well as to the late 19th or early 20th century. The last century artifacts such as nails, wire, screw, metal guard, and files are not considered in the description. The Historic-Contact artifacts include a French (?) clasp knife, and two iron awls.

To remove the iron oxide from the clasp knife, the object was placed in a mild solution of vinegar for three days. The results were excellent. Beneath the rusty surface were
t (d) (v)
engraved the following letters: Lo(?)es Piand. Although the makers mark could not at present be dated, according to M. Good (n.d. 157) the rounded front of the blade suggests an early date for this artifact around A.D. 1635. The blade is illustrated on the next page. As indicated by Sagard (1936), in 1630 clasp knives were a valued trade commodity. He stated..." we obtained from the Epicerinys (Nipissings) a piece of sturgeon in trade for a small clasp-knife which I gave them."

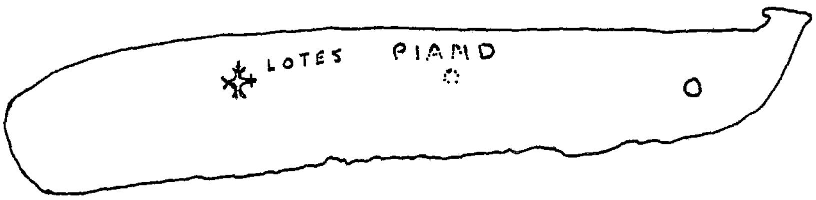


Figure 39: Lotes Piand clasp knife

The function of the metal guard is unknown, but it reminded Marc Lavoie (personal communication 1980) of a hardware fastener. It may belong to the 19th or 20th century. Metric measurements for the guard include: length 8.7cm, width 1.6cm, thickness 0.8cm (see plate).

The two iron awls recovered are characterized by a slight elbow joint at mid-shaft. The joint probably faciliated hafting. The total length of the awls is 14.8 cm, while the width at the elbow joint is 0.6 cm. Maximum thickness is 0.4 cm.

Lead

One round and one flattened (presumably from impact) mucket shot were recovered. The round musket shot is 0.9cm in diameter and weighs 4.0gms. The flat lead shot weighs 19.1gms.

Miscellaneous

One small amorphous shaped piece of graphite was recovered. Tt weighs 0.6gms.

CHAPTER SIX

SYNTHESIS AND CONCLUSIONS

Initially three questions were asked that would help elucidate the origins of the "middleman role" that characterized the Nipissings during the early Contact period. They were: (1) what were their ultimate origins? (2) What changes occurred in their seasonal round of subsistence and settlement pattern? And, (3) were there any relationships between the Nipissings to other Indian groups, and if so, did they change through time? Three sites, Campbell Bay, Frank Ridley, and Frank bay were analyzed to answer these questions, and from the data presented an interpretation of the inferred patterns is necessary.

The process of interpretation is approached with trepidation since the archaeologist is placed in the precarious position of having to judge the effects certain events have had on a people's culture based on the distribution and appearance of certain traits within the archaeological record. This act can no more be other than an impression of what the imagined events and effects have been. In essence, it is a subjective process which incorporates the author's experience, bias, training, and imagination. As C.L. Becker (in Guinsberg 1971:39) stated:

> in the imagined facts and their meaning there enters the personal equation. The history of any event is never precisely the same thing to two different persons; and it is well known that each generation writes the same history in a new way, and puts upon it a new construction.

Before any interpretative scheme can be proposed or evaluated, it should be noted that a number of limitations were placed on the analysis. These included insufficient sample size, a lack of precision in dating each stratigraphic level, and a lack of preserved floral and faunal materials. These problems plague most Algonkian sites, but some compensatory information was available for the three sites under discussion. The Ridley collection was included to increase the sample size for all artifact classes. The problem of whether the sites are representative of Nipissing prehistory must await future excavations. The seriation of artifacts and the relative stratigraphic sequence preserved at Frank Bay allowed a degree of temporal control, and seven carbon-14 dates have helped tie in the Nipissing sequence to other regional chronologies.

The subsistence pursuits of the prehistoric Nipissings still remains enigmatic. Not only is the analysis restricted by preservation problems, but cultural factors enter into the equation, as well. The analyxix of calcined bone, the material usually recovered from Algonkian sites, is unporductive with experts only able to identify roughly 20% of the sample. In other words, what is identified is a small sample of a small sample. Add to this, a number of cultural taboos on the dispostion of animal remains, and the presence of scavenging dogs, and what is left is an unreliable reconstruction of Nipissing subsistence strategies. Hence, the model derived from historic sources (pages 6 and 7) is used to provide a general framework in which to view the prehistoric seasonal round. Naturally, changes in the diet would be expected to occur as a result of environmental changes, technological innovations, or historic events, but as yet there is no way to quantify the results archaeologically.

In assessing Nipissing cultural change, two assumptions are made: that a continuity of material culture through time demonstrated an _in situ_ development, while changes within this continuity be the result of diffussionary, temporal or random processes; and a major shift in the material culture be the result of a population replacement. It is postulated that the historic Nipissings belonged to an Algonkian culture whose cultural development can be extraploated back in time to A.D. 800. From here, it is implied on the basis of the continuity in lithic technology that the ancestoral Algonkians were descended from a Laurel tradition, who in turn were descended from a people characterized by a Mattawan technology. I differentiate between _culture_ and _tradition_ in that ethnographic and ethnohistoric sources be used _directly_ with archaeological data to interpret or formulate questions about the nature of cultural change within a culture concept. The use of ethnographic and ethnohistoric data within a tradition concept connot be applied directly upon the archaeological record.

The concept of an exchange area is used to delineate the diffusionaly process. It simply describes Nipissing interactions as being spatially limited. Prehistorically, the magnitude and direction of trade presumably varied through time, and spatially the limits were circumscribed by a 100 to 200 mile radius around Lake Nipissing. It is within this area that an exchange of goods and ideas occurred. The Nipissing exchange model as defined here denotes no necessary economic motivation for an exchange to occur, although some goods would have to change hands to be noticed archaeologically.

The Archaeological Record

Palaeo and Plano (8000 B.C. to 5000 B.C.)

The ultimate origins of the Algonkian Indians is still a matter of conjecture with factual evidence absent from the area of research. Ridley (1966) suggested (the layer cake hypothesis) that the Sheguiandah and Frank Bay sites provided evidence of an in situ development of the Algonkian Indian from the Paleo to the Historic period. Although Ridley may have had certain advantages in reviewing the Sheguiandah material, a critical examination of the available literature indicates that such a sequence cannot as yet be demonstrated.

A second hypothesis to explain the origins of the Algonkians was espoused by Wright (1972), who suggested that the Archaic people developed from an intervening Plano stage. Evidence of Plano occupants to the area is non-existant, but Pollock (1976) intimated that Plano people may have moved into the Abitibi region by 5000 B.C.

The only evidence to support either position for northeastern Ontario comes from three sites: a disturbed site in the Sudbury region, the McCleland site, and the Campbell Bay site. H. Devereux (personal communication 1978) was fortunate in surface collecting an early side notched point in close association with a Lorraine quartzite flake from a site situated on Long Lake. Unfortunately, the remainder of the site has been bulldozed away. The point style and the material utilized has close affinities to Sheguianda (Lee 1957).

An Archaic Lorraine quartzite side-notched projectile point was surface collected at McCleland's camp located at Dokis Bay. No other detritus was recovered.

Archaic artifacts from the Campbell Bay site dated to 3255 B.C. (S-1682). Although the 4000 year temporal gap between Sheguiandah and Campbell Bay is immense, some similarities in lithic technology do exist. Both shared a bifacial industry based on the reduction of Precambrian cherts or quartzites; the implements were manufactured from bifacial preforms; and stylistic similarities were noted in the bifaces and projectile points produced.

Shield or Laurentian Archaic? (3000 B.C. to 1600 B.C.)

Theoretically the Archaic people would have inhabited the fossil shorelines and river banks of glacial Lake Nipissing and her tributaries between 5000 B.C. and 2200 B.C. as indicated by the Campbell Bay and Lamoreux site. After the drainage reversal at 200 B.C., little time was wasted by the natives in occupying the present day shoreline of Lake Nipissing as exemplified by the continuous occupation at the Frank Bay site. The problem is in determining the cultural affiliations of these earliest known colonizers with the meagre evidence at hand.

Evidence of late Archaic occupations are confined to four sites: a site on the Sturgeon River, the Lamoreux site, the Campbell Bay site, and the Frank Bay site. According to an inspection of point types by Wright (1978), a site on the Sturgeon River represents an Archaic occupation dating to 4000 B.C. No further details were given. Recovered from the Lamoreux site by the owner (the site is lacated on a fossil river ridge near Marstay, Ontario) was a large biface (28 cm in length) manufactured from Gordon Lake chert. No other surface finds were noticed. A discussion of the Archaic occupations at Campbell Bay and Frank Bay has been presented by Ridley (1954) and in chapters four and five of this thesis.

The proposed theoretical constructs to describe the Archaic assemblages can be placed within one of two traditions: Shield Archaic (Wright 1972) or Laurentian Archaic (Ritchie 1965). According to Wright (1972:1), the Shield Archaic people originated in the Keewatin district and maigrated eastward hunting barren ground caribou during the glacial retreat (8000 - 6000 B.C.). The people, then, adapted to the encroaching boreal forest by primarily subsisting on woodland caribou and fish. Technologically, they were characterized by a:

> widespread stone tool complex characterized by biface and uniface blades, lanceolate and side-notched projectile points, a wide range of scraper varieties, .. and an absence of stone grinding (Wright 1972:3).

The concept of an <u>early</u> Shield Archaic cannot be applied to the Nipissing assemblages for a number of reasons. First, paleo environmental reconstructions do not make it feasible for barren ground caribou hunters to have migrated eastward fromthe Keewatin District. Vegetation of the territory following deglaciation was characterized momentarily by tundra conditions but was quickly replaced by Boreal Forest (Saarnistoe 1974).

Second, the Archaic Indians were never in a position to exploit the Boreal Forest. Their immediate environs were characterized by a deciduous-pine forest (Terasmae 1967). Finally, ground stone tools, particularly gouges, appear to be omnipresent through the Upper Great Lakes region (Fox 1977, Conway 1977, St. Joseph Island Museum, Thesalon Museum, Massey Museum). This does not mean that by default the Nipissing collections should be described as Laurentian. Other aspects of the assemblage, such as the large biface technology, scrapers, pebble core tools, and the use of silicious Precambrian material (Gordon Lake chert, quartzite, and rhyolite) do have a Shield "flavour".

The large Lamoreux biface, the Campbell Bay bifacial tools, and large rhyolitic bifacial flakes recovered from the lowest level at Frank Bay are technologically related to the Abitibi Narrows Phase which was defined by Pollock (1976: 175). He suggested the phase was a variant of a Shield Archaic tradition and brobably dated between 3000 to 2000 B.C. The 3000 B.C. date was verified by a charcoal sample from Campbell Bay dating to 3255 ± 85 B.C. (S-1682), while a slightly later date, perhaps 1600 B.C. fro the Frank Bay material appears reasonable. This assertion was based on the fact that the earliest date the Frank Bay site could have been occupied is near water level at 2200 B.C.; the rhyolitic flakes were found midway between water level and the Mattawan level dated to 970 B.C. (Wilmeth 1978:122). A terminal date of 1600 B.C. may also be argued using Gordon Lake chert as a horizon marker. The precambrian chert outcrops in three known localities - Mississagi Provincial Park (Brizinski 1978), Smoothwater Falls (Pollock 1976) and Lake Abitibi (Ridley 1966). In the immediate vicinity of the quarrys, the chert appeared to be utilized throughout the Archaic - Woodland sequence, however, distributed away from the source, it appears only on Late Archaic sites, such as Lamoreux, and Money Musk dated to 1660 B.C. (Conway 1977). The date of 1660 B.C. for the Money Musk site is interesting, since adjacent but later dated sites (if beach ridge chronology can be used) do not contain Gordon Lake chert.

Although the subsistence - settlement pattern remains undefined for this time period, Wright (1972) and Pollock (1976) suggested that the use of large bifacial tools and projectile points may be an indication of a subsistence pattern based on the hunting of large game animals. This assertion will remain untestable because of the poor faunal preservation in the Shield area.

The association of good quality chert from southern Ontario (Kettle Point) and Michigan (Norwood) with the large rhyolitic flakes (Timiskaming) at Frank Bay suggested that contact with those regional groups were maintained at this time. The absence of more distantly located cherts in the Woodland period may be correlated with a decrease in the perimeter of the exchange area through time.

Ritchie (1965:70) defined Laurentian Archaic as:

> an extensive Archaic cultural continuum, widely spead throughout northeastern North America, with its major area of development and diffusion within southeastern Ontario southern Quebec, northern New England, and northern New York. Its most diagnostic traits, occurring in considerable morphological variety, comprised the gouge; adz; plummet; ground slate points, and knives, including the semi-lunar form or ulu which occurs also in chipped stone; simple forms of the bannerstone; a variety of chipped-stone projectile points, mainly broad-bladed and side-notched forms; and barbed bone points.

The application of the definition to Lake Nipissing sites may be pertinent because of the relative proximity to the type site (Allumette Island, Kennedy 1967) and the persistence of some Laurentian traits in the vicinity.

At present, the evidence of Vergennes and Brewerton (3200 - 2000 B.C.) in the Nipissing district can only be inferred from its presence in adjacent localities. It was, however, pointed out to me by Andrew Restoule, a long time resident of Dokis, that he recovered a ground stone gouge from Sandy Bay (on the French River, 12 miles from Lake Nipissing) when he was a boy. Unfortunately, the gouge has since been lost.

North of Lake Nipissing, Vergennes has been defined at the Pearl Beach site (Noble 1979:52) near Kirkland Lake and the Fretz site (Wright 1972:18) near Timmins. To the west, perhaps the most impressive gouge yet recovered from any site was the one collected by Ida Hobb (personal communication 1978) on her farm near Massey, Ontario. It is approximately 45 cm in lenght, 9 cm in width and is grouved the entire length of the body. Also present within the Hobb collection are an adz, two celts, a celt blank, the pole end of four ground stone celts(?), an ovate biface, and three side notched projectile points that have Vergennes affinities. Two other projectile points recovered are Otter Creek in style.

In the possession of Chief C. Chiblow, Mississagi Reserve, is a ground stone gouge collected by his uncle, apparently from a cave located in Mississagi Provincial Park (near Elliot Lake). Unfortunately, the precise location of the site could not be identified.

Housed at both the Thessallon and St. Joseph Island Museums are numerous Laurentian artifacts - gouges, adzes, celts, slate points, side notched points and ground slate gorgets. All items were donated by local residents.

Finally, Buchanan (1979:23) noted the presence of an "inscribed" gouge from the Sudbury area, and a second gouge in the Blind River area. No date could be derived from associated cultural features.

In summary, the occurrence of certain Shield elements and the inferred presence of Laurentian traits keep the Nipissing assemblage within a "grey zone" between the two tradition concepts. It is this admixture of southern Ontario and northern Ontario traits that characterize the Nipissing Woodland assemblages,as well.

Mattawan Phase (1600 B.C. to 600 B.C.)

The Mattawan Archaic was defined originally by Ridley (1954:42) on the basis of his excavations at Frank Bay. He described the assemblage as:

> ...trianguloid points, lanceolate points, notched triangular points, stemmed points, corner removed points, side-notched points, knives of narrow leaf shape and round end, ovate knives, stemmed end scrapers, small crescentic end scrapers, small retouched random flakes.

Since then, Pollock (1976:177) recorded the presence of Mattawan at Smoothwater Lake, and in so doing modified Ridley's definition. Technologically, he defined it as:

> the Mattawan phase consists of lanceolate, stemmed and expanding convex based side-notched points, with small end scrapers, leaf-shaped biface blades, ovate bifaces, side scrapers, chipped bifacial core choppers and small retouched random flakes.

Because of the near absence of Mattawan from the 1978 excavations at Frank Bay, no refinements could be made to Ridley's or Pollock's definitions.

On the basis of the reduced size of the lithic artifacts, Pollock assumed that there was a change in subsistence pursuits from the Abitibi Narrows phase. He (1976:178) suspected the change to be from large game animals to aquatic mammals and fish. Unfortunately, the lack of preseved faunal material on Shield sites will deny the testablitiy of his hypothesis.

An exchange relationship between Lake Nipissing and the Abitibi area has been mentioned by Pollock (1976:178). Further, the extensive use of good quality chert (Hudson Bay Lowland, Kettle Point, Scotts Quarry and Norwood) suggested that those relationships to southern Ontario and Michigan that were present in the preceeding stage, may have been amplified during Mattawan times. Much more research is necessary to support this assertion.

The dates set for the upper (1600 B.C.) and lower (600 B.C.) limits of the phase are assigned more or less arbritarily. It is suggested that the Abitibi Narrows concluded at 1600 B.C., but another consideration in setting the upper limits of Mattawan will be determining the termination of stone grinding in the area. Presently, estimates range from 2000 B.C. to 1200 B.C. It is suggested that the preponderance of end scrapers and utilized flakes be used as the distinguishing characteristics of Woodland culture (Wright 1967), which for this area may be as early as 600 B.C. Thus the radiocarbon date of 920 B.C. from Frank Bay falls snuggly between the limits imposed.

The Laurel Tradition (600 B.C. to A.D. 700)

The Laurel tradition was first recognized by Wilford (1941) as a result of his excavations at Pike Bay and the Smith and McKinstry burial mounds in Minnesota. Wright (2967:97) has since defined it in northern Ontario on the basis of ceramic motifs and characteristic lithic artifacts.

At Frank Bay, the early ceramic assemblage was small (13 vessels) which posed a slight problem in assingning it to a Laurel occupation. Two rocker stamped rims (Ridley 1954:43) suggested a Point Penninsula presence or influence, but I considered the remaining vessels (11) to be typically Laurel. All eleven were molded by the paddle and anvil technique with the interior surface being wiped clean with a surface having a texture of a coarse grass. In one case a vessel (no. 1) was constructed using both a paddle and anvil and coil technique of manufacture. Decoration was absent on the interior rim, lip, and all body sherds, while rims were decorated with a dentate stamp producing either a pseudo-scallop shell or lightly punctated design.

The lithic assemblage, comprised of end scrapers and utilized flakes which were manufactured from northerly derived cherts, delineated a definite Laurel occupation (Wright 1967).

Although there was a general continuity in lithic technology between Mattawan and Laurel assemblages, differences in artifact frequencies and styles were noticeable. Specifically, large and ovate bifaces and ground stone tools were no longer manufactured; point types become smaller and thinner and notching became the dominate technique of fastening the point to the shaft (perhaps indicating the introduction of the bow and arrow); and blade-like flakes and small end scrapers become the diagnostic artifacts. Concurrent, with the change in lithic design of artifacts was the increasing selective use of Paleozoic cherts rather than Precambrian cherts and quartzites. For Lake Nipissing, the Archaic - Laurel - Terminal Woodland transitions were masked by the predominate use of locally derived quartz which characterized the entire cultural sequence.

The changes, if any, between Archaic and Laurel subsistence pursuits were unresolved. Wright (1967) suggested, however, an overall shift in the procurement strategy from large game animals in the Archaic period to aquatic mammals and fish. His views were based on the changes in technology, as well as,the faunal material recovered from the Heron Baysite. Alternatively, Janzen (1968) argued that the Laurel's people primary source of sustenance was fish; but his generalization stemmed from the faunal recovered from a single site - Naomikong Point. Both arguments are weak because of the impoverished nature of the archaeological record, although certain changes in Laurel diet are not unexpected when one considers the change in climate, technology, and the change in subsistence patterns of adjacent middle Woodland groups. (Finlayson 1977:633).

For Lake Nipissing sites the dramatic increase towards unifacial tools, especially end scrapers,presumably resulted in an increased demand for pebble cherts, notably Hudson Bay Lowland. The chert was thought to originate around the 49th parallel in northern Ontario (Fox personal communication 1977). The presence of imported cherts from Michigan and southern Ontario may have indicated that as in the Mattawan period, the Laurel Nipissings retained the hypothesized exchange route to those distant social groups. What the Laurel people would have used as the medium of exchange remained unknown.But, the association of a prolific number of end scrapers within the tool kit to a subsistence based on aquatic mammals (Stoltman 1973:39) suggested that, as in the historic period, furs may have been a valued trade commodity.

A major debate within Laurel studies was determining the origins and diffusion of its ceramic technology. Wright (1967:130) believed that pottery was introduced into northern Ontario at approximately the 7th century B.C. from a well developed Asiatic ceramic tradition. His assertion was based solely on the presence of Laurel pottery on two Saugeen sites, Donaldson and Burly dating to 530 B.C. (S-119) and 669 B.C. (C-608). In addition, he rejected three carbon dates from the Heron Bay site, A.D. 790 (GSC-449), A.D. 700 (S-171) and A.D. 619 (GSC-208) as being too late. Stoltman (1973:86) argued that Laurel ceramics were derived from Hopewell and appeared in northern Ontario - Minnesota area after A.D. 100. He (1973:87) accepted the Heron Bay dates as valid and argued that the diffusion of Laurel ceramics was the result of a slow northward movement from the Summer Island site A.D. 160 (a mean of three dates; Brose 1970) to Naomikong Point, A.D. 430 (Janzen 1968:109), and then north to Heron Bay.

A fault that I found in Stoltman's argument was in equating Laurel culture with the introduction of ceramics. Since ceramics were assumed to be added to the material culture, attention should be focused initially on the lithic assemblage to indicate when Laurel was established,and then determine, if possible, when it was influenced by pottery. Thus, Laurel should be defined primarily on the appearance and perpetuation of its diagonostic lithic implements, basically end scrapers and utilized flakes.

At FrankBay a late Mattawan occupation, dated to 970 B.C., demonstrated a clear transitional development to Laurel. The time lapsed for the completed crystallization to a Laurel assemblage is unknown, but a conservative estimate would be between 400 and 700 years. If correct, the problem of understanding Laurel cultural change becomes one of demonstrating whether there was a relationship between the transitional change of the lithic assemblage and the acceptance of pottery, or whether the two processes were independent of each other? To test this assertion archaeologically, I would expect that if the processes were independent of each other, then there would be a negative association between lithic assemblages dated between 900 B.C. and 600 B.C. to pottery, while a positive association would exist between both classes of artifacts after 300 B.C. If pottery is found to date consistently between 300 B.C. and 600 B.C., then I would doubt the independent relationship between both classes of artifacts.

Recent work directed towards elucidating the chronological problems of Laurel has been sporadic and limited in number of cabon samples processed. Regardless, the results from these excavations, that were not available during Wright's and Stoltman's synthesis (see Table 52), do show some interesting trends.

Table 52: Ontario Laurel Dates

SITE		DATE	LAB	SUBMITTED BY
Michipicoten Harbour		1165 B.C. ± 425	S-1265	Buchanan
Frank Bay		970 B.C. ± 300	M-363	Ridley
Wawa		535 B.C. ± 250	S-1264	Buchanan
Constance Bay-1		490 B.C. ± 75	S-578	Watson
Montgomery Lake	(1)	430 B.C. ± 90	Gak-1891	Mitchell
	(2)	A.D. 90 ± 80	Gak-1892	Mitchell
Radiant Lake		215 B.C. ± 75	S-1044	Mitchell
MacGillivary	(1)	290 B.C. ± 80	Gak-2178	Dawson
	(2)	A.D. 20 ± 200	Gak-1492	Dawson
Killarney Bay	(1)	230 B.C. ± 300	M-194	Griffin
	(2)	90 B.C. ± 200	M-428	Griffin
	(3)	A.D. 20 ± 130	M-1482	Griffin
Dougall	(1)	235 B.C. ± 220	S-508	Wright
	(2)	A.D. 170 ± 110	S-507	Wright
McCluskey		40 B.C. ± 90	Gak-1282	Dawson
Marshalls Bay-1		A.D. 200 ± 60	GSC-2061	Kennedy
Ouimet	(1)	A.D. 250 ± 225	S-464	Wright
	(2)	A.D. 880 ± 260	S-469	Wright
Sand River		A.D. 320 ± 100	M-1507	Wright
Heron Bay	(1)	A.D. 140 ± 150	GSC-686	Wright
	(2)	A.D. 410 ± 160	GSC-445	Wright
	(3)	A.D. 610 ± 70	GSC-208	Wright
	(4)	A.D. 700 ± 60	S-171	Wright
	(5)	A.D. 790 ± 130	GSC-449	Wright
Frank Bay		A.D. 560 ± 40	S-1684	Brizinski

Of the sites dating between 900 B.C. to A.D. 700 only one ceramic site dated pre 600 B.C. - Michipicoten Harbour; 3 dated between 300 B.C. and 600 B.C. - Wawa, Constance Bay - 1, and Montgomery; and nineteen dated after 300 B.C.

The Michipicoten Harbour site was excavated under K. Dawsons's direction in 1971, and the materials were analyzed by Brizinski and Buchanan (1977). A small charcoal sample from a kiln feature yielded a surprising date of 1165 B.C. ± 475 (S-1265). Although the ceramic material was seriated to be early, the date was far in excess of any reasonable estimate. The entire lithic assemblage was diagnostic Laurel with no visible Archaic elements that might account for the early date. Since the date was located 22 feet above water level, the earliest it could have been occupied would have been around 700 B.C.(Saarnistoe 1974). It was suggested by the authors that the date may be acceptable if one or two standard deviation units were substracted from the actual date.

Similarily, the Wawa site was excavated under K. Dawson's directinn and analyzed by Brizinski and Buchanan (1977). A charcoal sample was dated to 535 B.C. ± 250(S-1264). The lithic assemblage contained transitional Archaic and Laurel elements,while the ceramics were estimated to be later than the Michipicoten Harbour site. The earliest the site could have been occupied would have been the 5th century B.C., according to Saarnisoe's (1974) calculation of glacial uplift in the area. It was possible that the date may reflect an Archaic - Laurel occupation as indicated by the lithics rather than an early ceramic assemblage.

At the Constance Bay-1 site, a red ochre burial dating to 490 B.C. ± 75 (S-578) was uncovered along with early Woodland pottery. Watson (1972) assumed that the burial and occupational horizon were related. Although the pottery was not diagnostic of Laurel some similarities were seen.

Similarily, at the Montgomery Lake site, early Woodland ceramics were dated to 430 B.C. ± 90 (Gak -1891, Mitchell 1967), and comparisons to Laurel pottery were evident. It should be noted that Archaic and Late Woodland artifacts were dispersed throughout the site.

In summary, some doubt has been raised in either accepting the early ceramic dates or in defining the sites as Laurel. On this basis, affirmative statements that conclude that Laurel pottery was manufactured between the 3rd and 6th century B.C. can neither be accepted or denied. But, since a large percentage (85) of the samples tested date after 300 B.C. , it is implied that the ceramic vessels were not fabricated consistently prior to this date. In other words, the hypothesis that the introduction of ceramics and the change in the lithic reduction sequence were independent of each other is upheld momentarily. To verify the hypothesis additional research should uncover preceramic Laurel sites dating between 600 B.C. and A.D. 1.

The nineteen carbon samples dating after 300 B.C. are significant in regards to Wright's and Stoltman's assertions concerning the introduction and diffusion of ceramic technology. Nearly a third (6) dated between 300 B.C. to A.D.1, hence Stoltman's hypothesis, that the diffusion of pottery occurred after A.D. 100 is negated. Further, four of the six samples dated between 200 B.C. and 300 B.C., and all four dates were derived from sites that were characterized by the admixture of Point Penninsula and Laurel ceramics. These factors, in conjuction with early dates from Donaldson, Burly, and possible early dates from Montgomery Lake and Constance Bay-1 sites suggested that the Laurel people adopted the use of pottery from souther Ontario people, presumably from either Point Penninsula or Saugeen women. Considering the exchange of lithic material with southern Ontario residents that was occurring in Archaic and Laurel times, it seemed reasonable to infer that the spread of ceramic technology would follow along these lines of interaction.

If the southern origin of pottery is correct, then the spread of the technology to Laurel women should have occurred between 200 B.C. and A.D 1. The remaining 13 dates indicated that by A.D. 100 pottery became entrenched within Laurel material culture.

Ceramic attributes generally agreed upon as indicating temporal sensitivity include vessel morphology and decorative technique and motif. The overall vessel morphology of early Laurel vessels was considered to be ovaloid with a concial basal protusion and an insloping rim profile (Wright 1967:100, Janzen 1968:102, Stoltman:1973114, Brizinski and Buchanan 1977:190). The mean lip thickness was approximately 4.5mm, while the mean rim thickness was 6.0mm (Wright 1967:101, Brizinski and Buchanan 1977:97). Temper and clay used in manufacturing the vessels were locally derived (Brizinski and Buchanan 1977:161). Pseudo scallop shell decorations were the only ones displayed on the exterior surface of the rim, and oblique over horizontals were popular motifs (Wright 1967, Stoltman 1973, Janzen 1968).

Over time, pseudo scallop shell decoration declined in popularity while dragged stamp, linear punctate, and dentate stamp increased from early to late (Wright 1967:100, Janzen 1968:78, Stoltman 1973:120). Punctates and bosses act as transition attributes liking late Laurel vessels to the subsequent cording stage.

At Frank Bay, a charcoal sample from a hearth dated Laurel vessel 4 to A.D. 560. The returned date is considered significant for two reasons. First, if correct, it suggests that the Laurel ceramic tradition was characterized by a high degree of cultural conservatism. That is, basic Laurel elements remained relatively unchanged either temporally or spatially. Second, it leaves very little time for the transition attributes, if there was a transition, to appear circa A.D. 650 to 750. That is, vessels which share characteristics of Laurel and one of the later cording ceramic traditions - Blackduck or Mackinac. Realistically, it is premature to discredit or accept the date as being late and to extrapolate nuances of cultural change considering the meagre sample. Hopefully, additional research will establish the validity of the date and will delineate the events leading up to the Terminal Woodland period.

The Terminal Woodland Period (A.D. 700 to A.D 1600)

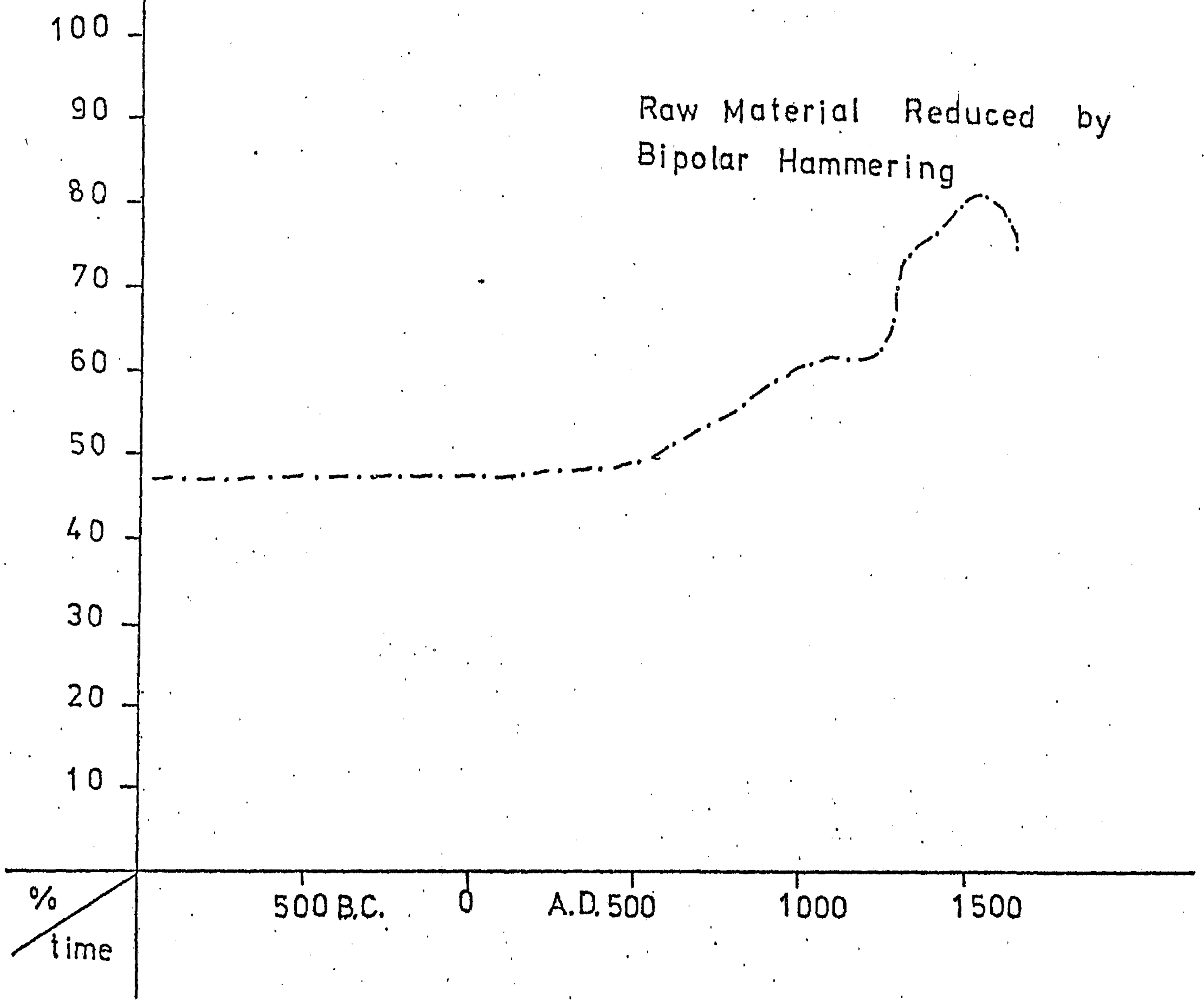
As Fathers Lejeune and Lalemont (J.R. 11:197; 18:229; 45:229) cogently observed, the Nipissings retained a "middleman role" in trading horticultural products from the Huron northward to the Cree in exchange for furs and handicrafts that were destined to southern Iroquoian markets. A major problem within Nipissing studies is demonstrating the inception and proliferation of this trade. Although the data were by no means prolific, inferences based on the lithic, ceramic, and floral recoveries were used to establish the antiquity of this barter system.

The concept of an exchange area was used to help define cultural change in the preceding Laurel period, and was relied upon to help delineate the events leading up to European contact. The spatial limits were defined by tracing the source laocation of the cherts and were supported by comparing the Nipissing ceramic tradition to other regional sequences. The frequencies of both chert types and ceramic types are used to gain an impression of whether the contact between groups was sporadic or consistent (seasonally occuring).

The presence of exotic items, such as a steatite pipe from New York State, a quartz crystal from Thunder Bay, a red slate pipe from Manitoulin Island, copper from the Lake Superior region, corn from southern Ontario, provided a backgroud to the kinds of diverse items that may have been traded prehistorically.

Before the limits of the system were delineated, the use of locally manufactured products was noteworthy particularly since the reduction of quartz and quartzite (perhaps from glacial till) dwarfed the entire collection of imported cherts. At Frank Bay, quartz ranged in frequency from 60 to 80% of the total lithic assemblage (see Table 41). Th following imported cherts are described in order of their relative frequency throughout the Woodland sequence (see Table 42 for statistical summary).

Hudson Bay Lowland chert was the most popular imported chert procured within the Woodland sequence. The pebble-cobble chert was found in glacial till in areas primarily inhabited by northern Ojibwa and Cree groups. A specific travel route to link the source with Frank Bay cannot as yet be identified. However, the presence of Huron pottery at the Milky Bay site (Noble 1979:65) on Larder Lake, and at


Raw Material Reduced by
Bipolar Hammering
100
90
80
70
60
50
40
30
20
10
%
time
500 B.C.
0
A.D. 500
1000
1500

Michipicoten (Wright 1968, Brizinski and Buchanan 1977) support the obvious directions of travel - the Lake Nipissing via the Sturgeon River to Lake Abitibi region, and the French River via Lake Huron to Lake Superior drainage systems.
It, along with Onondoga chert,showed the greatest variation through time (Fig: 41).

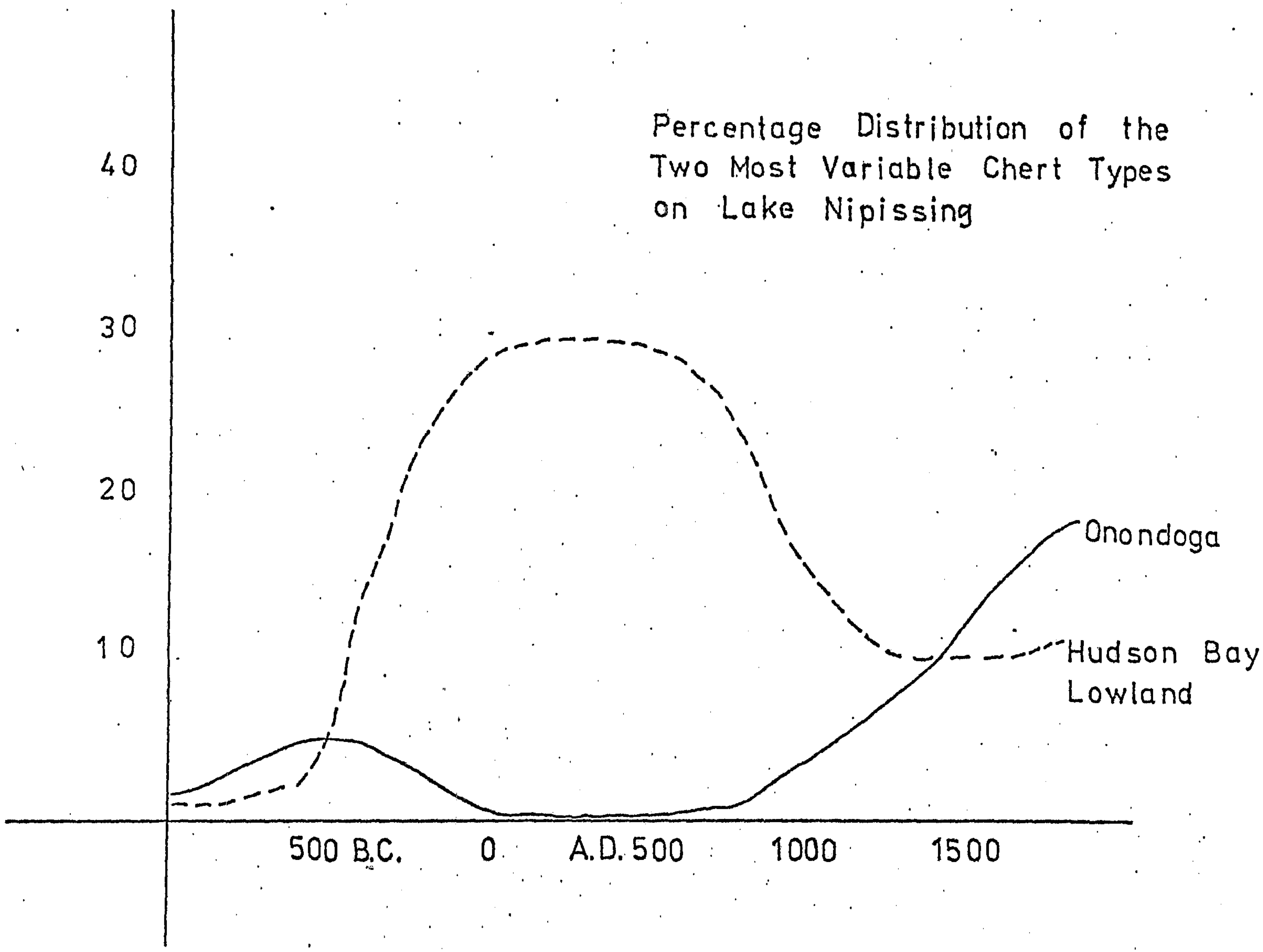
Like Hudson Bay Lowland chert, Scotts Quarry chert was utilized throughout the cultural sequence. It location near Sault Ste. Marie in Michigan, an area traditionally occupied by Ojibwa groups, the presence of Mackinac rims, and the close cultural similarities between the Nipissings and the Ojibwa suggested an intense and enduring economic association between the two groups. This inference was reinforced by a story that was related to Schoolcraft (1851-V-5:144) in the 1800's. According to an informant...
"these three local tribes, that is to say, the Nipèrcineans, of Algonquins proper, the Mississagies, and Saulteur or Odjibwas, were originally on and the same people, they spoke, and they still speak, the same language."

Balsam Lake chert, perhaps obtained from Huronia, made an insignificant showing during Pickering and Huron times. Its poor flaking charcteristics suggested that it was an undesired trade commodity, and may reflect the presence of ancestral Huron traders on the site. On the other hand, the excellent flaking characteristics of Kettle Point chert would have made it a treasured commodity. The lack of it during the Woodland sequeince, however, implied that its value was at a premium.

Fossil Hill formation chert with outcrops on Manitoulin Island and Collingwood was associated historically with the Ottawa Indians. It was present only during the Middleport - Uren and Huron periods at Frank Bay and the lack of it during the remainder of the Woodland sequence may be due to small sample sizes. Another Ottawa - Nipissing correlation was the recovery of a red slate pipe fragment from the Commanda Bay site (on the French River). The material was derived from Manitoulin Island and was a rimary trade commodity between the Ottawa and the Neutral Indians (Fox 1978). No date, other than its association with Woodland pottery, could be inferred from the site.

The rather large amount of Laorraine quartzite during Middleport - Uren times, and the fact that it occurs in glacial till throughout the region suggested that it may have been locally available to the Nipissings. Althernately, the popular usage of Lorraine quartizite on Manitoulin Island adds additional evidence of the Ottawa - Nipissing exchange system.

Used as a primary source of raw material by the Neutrals


Percentage Distribution of the
Two Most Variable Chert Types
on Lake Nipissing
40
30
20
10
500 B.C.
0
A.D. 500
1000
1500
Onondoga
Hudson Bay
Lowland

the presence of Onondoga chert was noted from the Archaic to the Contact period with the exception of the Pickering period. The chert may have arrived at Lake Nipissing through intermediaries such as the Ottawa or Huron, or the Nipissings themselves may have traded directly with the ancestral Neutrals. It showed an inverse relationship to Hudson Bay Lowland chert through time (see Figure 41).

The presence of Gordon Lake chert at Lake Nipissing was emphasized during the Huron - Contact period. Its utilization was confined to the vicinity of the outcrops in the Abitibi region during Woodland times, and its poor flaking qualities would have realized little market value. For this reason, it may indicate the movement of Cree traders to Frank Bay.

A steatite pipe recovered from the Middleport level should have passed through the Ottawa Valley. Since good quality chert outcrops in that region, its absence frm the Nipissing collections was unexpected. It was attributed to the author's inexperience in identifying the material. This view has some support in the W. Fox indicated after a cursory perusal of the Nipissing collections that a small percentage of Ottawa valley cherts were present in the unidentified chert category.

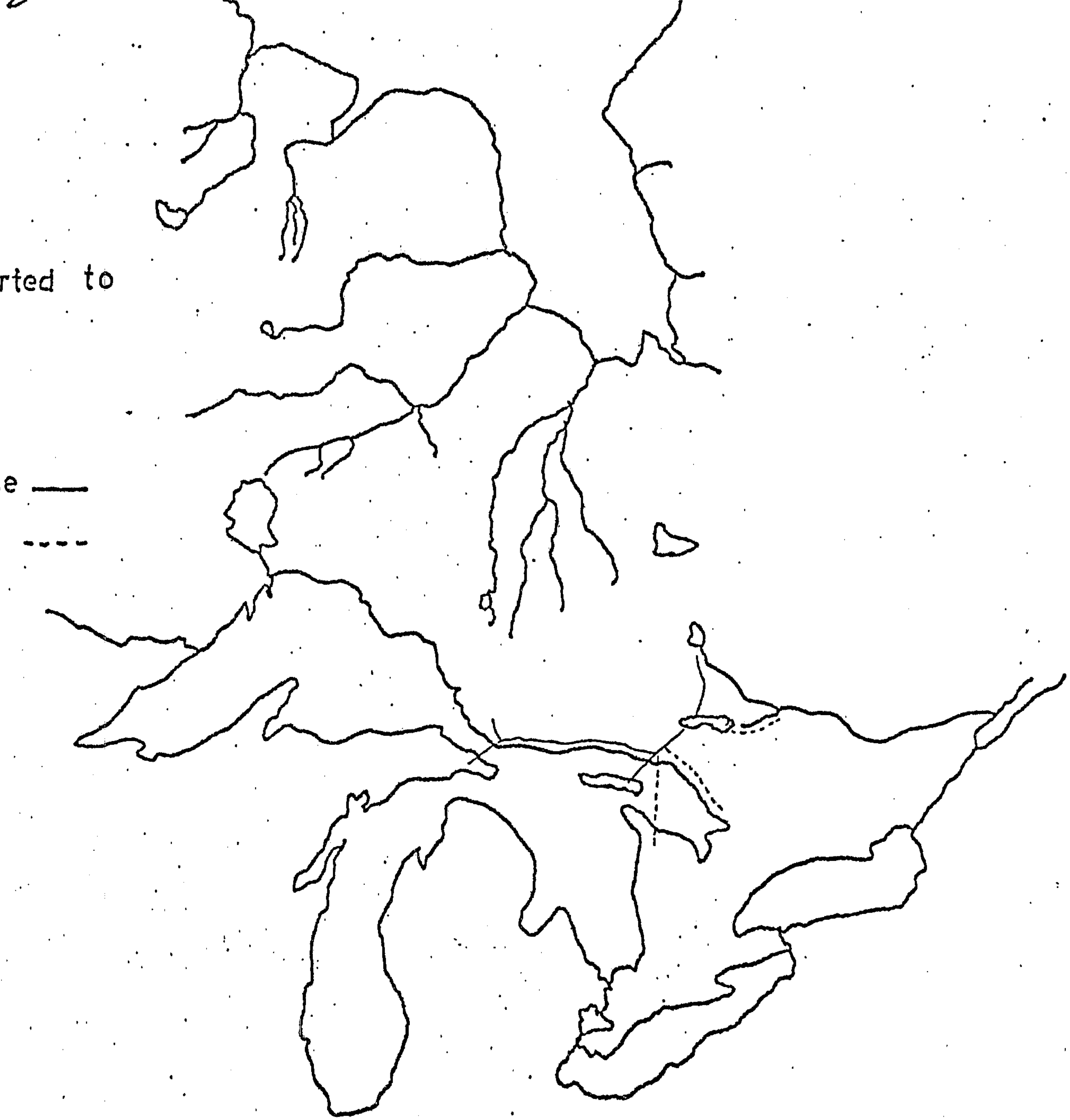
Five patterns emerged when the relative frequency of the material utilized were compared. First, corresponding to the increased use of quartz was significant increase in the bipolar industry through time. It did decrease, however, near contact (see figure 40). Second, imported cherts of any variety were not particularily abundant throughout the sequence. Third, two chert types appeared throughout the sequence - Hudson Bay Lowland and Scott Quarry, while the remaining chert types, Fossil Hill, Gordon Lake, and Kettle point, only appeared after the Pickering Period (circa A.D. 1300). Onondoga chert was absent in the Pickering period, however, it flourished from Middleport times on. Forth, imported chert tools increased at Contact. Fifth, there was an inverse relationship between Hudson Bay Lowland and Onondoga chert through time.

Taken together, the observations suggested that the spatial limits and direction of the exchange system varied through time (see Maps 3,4,and 5). The possible significance of these trends are discussed jointly with the patterns inferred from the ceramic sequence.

244

Spatial Limits of
Lithic Material Imported to
Lake Nipissing from
A.D. 800 A.D. 1300

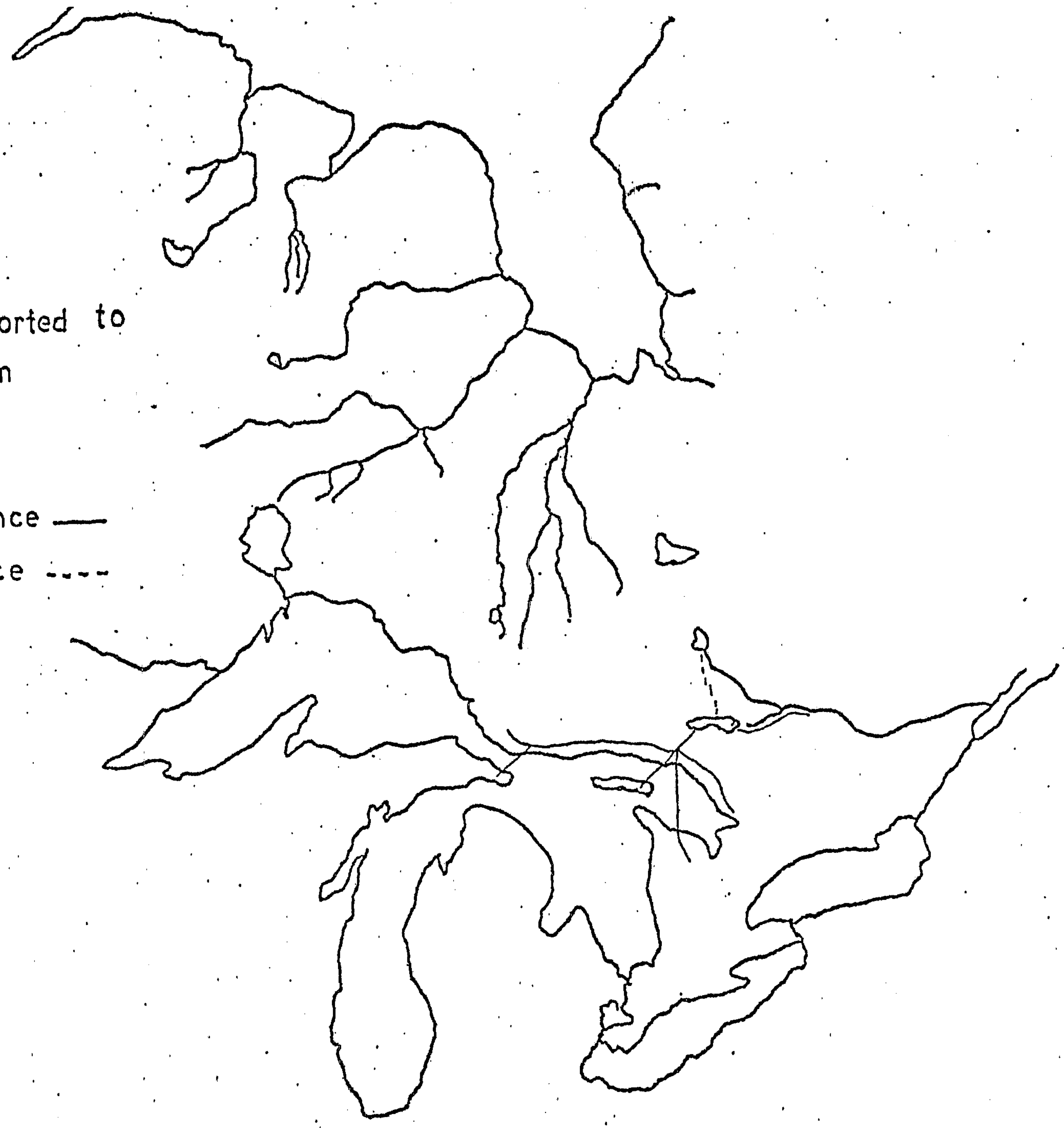
consistent occurrence ——
sporadic occurrence ----



237

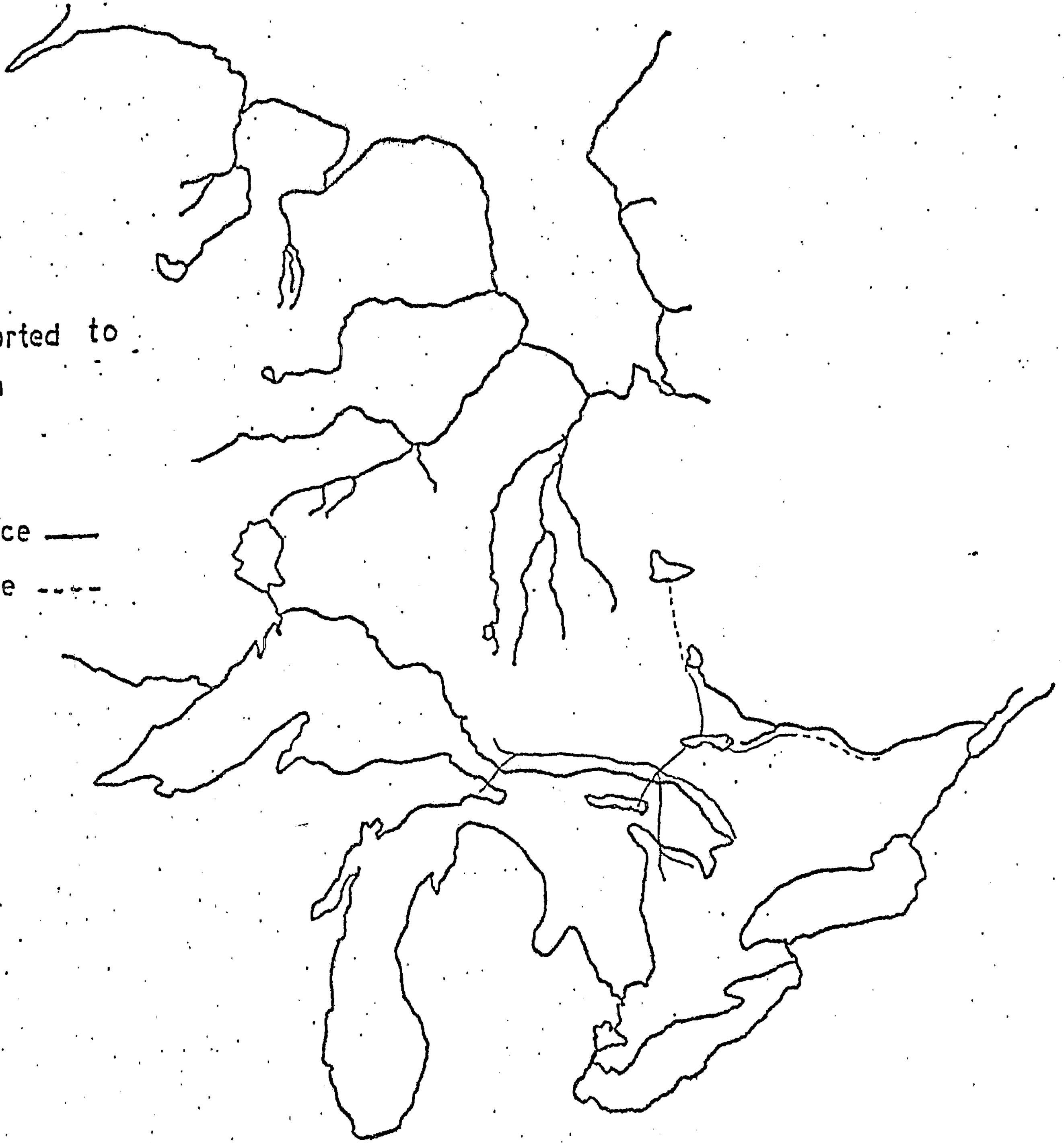
Spatial Limits of
Lithic Material Imported to
Lake Nipissing from
A.D. 1300 A.D. 1500

consistent occurrence ———
sporadic occurrence - - - -



Spatial Limits of
Lithic Material Imported to
Lake Nipissing from
A.D. 1500 A.D. 1650

consistent occurrence ——
sporadic occurrence ----



From Ridley's (1954) original report and the 1978 sample, the ceramic containers present belong to the following traditions: Mackinac, Blackduck, Juntunen and the entire Iroquoian sequence. The admixture of presumably Algonkian and Iroquoian pottery suggested that a Nipissing ceramic sequence cannot be viewed as a simple linear progression, and that cultural, historical and quite possibly random porcesses interdigited with one another to form the Frank Bay assemblage.

To study these processes the ceramic vessels that were manufactured by Nipissing women must be isolated from either imported or manufactured by women from another cultural group. The following scheme was employed to proved a range of logical alternatives by controlling temporal parameters (seriation of attributes, C-14 dates, stratigraphy, and comparisons with other regional chronologies). The Nipissing women may have manufactured either Laurel or Point Penninsula pottery or both up until A.D. 600; from A.D. 700 to A.D. 1200 they may have fabricated one or combination of Mackinac, Blackduck, and Pickering vessels. The push pull rims of Pickering and Juntunen, which occur at A.D. 1200 to A.D.1300, were so similar that it was impossible to distinguish between the two because of the small size of the rims. In models one to three (below) they were counted as a single tradition. It should be noted that other Juntunen styles were not present at Frank Bay. From A.D. 1300 to Contact, the Nipissings either tried to manufacture Iroquoian pottery or they did not manufacture pottery at all. In total, a Nipissing ceramic tradition can be hypothesized to be derived from one out of 224 alternatives (4 by 7 by 4 by 2). I suspect five have the greatest possibility of being correct based on parsimony and other regional chronologies. They are figuaratively described below and are discussed in greater detail.

All six models had one thing in common. That was, after A.D. 1200 the Frank Bay assemblage was dominated by the Ontario Iroqois tradition. According to Wright (1966:49) the early Ontario Iroquois sequence was characterized by:

> dentate stamped oblique motifs,one to three rows of closely spaced exterior bosses on an incipient chanelled or straight rim profile, linear punctate horizontal motifs, one row of closely spaced exterior bosses on a chanelled rim but with the push-pull technique replacing linear punctates and the absence of bosses resulting in the formation of the dominate Middle Ontario Iroquois stage rims.

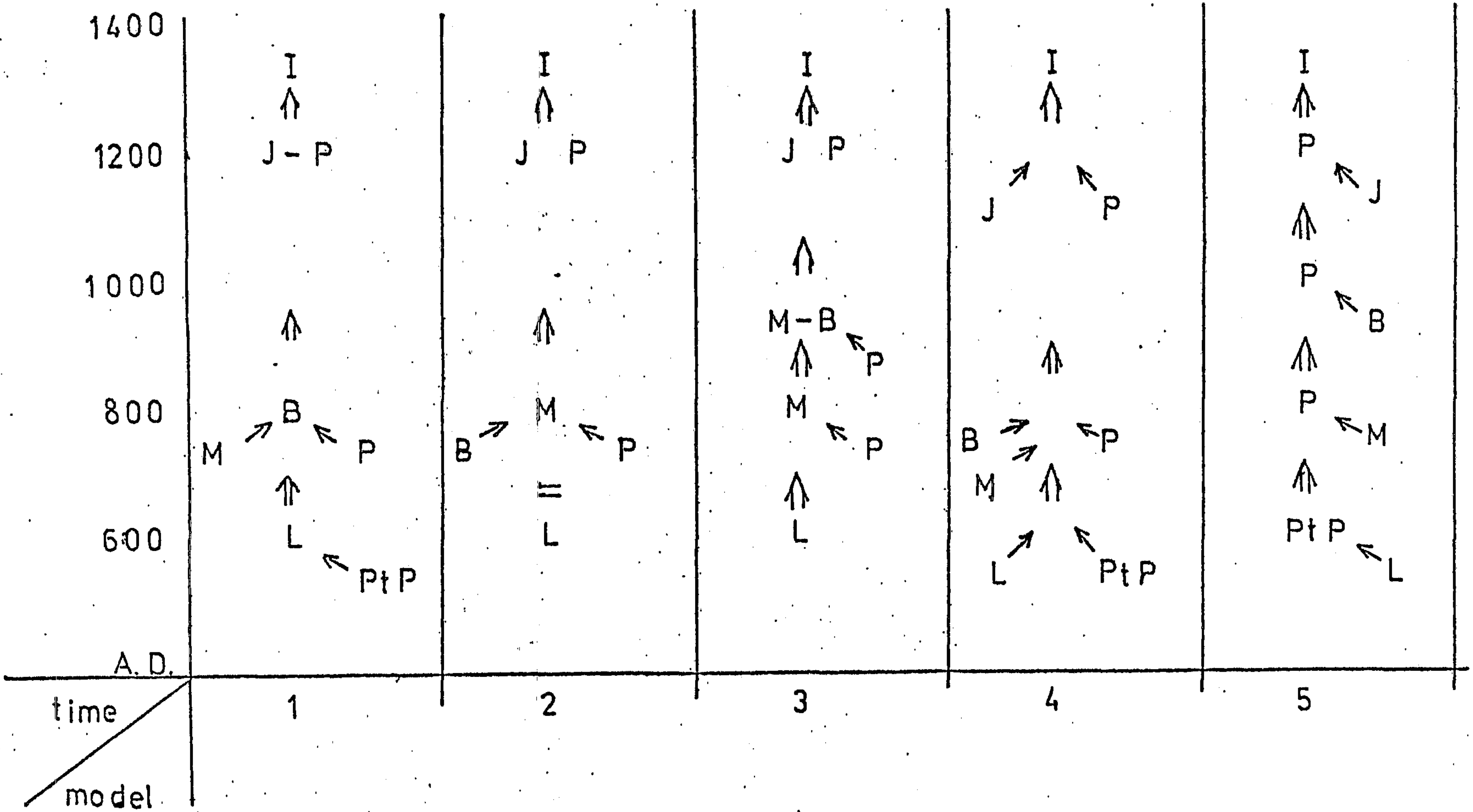


Fig The Late Woodland ceramic sequence

Legend
L = Laurel
Pt P = Point Penninsula
B = Blackduck
M = Mackinac
P = Pickering
J = Juntunen
I = Late Iroquois
= transition
= influence
= no transition

Wright's analysis was based primarily on the seriation of types and secondly on changes in ceramic modes. Based on the seriation of single and multiple attributes within the Frank Bay collection, stratigraphy, and other regional sequences (Reid 1975, Rozel 1979), the order in which one style succeeds another differs slightly from Wright's interpretation. Specifically, albeit a small sample, the decorative technique of push-pull should logically preceed linear punctation. Based on secondary decorative elements, such as neck, interior, and lip decoration, as well as, the rim profile, the push-pull rims were aligned more closely with the dentate stamped rims of early Pickering rather than the incised rims of Uren. Conversely, the linear punctated rims stylistically resembled the Uren rims rather than the early Pickering ones. Except for this one discrepancy, the remainder of the ceramic styles followed Wright's original sequence.

Model 1: In Model 1, Blackduck is hypothesized to be derived from Laurel. The late Laurel date of A.D. 560 $\pm$ 90 (S-1684) from Frank Bay suggested that the transition to Blackduck occurred between A.D 650 to A.D. 750 with Blackduck expected to appear at A.D. 800. Since level 11 of the Frank

Bay site has been dated by three carbon samples (A.D. 955 $\pm$ 50 S-1685; A.D. 1055 $\pm$ 60, S-1686; A.D. 1065 $\pm$ 65, S-1687) to A.D. 1025, Blackduck may be expected to last as long as A.D. 1200. Influencing the Blackduck tradition were Mackinac people from upper Michigan and Pickering people from southern Ontario. If the frequency of rim types was an indication of the degree of contact, then the dominant interaction with distant groups would be with Pickering. The absence of Bois Blanc pottery, a transitional Mackinac type which dated between A.D. 900 and A.D. 1130 (McPherron 1967)was interesting. It was attributed to either samplying error, or that contacts with southern Ontario intensified to the detriment of western Algonkian groups. From A.D. 1200 to A.D. 1300, the Nipissings were manufacturing Pickering push-pull rims which are stylistically similar to Juntunen jab and drag. After A.D. 1300, the push-pull rims gave way to a dominant Iroquoian sequence.

A portion of the scheme was supported by regional sequences in northwestern Ontario. Both Dawson (1974) and Wright (1976) have argued that Laurel evolved into Blackduck and illustrated their assertions with a number of transitional vessels. Also, their inferences were supported by a continuity within the lithic industry.

To test the model, future investigations should demonstrate: (1) the presence of transitional Laurel - Blackduck vessels; (2) a relative homogeneous assortment of clays and temper used in manufacturing Blackduck pottery, while Mackinac and early Pickering vessels should be more variable; (3) Bois Blanc pottery will remain an insignificant pottery type at Lake Nipissing; (4) The clays used in manufacturing Iroquoian pottery should be similar to Blackduck pottery. There was the possibility, as Buchanan (Brizinski and Buchanan 1977:558) has suggested, that through time better clay sources become known and sought after. If so, this factor would have to be taken into consideration.

Model 2: Unlike Model 1, Model 2 suggests that there is no local transitional period between Laurel and the subsequent Mackinac period. That is, the Mackinac vessels were introduced into the area at approximately A.D. 800 (McPherron 1967:89; Fitting 1970:243) and quickly replaced the Laurel tradition. Once established within the Nipissing area, Mackinac vessels persisted up until A.D. 1100(Fitting 1970:243). Within the Mackinac period, interactions with Blackduck people from northwestern Ontario and Michigan, and Pickering people from southern Ontario were indicated by their relative frequency of rims and overlapping ceramic attributes. These similarities include body morphology (rotund), the presence of castellations, punctates and bosses, decorated body sherds (fabric impressed), and the areas usually decorated include the rim, lip, and interior surfaces.

The implications of the Model archaeologically would be accepting the persistence of Laurel ceramics in the Nipissing area to A.D. 700. The vessels at this time should show an absence of any transitional traits, and conversely the initial Mackinac vessels would be dissimilar to Laurel. A late Laurel occupation is supported by three late C-14 dates from the Heron Bay site (see table 52). If these dates were accepted, it suggests that a time-slope model cannot be applied to northeastern Ontario. Like model 1, a chemical analysis of the clay and temper should indicate a relative homogeneous character for Mackinac pots, while Laurel, Blackduck, and Pickering vessels should be distinct from Mackinac. The model is supported indirectly by Tisdale (n.d.), who indicated that late Laurel and early Blackduck dates overlap in Manitoba.

Model 3: This Model suggests that Mackinac was derived from Laurel and that Blackduck should be viewed as a variant of a later Mackinac tradition. In the Mackinac - Blackduck horizon (A.D. 700-1100) the significant cultural attributes were not the motif or area decorated, but rather the cord wrapped object used to decorate the vessel. During this time, influnces from Pickering people were noticeable and, judging by the frequency of rims,increased dramatically by

A.D. 1200. From A.D. 1300 to Contact, the Nipissings manufactured Iroquoian pots. It the Model is correct, then it should be possible to demonstrate a seriation of attributes from Laurel to Mackinac. Evidence from Naomikong Point, Radiant Lake, Juntunen, and Frank Bay sites were used to do so. From the Naomikong Point site, Janzen (1968:92) suggested that Laurel Linear Stamp and Laurel Plain vessel types characterized late Laurel which was dated to A.D. 430.A vessel described by Mitchell as Cree dated to A.D. 710 (GSC-1351, Wilmeth 1978:133). I would type the vessel as Mackinac Punctate based on the attributes given. McPherron (1967:89) suggested that this type was an early Mackinac form dating to A.D. 835 at Juntunen. Similar rims were found at Frank Bay.

The following attribute changes should have occurred from A.D. 400 to A.D. 800. Punctates and bosses increased in popularity from 15% at A.D. 400 to 80 % at A.D. 800. Exterior decoration was unpopular between A.D. 600 to A.D. 800. Lip decoration increased in popularity from 10% at A.D. 400 to 70% at A.D. 800. Correspondingly, lip thickness increased from 4mm at A.D. 400 to 6mm at A.D. 800. Interior decoration was unpopular throughout the transition period,but did increase through time. The tool used to decorate the vessels changed from a stylus or dentate at A.D. 600 to a cord wrapped stick at A.D. 700. Decorating the body, either with a cord wrapped stick or fabric, was introduced probably at A.D. 650.

Exterior rim profile changes from straight or outsloping from A.D. 400 to outflaring by A.D. 800. Concurrently, a transition from a concial to a rotund body shapeoccurred circa A.D. 700. From A.D. 900 to A.D. 1100, the following attributes became diagnostic: punctates and bosses remained a popular decorative technique, as did surface treatment of body sherds. The lip, exterior,and interior surfaces were decorated.The tool used was either a cord wrapped stick, a twisted cord, or both. This Model is the one that I found most satisfying considering all the evidence. Dates derived from future excavations should determine its validy.

Model 4: Model 4 indicates an absence of any Nipissing ceramic tradition. It assumed that, if for whatever reason a design became known to them, it was copied by other women in the group. In this sense, pottery was used as a medium to delineate temporal or spatial trends, but not cultural boundaries. This assertion may be pertinent for the period between A.D. 1200 to Contact. During this time, the Nipissing assemblage was dominated by Iroquoian ceramics. If trade vessels or exogamy were the only factors considered to account for the Iroquoian attributes, then they would deny the pottery capabilities of the Algonkian women. Thus, it was reasonable to assume that the Nipissings shared or copied Iroquoian designs.

The problem is how can the assertion be tested in the earlier Woodland sequence? One method would be to examine the source location of the clay and the temper ratio used in manufacturing the pots. If the Nipissings did copy all of the ceramic styles through time, then the distribution of the clays and temper should be random between ceramic traditions. That is, there should not be any apparent reason why clay sources or temper ratios would vary between Mackinac or P.ickering vessels.

Chemical analysis of clays and tempers is still in its infancy, however, Buchanan's (in Brizinski and Buchanan 1977) X-ray studies of pottery from Michipicoten indicated that the distribution of raw material to pottery type was not random. It would seem probable that a similar situation would occur for the Nipissing area, but a definite analysis of the ceramics is warranted to either support or negate the hypothesis.

Model 5: Model 5 assumes a unilineal transition of southerly manufactured ceramics from Point Penninsula to the Huron stage. Influences from northerly and westerly located Algonkians occrred throughout the sequence. Implicit in the Model was an extensive association with Iroquoian groups to the detriment of linguistically rèlated Algonkians.

If the Model is correct, future excavations should delineate a Princess Point occupation from A.D. 500 to A.D. 800 on Lake Nipissing. Also, the Model can be tested chemically. The source location of the clays used to fabricate Iroquoian containers should be locally derived, while Algonkian wares should be imported.

In summary, five models are discussed in relation to the historical development of a Nipissing ceramic tradition. Acceptance of any one of the models cannot be ascertained with present evidence, but test implications have been outlined to either reject of accept the models in future studies. Regardless of which model is correct, three general trends are noticeable: (1) by A.D. 800 corded pottery became a popular design type; (2) Pickering vessels were the most popular type at A.D. 1000; (3) from A.D. 1200 to Contact, Iroquoian vessels dominated the Nipissing collections.

These patterns, in conjuction with those noticed from the analysis of the lithic assemblage and a date of A.D. 955 ± 50 (S-1685) for the presence of corn on Lake Nipissing, have generated three hypothesis that account for the inception and proliferation of trade based on horticultural products. They are:

1) At A.D. 800, the Nipissings were suitably impressed with incipient horticultural groups as to copy their ceramic styles, however, trade was either sporadic or random and probably did not involve the use of corn.
2) At A.D. 1000, the inception of trade based on horticulture began. The trade was sporadic, and involved the exchage of corn between the Pickering and ancestral Nipissing groups.
3)At A.D. 1300, trade of corn between the Nipissings and Iroquoian groups solidified. This exchange had a dramatic effect on Nipissing settlement - subsistence strategies.

1) At A.D 800, the Nipissings were suitably impressed with incipient horticultural groups as to copy their ceramic styles, however, trade was either sporadic or random, and probably did not involve the use of corn.

One element of Laurel culture that have impressed archaeologists was its conservative ceramic tradition. That ~~is, basic attributes that remained relatively constant~~ through time and across space. It was for this reason that the dramatic shift in decorative design from A.D. 600 (Frank Bay site A.D. 560,S-1682) to A.D. 800 (Juntunen site A.D. 835, M-1144; A.D. 825, M-1142) required a cultural rather than a temporal explanation. The shift, whether it was to a Mackinac, a Princess Point, or a Blackduck tradition was characterized by an overall change to a corded ceramic tradition. It should be noted that corded vessels on Lake Nipissing may date to A.D. 700, based on the

Radiant Lake recoveries at A.D. 710(Wilmeth 1978:133).

The shift towards corded pottery goes beyond north eastern Ontario as it appears to be a general phenomena occurring throughout the Northeastern Culture Area. Where or when cording first appeared cannot as yet be defined, but it can be correlated with incipient horticultural groups at A.D. 600 (Fowler and Hall 1978, Griffin 1978, Brose 1978). If the diffusion of this trait originated from the south, then two groups have the most likelihood of affecting the Nipissing area - Princess Point and Wayne (southern Michigan)(Stothers 1976, Noble 1976, Fitting 1970). Thus, the problem can be defined as: did one or both of these groups initiate ceramic change among the Laurel Nipissings, and if so, was the change induced by the trade of horticultural products?

The weaknesses within the data base are self evident, but I think an attempt at answering the questions raised is a useful exercise in that regardless of whether one accepts or rejects the argument, it may at least direct the course for future research.

It was assumed that cultural change was based on diffusion, and that it could be spatially defined. For Lake Nipissing, an exchange area was delineated by tracing the source location of imported cherts. From A.D. 800 to A.D. 1200, it covered an area extending from Sault Ste. Marie, to Timiskaming, and possibly to northern Huronia, and down the Mattawa River. The limits do not extend to the Princess Point or Wayne culture areas with the implication being that there was no direct or consistent (seasonally occurring) contact between the groups. This assertion was supported by the distribution of the lithic material. Local quartz,a poor quality material to work, dominated the collection suggesting that imported material was not readily available. When chert was bartered for (or travelled for) it was primarily derived from the Shield area (Hudson Bay Lowland or Scotts Quarry). Interesting is that Onondoga chert, which would have originated in the Princess Point area, was absent during this time, while it was present in earlier and later assemblages. Sampling error should be responsible, but I suspect it had to do with the nature of trade. The picture derived from the inferred patterns was that travel outside of Lake Nipissing was random or sporadic, and when it occurred, it was directed towards adjacent Algonkian groups.

Thus the diffusion of pottery would have had to travel through an intermediate group since direct or consistent contact to the southern region was avoided. This framework would in part answer the second question. If the incipient horticulturalists did have a surplus of corn for trade, it presumably would have gone to the intermediate group(s) rather than to the Nipissings. Who were the intermediate group? Only time will tell.

2) At A.D. 1000, the inception of trade based on horticulture began. The trade was sporadic, and involved the exchange of corn between the Pickering and ancestral Nipissings

A charcoal sample from feature three at the Frank Bay site dated to A.D. 955 ± 50 (S-1685). Recovered from the feature floatation sample were two charred corn kernels and a charred raspberry seed(Rudy Fecteau 1979, personal communication). The date was verified by its stratigraphic position (level 11), where only Blackduck and Pickering dentate rims were recovered and two additional charcoal samples that dated level 11 to a mean of A.D. 1025(A.D. 1055 ± 60, S-1686; A.D. 1065 ± 65, S-1687). It remains, therefore, the earliest known date for corn on a Shield site. Naturally, I assumed that the corn was bartered for rather than being locally produced, the question being with who?

At A.D. 1000, the pottery recovered was assigned to either a Mackinac, a Blackduck, or a Pickering tradition, and five models were discussed to relate one or more of the traditions to Nipissing ceramicists. Three of the models assumed that Mackinac and Blackduck were part of a Nipissing Algonkian culture, and Pickering to an Iroquoian culture; one described Pickering as sharing a ceramic tradition with the ancestral Nipissings; while the fifth suggested that the Nipissings could have manufactured all three types.

Since a chemical analysis of the clay and temper, or additional research in the area was beyond the scope of the thesis, the implications of the models could not be tested to deduce which was the correct one.

Comparisons with other regional sequences, however, suggested that Mackinac and Blackduck traditions belonged to an Algonkian culture, while Pickering was derived from an Iroquoian culture. In those areas historically associated with Algonkian groups, the majority of vessels dating to A.D. 1000 belong to a Mackinac or Blackduck tradition rather than Iroquoian (McPherron 1967, Conway 1976, Bertulli in preparation). Similarly, the Iroquoian areas were dominated by Pickering vessles, rather than Mackinac or Blackduck (Reid 1975). Thus, the assumption that the Frank Bay Pickering vessels were manufactured by Iroquoian women seemed reasonable. Whether the vessels were fabricated on the site or were used as trade vessles cannot, as yet, be ascertained.

The relative equal proportion between Pickering and Mackinac - Blackduck containers suggests that contact between the two groups was no longer random, but the lithic analysis indicated that chert was traded infrequently. Imported chert tools were worked and reworked to the point of total exhaustion. This was apparent particularly with scraping tools where more than one scraping face had been retouched on all implements.

3) At A.D. 1300 trade between the Nipissings and Iroquoian groups solidified, which had a dramatic effect on Nipissing settlement - subsistence strategies.

In southern Ontario, horticultural pursuits at A.D. 1300 included the growth of four major cultigens: corn, beans, squash, and tobacco. (Rozel 1979). This nutritional base and the presumed surplus of food has been hypothesized to have a profound influence on the cultural development of the indigenous groups. Noble (1968:307) suggested that among the Ontario Iroquois a sophisticated degree ofvillage planning was accounted for by population growth and the complete crystallization of a matrilineal system. Similarly, if a surplus of food was available for trade, then it should have had a profound effect on adjacent hunters and foragers whose subsistence scysle was characterized by seasonal deficiencies of game.

In tha absence of adequate floral and faunal preservation, how can a reliance on horticultural products be demonstrated? The question may remain unanswerable, but the changes in the ceramic and lithic assemblages do imply on going cultural changes within Nipissing society that were perhaps influenced by Iroquoian groups. Particularly noticeable were (a) the presence of dominateIroquoian ceramic tradition from A.D. 1200 to Contact. In some cases, the pots were imitations of Ontario Iroquoian vessles, in others, they were similar to some of those fashioned in Huronia. (b) The bipolar industries increased appreciably from the Pickering to the Middleport-Huron horizons, while at Contact it decreased. (c) The variety of imported cherts, particularly Onondoga, and lithic tools increased in the Middleport, Huron, and Contact horizons. And (d), the introduction of pipes occurred during the Middleport period. The following assumptions were made to account for the inferred trends.

I would expect that a Nipissing seasonal dispersal pattern, analagous to the one Rogers (1954) outlined for the Mistassini Cree, to be operational early in the prehistoric record, at approximately A.D. 800. The social organization was based on the nuclear family, and the hunting - group complex was the basic subsistence task force (Speck 1915). The seasonal round would involve the dispersal of the hunting group in the winter time to small lakes and rivers that radiate out from Lake Nipissing. During the summer the groups would coalese during the abundant fish runs, only to disperse again after the spawn. Historically, the Nipissing seasonal round differed from the one pictured above in that several band members wintered in Huronia from time to time . The exact numbers were not given by the missionaries living in Huronia, but the death of 70 Nipissings in 1637 from a smallpox epidemic (J.R. 14:37) at Anonatea, and Lejeune's (J.R. 1075) estimate of 250 Algonkians wintering Huronia, suggested that a majority of Nipissings participated in this seasonal movement.

This group decision making process bespeaks of a greater political complexity than that shown by the Mistassini Cree where decisions were grounded in the hunting-group complex. For it to occur, I would expect that face to face contact between individuals would have had to increase sometime between A.D. 800 and Contact. Seasonally, then, the increased interaction would have occurred in the winter time when the group lived together in Huronia, but I also suspect that for wintering plans to be made an increase in interpersonal relationships would have had to also occur during the summer.

Archaeologically, when would this change best be accounted for?

The differences between Pickering and Middleport artifact distributions were significantly higher than those from the Middleport and Huron horizons. Thus the approximate date of A.D. 1300 was labelled as when major changes in Nipissing subsistence - settlement strategies occurred. If correct, it is necessary to correlate the increase in bipolar industries to increased summer activites on Lake Nipissing. The reasons why bipolar industries would have increased in relation to other reduction techniques during the summer were not readily apparent. Perhaps the technique allowed for the quick and efficient production of tools that were sufficient for basic task requirements.

Contact (A.D. 1600 to A.D. 1700)

Just as there was some doubt as to when the exchange system began, there was uncertainty as to when the system became amplified under European influence. Until precise dating techniques are established, documentation of the changes in the material culture through time will remain tentative. With this caution in mind, a comparison between the Huron - Contact strata at the Frank Bay, Campbell Bay and Frank Ridley sites delineated three interesting trends: (1) a wider range of source material utilized in the manufacture of lithic implements at Contact. A comparison between Campbell Bay and Frank Ridley indicated a decreased utilization of locally abundant quartz and conversely an increased diversity of cherts from southern and northern Ontario and Michigan. Particularly noticeable was the increase in the number of imported chert tools. Two factors, perhaps co-occuring may have been responsible: an increased number of traders journeying to Lake Nipissing, and a marked increase in trade of utilitarian items, presumably stimulated by the desire for European goods. Regardless of whether the movement of goods or people was amplified during the protohistoric or historic period, the outcome was final - a dependency upon European goods. To account for the intervening process, Ray(1978) and Trigger(1976 suggested that the effect was acheived by the specialization of activities within a group. That is, trading and trapping became full time occupations. The desire for European goods by other groups maintained these specializations which at the same time fostered a greater dependency upon trade within the group, hence its perpetuation.

(2) There was a noticeable change in the manufacture of pottery, although hard to demonstrate quantitatively. As opposed to the prehistoric - protohistoric vessels, the contact vessels were crude in design and construction. The utilization of coarse temper (poorly crushed), a seemingly unrefined clay (as indicated by the iron oxide present), and vessels that may have "exploded" during firing were noticeable ~~within a large percentage of the Frank Ridley and upper stratum~~ Frank Bay vessels. Further, although the Nipissings were never known for their artistic refinement in ceramic manufacture, there appeared to be an increase in the careless placement of design elements on most contact pots. Implied from these observations was the abandonment of ceramic technology among the Nipissing women. What would have caused such a change?

Presumably the appearance and readily apparent advantages of brass and copper kettles may be considered sufficient inducement to abandon pottery, but I suspect there was another factor. It had to do with the third noticeable trend.

(3) A greater variety and number of European goods were present on the Nipissing sites than any other Algonkian Contact site. These items included ornamental objects, such as beads, rings, and bangles; utilitarian items, such as, clasp knives, awls, and axes; and prstigious items , as indicated by the sword or dagger guards, and perhaps guns. All indicated the relative success the Nipissings attained as middlemen in the early fur trade. No where was this influx of wealth better described than in Lalemont's (J.R. 23:209-230) description of the Feast of the Dead ceremony held in September 1642. At the invitation of the Nipissings, literally thousands of Algonkian and Iroquoian Indians participated in what might be considered a potlatch. The Nipissings, in traditional Algonkian fashion, gave away forty to fifty thousand francs according to Lalemont's appraisal. The ritual internment of nine Frank Bay dogs may have been a part of the festive activities, but further research is necessary to test the assertion.

The occasion has been viewed as strenghtening social and political alliances among trading partners (Hickerson 1962). And just as important as the implied benefits were from this economic reciprocity were the changes that may be assumed to have occurred within Nipissing society.

I would expect the traditional Nipissings to follow the same pattern in regards to the political decision making process and leadership roles as Smith (1971, 1974) and Rogers (1963) described for other Ojibwa groups:

> a decision making process based upon a deep but implicit belief in consensual democracy and a corollary ethos of egalitariansim; and a pervasive distrust of all those who are not close kinsmen, coupled with a fear of those possessing excessive power (Smith 1971:1).

Where leaderhip roles were prescribed, for example in hunting, trading, or conjuring situations, individuals having proven abilities were chosen by the group. The person was removed from the postion by the abondonment of group support for the individual.

Based on the tremendous influx of wealth into Nipissing society, it is argued that the role of trader-captain would have increased in power and prestige, and in Ray's sense become specialized. Upon this individual there would not only be a greater demand to secure and redistribute European goods among band members, but also to strengthen political ties with traditional trading partners and to establish or reaffirm relationships with distant trading groups - hence, the Feast of the Dead ceremony. A corollary to the increased prestige and specialization of the husband as a trader and trapper was the subsequent erosion of the husband and wife partnership as a mutually benefical cooperating hunting and gathering unit. Since the time away from the family increased when the husband focused his attention on trading or trapping pursuits, there would have been additional pressure on the wife to provide sustenance for the rest of the family. This pressure may have been aleviated by a greater dependency on extended kin or fictive kin, but nevertheless, I would expect women to become more actively involved with subsistence activities, such as fishing and horticulture (J.R. 21:123, Blair vol 1:279). Thus, I would suggest that it was the changing roles between men and women caused by the fur trade that may account for the abandonment of what was a traditional female craft - pottery.

Conclusions

There is archaeological justification in applying Lalemont's and Lejeune's observations concerning a Nipissing exchange system both historically and prehistorically. It is suggested that the spatial limits, direction and magnitude of the exchange system varied through time, and that it is within the limits of this trade network that the that the exchange of goods and ideas took place. In particular, it is postulated that:

(1) The shores of Lake Nipissing were occupied sporadically from 3255 B.C. to the present. Some similarity was seen between the Archaic assemblages on Lake Nipissing to those represented at Sheguiandah, and future investigations should unearth possible Paleo or Early Archaic sites.

(2) The Archaic occupants reflect both Shield and Laurentian Archaic influences. The influences from southern and northern Ontario perhaps signify Lake Nipissing's strategic position as a major thorough fare between two geographically distinct regions of Ontario.

(3) The Mattawan stratum is technologically related to the later Laurel stratum, although major differences in distribution are noted between artifact classes.

(4) At approximately 200 B.C., ceramic technology was introduced on Lake Nipissing from presumably Saugeen or Point Penninsula women.

(5) At A.D. 800, the Algonkians were suitably impressed with incipient horticulturalists as to copy their ceramic styles, however, trade was either sporadic or random and probably did not involve the use of corn.

(6) At A.D. 1000, the inception of trade based on horticultural products began. The trade was sporadic and involved the

exchange of corn between the Pickering and ancestral Nipissing groups.

(7) At A.D. 1300, trade of corn between the Nipissings and Iroquoian groups solidified. This exchange had a dramatic effect on Nipissing settlement - subsistence strategies.

(8) The fur trade amplified the above system by intensifying contacts with their trading partners, which initiated a number of structural changes within Nipissing society.

Finally, it is proposed that it is within and between these spheres of interaction that cultural change be studied.

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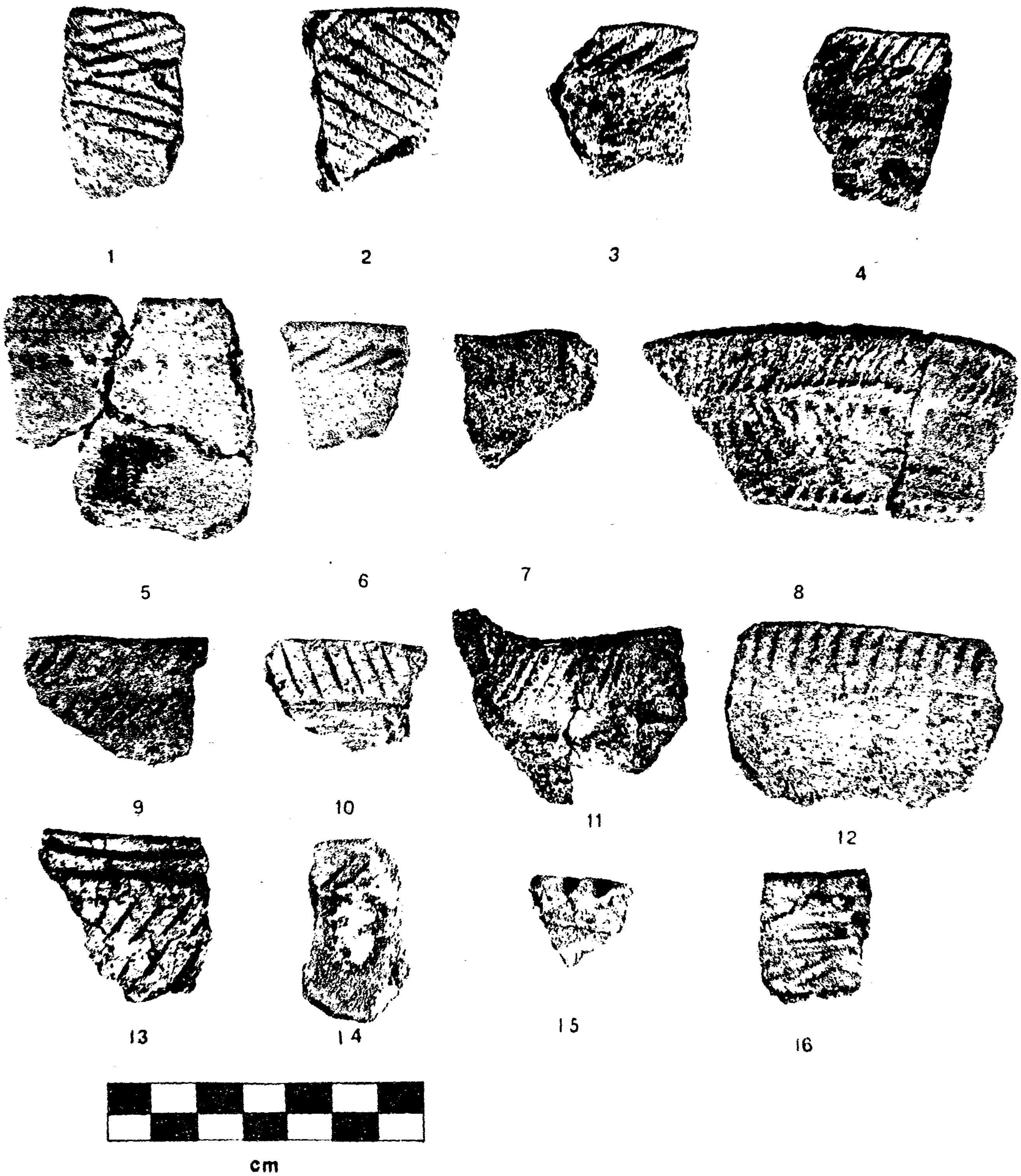
CAMPBELL BAY CERAMIC DEBRIS

1-2: High collared vessels (uppermost section of vessel 1 is missing).

3-16: Low collared vessels.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16
cm

FRANK RIDLEY SITE

1-5: Low collared vessels.

6: Thumb nail scraper.

7: Side scraper.

8: Bipolar flake scraper.

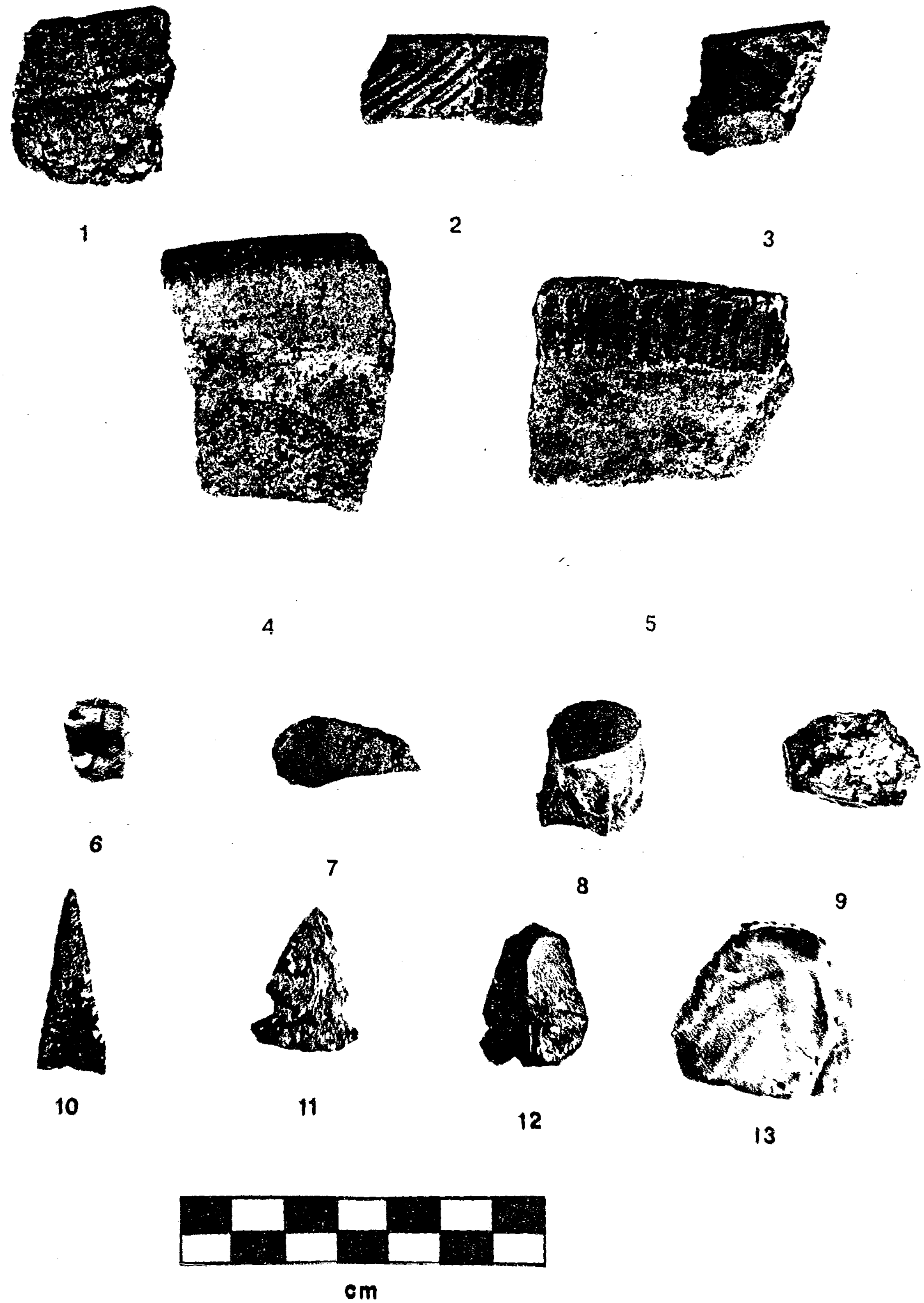
9: Bipolar scraper.

10: Triangular projectile point(manufactured from Onondoga chert).

11: Side notched projectile point(manufactured from Onondoga chert).

12: Side bipolar tool.

13: Side bipolar tool.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FRANK BAY CERAMIC SEQUENCE

1: Laurel pseudo scallop shell.

2: Laurel dentate stamp.

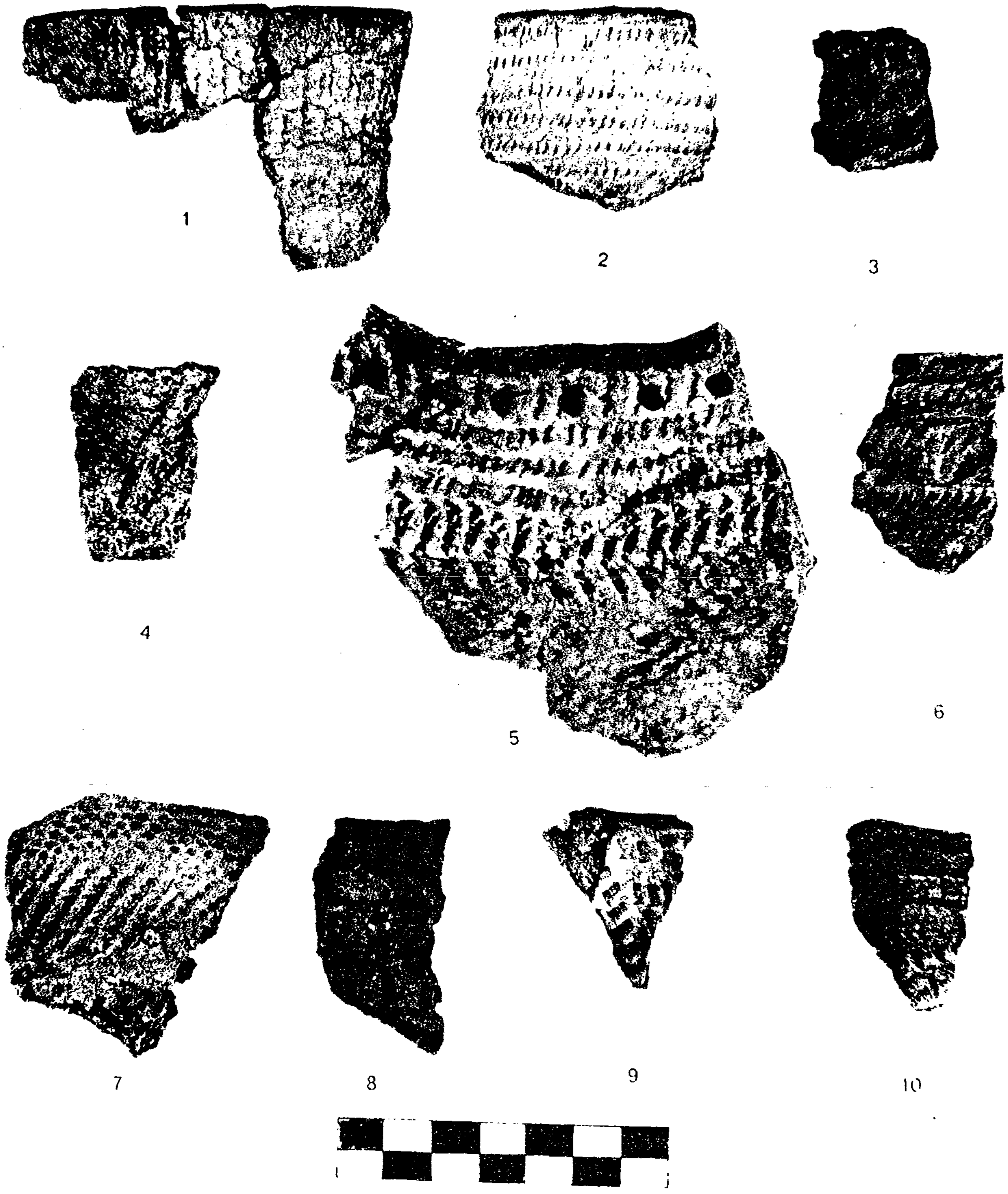
3: Mackinac punctate.

4: Mackinac twisted cord.

5: Blackduck.

6-8: Early Pickering varieties.

9-10: Pickering-Juntenun varieties.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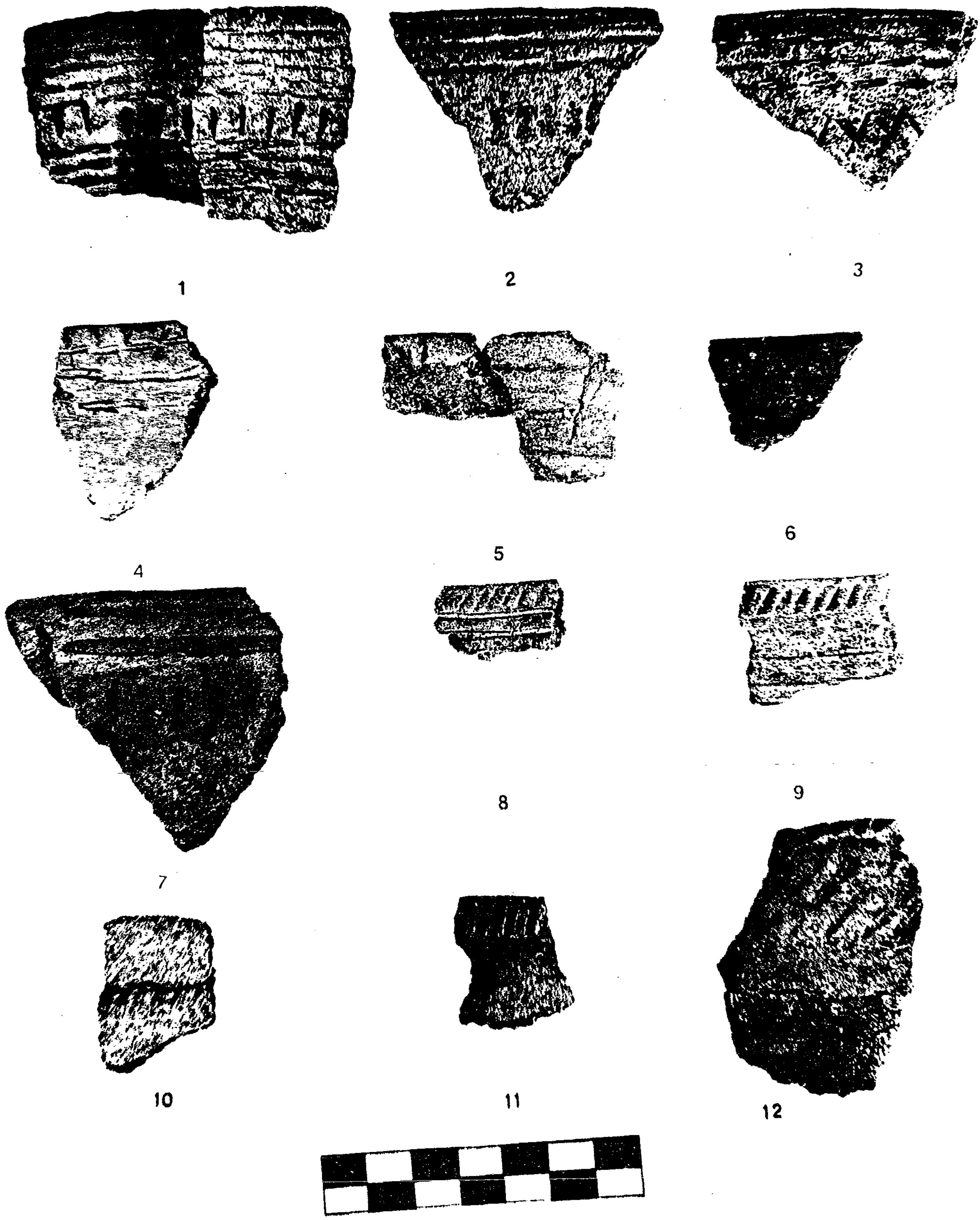
FRANK BAY CERAMIC SEQUENCE

1-3: Late Pickering varieties.

4-5: Uren.

6-7: Middleport.

8-12: Huron varieties.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NIPISSING LITHIC SEQUENCE

1: Archaic side notched (ca. 3255B.C.),Campbell Bay.

2: Laurel side notched (ca. A.D. 100),Frank Bay.

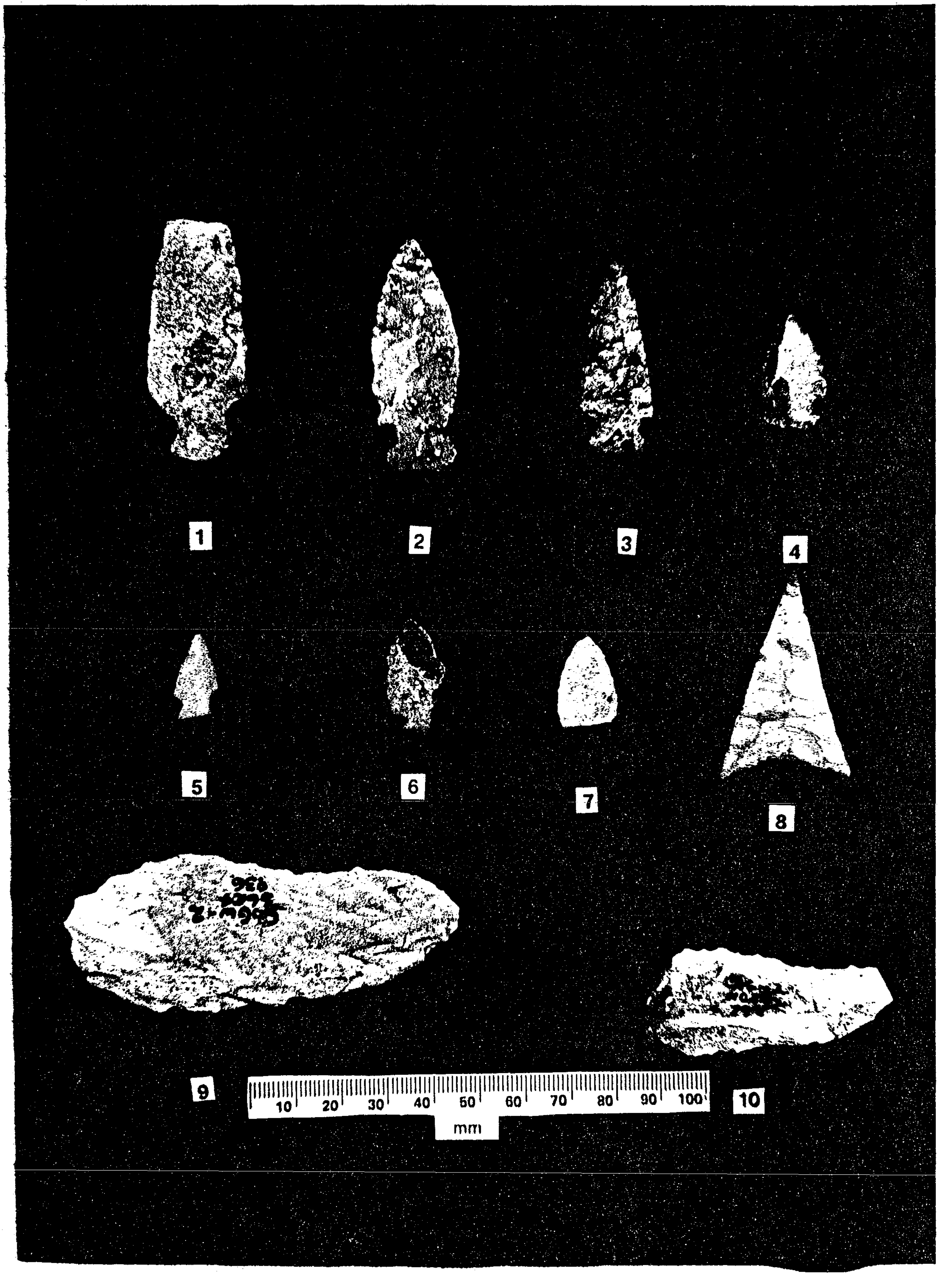
3: Transition Laurel-Late Woodland side noteched (ca. A.D. 700-900),Frank Bay.

4-6: Late Woodland side notched (ca. A.D. 800-1200), Frank Bay.

7: Triangular (ca. A.D.1300), Frank Bay.

8: Triangular (Onondoga) projectile associated with Frank Bay dog burial 5 (ca. A.D. 1600).

9-10: Archaic bifaces (ca. 3255 B.C.),Campbell Bay.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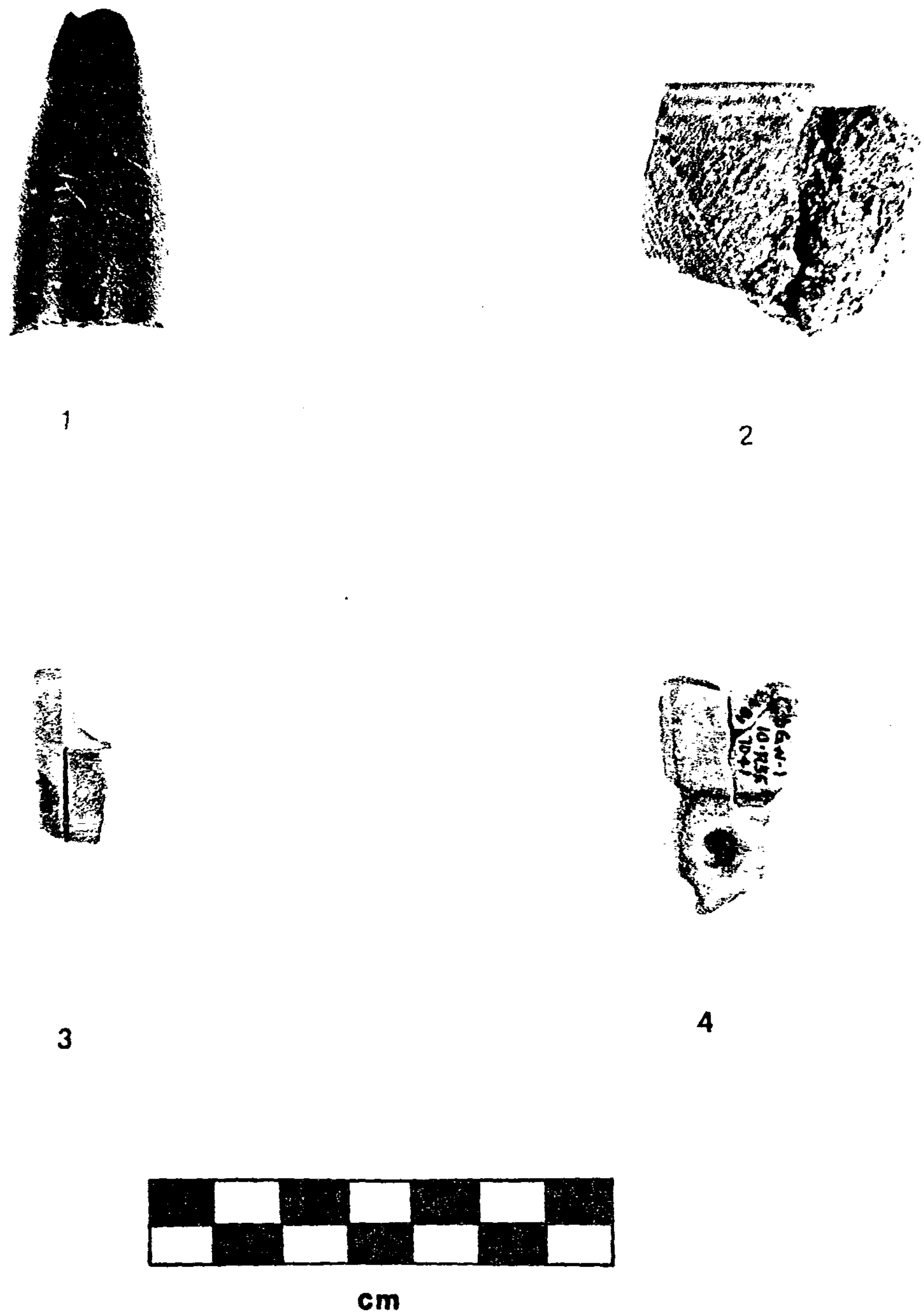
NIPISSING PIPES

1: Steatite pipe stem (note the incised lines), Frank Bay.

2: Classic Middleport pipe bowl, Frank Bay.

3: Red slate pipe bowl (the scored sides indicate the method of manufacture), Commanda Bay, French River.

4: Micmac pipe bowl, Frank Bay.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HISTORIC GOODS

1: Musket shot, Frank Bay and Frank Ridley sites.

2: Copper detritus, Frank Ridley.

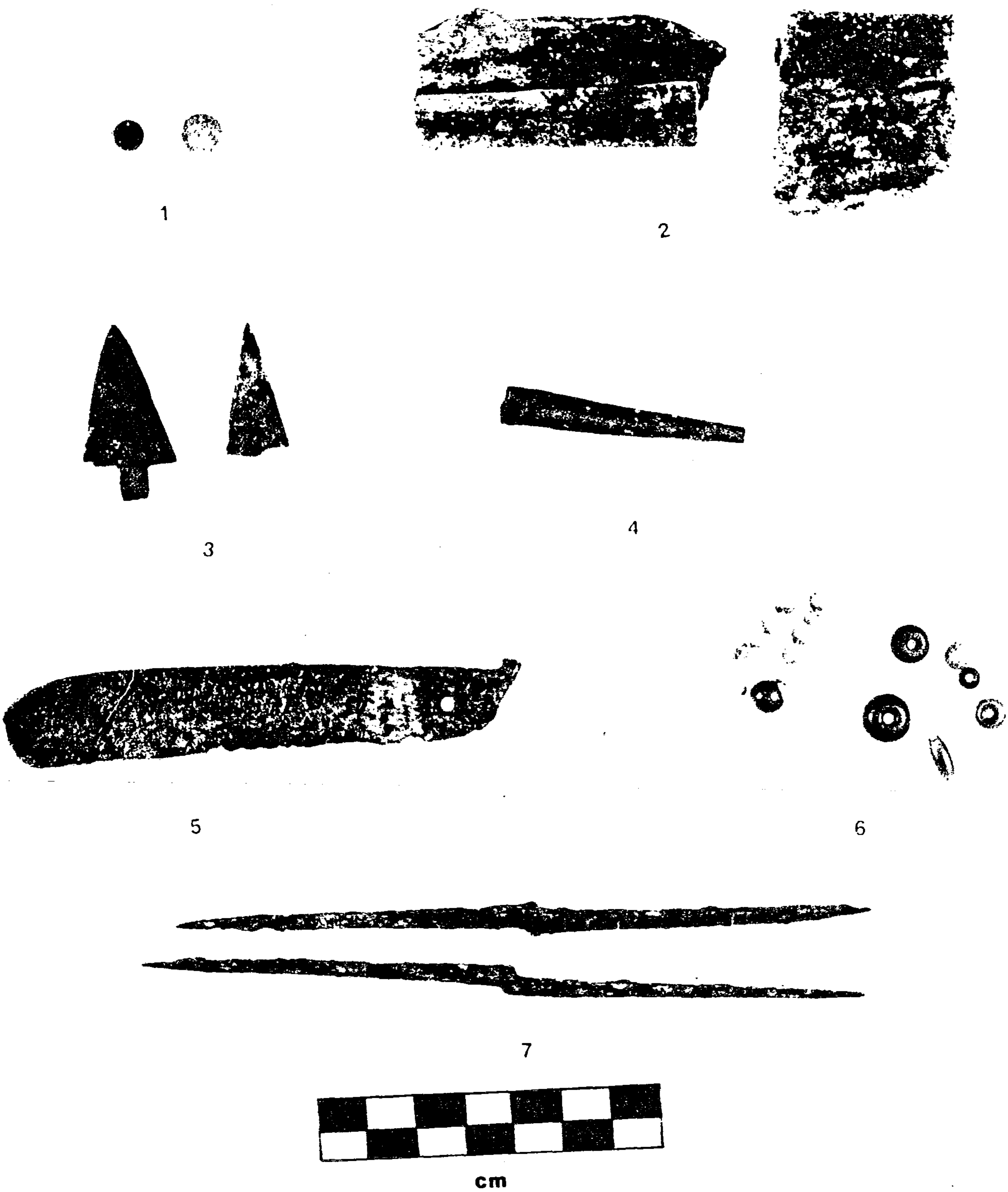
3: Brass Christmas tree arrow heads, Frank Bay.

4: Copper tinkling cone (leather tong preserved inside), Frank Bay.

5: Clasp knife, Frank Bay.

6: Trade beads, Frank Bay.

7: Iron awls, Frank Bay.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