

THE UNIVERSITY OF MANITOBA

AN ANALYSIS OF
THE BUNDORAN SITE, (DjKn-5)

A THESIS SUBMITTED TO
THE DEPARTMENT OF ANTHROPOLOGY
IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF ARTS

BY



PAUL CHARLES ADAM SPEIDEL

WINNIPEG, MANITOBA

APRIL, 1988

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PAUL CHARLES ADAM SPEIDEL

A thesis submitted to the Faculty of Graduate Studies of
the University of Manitoba in partial fulfillment of the requirements
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FOREWORD

This paper would not have been attempted without the help and encouragement of many people. I would like to formally thank C.S. "Paddy" Reid and Grace Rajnovich from the Ontario Ministry of Citizenship and Culture office in Kenora, Ontario, for suggesting I undertake this project, and for the incredible support they gave me throughout its writing. I would also like to thank Dr. Louis Allaire, my advisor, and Dr.s Greg Monks and Tom Vadney, my other committee members, for their patience and generous contributions to the final form of this thesis.

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Arlene Kraljevic, Felix and Ed Sikora, and Felix's wife D'Anna, all supported me with their good cheer and true interest in my work. Finally, my fellow graduate student, Jeff Chartrand, understood all too well the rigors of thesis writing, and helped me laugh through the difficult times.

Paul Speidel

Winnipeg, MB., 1988

ABSTRACT

In this paper is the analysis and interpretation of the recoveries from the Bundoran site, DjKn-5, a multi-component campsite/fishing station approximately 20 km south of the town of Kenora, Ontario. The site was comprised of Laurel, Blackduck and Selkirk components, as well as an historic ash dump. The main focus of the paper is on the largest feature of the site, a semi-circular alignment of rocks, with associated hearths and artifacts, discovered in the Laurel strata, which has been interpreted as representing the remains of a Laurel house structure. As few of these structures have ever been found, and those found only in the last ten years, the analysis of DjKn-5 provided the opportunity to add to the study of Laurel residential and settlement patterning.

The analysis of the site consisted of the classification of the lithic and ceramic collections from all cultural components, as well as the analysis of the stratigraphic and horizontal patterning of artifacts and features in the site. The site was dated through relative means, specifically ceramic seriation. The site was shown to contain a Laurel

house structure dated to approximately A.D. 900, with the Blackduck and Selkirk components dated to A.D. 1000 and A.D. 1500, respectively. The Laurel house proved similar in design and interior layout to previously discovered houses, concluding that previous descriptions of Laurel residential patterning were accurate.

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Paul Speidel

Winnipeg, MB., 1988

CHAPTER I

INTRODUCTION

The Problem

The archaeology of northwestern Ontario is a lengthy and diversified record of human occupations dating from as far back as 7500 B.C., the approximate date of entry of the first Paleo-Indian hunters in the area, up to and including the earliest contacts with European traders. Nearly 10,000 years of culture history is represented by relatively sparse settlement remains, a problem that is further compounded by the ever-present condition of compressed soil deposition, often referred to as "collapsed stratigraphy" (Syms, 1977). Within this region lies the site DjKn-5, known as the Bundoran site (Fig.1,2; Plates 1,2).

The Bundoran site is a multi-component probable campsite/fishing station containing cultural remains attributable to the Laurel, Blackduck, and Selkirk cultures, as well as some evidence of historic occupation in the area. The Bundoran site is one of seven sites that contain the remains of Laurel culture house structures. The Laurel culture was first described by Wilford (1941, 1955), naming both the cultural "focus" in the "Rainy River Aspect", and the burial mound group at the mouth of the Big Fork River (the Smith site) after the small town of Laurel, Minnesota. The culture was defined based upon the archaeological recoveries from the excavations of the Smith site mounds, as well as the McKinstry mounds (Wilford, 1941) and the Pike Bay mound (Wilford, 1955). In

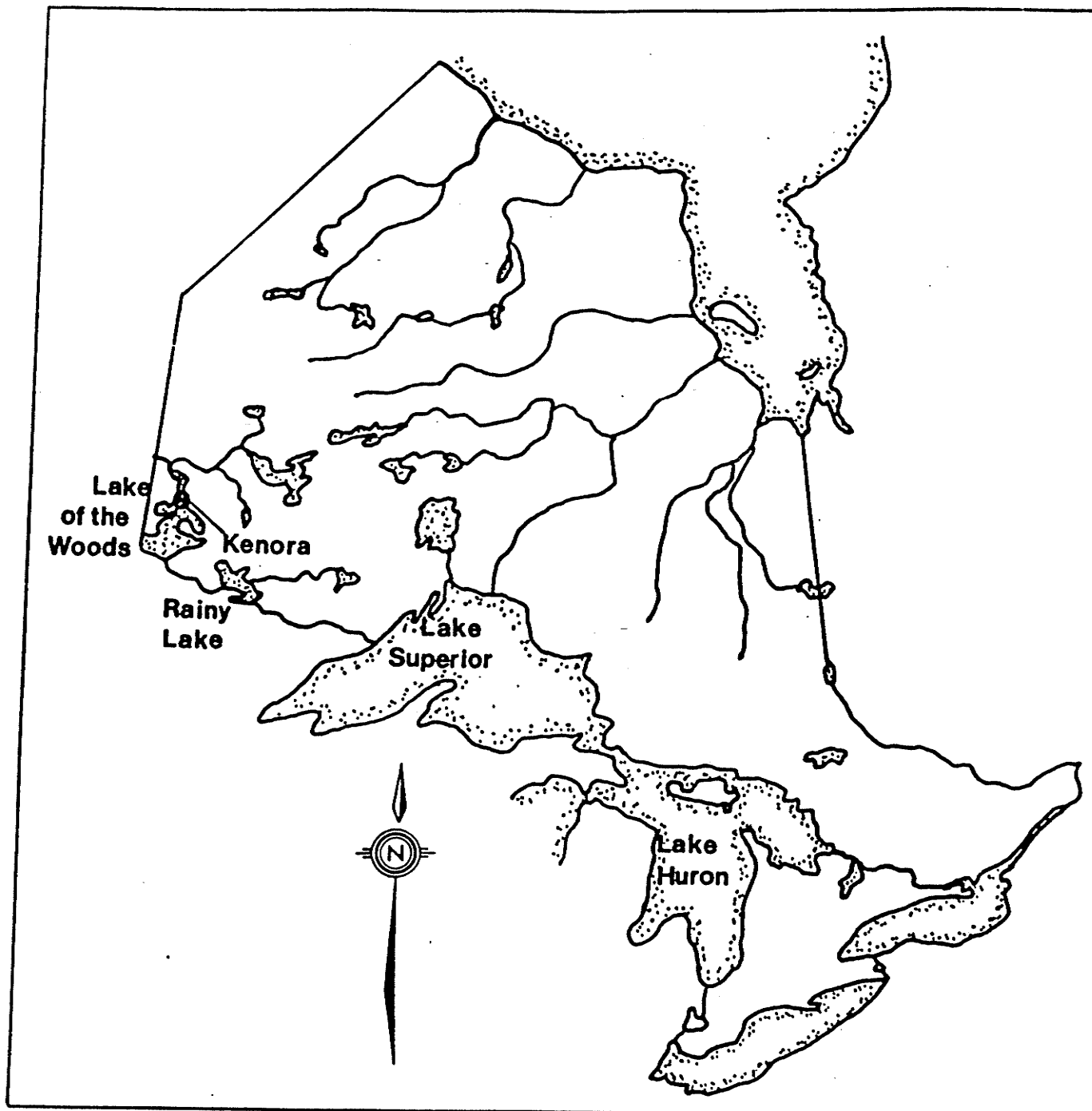


Fig.1 Map of Northwestern Ontario

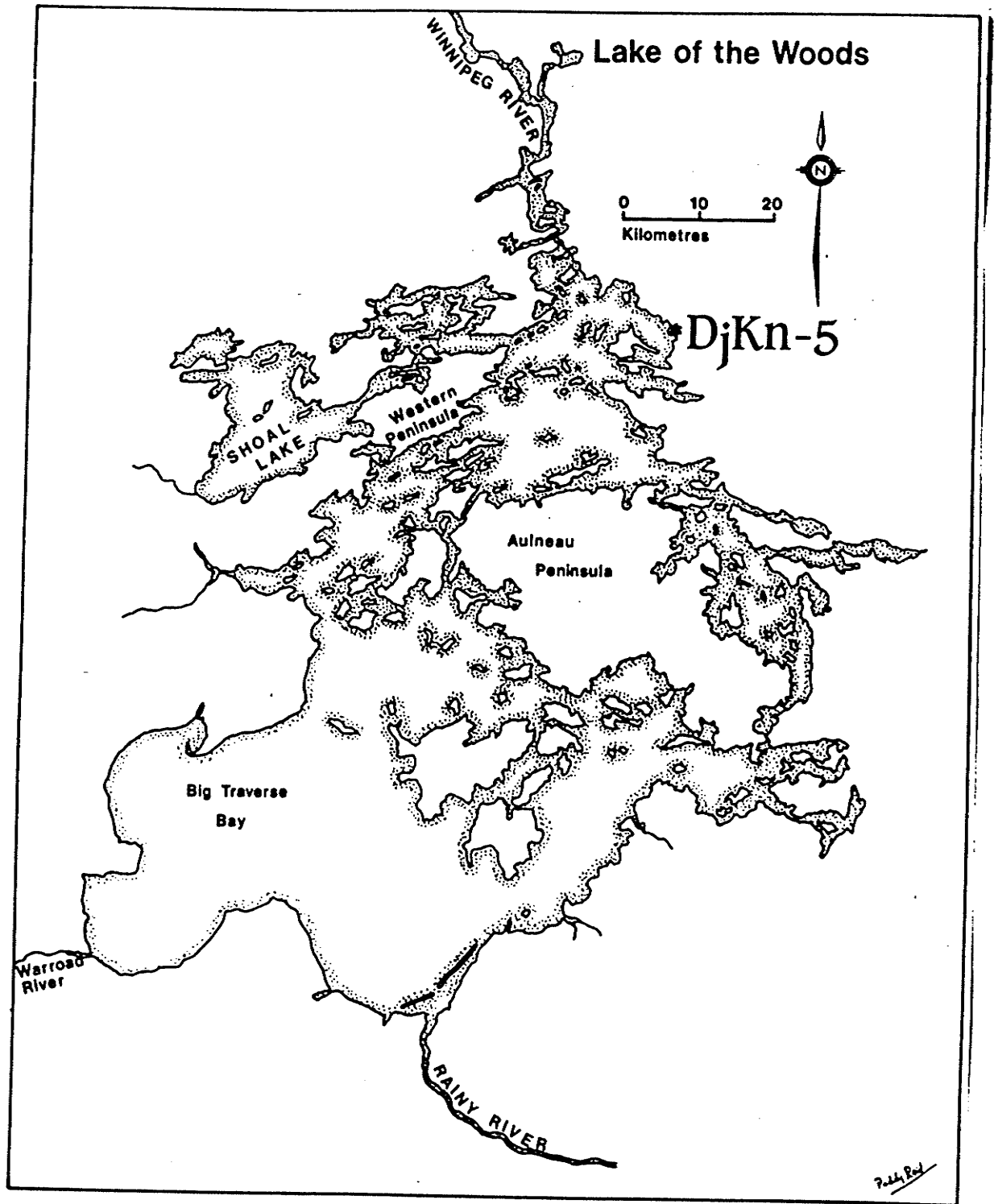


Fig.2 Map of Lake of the Woods Area

1961, the first Laurel settlement site, the Pearson site (Stoltman, 1973:1) was excavated. The Laurel culture appeared in the southern Boreal forest between 300 B.C. and A.D. 1200. This "northern tier" Middle Woodland group was identified based upon the presence of conical, coil made pottery vessels, with plain bodies and decoration on the upper third of the vessels, which included various stamped and dragged impressions and punctates, and projectile points, which were usually corner-notched.

After these early descriptions of Laurel remains, Laurel sites were identified in southeastern Manitoba (MacNiesh, 1958), northern Manitoba (Mayer-Oakes, 1970), northwestern Ontario (Kenyon, 1960, Wright, 1967), and Michigan (Janzen, 1968, Brose, 1970a,b). These descriptions of Laurel, particularly Wrights, showed a great variation in Laurel ceramic decorations between geographic areas over time, and it was from the recoveries from these first sites that tentative ceramic seriation chronologies for the Laurel culture were created. These chronologies were further elaborated upon by Stoltman (1973), and the first interpretive analyses of The Laurel culture were attempted. Based upon the resulting data, the Laurel culture appeared to consist of seasonally transhumant hunter-gatherers who made and utilized pottery, and occasionally constructed burial mounds in the Rainy River/northern Minnesota area. Suggestions were made that the origin of the Laurel culture was Asiatic (Wright, 1967:132), Hopewellian (Stoltman, 1973:122) or, in some areas, a combination of the two (Wright, 1967:135). The social organization of the Laurel culture (kinship, descent, etc.) was rarely touched upon, except by Brose (1970a). With the remains of a house structure in a Laurel cultural stratum to serve as a data base, Brose was able to make some tentative speculations as to the nature of the familial organization at that Lake Michigan area site. Such speculations were not thought possible for the Minnesota/northwestern Ontario Laurel occupations, because only one site, Heron bay, was reported as possibly containing the remains of a house structure. This structure was not investigated more fully (Wright, 1967:8). It was only in the mid- to late- 1970's when the first definite Laurel house structures were discovered.

In 1975 and 1976, Reid and Rajnovich (1985) excavated the Ballysadare site (DkKp-10), which contained an oval line of rocks with associated Laurel artifacts and hearths within the arc. Also in 1975 and 1976, the Fisk site (DlKp-1) was excavated (Rajnovich, Reid, Shay, 1982). This, as well as the Meek site (DjKp-3), contained the remains of Laurel house structures, represented by arching alignments of stones with associated Laurel artifacts, hearths and post moulds. The Ballynacree site (DkKp-8) was first tested in 1976, and has since been subject to excavation since 1983. The most recent reports indicate that this site contains several contemporaneous Laurel house structures similar to the ones described above. The final laurel house site besides Bundoran has been reported at the River Point site in northern Minnesota.

The Bundoran site was excavated in 1977 and 1978, and contained an isolated Laurel component with the remains of a Laurel house structure with associated hearths and post moulds, as well as Blackduck, Selkirk and Historic components. The house is one of the original cluster of Laurel houses discovered in northwestern Ontario, and, as such, the interpretation of the data from this site is important in the understanding of Laurel habitation structures and the inferred household patterning of its occupants. The analysis of the Blackduck and Selkirk deposits was limited to a description of the recoveries, and a tentative dating of the strata. The objectives of the interpretation of the site were to first, produce a site report on the recoveries from the 1977 and 1978 excavations, and second, analyze the Laurel house in terms of the structure itself and its associated features, and the possible social implications of that data.

The Environmental Setting

The Bundoran site (DjKn-5) is located at 49 degrees, 39', 41" north Latitude, and 94 degrees, 17', 42" west Longitude. It is on a strip of land west of the mouth of the Rushing River, 20 kilometres south of the town of Kenora, Ontario. The Kenora area "lies within

two climatic regions as defined on the basis of temperature and precipitation. The northern section lies within the English River region while the southern portion is located in the Rainy River region. The climates of both these regions can be classified as modified continental which is characterized by short, warm summers and long, cold winters." (McGregor, 1981:4)

The Bundoran site lies within the southerly Rainy River climate region. It has a mean annual rainfall of 660.4 mm. The mean daily maximum temperature is reached in July, at 25.5 degrees Celcius, while the mean daily minimum temperature is reached some time in January, at -22.2 degrees Celcius. There is an average snowfall of 1524mm, and an average of 104 frost free days throughout the year.

Geologically, the Kenora area lies within the Superior Structural Province of the Precambrian Shield. The rocks in the area were formed during the Archean era, 2.5-2.9 billion years ago. Approximately 60% of the Kenora area is underlain by a light coloured granite, with scattered "greenstone belts", lying east to west. These greenstone belts are mixtures of volcanic and sedimentary rocks found between the granite slabs. The granite itself is not deposited in a regular pattern. After the "Kenoran orogeny", a geologic mountain building episode, the granite was left faulted and folded, many of the rocks tilted to almost vertical positions. Also during this orogeny, the rocks were subjected to high temperatures and metamorphised. The result was that the rocks in the area were recrystallized, and therefore harder than rocks in other areas. The Kenora district has three structural belts of rock, two are mixture of volcanic and sedimentary (the Wabigoon and Uchi belts), and one consists of granite rock and metasediments (the English River belt).

McGregor noted that "The superficial geology of the Kenora District is largely the result of relatively recent periods of continental glaciation"(McGregor, 1981:7). This is related to the final glaciation in the area, the Wisconsin glaciation, approximately 9000 years ago. Due to the glaciations in the area, water covered most of the district at one time or another. The result of this is that beach and bottom deposits are commonly found here. The beach

deposits consist of sand and gravel, while the lake bottom deposits are made up of silts and clays, which are laminated with alternating coarse silt and fine clay (called varved deposits). The English River basin has the most extensive clay deposits in the area.

McGregor goes on to describe the remaining soil deposits in this district. "In addition to the lacustrine deposits, fluvial deposits (those deposited by running water) are also common. These deposits are typified by formations consisting of sorted sediments washed out by glacial rivers and spread onto flat plains or valleys"(ibid:7). Another result of glacial action is the scraping and scratching of the land surface in the area, and the redepositing of materials to different regions from where they came from.

Topographically, most of this region, including the Bundoran site, is described as "moderately broken uplands". Towards the south, at Sioux Narrows, lies what are called "weakly broken plains". The soil in the area consists of four textures; sand, loam, silt, and clay. Most of the area decribed is sandy soil, and there are loam and clay deposits to the south and west of the site. Soil depth for the region is also divided into four categories. These are; bare and shallow, generally shallow, mixed deep and shallow, and generally deep. Over all, soils south of Kenora are generally shallow, and soils north of Kenora are bare and shallow.

The Kenora area lies entirely within the Lake Winnipeg primary watershed division. This in turn is divided into two secondary watersheds. To the northeast lies the English River watershed, and in the southwest is the Winnipeg River watershed. The predominant flow of drainage in the area is northwest, in the Winnipeg River watershed. The English River system flows west and emptys, ultimately, into the Winnipeg River system. The predominant body of water in the area is, of course, Lake of the Woods. Its size (277,109 hectares or 609,640 acres) makes it the largest lake in the area, and a major waterway. Currently, it is the site for major cottage development and other recreational facilities. "The lake provides an excellent resource base for several activities, including sport fishing, commercial fishing, cottaging, and several water based recreational pursuits."(McGregor,

1981:13) Water quality is also generally high in the area. The lake is also the site of hydroelectric dams, notably at Caribou Falls and Whitedog Falls, and water control dams, at Nestor Falls, Dogpaw Lake, Ena Lake, Crow Lake, Blindfoot Lake and Longbow Lake. This abundance of modern activity in the area has naturally threatened archaeological preservation of sites situated in industrial or recreational areas, and the damming of rivers has caused flooding of some sites and suspected sites.

The Kenora District "lies partially within the Boreal Forest region and the transition zone between the Boreal and Great Lakes-St. Lawrence Forest region." (ibid:15) To the north and northeast of Kenora is the Boreal Forest zone. This consists of coniferous species that include jack pine, black spruce, and balsam fir. The deciduous species of trees in the area include trembling aspen and white birch. The other plants in the area include sphagnum and other mosses, and shrubs like bog laurel, blueberry and leather leaf are also found.

South of Kenora lies the transition zone. It is within this zone that Bundoran is located. The transitional forests include the tree species described above for the boreal forest, as well as isolated stands of red pine and white pine. Also found there are hardwoods like balsam poplar, large tooth aspen and Manitoba maple, with occasionally red maple, basswood, burr oak, and white elm. The shrubs in the area also include sumac and asters. Poison ivy reaches its northern most limits for this area. Wild rice may have also existed in this area in prehistoric times. Now there are modern production centres in the bays and narrows around Lake of the Woods, proving the ability of the area to support such a crop.

Animal resources in the area are diverse. Beaver, mink, marten, fisher, otter, lynx and muskrat are all found in the region, as well as large mammals such as moose, deer, and black bear. Ruffed grouse are present, as well as ducks such as mallards, scaup and teal. Other, less prominent species include bald eagle, great blue herons, and seasonably migrating pelicans. Less frequent mammals in the area are wolves, and some caribou in the

extreme north of the region. Fish resources are plentiful, and include pickeral, sucker, northern pike, bullhead, rock bass, sauger, perch, lake trout, and sturgeon.

Methods of Analysis

Excavation of the Bundoran site took place in the summers of 1977 and 1978, under the direction of Grace Rajnovich, Ontario Ministry of Citizenship and Culture, Heritage Branch. Over the course of the two summers, 45 units were excavated in three different areas. Units were excavated in arbitrary, three centimetre levels in 1977, for units one-19 (area A and B), and units 20-27 (area C). In 1978, excavation of units 30-33, 35-38, 40-44, 49, 50, 55, 60 and 61 was undertaken in natural levels. Stratum A (a dark brown fine loam) comprises approximately levels one to three of the previous years system. Stratum B, comprised of light brown clay and a dark brown clay/loam mixture, encompasses what was level four. Stratum C, containing the Laurel "structure", approximates level five and lower. This final stratum was recorded as levels C1, C2, etc.

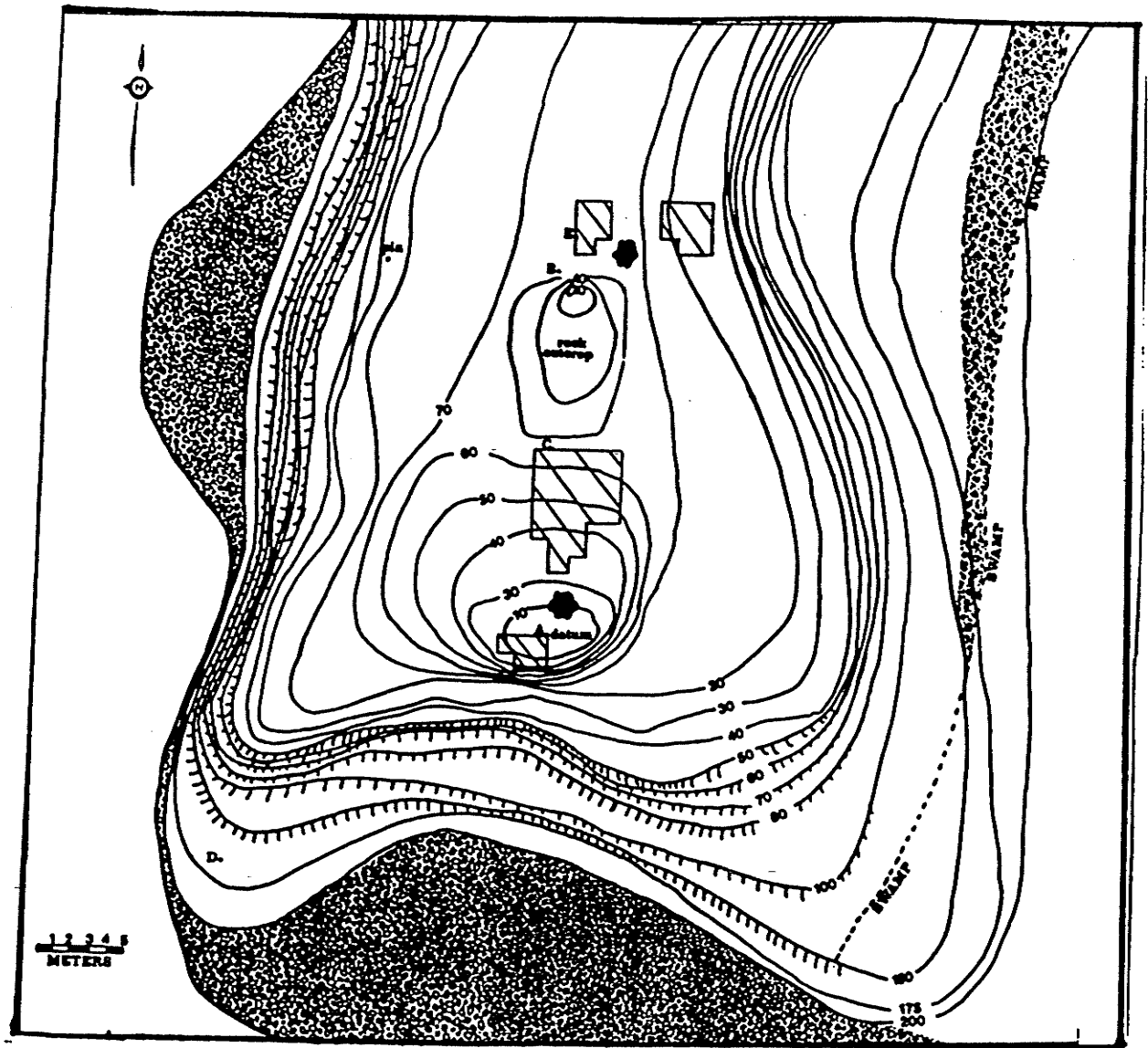
In 1977, the area was surveyed by transit, and areas of excavation were established, based upon surface collection made in 1976. The topography of the site includes a large rock outcrop and some large trees, as well as a rocky beach comprising the western edge of the site. Because of this uneven terrain, five transit stations were used in the laying out of the grid, and the mapping of the site. Station A is located at the southern end of the site, and serves as the northeast corner of the grid on area A. Station B is located directly north, on the far side of the intervening rock outcrop. Station C is located on the same line, 9.5 metres north of station A. Station D was a pin placed on the beach, in order to accurately measure the curve of the beach itself. Station E is located one metre to the east and north of station B. It serves as the northwest corner of unit 11, and acts as one of the datum points for area B. The final marker, station F, is due east of station E, and serves as the common corner post for the southeast corner of unit 17, and the northeast corner of unit 18. Contour

measurements for each block of excavation units were taken from their respective station points.

Excavation was conducted by trowel and earth was sifted through one-quarter inch screen in an attempt to recover small remains that might have been missed by troweling. All recoveries were plotted on level sheet scatter-grams, and black and white photographs were taken of the floors. It was an intention of this excavation to reveal entire floors in adjacent units to get the clearest idea of spatial patterning of artifacts, if any were to be found. Any features found were also photographed and recorded as per Ontario Heritage Branch procedures. All walls and floors of excavation units were also drawn.

Soil and carbon samples were taken several times during the excavation, and one sample from area C, unit 50, level three (9-12 cm.) was subjected to radiocarbon dating at the Dicarb Radioisotope Company, Ohio. Taken from the base of a post mould in what the excavators considered to be the remains of a Laurel dwelling, the sample was filled with many tiny, recent rootlets, which the laboratory was unable to completely eliminate from the sample. The resulting date of 440 B.P. plus or minus 60 years (A.D. 1510) may therefore be viewed as false, due to the contamination of the rootlets. The estimated sample age, A.D. 800-1100, is closer to what may be the actual date of the structure.

Faunal remains for the entire site were relatively small, and flotation for the recovery of seed remains was not carried out. A total of 469 faunal remains were recovered from the site, consisting for the most part of small, fragmentary pieces of bone and shell. Identifiable only as fish, avian or mammal bone, most of these remains were of little use in faunal reconstruction. A few items were, however, identifiable. Clam shell and turtle shell was identified, as well as a muskrat femur (Oneatra zibethicus), beaver vertebrae (Castor canadensis) and a Black bear molar (Ursus americanus) (Peterson, 1966). Some small seed pods, either Prunus pennsylvanius L. (pin cherry) or Prunus virginiana L. (choke cherry) were recovered from unit 66, level CIV. These were, however, near a rodent burrow, and



LEGEND





-  -rock cobble beach
-  -bush/transitional forest
-  -tree
-  -excavated units
- 70-in cm.

Fig.3 Contour Map of DjKn-5

One faunal artifact, a unilaterally barbed harpoon (Plate 3), was recovered from unit 8, level III. It is either bone or, more likely, antler. Many of the bone fragments were either burned or calcined, and showed evidence of butchering.

CHAPTER II

FEATURES AND ARTIFACT PATTERNING

Introduction

The occupation of northwestern Ontario by Laurel, Blackduck and Selkirk peoples has recently been described in terms of two new temporal and cultural periods, "...the period in the north has been divided into Initial Woodland and Terminal Woodland, which equate with the southern Early and Middle Woodland periods and the Late Woodland period, respectively" (Dawson, 1983:15). During this paper, certain quotes may refer to the newer terminology, but I will continue to use "Middle" and "Late" Woodland as the standard throughout this report.

The description of features discovered and the distribution of artifact styles relating to their cultural origins will be discussed by excavation area. In the case of Area C, which was excavated over the period of two summers with slightly different excavation level terminology between the two years, an effort will be made to present the information for that area using a consistent terminology.

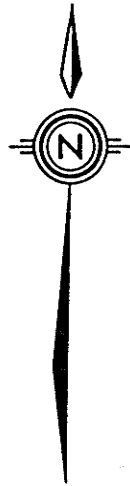
Three excavation areas were utilized by the field crew. (Fig. 4) Area A, the most southerly block of units, consisted of six 1x1 metre pits, five of which were excavated. Area B, the most northerly of the areas, consisted of units 7-19, and was divided into two blocks of units, 7-11 and 12-19. A large rock outcrop lies south of these units, and serves

to divide Area B from Area C. Area C, the largest of the excavation areas, was surveyed to include a square block of units numbered from 20-61. Due to time limitations, only certain units were excavated (see later this chapter, Area C). South of Area C, a large tree stands to divide Area C from Area A.

The artifact styles that will be discussed are Laurel, Blackduck and Selkirk. Relating artifacts found in a certain unit and/or at a certain depth will help to illustrate the overall cultural deposition on the site, and serve to show the scope of occupation levels and areas for each cultural group. The Laurel remains can generally be described as follows. Ceramics are usually thick walled, originally conical in shape, and possessing plain bodies and decorated necks and rims. Decorative style changed through the history of Laurel, thus providing the archaeologist with a good method of relative dating. Such styles included punctates, linear stamps, dentate stamps, and pseudo-scallop shell decorations. Decorative motifs will be better illustrated in the chapter on ceramics. Laurel lithics were generally made up of corner notched projectile points, unifacial end scrapers and small knives. The variations will be discussed further in the chapter on lithics. Blackduck ceramics consisted of mainly large, globular vessels, with fabric paddled bodies, and decorated rims and necks. Decorations included varieties of horizontal and vertical cord-wrapped stick impressions (CWS) and punctates. Blackduck lithics included small, side-notched projectile points and side scrapers. Selkirk ceramics were also globular, but almost entirely fabric impressed. Decoration was less than that of Blackduck, but included punctates and CWS markings on the lip. Selkirk lithics resembled Blackduck lithics.

Area A, (Units One to Six)

The stratigraphy was revealed as follows: level I (0-3 cm.) was mainly leaf mat and roots in a fairly even deposition. Level II (3-6cm.) held a dark brown loam , with some roots. The bottom of this level slanted down in the western half. Levels III to IV(6-12 cm.) was mainly a dark brown silty loam, and presented an undulating surface on the top



8	9
7	10
11	

15	12	16
14	13	17
	19	18

Area B

61	20	21	22	23
60	27	25	24	26
41	30	31	32	33
40	35	36	37	38
42	43	44		
	49	50		
	55			

Area C

1	2	3	4
		5	6

Area A



Fig.4 Excavation Areas and Units

and bottom. Levels V and deeper (12 cm. and lower) consisted of a grey, crumbled clay. The depths given are not exact for all six units, but levels described illustrate the overall stratigraphic sequence.

Historical artifacts were recovered from the uppermost levels of areas A and C. Because their presence does not represent an historically important occupation, the artifacts will not be analyzed and discussed formally. However, their presence does account for a degree of stratigraphic disturbance in those areas. Because of this, a brief description of the historical component, above what will be described in the area summaries, will be given. Historical recoveries included a wide range of artifacts, indicating that this site had more than one use during historical times. Blue seed beads were recovered from units 1,3,4 and 6, and other items that included a small animal trap, a square spike, coarse earthenware, square nails, yellow glass, shotgun shell casings, various metal fragments, wire fragments, buckles, melted glass, phonograph record fragments, buttons, blue and white earthenware, pipe stems, safety pins, and mirror fragments were found in Area A. The recoveries from Area C included all of the above, as well as various coloured, melted glass, some mortar and some porcelain. The date range for the historic materials ends some time in the 1940's, and probably began late in the last century, when square nails were commonly used. The source of this deposition will be discussed in the review of Area C.

There were no features associated with this excavation area. Artifact patterning indicated that there is some stratigraphic disturbance in these units. The upper levels of all units, except unit two, which was not excavated, showed historic materials. Unit 3, (level one) produced a leg hold trap (not recent). In level two, however, some of the artifact mixing becomes apparent. Level one held faunal material and a cord wrapped stick (cws) oblique neck sherd, while the same level in unit three held square nails, earthenware, a blue seed bead, what was apparently the lid of a paint can, and a recent bone concentration (muskrat). Unit four revealed a mixture of phonograph record fragments, square nails, and a quartz

core and flake, as well as many round nails. Unit five produced a fabric impressed neck sherd, while the adjacent unit six produced sheet metal and a bullet.

Level three revealed an abundance of historic glass, blue and white earthenware, square nails, buckles, pins and buttons in units three to six. Unit one held prehistoric ceramic sherds, attributable to the Selkirk people. Level four showed continued mixing of prehistoric and historic material in units three to six. Unit three especially, produced glass fragments in association with possible Selkirk and Blackduck ceramic sherds. Unit one still produced only prehistoric materials, including a fabric impressed neck sherd, and an assortment of quartz, Lake of the Woods felsite, Lake of the Woods chert, Lake of the Woods rhyolite, and Knife River flint, also called chalcedony.

The pattern of mixed prehistoric and historic materials continues in units three to six in level five, with recoveries all but disappearing in level six. The exception was unit six which, unlike the other units, was excavated past level six to level nine. Recoveries in these last three levels only included some burnt bone, some fabric impressed body sherds, some quartz flakes, and one red ochre fragment in level nine. Unit one remained purely prehistoric, and excavation was stopped after level six proved almost sterile (only one Lake of the Woods felsite flake recovered).

Units three to six, starting at level three, showed the presence of yellow mottled ash/sand in association with charcoal, melted and unmelted glass, some unburnt bone, and grass roots. This, combined with the mixture of prehistoric and historic artifacts in these units, seems to indicate that the disturbance in the area is a result of the land being, at one time, used as an historic refuse dump. The presence of grass roots well below the surface level (as deep as level five, 12-15 cm. in unit five) in conjunction with ash deposits, burnt and unburnt glass and bone, indicates that this area was probably used as a refuse pit, and not as a refuse burning area. The grass roots at the lower levels are probably the result of the soil being overturned when the pit was dug. This would also account for the presence

of prehistoric pottery along side historic materials. These might have been uncovered and shoveled back into the pit when it was dug initially.

The sequence found in unit one more accurately indicates what the nature of undisturbed deposits would be. Levels one to six showed a sparse scattering of Selkirk pottery and an assortment of lithic flakes. This indicates that this area of the site was rarely used in conjunction with the more intensively used areas B and C.

Area B, (Units Seven to Eleven)

Although both blocks of units were included in area B, for the purposes of discussion both blocks will be treated separately. The stratigraphy for units 7 to 11 are as follows. Level I (0-3 cm.) consisted of leaf mat and roots in an even depth, and level II (3-6 cm.) was a dark humus slanting downwards towards the west. Levels III to VI (6-18 cm.) though sometimes disturbed by the presence of rocks or roots, is continuously a dark brown silty loam, mixed with a light sandy loam, or sometimes just sand, and continues to slant westward. In level VI, some units start to show the intrusion of a light brown clay, and by level VII (18-20 cm.), all stratas are light brown clay. Only units 9 and 11 were excavated to level VII.

Level one in this block produced no artifacts, and level two produced few artifacts in units seven to ten. Small quartz and Lake of the Woods chert flakes were found, as well as some small ceramic neck sherds, one being Selkirk, and the other being a possible Blackduck. Unit 11 produced a much denser concentration of artifacts. A concentration of fabric impressed pottery fragments was found near the centre of the unit, in association with fire-cracked rock, which was spaced in a very loose semi-circle in the northeast corner of the unit. Also found were a concentration of quartz flakes within this semi-circle. Outside of this rock formation was found another concentration of fabric impressed ware, as well as some randomly scattered rock and fire-cracked rocks. The cultural association of this level is Selkirk. Level III held large groupings of artifacts in units 8 and 11, with much

smaller numbers in the other units. Unit 7 held a high frequency of worked and diagnostic material within its relatively small number of artifacts, including bifaces and fabric impressed ceramics. The adjacent unit 8 held a great number of mainly Selkirk ceramics, including 73 body sherds, two side-notched projectile points, and a unilaterally barbed harpoon, as well as non diagnostic lithic flakes. Unit 9, however, held nothing except five lithic fragments (one biface), and one rim sherd (possibly Blackduck) in association with what was described as "possible fire-cracked rock" in the northern edge of the unit. Unit 10 shared this paucity of artifacts, but had three large fire-cracked rocks in its southeast corner. Unit 11 continued to produce concentration of fabric impressed ware in the northeast, northwest and southwest quadrants of the unit. Some fire-cracked rock was uncovered in the northwest quadrant. Level 4 produced a mixture of Selkirk ceramics, a variety of side and end scrapers, and bifaces. Unit 7 produced a plain rim and neck, and a possibly Blackduck rim sherd. Unit 11 produced an alignment of fire-cracked rocks extending from the southwest corner of the west wall to two-thirds up the east wall. This line approximates the outline of a strata of yellow clay which appears in this level. Nearly all the artifacts recovered were taken from among the fire-cracked rock, outside the yellow clay. These artifacts included Selkirk ceramics, bone and quartz flakes. A burnt bone sample was taken from this level.

In level V, artifacts become fewer in number, and ceramics show a mixture of Selkirk sherds from the top of the level, and Blackduck sherds appearing at the bottom of the level. Soil in all units rapidly becomes clay. Unit 11 produced a concentration of fabric impressed sherds along the centre of the south wall, in association with three fire-cracked rocks. A quartz core was also discovered in the northwest corner, near a fire-cracked rock. Level six in general shows a paucity of artifacts, with unit 8 becoming sterile. Unit 11 produced an alignment of fire-cracked rocks extending from the southwest corner of the south wall to the centre of the east wall. Artifacts recovered, including fabric impressed sherds, quartz and rhyolite flakes were recovered in association with these rocks. Level seven produced

few artifacts. A juvenile vessel, or "toy vessel", was recovered in association with a root stain in level seven. Unit 11 was only excavated in the southern half. Fire-cracked rocks and two fabric impressed sherds were found. Level eight was excavated in unit 11, southern half. One, probably intrusive fire-cracked rock was discovered.

From the artifacts recovered it becomes apparent that this is a mainly Selkirk deposit. Unit seven occasionally produced sherds that were intrusive into the Selkirk strata. From the field notes taken it is apparent that root activity was a major factor in artifact deposition for this block of units, and the presence of non-Selkirk artifacts should be viewed as the result of such disturbance, and not an in situ deposit. The deposits in levels VIII to X were generally without major concentrations. Unit 11 produced alignments of fire-cracked rocks with associated artifacts, mainly Selkirk pottery. Interpretation of this feature is risky, as units that would have been adjacent to the stone alignments were not excavated, and the length and shape of the formation is not entirely known. It seems, however, that some sort of food preparation or refuse disposal area was located here. It is premature to expand upon this interpretation until a discussion of the second part of area B, units 12-19, is made.

Area B:Units 12-19

The stratigraphy of this area is as follows; level I (0-3 cm.) leaf and root mat in an even deposition, levels II and III (3-9 cm.), black loam with mottled black and grey clay or sand with a slightly undulating floor. Level IV (9-12 cm) black and brown loam slanting to the west, while levels V and VI(12-18 cm.) are grey-brown sandy loam and grey clay, and levels VII to IX (18-27 cm.) are yellow to grey clay with decreasing amounts of grey-brown loam.

This section of area B produced the first complete feature uncovered during the excavation. As with previous areas, the first two levels produced Selkirk artifacts (fabric impressed sherds). Unit 13, in the centre of the block of units, revealed a cluster of fire-cracked rocks, with some associated burnt bone fragments. The adjacent unit 17 also had

Table 1: Site Features

Feature No.	Location	Depth Below Surface	Plan	Fill	Contents	Comments
1	Area B, Units 13, 16-19	9-15 cm	Oval	Black Loam	127-Flakes 385-Body Sherds 38-Rim Sherds 9-Neck Sherds 35-Scrapers 1-Projectile Point 2-Cores 2-Awls	-surrounded by fire-cracked rocks -post moulds on either side -probable cooking or refuse pit -Selkirk culture
2(a)	Area C, Units 49, 60 61, 40-43	12-24 cm	Arcing Alignment	Dark, Light Brown Fine Loam	332-Flakes 316-Body Sherds 45-Rim Sherds 29-Scrapers 4-Projectile Points 4-Cores 2-Hammerstones 1-Chopper	-post moulds in units 49, 61 -wall of structure -Laurel culture
2(b)	Area C, Unit 30	12-20 cm	Oval 40 cm across	Black Organic Loam	41-Flakes 62-Body Sherds 22-Scrapers 1-Projectile Point 4-Cores 1-Knife Burnt Bone	-fire-cracked rock -hearth -Laurel culture
2(c)	Area C, Units 36, 37	12-24 cm	Oval	Black Organic Loam	226-flakes 121-Body Sherds 3-Rim Sherds 35-Scrapers 1-Projectile Point Plug 8-Cores 2-Awls	-associated post-moulds in unit 35 -fire-cracked rock -hearth -Laurel culture
2(d)	Area C, Unit 21	12-24 cm	Circular	Black Organic Loam	59-Flakes 169-Body Sherds 13-Rim Sherds 3-Neck Sherds 20-Scrapers 2-Projectile Points 2-Cores	-post mould -fire-cracked rock -hearth -Laurel culture

burnt rock and bone, but to a lesser extent. An intrusive Laurel dentate sherd appeared in unit 16, but this may be the result of disturbance caused by the presence of a large tree trunk and root system in the northwest corner of the unit. Level III produced large concentrations of artifacts, primarily Selkirk, in all units. These included fabric impressed sherds, quartz cores and flakes, yellow and red ochre, turtle shell and bone, and lithic artifacts made of chalcedony, lake of the woods chert, and hammerstones made of granite cobbles. Unit 16 produced a Laurel rim fragment, and the adjacent unit 12 produced a plains side-notched projectile point. Both of these units have large tree root systems intruding through these levels. These may account for the mixing of the cultural debris. Unit 19 also shows some mixing of Blackduck and Laurel artifacts in the Selkirk strata. Units 13, 14 and 18 produced a scattering of fire-cracked rocks.

Level IV held large amounts of artifacts, almost uniformly mixed Selkirk/Blackduck with some intrusive Laurel ceramic sherds. Other recoveries include red and yellow ochre, a variety of side and end scrapers, utilized flakes, burnt bone, and three side-notched projectile points. The bulk of these deposits, however, rests within an area that is roughly oval shaped, covering the northern edge of unit 19, the northwest half of unit 18, the bulk of unit 13 and 17, the southeast corner of unit 12, and the southwest corner of unit 16. The soil within this area is primarily black loam, with a high organic content. Around the south edge and the northeast edge of this area is a loose scattering of fire-cracked rocks. Outside this area, the soil consists of either clay, brown loam, or sandy brown loam. Some artifacts and fire-cracked rocks do appear outside of this area, but not in the high concentrations that appear within the oval shaped stain. Level V continues the patterning found in level IV. Artifacts are a mixed Selkirk/Blackduck, and are concentrated within the apparent feature. Outside the feature, unit 15 becomes almost sterile, while unit 14 shows a scattering of fire-cracked rocks on the edge of, and within, a clay strata that nearly covers the unit except for the east edge, and the adjoining unit 13. Unit 13 itself revealed a possible post mould, roughly circular and two cm. deep. It is associated with concentrations of fabric impressed

ceramics, burnt bone and some quartz scrapers. Clay appears on the east side of unit 17, and almost completely covers unit 16, except for the southwest corner, the edge of the feature. Unit 19 showed an abundance of fire-cracked rock.

Level six revealed a much smaller number of artifacts than from the previous two levels. Unit 15 was sterile and was abandoned at this point. Unit 16 produced only a few fabric impressed sherds, near the tree roots, and three fire-cracked rocks, but was otherwise sterile. Artifacts that did appear were still a mixture of Selkirk/Blackduck, with one Laurel dentate sherd. Lithics included scrapers, a spokeshave, and a hammerstone. The feature becomes less distinct at this level, but artifacts were still recovered mainly from within its boundaries. Soil within the feature becomes mixed clay, sand and black/brown loam. Fire-cracked rock still appears around the edge of the feature in units 14, 17, 18, and 19. Two post moulds, roughly circular, were found in unit 12, outside the feature.

In level VII, unit 12 revealed three more post moulds, again outside the northern edge of the feature. Artifacts have almost disappeared from all units, with only a concentration of burnt bone and quartz appearing near the fire-cracked rock along the south wall of unit 17. Fire-cracked rocks also appear in units 12, 13 and 14, and appears scattered across units 18 and 19. Clay becomes more predominant in all units at this level. Only the southwest corner of unit 16, and the east edge of unit 14 were excavated for this level.

Level VIII produced only scattered lithics, and two examples of Blackduck pottery. Fire-cracked rock appears mainly in unit 13, with some showing up in units 17, 18 and 19. A possible post mould was uncovered in the northwest corner of unit 19. Unit 16 was abandoned at this point, and only portions of units 14, 18 and 19 were excavated. In level nine, only small amounts of burnt bone and lithics were discovered. Over the past two levels, the feature has been disappearing, and is completely gone by level nine. Unit 10 produced a few rhyolite flakes and a burnt bone in a clay matrix. Only units 13, and parts of units 18 and 19 were excavated. Level XI was partially excavated in unit 18 and produced one bone fragment.

The oval shaped feature in this part of area B is most likely a refuse pit.(Table 1) The black, highly organic loam within the feature, along with the fire-cracked rock, suggests that some burning was done here as well. The cultural deposits were, for the most part, Selkirk, with a few scattered Blackduck and Laurel sherds. This follows closely with the recoveries from the previous part of area B. The abundance of Selkirk materials in relation to the other cultural groups suggests that this area was used primarily as a cooking/refuse pit by Selkirk peoples, and the presence of Blackduck and Laurel ceramics is the result of the Selkirk initial excavation of the pit, uncovering the remains of the previous, unassociated occupations. Root disturbance in units 12 and 16 may also account for the intrusive pottery. The presence of post moulds on either side of the feature, and within the feature, appears to indicate primary use of the feature may have been for cooking, with use as a refuse pit coming later. The fact that the post moulds were found at such a great depth indicates how early some sort of structure was placed over the feature. The fact that so few moulds were uncovered may indicate that the structure was some sort of cooking, smoking or drying rack. The similarity of this feature to the partial feature in the other part of area B (mentioned previously) suggests the two are related, possibly being used during the same occupation. The area north of area B may have revealed the extent of this Selkirk occupation, but it was not excavated.

Area C

Area C, consisting of units 20-27, 30-33, 35-38, 40-44, 49, 50, 55, 60 and 61 was excavated over the course of two summers, 1977 and 1978. As previously mentioned, two different systems of labelling levels were used in an attempt to keep cultural strata whole. For the purpose of continuity, all levels will be referred to in terms of depth below surface. The stratigraphy for this area (Fig.5) is as follows: humus and leaf mat (0-3 cm.), mottled dark brown loam with light brown fine clay (3-12 cm.), dark brown fine loam (12-18 cm.), mottled dark brown to light brown loam (18-21 cm.), mottled medium brown sandy

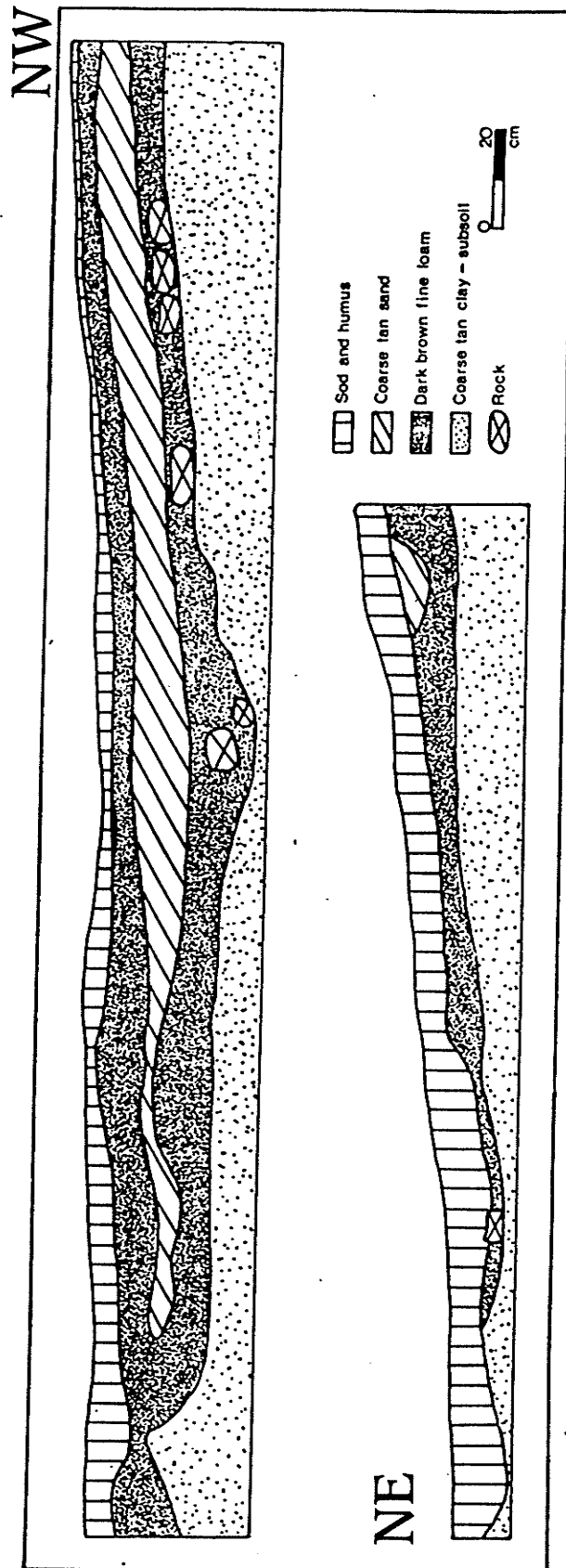


Fig. 5 Area C Statigraphy (from Reid and Rajnovich, 1985)

loam (21-24 cm.), and light brown sand and clay (24-27 cm.). The above depths approximate soil deposition for the entire area. Actual depths for each layer varied across the area.

Area C was the most productive area in terms of features and artifact patterning. Disturbance was present from the outset in this area as a 1940's vintage ash dump was present in unit 20 to a depth of 12 cm. Ashy soil also appears in units 36 and 41. Surface material is mainly historic, with a concentration of 60 seed beads recovered from unit 60. Other historic artifacts include shotgun shell casings, various metal fragments, round and square nails, buttons, combs, stoneware and glass. These items may have been deposited at the same time as the refuse pit in Area A was deposited. According to reports from local inhabitants, there may have been a structure built on or near the site, which by local report was torn down in the 1940's. If this is so, it would explain the presence of building materials such as nails and glass, and would account for the presence of the dump sites.

Recoveries from the next three centimetres (3-6 cm.) seem to support this contention. There is a continuance of the wide range of historic artifacts, now including mortar, cloth and wire. Some prehistoric material appears in units 31 and 61 (fabric and CWS impressed sherds), and the rim of a juvenile vessel was taken from unit 24. A quantity of small animal bone and charcoal was taken from units 30, 39 and 41, illustrating the continued usefulness of the area for hunting and trapping.

At depths of six to twelve centimetres, artifact recoveries consist of mixed Blackduck and Laurel ceramics, a wide range of scrapers and utilized flakes, a spokeshave, an awl and small cores. The bulk of the recoveries were taken from the seven unit block of units 30-33 and 35-37. Historic artifacts continued to appear at the six to nine cm. depth, but to a decreasing degree from previous levels. Another assortment of seed beads was recovered from unit 38 within the above depth range. Small groupings of rock, and/or fire-cracked rock and charcoal stains appear scattered across the area. No definite features were revealed at this point, although, despite mixing of the artifacts, it seem likely that there was at least a

short term Blackduck occupation at this site. Unit 41 displays a circular ash stain, partially ringed with rock, and large rocks are scattered through units 43 and 49. The 12 cm. depth marks the bottom of the historic ash dump found in unit 20, and may, therefore, mark the extent of site disturbance by historic dumping of refuse, house building, and other activities.

The separation of materials from the top twelve centimetres from those below twelve centimetres is both conceptual and physical. Near the twelve centimetre depth across the site is a layer of coarse tan sand, almost sterile in the south part of area C, below units 24-27. The division of the top twelve centimetres, referred to as stratum A, and in some places stratum B, or as levels one to four, is a difficult distinction to make. According to the archaeologists field notes, horizons were laid down in an "undulating fashion across the site, sometimes at nine cm., sometimes at twelve cm.". Therefore, distinguishing cultural horizons above twelve centimetres is hazardous, and with the threat of disturbance from the historic activities listed above, any interpretation of the archaeological data to this point should be made with caution.

At approximately the 12-24 cm depth below surface, just beneath the sand deposit, the largest feature of the site was revealed. A dense concentration of rocks was found through units 40-43, 49, and to a lesser extent 60 and 61 (Fig.6), (Plate 4,5). The curvilinear rock arrangement had, within its boundaries, at least three and possibly four arrangements of rock and fire-cracked rock in conjunction with concentrations of Laurel pottery, an assortment of scrapers, hammerstones, cores, projectile points and ochre. Post moulds were discovered in units 21, 35, 40, 42, 43, 44, 49, 50 and 61. All these post moulds appear in conjunction with a suspected hearth, or in the unit that hold part of the arching alignment of stones. The alignment of stones contains rocks that are piled up, sometimes three deep. Artifact concentrations are greater towards the hearths, and inside the stone alignment rather than outside. Soil within the arc is hard packed, while the soil outside is quite loose. A feature in unit 30, undoubtedly a hearth, was 40 cm. across and eight cm.

Area C

Level C1-Laurel House

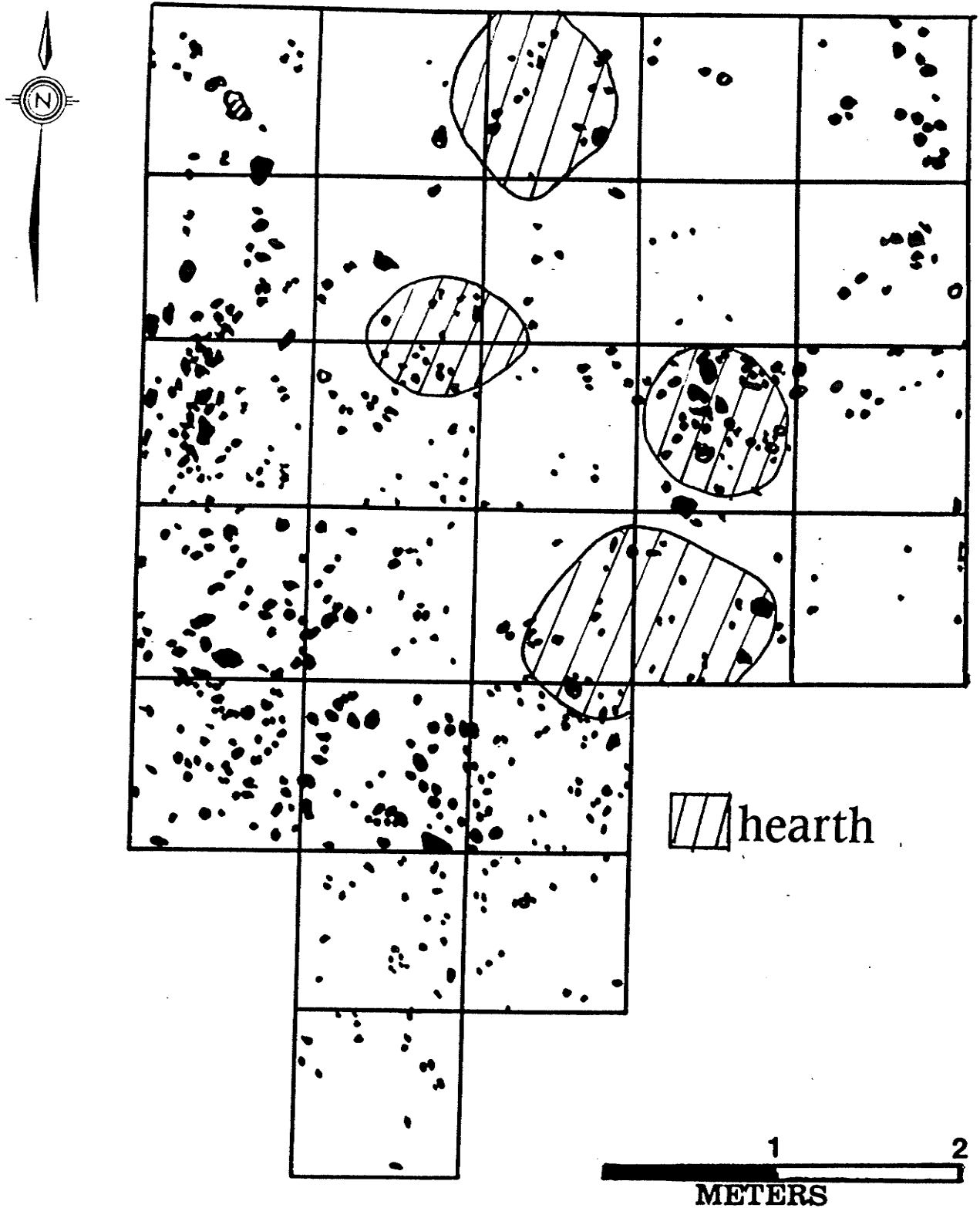


Fig.6 Rock Deposits in Area C, Level C1

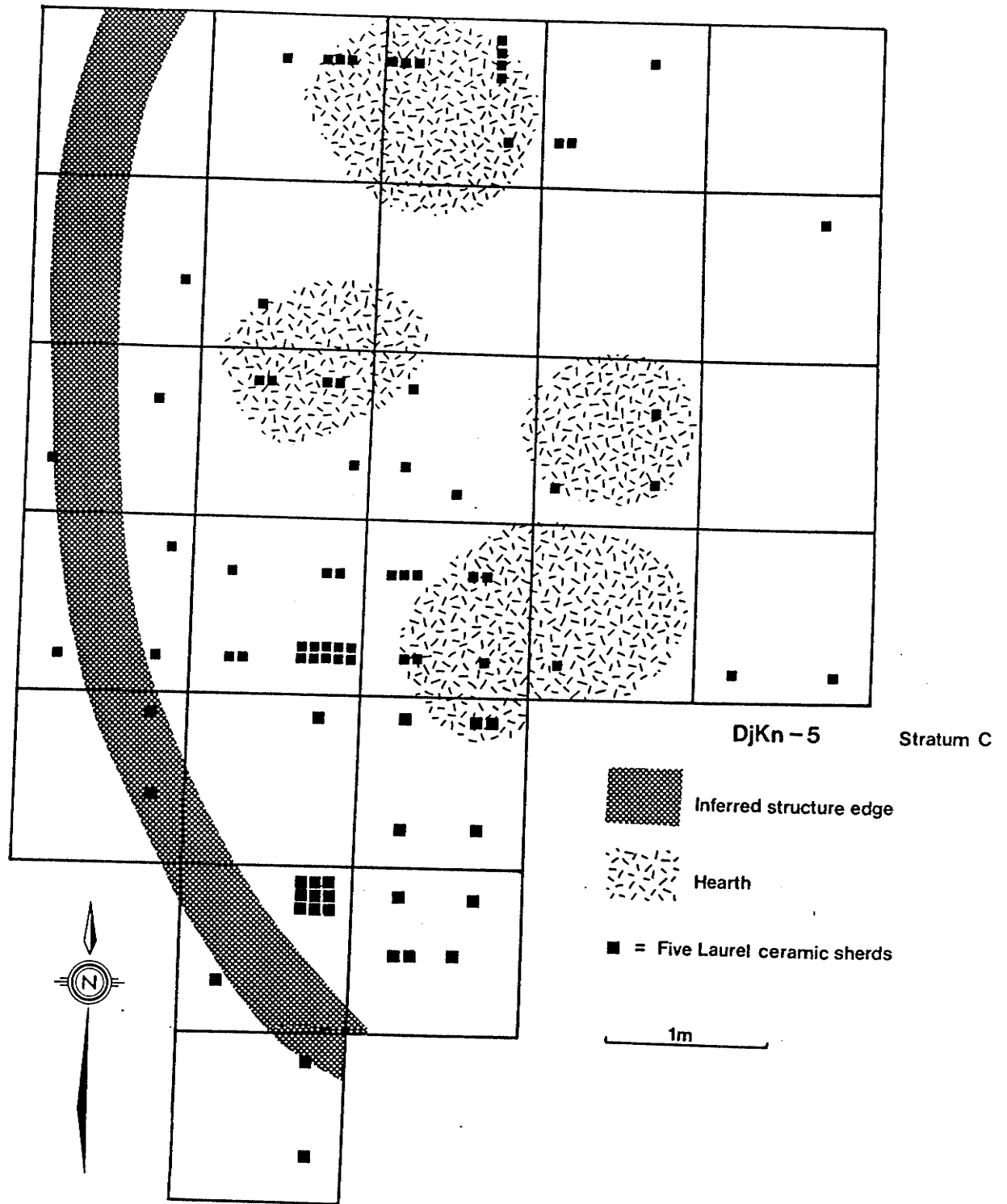


Fig.7 Laurel House Floor (from Reid and Rajnovich, 1985)

deep, and contained much burnt bone, decomposed rock and plain and dentate Laurel pottery in a black organic loam. The other hearths, located across units 21, 32, 36 and 37, all contain fire-cracked rock, Laurel pottery and lithics. It is with some certainty that this feature will be referred to as a Laurel house floor.(Fig.7)

Within these levels, roots and decomposed roots are present, the largest being in units 31, 35 and 36, the centre of the proposed habitation area. As mentioned previously, the infiltration of roots in a wood sample taken for a radiocarbon date more than likely skewed the date, making it seem more recent than should be expected. Despite this root disturbance, artifact patterning is present in several areas. Unit 35, between two hearths and the wall of the structure, held 89 body sherds, eight rim sherds, and various lithics at 12-15 cm. (approximately), while the adjacent unit 40 held only rock at that level. Artifacts were found within and immediately adjacent to the interior curve of the wall at all levels, but at a lower concentration than those found towards the centre of the structure. By contrast there were almost no artifacts found outside the curve of the wall. The ramifications of this artifact patterning to Laurel domestic patterning will be discussed later.

CHAPTER III

THE LITHIC COLLECTION

The analysis of an archaeological sites' lithic collection begins with the classification of the stone tool forms, which in turn are used to determine the function of the tools. Once the function of the tool is established, the activities carried out by its maker may be inferred. Finally, it is from this reconstruction of the behavior of the tool makers that theories on the structure of the social organization of the culture may be partially based. As Hayden stated, referring to the modern goals of lithic analysis, in general, "At present, the emphasis is on behavior as a response to environmental and cultural stimuli..."(Hayden,1979:2)

The analysis of stone tools typically has included the study of fractures, edge angles, sources of edge damage, and the "...mechanical, physical and chemical properties of the lithic materials being used."(ibid:8) Ultimately, however, the study of a particular lithic collection must focus on the manufacture techniques of the culture represented by the tools, because "Any particular culture may be expected to manufacture its chipped stone objects using only a very limited set of the possible combinations of techniques and options"(Collins,1975:17). The lithic collection at the Bundoran site includes non-utilized lithic waste and utilized artifacts from three Middle and Late Woodland cultures, Laurel, Blackduck and Selkirk. The analysis of this collection is intended to show, not only the raw data as to the size, location, number and technique of manufacture of the tools, but also

show how the form of the tools shows evidence of each cultures' subsistence strategy, and their adjustments to the environment they lived in.

Description of the Collection

The excavation of the Bundoran site produced 3,332 stone items. The lithic collection was divided into two classifications, non-utilized lithics and utilized artifacts. Non-utilized lithics were those that showed no use whatsoever, or those that showed no secondary reduction or retouching, in other words, waste lithics. These represented 2590 pieces of the collection. The remaining 742 artifacts were further divided into utilized flakes, those tools showing flaking or scarring without having been touched, and tools that have been deliberately retouched. A total of 238 flakes were identified as having been utilized without further reduction, leaving 504 items that were worked into identifiable tools. These tools themselves were analyzed and classified. The scrapers were analyzed and classified according to Hamiltons' (1981) typology, developed for his work at Wenasaga Rapids. In this typology, end scrapers were subject to 12 measurements of metric attributes, defining 10 identifiable types. The side scrapers were analyzed through 10 metric attributes, defining 7 different types. The only addition to this system is the inclusion of a new scraper class, referred to as "side and end" scrapers. These are scrapers that have been worked on at least three identifiable sides, either unifacially, bifacially, or a combination of the two. Worked stone tools recovered from Bundoran included 361 scrapers, 51 cores or core fragments, 16 knives, 23 awls/drills, 27 projectile points and/or point blanks, nine choppers, five blades, eight hammerstones, one spall, one spoke shave, one pipe plug and one possible ground stone object (see Tables 2,3).

Raw materials. These show a great preference for local rocks. In both utilized and non-utilized lithic collections, local quartz is the most frequently used material, followed by local rhyolites and Lake of the Woods chert. These materials are all available in the form of

Table 2: Utilized Artifacts-Scrapers

%		CHERTS:										JASP. TOTAL
		QUARTZ	RHYOLITES	CHALCEDONY	S. RIVER	H.B.L.	G.R.	L.O.W.	LIMEST.	FELCITE		
39.08	STRAIGHT SIDE	91	14	6	3	5	4	14	2	2	141	
8.05	DOUBLE SIDE	11	5	1	1	4	4	3	1		29	
10.55	CONVEX SIDE	30	3		1		1	2	1		38	
6.95	CONVERGENT SIDE	19	2		1			3			25	
2.79	CONCAVE SIDE	9			1						10	
2.79	IRREGULAR SIDE	5	2	1	1		1				10	
8.05	DISCOID END	22		1	2		2	2			29	
4.45	TRAPEZOIDAL END	11	1	1			1	1			16	
4.45	SQUARE END	8	2		3	1	1	1			16	
1.95	TRIANGULAR END	4	1			1	1				7	
1.13	OVAL/ROUND END	3	1								4	
2.24	STEMMED END	7			1						8	
3.9	SIDE & END	6	2	2	2			2			14	
3.9	OTHERS	4	3	1		2	1	1		1	14	
TOTALS		230 (63.8%)	36 (10%)	13 (3.6%)	15 (4.2%)	13 (3.6%)	16 (4.45%)	30 (8.33%)	4 (1.11%)	3 (.85%)	361 (.3%)	

Table 3: Utilized Artifacts

%		QUARTZ	RHYOLITE	CHALCEDONY	CHERT:		H.B.L.	G.R.	L.O.W.	LIMEST.	SLATE	GRANITE	TOTAL
					S.RIVER								
35.7	CORES	42	5		1		1		2				51
11.2	KNIVES	10	1					1	4				16
16.1	AWLS/DRILLS	17	2	1			2		1				23
	POINTS /												
18.9	BLANKS	2	8	1	1		2	2	11				27
6.3	CHOPPERS	8							1				9
3.5	BLADES	1	2					1			1		5
5.6	HAMMERSTONES											8	8
.7	SPALLS		1										1
.7	SPOKESHAVES	1											1
.7	PIPE PLUG		1										1
.7	"GROUND- STONE OBJECT"		1										1
TOTALS		81 (56.7%)	21 (14.7%)	2 (1.4%)	2 (1.4%)		5 (3.5%)	4 (2.8%)	19 (13.3%)		1 (.7%)	8 (5.6%)	143

Table 4: Raw Material Use-Non-Utilized Lithics

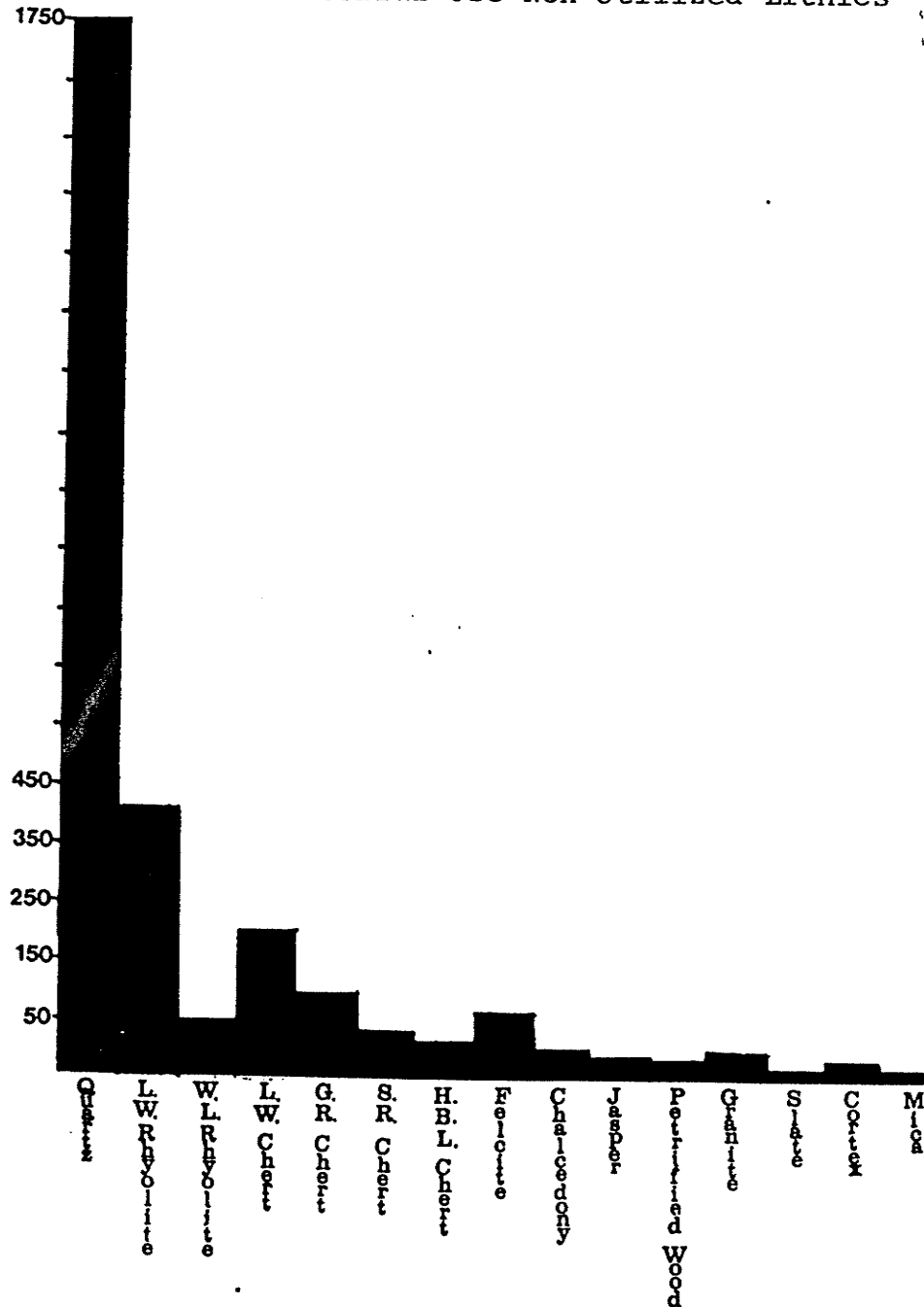
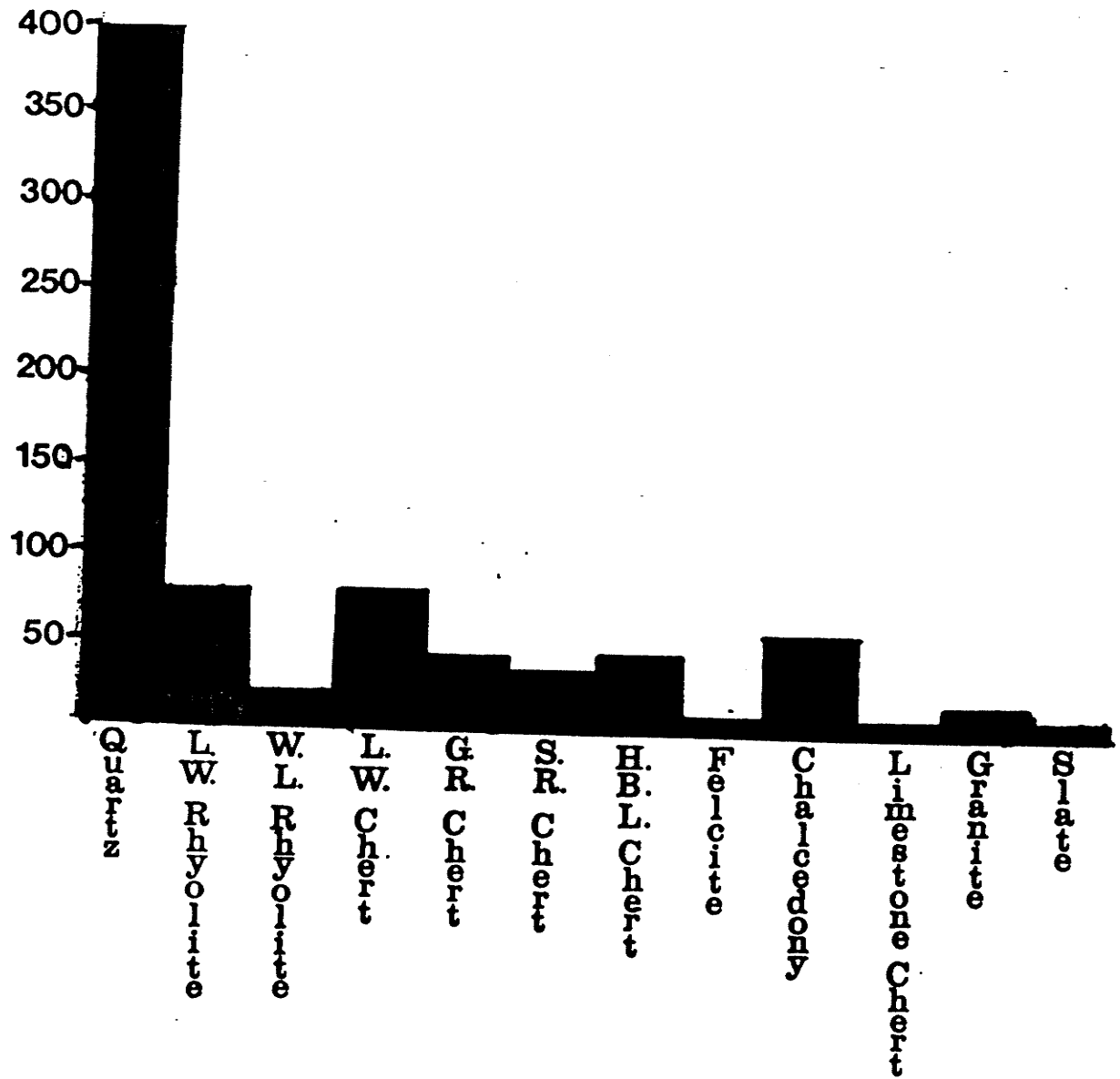


Table 5: Raw Material Use-Utilized Lithics



beach cobbles or outcrops in the Lake of the Woods area. To a lesser extent, Hudsons Bay Lowland chert, found on the Lac Seul Moraine, and possibly along the English River (Rajnovich, 1985:15), and green recrystallized chert (sometimes referred to as West Patricia chert) was used. Green recrystallized chert is found sporadically from north Caribou Lake to the Albany River (Rajnovich, *ibid.*).

Exotic or non-local materials recovered from Bundoran include Swan River chert, found predominantly in Manitoba, and available around Lake Winnipeg and the Winnipeg River, and Knife River flint, or chalcedony, found in North Dakota. Also represented in small amounts is jasper/taconite, granite, slate, and three samples of petrified wood. The type of raw material used for both non-utilized lithics and utilized artifacts is shown in Tables 4 and 5.

The diagnostic lithics, 143 items are listed in Table 3. As with the other lithics, most of the diagnostics are made of quartz (56.7% of the sample) with local rhyolites (14.7%) and Lake of the Woods chert (13.3%) next. The only departure from this trend comes with the projectile points. Of the 27 points recovered from all levels, 11 were Lake of the Woods chert, and eight were local rhyolite, with only two being made of quartz.

Utilized Artifacts

Projectile points. (Plate 6) These were measured in terms of greatest length, width and thickness, in millimetres, and identified as per material used and location of notching, if applicable. All points were bifacially retouched. As might be expected there is some differentiation between cultural strata regarding projectile point types. In general, smaller side notched or triangular points were found in association with Blackduck or Selkirk strata, while longer, corner notched points were found with the Laurel strata.

The corner notched points were on an average 40.41 mm. in length, 19.8 mm. wide and 6.23 mm. thick. The two longer points (see Table 6) have been identified as the type Anderson corner notched, while the other two are of a type commonly associated with

Table 6: Projectile Points

UNIT:	LEVEL MATERIAL	LENGTH	WIDTH	THICK.	DESCRIPTION
8:3	QUARTZ	21.45	12.75	3.75	SIDE NOTCHED
8:3	RHYOLITE	14.15	10.45	3.05	" "
17:4	"	16.85	10.65	3.05	" "
10:3	L.O.W. CHERT	30.50	20.15	5.95	CORNER NOTCHED
12:3	"	26.45	15.70	4.20	TRIANGULAR
12:3	QUARTZ	22.55	14.35	5.35	SIDE NOTCHED
12:4	RHYOLITE	16.00	11.05	2.00	UNFINISHED (?)
21:6	"	26.25	15.35	4.25	SIDE NOTCHED
21:6	"	17.95	11.55	1.25	" "
37:CII	L.O.W. CHERT	30.25	18.05	5.70	STEMMED/LANCEOLATE
38:CII	QUARTZ	59.00	21.95	7.00	CORNER NOTCHED
38:CIII	RHYOLITE	23.15	17.45	4.35	CORNER NOTCHED
36:CIV	G.R. CHERT	49.00	19.65	7.65	" " (ANDERSON)
41:CIV	"	27.30	18.55	8.05	" " (FRACTURED)
44:CIV	RHYOLITE	44.15	25.55	9.35	PROJECTILE POINT BLANK

(all measurements in millimetres)

Laurel sites, Larter Tanged (MacNeish, 1958). The side notched points are, on the average, smaller, with an average length of 19.32 mm., a width of 12.96 mm. and a thickness of 3.41 mm. These have been identified as the type Plains side notched. The small triangular point, identified as Eastern triangular, was 26.45 mm. long, 15.70 mm. wide and 4.20 mm. thick. The implications of the distribution of these lithics between cultural strata will be discussed later.

Scrapers, (Plate 7) Scrapers are tools used in "scraping, scouring and planing functions" (Fladmark, 1978:148) and were by far the most numerous stone artifact recovered. A total of 361 scrapers comprised of 14 identifiable varieties were recovered from all levels of the site (see Table 2). The most common type was the straight side scraper, represented by 141 items, and comprising 39.08% of the scrapers. The next most frequent was the convex side scraper (38 items at 10.55% of the total). The most frequently used material in scraper production was quartz. A total of 230 of the scrapers, or 64% of the sample, were made with local quartz, with local rhyolites coming second, with 8.5% of the sample. The apparent preference for the simple side scraper, not much more than a retouched flake, occurs throughout every level. The only other general trend apparent in the scraper collection comes in the lower levels (C1, C2, etc.) of area C, the Laurel strata. Here there is a greater number of unifacially retouched end scrapers relative to the amount of end scrapers found in other levels of the site. This fact will be discussed in more detail in a later chapter.

Blades/Large Bifaces, (Plate 8) A total of 15 items were identified as being possible blades, a "parallel-sided tool struck from a core and then further knapped to provide a sharper edge" (Joukowsky, 1980:320). All are bifacially retouched, except for item 14 (Table 7) which is unifacially retouched on two sides. The average length of these tools is 41.22 mm., the width is 24.57 mm. and the thickness is 8.55 mm. Fragments of blades, knife preforms, etc., were not included in this sample. Vertical stratigraphic distribution of

Table 7: Blades/Large Bifaces

UNIT:	LEVEL	MATERIAL	LENGTH	WIDTH	THICK.	DESCRIPTION
9:6		QUARTZ	38.95	34.45	14.35	BIFACE
12:3		RHYOLITE	36.55	9.65	8.45	"
12:5		G.R.CHERT	40.25	10.85	6.95	"
12:5		"SLATE"	57.65	21.55	5.65	-
13:4		QUARTZ	32.95	9.00	6.85	-
14:4		G.R. CHERT	30.45	12.95	4.00	BIFACE
18:3		QUARTZ	20.65	13.75	3.95	LAUREL (?)
21:5		L.O.W. CHERT	36.75	38.35	16.85	BIFACE
26:7		QUARTZ	24.65	16.15	4.85	BIFACE
27:7		QUARTZ	40.15	23.85	8.65	BIFACE
30:AIII		L.O.W. CHERT	72.00	43.00	17.25	BIFACE
30:CIII		"	38.05	16.15	5.00	BIFACE-LAUREL
35:AIII		QUARTZ	23.35	29.25	10.65	BIFACE
5:5		QUARTZ	62.65	48.40	11.05	UNIFACE, TWO SIDED
25:5		L.O.W. CHERT	63.30	41.30	8.55	BIFACE

(all measurements in millimetres)

these items shows three examples of Laurel knives, with the bulk of the bifaces and knives occurring in the Blackduck/Selkirk strata.

Awls/Gravers/Drills. Awls are small pointed hand tools used for piercing leather and wood, as are drills, which are also used for soft stone. Gravers are pointed or chisel-like tools used for incising or engraving. Twenty-two piercing/incising instruments were recovered from all strata across the site, with 16 of them being made of quartz (Table 8). Different from the large bifaces, the awls and gravers were distributed, for the most part, fairly evenly between the Blackduck and Selkirk stratas, and the Laurel stratas. Average length for all tool was 23.67 mm., average width was 18.47 mm. and average thickness was 5.42 mm. Twelve items were bifacially retouched, with ten being unifaces. One of the awls, item 20, was heat treated.

Choppers/Chopping Tools. A chopper is a cobble that has been unifacially flaked to get a cutting edge. A chopping tool, on the other hand, is a bifacially flaked core tool. Five choppers and four chopping tools were recovered from the site (Table 9). Four of the choppers were made of quartz, with one made of Lake of the Woods chert. The choppers were an average 61.78 mm. long, 54.14 mm. wide and 22.57 mm. thick. Three of the choppers came from the Laurel house strata. The chopping tools were an average 44.51 mm. long, 40.87 mm. wide and 19.65 mm. thick. All of the chopping tools were recovered from the Blackduck/Selkirk strata

Cores. The production of cores is the primary stage of manufacture for all stone tools, and it is from cores that much of the lithic waste is scattered. A total of 52 cores or core fragments were recovered from the site, 22 from the Blackduck/Selkirk strata, 30 from the Laurel strata. Seven of the cores, all recovered from the Laurel strata, showed bipolar percussion markings. Bipolar cores are the result of a technique of manufacture known as bipolar percussion, in which the raw material is placed on a rock surface, known as an "anvil stone" and struck with a hammerstone from above. The result is a core that displays percussion scars on both ends.

Table 8: Awls/Gravers/Drills

UNIT:	LEVEL	MATERIAL	LENGTH	WIDTH	THICK.	DESCRIPTION
18:4		RHYOLITE	18.95	13.00	4.00	AWL
18:5		QUARTZ	45.95	16.85	8.35	AWL/PUNCH-BIFACE
19:4		RHYOLITE	40.35	24.00	4.75	DRILL
19:7		QUARTZ	21.25	9.25	12.00	DRILL
22:5		QUARTZ	16.45	14.00	2.55	AWL-BIFACE
22:6		H.B.L. CHERT	20.65	22.45	4.55	AWL-BIFACE, FRACTURED
25:6		QUARTZ	22.15	17.95	4.15	AWL-UNIFACE, TWO SIDES
25:9		"	18.35	14.85	13.65	AWL-BIFACE
"		"	23.65	11.75	3.25	" "
26:4		"	22.45	24.85	5.45	SCRAPER/AWL-UNIFACE
"		"	22.00	17.75	5.00	" " "
27:4		"	29.00	14.75	6.00	AWL-BIFACE
27:5		"	31.75	15.75	5.55	POSSIBLE AWL-UNIFACE
27:7		"	21.25	22.75	6.35	AWL-BIFACE
"		"	18.75	10.25	3.85	" "
31:CII		L.O.W. CHERT	17.15	13.45	4.65	" "
35:AIII		QUARTZ	19.85	14.75	4.75	AWL/BURIN-BIFACE
"		"	20.45	8.00	5.15	" " "
36:CII		"	25.00	19.00	6.00	AWL-UNIFACE
36:CIV		H.B.L. CHERT	23.00	12.35	4.85	AWL-UNIFACE, HEAT TREATED
44:CI		CHALCEDONY	21.95	14.65	1.85	AWL-BIFACE
44:CII		QUARTZ	20.40	9.65	2.65	AWL-UNIFACE

(All measurements in millimetres)

Table 9: Choppers/Chopping Tools

UNIT: LEVEL	MATERIAL	LENGTH	WIDTH	THICK.	DESCRIPTION
12:4	QUARTZ	48.15	39.00	16.95	BIFACE
18:3	"	35.35	49.00	18.95	BIFACE
18:9	"	44.55	43.85	22.75	BIFACE
22:5	"	67.45	58.45	23.85	UNIFACE
27:7	"	62.15	47.75	24.45	UNIFACE
32:CII	"	62.25	51.45	20.95	UNIFACE
32:CIII	"	50.00	31.65	19.95	BIFACE
41:CII	L.O.W. CHERT	66.70	66.10	20.00	UNIFACE
44:CIV	QUARTZ	50.35	46.95	23.60	UNIFACE

(all measurements in millimetres)

The cores recovered from the Blackduck/Selkirk strata were an average 39.41 mm. long, 32.22 mm. wide and 20.44 mm. thick. The cores recovered from the Laurel strata were an average 40.93 mm. long, 31.14 mm. wide and 21.36 mm. thick. There appears to be little difference between cultural strata regarding core size.

Hammerstones. These are rounded, unmodified cobbles used as a hammer. They are not hafted to hold a shaft. All of the hammerstones recovered at Bundoran were granite, and two of the nine items were from a definite Laurel strata. The average length of the hammerstones was 61.11mm., the average width was 49.67 mm., and the average thickness was 37.03 mm. Three of the items, numbers three, five and six, were burned, and number five had an end chipped off (Table 10). All average tool sizes are listed on Table 11.

Utilized Flakes. These comprised 238 of the 742 utilized artifacts. Of these, 80 (34%) were quartz, 44 (18.5%) were local rhyolite, 31 (12.5%) were Lake of the Woods chert, and 18 (7%) were green recrystallized chert. The other utilized flakes were made up of 19 chalcedony (7.5%), 17 Swan River chert (7%), 24 Hudsons Bay Lowland chert (10%), four felsite (4%) and one Limestone chert (.4%), (Table 12). Material use for utilized artifacts is similar to that for non-utilized stone, with a slightly greater occurrence of non-local materials. This might be due to the fact that the difficulty in acquiring non-local materials meant that it was used sparingly, producing little waste relative to the amount of stone used.

Quartz was used most frequently, comprising 53.78% of the total. Local rhyolites came next with a combined 13.22% of the used materials. Lake of the Woods chert (10.79%) and green recrystallized chert (5%) show a slightly higher use in terms of utilizing stone, as well as do Swan River chert (4.45%), Hudsons Bay Lowland chert (5.53%) and chalcedony (4.05%). In fact, the final three "exotic" materials are represented in terms of utilized lithics 4.5 times more, 3.5 times more and 8.0 times more than in the non-utilized collection, respectively.

Table 10: Hammerstones

UNIT: LEVEL	MATERIAL	LENGTH	WIDTH	THICK.	DESCRIPTION
14:6	GRANITE	52.55	41.75	27.85	
16:3	"	54.65	37.85	28.45	
"	"	60.00	59.25	46.15	BURNED
"	"	60.85	54.00	26.85	
"	"	49.65	48.35	33.45	BURNED *
17:6	"	40.25	31.45	27.75	COBBLE, BURNED
"	"	51.25	35.00	33.75	COBBLE
49:CI	"	70.75	66.40	56.65	
49:CII	"	119.10	73.00	52.40	

(all measurements in millimetres)

* end chipped off

Table 11: Average Tool Sizes

<u>PROJECTILE POINTS</u>			
<u>SHAPE</u>	<u>AVERAGE LENGTH</u>	<u>AVERAGE WIDTH</u>	<u>AVERAGE THICKNESS</u>
SIDE NOTCH	19.32mm	12.96mm	3.41mm
CORNER NOTCH	40.41mm	19.8mm	6.23mm
TRIANGULAR	26.45mm	15.70mm	4.20mm
<u>KNIVES/BLADES</u>			
	41.22 mm	24.57mm	8.85mm
<u>AWL/GRAVER/DRILLS</u>			
	23.67mm	18.47mm	5.42mm
<u>CHOPPERS</u>			
	54.10mm	48.24mm	21.27mm
<u>HAMMERSTONES</u>			
	62.11mm	49.67mm	37.03mm

Table 12: Utilized Flakes

<u>MATERIAL</u>	<u>NUMBER</u>	<u>%</u>
QUARTZ	80	34
RHYOLITE	44	18.5
CHALCEDONY	19	7.5
SWAN RIVER CHERT	17	7
H.B.L. CHERT	24	10
L.O.W. CHERT	31	12.5
G.R. CHERT	18	7
LIMESTONE CHERT	1	.5
FELCITE	4	3
TOTAL	238	100 %

Non-Utilized Lithics

As mentioned above, non-utilized lithics comprise any unused flakes or stone recovered from the site. For the purpose of analysis, these items were divided according to raw material and size (greatest length). As illustrated in Table 13, quartz comprises the greatest amount of lithic debris (68% of the total), with the next largest being local rhyolite and chert (12.5% and 8%, respectively). It is also apparent that the most prevalent sized flakes are those between 10-12 mm. long (53.45% of the sample), with flakes 20-30 mm. long coming next (25.69% of the sample). The fact that nearly 80% of the debitage and waste flakes fall within the 10-30 mm. range suggest that an ideal length of waste flake might have been removed during tool production. The lack of extremely small flakes (0-10 mm., or 10.99% of the sample) may partially be due to difficulties in recovering smaller items, but may also show a lack of fine flaking on behalf of the tool makers. Culturally, this may indicate a lack of concern for utilitarian tools, or that tools, when made, were made relatively quickly, and with a specific purpose in mind, perhaps the replacement of a broken tool, or retouching before skinning or butchering.

Other Lithics

One large rhyolite spall was recovered from unit 35, level C4, deep within the Laurel stratum. It measured 63.55 mm. long, 91.15 mm. wide and 55.95 mm. thick. A single quartz spokeshave was recovered from unit 31, level A3. This was the bottom of the Blackduck/Selkirk stratum in the area. It was unifacially retouched, and was 20.65 mm. long, 16.25 mm. wide and 6.25 mm. thick. A possible pipe plug (Plate 9) was discovered in unit 35, level C1, the highest Laurel level containing the Laurel house structure. The rhyolite object was 57.35 mm. long, 20.45 mm. wide and 16.75 mm. thick. One object

Table 13: Non-Utilized Stone

MATERIAL	0-5	5-10	10-20	20-30	30-40	40*	TOTAL	%
QUARTZ	13	214	960	420	113	42	1762	68
L.O.W. RHYOLITE	0	27	176	84	23	9	319	12.5
W.L. RHYOLITE	0	1	26	21	4	3	55	3
L.O.W. CHERT	1	14	105	66	14	4	204	8
G.R.CHERT	0	3	42	33	10	11	99	4
FELCITE	0	0	22	22	6	6	56	3
CHALCEDONY	0	4	6	1	2	0	13	.5
SWAN RIVER CHERT	0	3	12	3	4	1	23	1
H.B.L. CHERT	0	2	20	6	0	1	29	1.5
JASPER/ TACONITE	0	0	2	1	0	0	3	-
GRANITE	0	2	8	2	1	0	13	.5
SLATE	0	0	1	2	0	0	3	-
CORTEX	0	0	1	3	0	0	4	-
"OBSIDIAN"	0	0	1	0	0	0	1	-
PETRIFIED WOOD	0	0	0	0	0	2	2	-
HEAT-CRACKED ROCK	0	0	0	0	0	1	1	-
"CHALKY" SUBSTANCE	0	0	1	0	0	0	1	-
"PEBBLE"	0	0	0	1	0	0	1	-
MICA	0	0	1	0	0	0	1	-
TOTAL -	14	270	1384	665	177	80	2590	
% -	.545	10.45	53.45	25.69	6.84	3	100.045	

40* - greater than 40mm in length

- less than 0.05%

that is seemingly an anomaly for this area is a possible ground stone object (Plate 10), recovered from unit 60, level C2. It was 210 mm. long, 80.60 mm. wide and 20.50 mm. thick. Its purpose is unknown.

Other Materials

Both red and yellow ochre were found across this site, totaling 363 grams, with 48.9 grams of that being yellow ochre. One concentration appeared to be a red/yellow combination (unit 41, level C3, 37 grams). This sample, recovered from the Laurel stratum, may be an example of yellow ochre which becomes a red pigment when heated, as described by Rajnovich (1985:35). The largest concentration of ochre were recovered from unit 40, level A3 (76.2 grams), unit 33, level C1 (40.8 grams), and unit 41, level C3 (the red/yellow ochre, 37 grams). It is interesting to note that these largest concentrations were recovered from in or near the Laurel house structure strata.

Lithic Distribution

As mentioned previously, the distribution of lithic remains stratigraphically and spatially over the site is relatively constant, except in the case of projectile points, in which types seem to be culture specific, and end scrapers, which are more predominant among Laurel strata. The distribution of the projectile points generally follows the stylistic trends noted in the section on projectile points in this chapter. Of the 94 end scrapers recovered from Bundoran ("side and end" not included), 58.5% were found in the Laurel strata, area C. The remaining 41.5% of end scrapers were recovered from above level C in area C, and areas A and B. Of the end scrapers in the Laurel strata, 80.7% were unifacially retouched, with 19.3% bifacially retouched. All of the "types" of end scrapers described by Hamilton are represented in the Laurel strata, with no single type dominant.

There are roughly 3 1/2 times more non-utilized stones than utilized lithic artifacts on this site. Between the different areas of this site, the proportion of non-utilized to utilized lithics recovered from a specific unit remains generally a 2-1 to 3-1 ratio. Once into levels C1 to C3 in area C, however, this relationship jumps to between 5-1 to 6-1. For example, in units 12-19, level four produced a ratio of 113 non-utilized lithics to 45 utilized, 4.5 times higher. Level C1, in units 30-61, however, produced 403 non-utilized lithics to 71 utilized lithics, 5.6 times greater. This, of course is a reflection of the activity within the Laurel house structure. Especially prevalent in the block of units 30-32 and 35-37, these high concentrations of lithics indicate either increased use of an area for a chipping station, or an increased period of time that an area was used for chipping. Within the confines of a house structure, the latter would seem to be the most likely. The fact that these units contain or border upon three hearth features (Fig.7) gives an indication of the social and industrial layout of the interior of a Laurel lodge. The use of lithic scatter analysis to interpret the activity areas in a site has been attempted by some archaeologists. Hamilton hypothetically identified chipping stations as areas that contain "...relatively high concentrations of lithic materials that may or may not be associated with other artifact categories"(Hamilton, 1981:136). Magne (1983) used replication and simulation experiments to relate tool production processes to lithic remains, and demonstrated that an in depth analysis of lithic scatter patterns can be used to define the functions for the tools created. His methodology, however, was too complex for the purposes of this paper. The stages of lithic reduction that are indicated by the concentrations and types of waste stone, and types of implements at a site, imply something of the goals and methods of the tool maker. Swanson noted that "Lithic analysis should make it possible to discriminate between some artifact populations which are now thought to be essentially the same, yet permit the synthesis of some populations identified on stylistic grounds alone"(Swanson, 1975:2). The lithic materials at the Bundoran site suggest that Hamilton's (1981) interpretation of a chipping station was

found in the Laurel component, because of the presence of large amounts of waste stone in relation to utilized tools in units 30-32 and 35 to 37.

CHAPTER IV

THE CERAMIC COLLECTION

Introduction

The study of ceramics begins with the study and classification of the vessel form, which lead ultimately to inferences as to its function. The types and textures of clays, tempers and pigments (when used), as well as vessel construction and firing techniques are all taken into account in the attempt to reconstruct the construction method and vessel functions indicated by the ceramic collection of an archaeological site. Added to the technical/functional analysis of ceramics is the decorative analysis. The decorative attributes present on ceramic remains are useful to the archaeologist in several ways. First, the decorations on a ceramic vessel might indicate something of the cultural standards of its' makers. As noted in general terms by Shepard, "Ceramic art affords insights of the life and psychology of a people..." (Shepard, 1968:256) As well as the artistic preferences of a culture, ceramic decorative elements can also indicate possible interactions between peoples and cultures. A mixture of regional ceramic decorations on a single vessel might be indicative of some kind of culture contact, though it must be recognized that independent invention and the potters' personal preferences are an important factor in the final ceramic product.

For this research, perhaps one of the most important aspects of ceramic analysis deals with the use of pottery for relative dating. "In the absence of recorded dates or material that will yield absolute dates, (the archaeologist) turns to the study of changes in the form of artifacts for the record they bear of the passage of time." (Shepard, 1968:341) The use of changes in pottery decoration over time to set up a chronological sequence has been used often for dating Middle and Late Woodland sites, and is also used as the primary method for dating the Bundoran site. The analysis of the ceramic collection from DjKn-5 intends to illustrate the technical, functional and stylistic attributes of the Laurel, Blackduck and Selkirk pottery recovered from that site.

The Collection

The excavations of the site produced a total of 3,911 pottery sherds, comprised of 3,471 body sherds, 276 neck sherds and 163 rim sherds. The rim sherds represented 69 different vessels. All body and neck sherds were analyzed in terms of decorated vs. plain, non-decorated attributes, sherd thickness, type of temper and temper size. These measurements were adjusted slightly for neck sherds, where differing thicknesses on a single sherds were recorded as a range of thicknesses (eg. 2-4 mm). All decorative analysis was done in terms of combinations of individual decorative elements.

The decorative attributes present in Bundoran pottery are as follows: Punctates are deep impressions in the rim or neck area of a vessel produced by a dowel-like tool with a "push-pull" motion. Punctates can be round, square or oval, and almost never perforate the vessel wall completely. Often associated with punctates are bosses. These are small, raised clay mounds, usually on the interior of the vessel wall, often opposite a punctate. Cord-wrapped stick (CWS) impressions, sometimes called cord-wrapped dowel impressions, are linear impressions produced by a tool that has had some sort of cord or rope wrapped around it. Fabric impressions are markings caused by the imprint of a textile on the wet clay. Similar to this is the use of a cord-wrapped paddle, with which the surface of a

vessel was given a textured surface by "paddling" the wet clay. Stamped impressions are shallow marks on the surface of a vessel made in various patterns, shapes and sizes. Finally, incised lines are markings that are scratched or dragged across the vessel surface with a pointed or edged incising tool.

The combination of decorative elements on individual sherds was used to identify the cultural origin of that sherd, as certain combinations of elements were found to have been produced, by each culture group. In general, Laurel ceramics displayed plain, undecorated bodies with decorated rims and often plain lips. The most common Laurel decorations over time included "pseudo-scallop shell" stamp, dentate stamp, incised lines, or various combinations of punctates and associated interior bosses. Blackduck ceramics commonly showed variations on horizontal and vertical CWS impressions on the rim and lip, sometimes with punctates and bosses, and fabric paddled bodies. Vessel lips were also often decorated. Selkirk ceramics were most often fabric impressed on the body, rim and sometimes lip of the vessel. Punctates and bosses, and sometimes stamps, were also incorporated into the design. The identification of the cultural origin of individual sherds was used to identify cultural strata at Bundoran. Levels C1 and below at area C has been referred to as the "Laurel strata" partially due to the concentrations of Laurel pottery recovered from there, as were the Blackduck and Selkirk strata identified through the presence of Blackduck and Selkirk pottery.

Rim Sherds

All rim sherds were analyzed and illustrated using a rim sherd analysis sheet. Based on the number and combination of decorative elements displayed by the sherds, they were classified according to cultural association, Laurel, Blackduck and Selkirk.

Fifty rim sherds were determined to be Laurel (Plates 11,12). These are illustrated in the master ceramic chart (Fig.8). The master ceramics charts are read as follows. The three boxes in each section running down the left and right edges of the chart illustrate the

Table 14: Rim Sherds

RIM SHERDS-LAUREL

DESCRIPTION	NUMBER	%
PLAIN	16	32
DENTATE STAMP	16	32
PLAIN w/PUNCTATES & BOSSES	11	22
INCISED	3	6
LINEAR STAMP	3	6
PSEUDO-SCALLOP SHELL	1	2
TOTAL	50	100

RIM SHERDS-BLACKDUCK

DESCRIPTION	NUMBER	%
WASKISH VERTICAL CORD & PUNCTATE	17	37.8
OSUFSEN CORD & PUNCTATE	20	44.5
SCHOCKER CORD IMPRESSED	5	11.2
OTHER	3	6.7
TOTAL	45	100.2

RIM SHERDS-SELKIRK

DESCRIPTION	NUMBER	%
ALEXANDER FABRIC IMPRESSED	36	53.8
SPRUCE POINT *	8	12
STURGEON FALLS FABRIC IMPRESSED	2	3
CLEARWATER LAKE PUNCTATE	1	1.5
SANDY LAKE	1	1.5
STURGEON PUNCTATE	2	3
PLAIN	1	1.5
OTHER	16	24
TOTAL	67	100.3

* after RAJNOVITCH, 1982

exterior, lip and interior decoration on a group of rim sherds. The illustrations along the top of the chart are rim profiles, with the exterior of the rim facing to the left. Each type of profile is given a letter designation, and these are used for all ceramic charts. The columns beneath the rim profiles show the number of each type of sherd that has each particular type of profile. The sherd types in the left hand side of the chart are numbered in the horizontal boxes that end with an elongated box intruding on the right side sherd type illustration. the opposite is true for the right side sherd type illustration. This makes the first, third, fifth, etc. horizontal rows pertaining to the left side illustrations, and the second, fourth, sixth, etc. horizontal rows pertaining to the right side illustrations.

The two most common decorative elements present were dentate stamp (32% of the sample) and plain (32% of the sample). The next most frequent decorative elements were plain with punctate and associated interior boss (22% of the sample) incised lines, linear stamp and pseudo-scallop shell, the last being represented by only one sherd (Table 14). The amount of dentate stamp in relation to pseudo-scallop shell is to be expected in later Laurel sites, as is a large amount of plain and punctated vessels. Only complete sherds were used in the analysis, and those sherds partially destroyed or exfoliated were eliminated from the sample.

Blackduck vessels (Plate 13) were represented by 45 sherds from 32 different vessels. Like the Laurel vessels, the Blackduck vessels were analyzed in terms of decorative elements. The vessels themselves, illustrated in master ceramic charts, (Fig. 9,10), represent four broad categories, as first described by MacNeish (1958). The most common combination of elements is Ofusen cord and punctate (44.5% of the sample), followed by Waskish vertical cord and punctate (37.8% of the sample) (Table 14). Vessels that do not fit into these categories include a motif of three horizontal CWS impressions on the exterior of the sherd, a smooth lip and vertical CWS impression on the interior of the sherd. Another unrelated motif displays two horizontal CWS impressions bracketing oblique pairs of punctates on the exterior, with punctates overlapping the exterior of the lip, and interior

paired bosses. The final unidentified sherd displays vertical CWS impressions over oblong punctates and a single horizontal CWS impression on the exterior, incised lines on the exterior half of the lip, and associated bosses on the interior.

The Selkirk sherds (Plate 14), shown in the master ceramic chart (Fig.11) total 67 sherds representing 38 vessels. As with the Blackduck sherds, these sherds have been divided into previously defined decorative groupings (Table 14). The most frequent motif was fabric impressions on the exterior rim and lip, with a plain interior. This represented 53.8% of the sample. The next most frequent motif was a fabric impressed exterior, with plain lip and interior (12%), a Spruce Point variant (Rajnovich, 1985). The sherds that do not fit into the listed categories comprise 24% of the sample. These include sherds with exterior and interior stamps with CWS impressions on the lip, fabric exterior with stamps on the lip and a plain interior, and stamp and punctate with CWS impressions on the lip and a plain interior. The use of vessel types to date the site components will take place in chapter V.

Neck Sherds

Neck sherds were divided into a similar fashion to body sherds, that is, plain with decorated elements, and fabric impressed/paddled sherds with decorative elements (Table 15). A total of 118 neck sherds were plain, and of these, 50 or 42.4% showed dentate stamp. All dentate stamp elements account for almost half of the neck sherds, with linear stamp (21.2%) coming next. Much like on the body sherds, the pseudo-scallop shell element accounts for very few items, only .9% of the sample. The plain neck sherds account for only 6% of the total number of neck sherds.

Fabric impressed/paddled neck sherds show a greater range of decoration. Those with only fabric impressions were still the most frequent with 42.8% of the sample, with horizontal CWS next at 39.4% of the sample. Generally speaking, Selkirk sherds display fabric impressions, bosses and punctates, with a lack of CWS impressions compared to

Table 15: Neck Sherds

<u>NECK SHERDS-PLAIN-DECORATIVE ELEMENTS</u>		
DESCRIPTION	NUMBER	%
PLAIN	7	6
w/LINEAR STAMP	25	21.2
w/LINEAR STAMP, PUNCTATE & BOSS	1	.9
DENTATE STAMP	50	42.4
" " w/PUNCTATE & BOSS	8	6.8
PUNCTATE	6	5.1
PUNCTATE & BOSS	3	2.6
CWS	3	2.6
CWS-CHEVRON	6	5.1
DRAGGED STAMP	2	1.7
INCISED LINES	6	5.1
PSEUDO-SCALLOP SHELL	1	.9
TOTAL	118	100.4
<u>NECK SHERDS-FABRIC IMPRESS-DECORATIVE ELEMENTS</u>		
DESCRIPTION	NUMBER	%
FABRIC IMPRESS	38	42.8
w/HORIZONTAL CWS	35	39.4
CWS & PUNCTATES	7	7.9
w/PUNCTATES	4	4.5
w/PUNCTATES & BOSSES	1	1.2
LINEAR STAMP	3	3.4
LINEAR STAMP & HORIZONTAL CWS	1	1.2
TOTAL	89	100.4

Blackduck. Using these guidelines, the fabric impressed neck sherds are represented by 48.5% Selkirk ware and 51.9% Blackduck pottery, a division that seems likely based upon the apparently equal occurrence of Blackduck and Selkirk ceramics at the site.

Body Sherds

For the purposes of this analysis, body sherds were initially divided into "plain" and "fabric impressed" categories. As plain body sherds were exclusively produced by Laurel potters, it is a division that is safe to use as a cultural indicator. Based on this division there were 963 plain body sherds recovered, and 2508 fabric impressed/paddled sherds. Certain decorative elements were found on the plain body sherds, and these are shown in table 16. As shown, 83.7% of plain body sherds had no decoration at all. The most frequent body decoration was dentate stamp (3.65% of the sample) followed by linear stamp (2.81%) and incising (1.67%). If all dentate elements are combined, dentate stamp sherds account for almost 5% of the sample. This, combined with a lack of pseudo-scallop shell motifs (only .1% of body sherds), indicates a probable late date for Laurel on this site.

The fabric impressed/paddled body sherds also show some decoration, but very little compared to the plain sherds. A full 98.85% of the fabric impressed sherds show no other decoration. The first most frequent decoration visible is horizontal cord-wrapped stick (CWS), with .36% of the sample. The rest of the decorative elements present only a total of .48% of the sample. As can be expected with Blackduck and Selkirk ware, decoration is limited to the rim and neck area.

Vessel Construction

The predominant method of Laurel vessel construction used at Bundoran was the "coiling" method. This is evident, as the coils are still visible in the breaks of some sherds.

"Coiling is a method of forming pottery by building up the walls

Table 16: Plain Body Sherds

DESCRIPTION	NUMBER	%
PLAIN	806	83.7
w/TRAILED/DRAINED STAMP	10	1
w/CWS-HORIZONTAL	12	1.25
w/CWS-HORIZONTAL/OBLIQUE	2	.2
w/CWS-CHEVRON	1	.1
w/CWS-OTHER	7	.7
INCISING	16	1.67
OBLIQUE INCISING w/CWS	1	.1
DENTATE STAMP	35	3.65
DENTATE-CHEVRON	3	.3
DENTATE-CHEVRON w/HORIZONTAL DENTATE	6	.6
DENTATE-HORIZONTAL	1	.1
" " w/OBLIQUE DENTATE	1	.1
" " w/CROSSED DENTATE	1	.1
" " -CROSSED	1	.1
LINEAR STAMP	27	2.81
LINEAR STAMP-HORIZONTAL	2	.2
PSEUDO-SCALLOP SHELL	1	.1
TOTAL	963	100.0

Table 17: Fabric Impressed Body Sherds

DESCRIPTION	NUMBER	%
FABRIC IMPRESS	2479	98.85
w/CWS-HORIZONTAL	9	.36
w/CWS OBLIQUE & HORIZONTAL		
INCISED	3	.12
CWS	1	.04
DRAGGED STAMP	3	.12
EXFOLIATED	8	.32
INTERIOR INCISED	1	.04
TRIANGULAR STAMP	2	.08
PUNCTATE THROUGH SHERD	2	.08
TOTAL	2508	100.01

with ropelike coils of clay and then smoothing over the joints, generally with an adhesion strip, until the spaces between the coils are solidly filled and the surface is uniformly smooth."(Joukowsky,1980:363)

The vessels themselves were generally thick walled and conical in shape, with straight or slightly curved rims. Firing of the vessels was accomplished by digging a shallow pit and filling it with sticks and branches. After setting fire to the wood, and feeding the fire to the point that hot embers were produced, the vessels were placed directly into the fire and left until hard.

The Blackduck and Selkirk vessels were constructed through the "paddle and anvil" method.

"In the paddle and anvil method, the potter used a short, wide-bladed paddle to for the exterior surface of the vessel while an anvil (generally a smoothed stone or piece of wood wrapped in cloth) was held on the interior with the other hand."(Joukowsky,1980:363)

The Late Woodland vessels were generally globular in shape with flaring rims. Firing of the Blackduck and Selkirk vessels was probably done in a similar way to that described for the Laurel vessels.

Temper

Temper size and consistency was recorded in an effort to determine if there were any cultural preferences shown on behalf of the potters for a specific material or mixture. Temper size was measured as either fine (flakes or powder), medium (nodules up to 1mm in diameter) and coarse (nodules over 1mm in diameter). Temper size was also analyzed in terms of decorative elements.

The temper found in the body sherds is shown in Table 18. The most popular temper materials for fabric impressed body sherds were fine grit (55% of the sample) and medium

Table 18: Temper-Body Sherds

DESCRIPTION	MATERIAL	SIZE	%
FABRIC IMPRESS	QUARTZ	FINE	.5
" "	"	MEDIUM	40.5
" "	"	COARSE	1.5
" "	GRANITE	MEDIUM	2.5
" "	"	COARSE	.5
" "	GRIT	FINE	55
" "	"	MEDIUM	.5
PLAIN	QUARTZ	FINE	1
"	"	MEDIUM	45.5
"	"	COARSE	3.5
"	GRANITE	MEDIUM	16.5
"	"	COARSE	3.5
"	GRIT	FINE	25.5
"	"	MEDIUM	1

Table 19: Temper-Neck Sherds

DESCRIPTION	MATERIAL	SIZE	%
FABRIC IMPRESS	QUARTZ	MEDIUM	36
" "	"	COARSE	2
" "	GRANITE	FINE	2
" "	"	MEDIUM	17
" "	"	COARSE	3
" "	GRIT	FINE	2
" "	"	MEDIUM	17
" "	"	COARSE	3
PLAIN	QUARTZ	MEDIUM	37.5
"	"	COARSE	3
"	GRANITE	MEDIUM	29.5
"	"	COARSE	1
"	GRIT	FINE	29

quartz (40.5% of the sample). This compares with 25.5% fine grit and 45.5% medium quartz for plain body sherds. The popularity of quartz is quite understandable, as quartz is a plentiful local material, and used for a great deal of lithic manufacture (see chapter 3). The greater preference by Blackduck and Selkirk potters for fine grit, over twice as much for Laurel potters, may be due to the fact that, on average, Laurel ceramic vessels are thick walled and coarse, while Blackduck and Selkirk vessels are thin walled and of a finer texture.

Temper size for neck sherds does not follow the pattern set by temper in the body sherds (Table 19). Medium quartz remains the preferred temper used, but is found in only 36% of the fabric impressed sherds, and 37.5% of plain sherds. The greatest difference is in the use of fine grit as a temper in the fabric impressed sherds. Only 2% of the sherds use it, while 29% of the plain sherds use fine grit. Medium sized temper is used for 70% of all fabric impressed neck sherds, and 67% of plain neck sherds.

The greatest difference between temper in body and neck sherds is apparent in the lack of fine materials used in fabric impressed neck sherds. The reason for this is not definitely known, however, the difference may be the result of increased decoration on the necks of Blackduck and Selkirk vessels. Needing to support a greater amount of impressed and incised decoration on a thinner vessel wall may require a coarser temper to support the neck than the body would. If this is true, it would imply that two batches of clay were prepared for vessel construction. Since this has not been noted before in Woodland ceramics, the veracity of this statement must be tested further.

Burn Marks

Several body sherds displayed burn marks on either one or both sides (Table 20). Exterior burning may be the result of initial firing, or of scorching inside the vessel during preparation. Those sherds with both exterior and interior burning are possibly the result of

Table 20: Burn Marks

DESCRIPTION	LOCATION	NUMBER
FABRIC IMPRESS	INTERIOR	11
"	EXTERIOR	8
"	EDGES	1
"	BOTH SIDES	47
PLAIN	INTERIOR	2
"	EXTERIOR	8
"	BOTH SIDES	6
TOTAL		83

a combination of the first two factors, or evidence of secondary burning after the destruction of the vessel, in a hearth, or accidentally burned at a later date during a different groups occupation of the site, such as is mentioned by Arthurs (1986:105). The small number of burned vessels in relation to the number of sherds is probably due to the fact that only a few vessels were used for the actual cooking. At Long Sault, only 20% of Laurel vessels were used for cooking.

The vessels at Bundoran suggest that, while few vessels were definitely used for cooking by any cultural group, the Blackduck and Selkirk groups might have utilized their vessels for cooking more than the Laurel group did. Of the burned sherds, 67 or 80.73% were Blackduck/Selkirk. If this does indeed reflect an increased activity in cooking food in ceramic vessels by the Late Woodland cultures, it might be presented as evidence of dietary change between the Middle and Late Woodland.

With only a few vessels being definitely used for cooking at the Bundoran site, the remainder of the vessels might have been used for storage. The contents of these vessels have not been preserved, so any supposition on their contents would be hypothetical. However, since diversified diets seem to have been represented at Bundoran (see Chapter I), vegetable matter such as fruit, roots, etc. would seem to be a logical guess. However, since burn marks are not always found on cooking vessels, any supposition as to the storage function of these vessels is tentative.

Other Ceramics

Five examples of juvenile pottery (Plate 15) or "toy pottery" were recovered from the site, all from Area C, levels CI and CII. One sherd displayed vertical incised lines over a single horizontal incised line on the exterior as its sole decorative motif. The other sherds displayed oblique incised lines over four horizontal incised lines, which in turn was over two rows of miniature "punctates". The lip of these sherds shows oblique incised lines, while the interior is plain. On all sherds, the body was plain. The four similar sherds seem

to have been additionally worked so that the tiny incised lines would appear to be cord-wrapped stick impressions.

A native ceramic pipe bowl fragment (Plate 16) was also recovered from unit 55, level CI (Area C). It is 7-9 mm thick, and displays a linear stamp or shallow punctate motif on the exterior. Few native ceramic pipe bowls have ever been found. One was discovered at the Long Sault site displaying circular, punctate-like impressions, and two others similar to that were found on the Whitefish island site on the east end of Lake Superior (Arthurs, 1986). Ceramic pipe bowls were also recovered from Selkirk sites (Dickson, 1980:151).

A rolled clay nodule was recovered from unit 27, level VII. It is noteworthy because one end of it displays various sized stamps. It may have been used as a test nodule for a potter before applying a decorative tool to an actual vessel. If this was the case, it would seem likely that vessel construction took place right at the site itself, rather than at a separate pottery construction location.

CHAPTER V

CHRONOLOGY AND COMPARISON

A unique radiocarbon date from DjKn-5, A.D. 1510, was deemed unusable due to the contamination of the sample by modern rootlets. This leaves only the methods of relative dating to determine the time of the components deposition: through ceramic decorative typology comparisons, associating stone tools with specific cultures, and through radiocarbon dates from other sites as the methods to determine the age of the Laurel, Blackduck and Selkirk components of the site.

Stone Tool Typology

Stone tool types found in Woodland sites make a comparatively small but nonetheless important contribution to the dating of site components. The identification of cultural components has already been aided by the study of raw material use in Chapter III. Generally speaking, local raw materials such as quartz, rhyolite and feldspar were used more often by Laurel groups than by their Late Woodland counterparts, in which more exotic materials like Hudsons Bay Lowland chert, Chalcedony and Jasper were used when available. "Tests of the relationship between utilized flakes and other tools show that, at least for the late occupation, non-local materials were often worked into finished tools"(Rajnovich, Reid, Shay, 1982:85). This is probably due to the fact that the

Blackduck and Selkirk peoples had greater access to such materials via trade routes than Laurel peoples did.

Individual tool types, however, are useful for the actual tracking of temporal changes at Bundoran. In the Laurel lithic assemblage, several trends are apparent over time, and these reflect a similar pattern within this site. As shown in Chapter III, there is a sizable proportion of end scrapers in the Laurel levels. Wright has noted that end scrapers seem to be common in Laurel sites, showing "... a steady increase through time with a concomitant decrease of the side scrapers"(Wright, 1967:104). Unifacial tools are most frequently found in the Laurel lithic industry, "...a lithic industry typified by numerous end scrapers and stemmed and notched points"(Stoltman, 1973:3). The pattern of finding unifacial end scrapers in Laurel sites has also been noted by Buchner(1980:15). In fact, scrapers are cited as being the most frequent member of any Laurel lithic collection, as noted by Stoltman (1973:100). The proportion of scrapers to other utilized lithics was illustrated by Lugenbeal at the Smith site, when he stated that there were "...16.9 scrapers per projectile point"(Lugenbeal, 1976:347). He contrasted this to proportions found in Blackduck strata, in which only 11 scrapers appeared to every 14 points.

The high indexes of unifacially retouched scrapers to bifacial scrapers in Laurel lithic assemblages has been noted by Janzen (1968), who found that at the Naomikong Point site, the uniface to biface ratio was 35:1. This pattern, he states, seems to continue at the Pays Platt site (20:1), Heron Bay (7:1), Killali Lake (3:1) and the Rossport site (2:1). In fact the only site that Janzen mentions that does not follow this trend is the Little Pic site, (1:1). Janzen suggests that the glut of unifacially flaked tools found in Laurel sites is related to Laurel subsistence strategy. As shall be discussed later, fish was an important aspect of the Laurel diet. Janzen therefore suggests that unifacial tools are more useful to, and more often used by the fisherman than the hunter. Janzen, however, lacks substantive ethnographic data to support this, and his conclusions are based on a relationship between the number of unifacial scrapers at the site, and the apparent dietary preference indicated to

him by the faunal remains at the site. It follows, though, that if Janzen is correct in this point, the presence of many unifacial scrapers on this site may be an indication of not only of their cultural affiliations, but also of subsistence strategy, manufacturing strategy and reasons for site selection. This will be discussed at greater length later in the paper.

Other proportions of lithic artifacts found at Laurel sites relates not only to scrapers, but to other utilized lithics as well. At the Potato Island site, Koezur and Wright (1976) found lithic proportions as follows; arrowheads 17.8%, scrapers 52.3%, Biface blades 13.1%, and wedges 4.1%. While there was some measure of disturbance at this site, with only shield Archaic and "terminal" Woodland components left undestroyed, one still might make use of the surviving lithic patterns.

While unifacial scrapers are commonplace for the Laurel strata, Blackduck strata generally produce smaller, double-edged scrapers (Buchner, 1980). Scrapers of this type were also collected from the Blackduck and Selkirk strata of the Bundoran site. A total of 58.65% of the double side scrapers were from these strata.

Perhaps the most useful lithic artifacts for the purpose of identifying and dating cultural strata are projectile points and their typology. In general, the corner notched projectile points, such as Pelican Lake and Larer Tanged are considered to be Laurel, while the smaller side notched and triangular points, such as Plains Side Notched and Eastern Triangular are deemed to be Blackduck and Selkirk (Rajnovich, Reid, Shay, 1982). These types of points were found at Bundoran within the same cultural strata as suggested above. Stemmed and corner notched points were found primarily in the Laurel strata of Area C, with side notched and triangular points found in the rest of the site.

Ceramic Typology

A more accurate method of relative dating is through a ceramic decoration typology. While there is some variation, generally vessel decorative patterns can be placed within a particular region and within a time period. Laurel ceramics in particular have been shown to

follow this pattern. Laurel sites tend to cluster geographically (Rajnovich, Reid, Shay, 1982), and within these areas, certain decorative motifs show dominance over others. Generally, these clusters fall within an identifiable time scale. This time scale has been described as follows: "The earliest dates in the list come from northwestern Ontario and northern Minnesota; the sites east of Lake Superior all date later and cluster in a range from about A.D. 150-A.D. 800. The latest Laurel dates are derived from western sites, along the Rainy River and in northern Manitoba" (Rajnovich, Reid, Shay, 1982:99).

Wrights' early work on Laurel classified decorative techniques, and placed them within a tentative time scale. "For the five dominant decorative techniques these trends are as follows: pseudo-scallop shell decreases from early to late, dragged stamp remains relatively constant, linear punctate, dentate stamp, and the absence of decoration increase from early to late" (Wright, 1967:100). Since Wright first described these trends, archaeologists have been able to localize dominant ceramic decorative motifs within geographic clusters. The earliest Laurel sites, in Minnesota and northwestern Ontario, displayed some of the following trends. Stoltman, in his early investigation into Laurel in Minnesota (1973) noted that "Laurel Oblique is the most common ceramic type in the Laurel culture of northern Minnesota..." (Stoltman, 1973:85). He further commented that this motif declines in importance the farther north a site is found. As was mentioned above, dentate stamp was a motif common to later Laurel sites, a fact that demonstrates the early age of Minnesota Laurel: "The type Laurel Dentate is a minor constituent (less than 10 per cent) of all the Minnesota Laurel ceramic assemblages, except at Smith mound 4, where it is the leading type (31.9 per cent)" (Stoltman, 1973:86).

Stoltman thought that pseudo-scallop shell and dentate stamp showed a "highly stable core or central tendency" through time and space in northern Minnesota (ibid.:1973). Subsequent work into Laurel has revealed that the early Laurel investigations, centred primarily on the mound sites (McInstry, Smith, Pike Bay, etc.) show a much more varied pattern of ceramic decorative motifs both geographically and temporally. The excavation of

the Smith site, 17 miles west of International Falls, Minnesota, expanded upon Stoltmans work, even though it too was a mound excavation. The results of the Smith site indicate that: "Three decorative elements are found in our sample: dentates, pseudo-scallop shell, and undragged oblique stamped impressions. Incising may be present"(Lugenbeal, 1976:147).

In this Laurel site, Lugeneal noted that dentate stamp comprised 28.6% of decorated sherds, with pseudo-scallop shell representing 24.5%. Other types at this site included bossed (12.2%), punctate and plain (both at 4.1%). This compares with recoveries from McInstry Mound I, with 33.3% pseudo-scallop shell, 23.2% oblique, but only 1.1% dentate stamp. Already this placed the McInstry Mound I earlier than the Smith site. Other early mound sites in Minnesota include Pike Bay and Pearson, both showing a heavy dominance in Laurel Oblique sherds within their collections (48.8% and 52%, respectively).

Laurel sites in Ontario show slightly different concentrations of decorative motifs. Arthurs (1986:97) noted that: "all of the decorated ceramics from the Initial Woodland component bear stamped or incised impressions." The presence of these types of sherds has been explained as follows: "Typologically, the Long Sault vessels place the component late in mid-Laurel times"(ibid:110).

The Lady Rapids site (DcKc-1) produced two Laurel components. The component from "Area C" of the site revealed ceramics that displayed pseudo-scallop shell (16.7%) dentate stamp (16.7%) plain with punctates (22.2%), plain with bosses (16.7%), and plain with bosses and punctates (14.1%). This component was identified as mid-Laurel, and clearly shows a decrease in pseudo-scallop shell decoration with an accompanying increase in plain variations and dentate stamp. The other component in this site, in "Area A" produced ceramics that were 33.3% dentate stamp, 11.1% plain, 11.1% plain with punctates, and 44.4% incised (Callaghan, 1982:38). This component was identified as late Laurel, and the

lack of pseudo-scallop shell along with the increase of dentate stamp is an important indicator when dating Laurel sites.

Another site in Ontario, Wenasaga Rapids, also has a Laurel component, and Hamilton (1981) described the Laurel vessels recovered from there as follows: "The most common combinations of decorative techniques are represented by a motif that incorporates obliquely oriented elements over punctates over horizontally oriented elements..."(Hamilton, 1981:57). At this site, the Laurel component was represented by sherds with punctates (35.5%), dentate stamp (26.9%) and bosses (12.8%). Pseudo-scallop shell was found on 6.4% of the sample. This would place the Laurel component of Wenasaga Rapids in the mid to late Laurel times.

Sites from outside Ontario produce ceramics that show an interesting temporal pattern. The Naomiking Point site and the Summer Island site, both south and east of the centre of Laurel development and both fairly early sites (A.D. 430 and A.D. 250, respectively), produced ceramics that Brose (1970) noted were similar to the "punctate" ceramics of Wrights "Saugeen focus". Janzen (1968) noted this also, and declared the Saugeen focus an amalgam of Laurel, Hopewell and Point Peninsula ceramic decorations. This extreme eastern border of Laurel influence should be expected to differ from the core area of Laurel.

Laurel ceramics in Manitoba show the influx of decorative trends that match the distribution found in mid-Laurel times. At the Cemetery Point site, on the Winnipeg River, "Laurel Oblique was the most common Laurel style..."(Buchner, 1980:15). At the Astwood site, a mixture of Laurel Oblique (3 vessels), dentate stamp(5 vessels) pseudo-scallop shell (3 vessels) Laurel Incised (1 vessel) and plain (2 vessels) were recovered. A tentative date of A.D. 500 has been volunteered for the Astwood site (Buchner and Callaghan, 1980).

Site Dates

The range of site dates based partially on decorative motifs of Laurel

vessels has been in the past so effective a method of chronologically ordering sites, that members of the office of the Ontario Ministry of Citizenship and Culture, Heritage Branch, Kenora has taken such information as is listed above and has created an index of ceramic pattern occurrence for four time periods, from 200 B.C. to A.D. 1200 (Table 21). If this chart, along with the data gained from the other Laurel sites, is compared with the Laurel ceramic assemblage found at Bundoran, it becomes obvious that Bundoran contains a late Laurel component. The large concentration of dentate stamp sherds, along with plain and punctated sherds, would fit into the later categories shown on the chart. This fact, along with the lack of pseudo-scallop shell sherds (only 2% of the sample at Bundoran), leads one to conclude that the Laurel component at DjKn-5 was deposited in late Laurel times, approximately A.D. 900-1200.

Combined with the decorative motif index, the location of the Bundoran site adds to the supposition that the Laurel component is indeed a late one. The site is located in the same geographic area, or "cluster", as the Hungry Hall, Long Sault, Lady Rapids, Fisk and Wenasaga Rapids sites (Table 22). All of these, with the exception of Fisk, contain Laurel components that date between A.D. 500-A.D.1200. This would indicate that the full scale of Laurel occupation of northwestern Ontario took place during this time period, in mid-to late Laurel times. The movement of the Laurel people throughout its history will be discussed later. This late date for the Laurel component at Bundoran has connotations for the later Blackduck and Selkirk occupations.

The Blackduck occupation of northwestern Ontario began at approximately A.D. 800, and continued to around A.D. 1750, the approximate date of historic contact with Europeans (Dawson, 1976). Blackduck ceramics seem to cluster in three groups; the Lake Superior region, northern Minnesota, and northwestern Ontario. Blackduck ceramics are distinguished from Laurel ceramics through the presence of fabric paddled bodies, and combinations and variations of cord-wrapped stick impressions (CWS), punctates and bosses on the rim, neck and lip of the vessels. As noted by Hamilton, " decoration upon

Table 21: Quick Index to Laurel Ceramics of the Central Zone (% by Time Period/Phrase).

Exterior Rim Decorative Technique	Early (200BC-300AD)	Middle (300-600AD)	Middle (600-900AD)	Late (900-1200AD)
Pseudo-Scallop Shell	22	34	24	2
Dragged Pseudo-Scallop Shell	12	-	-	-
Dentate	3	8	44	45
Dragged Dentate	-	7	2	3
Linear Stamp	16	8	12	6
Dragged Linear Stamp	12	4	-	5
Plain	14	7	2	4
Plain Punctated	3	4	7	12
Plain Bossed	8	9	5	3
Plain Punc. & Bossed	6	15	1	1
Incised	3	2	-	7
Cord-Wrapped Stick	-	-	1	3
* Other	1	2	2	9
Total Percent	100	100	100	100

* Includes combinations of techniques

Table 22: Laurel Dates

SITE	DATE
BALLYADARE (DkKp-10)	150 B.C.
FISK (D1Kp-1)	A.D. 50
THE PAS	A.D. 190
MEEK (DjKp-3)	A.D. 280
McGILLVARY (DbJm-3)	A.D. 290
MEEK	A.D. 390
NAOMIKING POINT	A.D. 430 (?)
MEEK	A.D. 450
SMITH SITE	A.D. 480
BALLINAMORE (DkKp-9)	A.D. 490
LADY RAPIDS (DcKc-1)	A.D. 520
LONG SAULT (DdKm-1)	A.D. 500-900
SMITH SITE	A.D. 760
BUNDORAN (DjKm-5)*	A.D. 900
PIC RIVER	A.D. 950
HUNGRY HALL	A.D. 1130
HUNGRY HALL	A.D. 1190
BALLYNACREE (DkKp-8)	A.D. 1240
BALLYNACREE	A.D. 1270
* relative date	

the lip of the Late Woodland ceramics consists primarily of oblique cord-wrapped dowl impressions (50.9%), chevron cord-wrapped dowl (22.8%) and smoothed or obliterated textile impressions..."(Hamilton, 1981:66).

The vessels themselves were usually globular with flaring lips. "Decoration of the exterior rim was common and consisted of a row of typically rather long and probably spaced oblique cord-wrapped stick impressions. Lips were almost always cord-wrapped stick, with oblique impressions below the lip nearly universal. Lips were flattened and thickened and ran to bevelled-out shapes"(Lugenbeal, 1976:273).

Since first defined in 1961 by Evans, the study of Blackduck ceramics has been forced to continue to describe compilations of decorative motifs under arbitrary headings such as "Osufsen Cord and Punctate", "Schocker Cord Impressed", "Waskish Vertical Cord and Punctate", and other descriptive titles. The problem with using these early classifications is that, as more variations of Blackduck ceramics have been discovered, categories that were once precise descriptions have been forced to become generalized, or multiple new categories have had to become invented. Because of the wide-spread use of such terminology, later archaeologists have been forced to utilize a possibly inaccurate terminology in order to be able to reference their work with previous work. It is necessary, therefore, to make a short explanatory note regarding the terminology of Blackduck ceramics. Waskish Vertical Cord and Punctate includes those sherds showing oblique CWS impressions over punctates in the neck, with varied CWS impressions, most of the time, on the lip. Osufsen Cord and Punctate includes sherds with vertical or oblique CWS impressions over punctates and horizontal CWS impressions. The lips show various CWS impressions. Schocker Cord Impressed displays oblique CWS impressions over horizontal CWS impressions on the rim, with CWS impressions on the lip. They have no punctates.

Blackduck Dates

No dating procedure using Blackduck ceramics has been developed as was the one used earlier dealing with Laurel ceramics. There are, however, certain trends evident in Blackduck ceramics that are useful in placing the Bundoran Blackduck occupation within a temporal sequence. Early Blackduck vessels are cord marked and paddled, while later ones were neither cord marked nor paddled. Less than one fifth of Blackduck vessels had interior decoration, and the rims, while most were oblique, were 20% non-oblique. Punctates, which were round early in Blackduck vessels, become "non-round" (square, oval, etc.) in later vessels. Certain vessel types are associated with certain areas as well. Waskish Vertical cord and Punctate is most common in northwestern Ontario, while Osufsen Cord and Punctate is most common in the Lake Superior region. Schocker Cord Impressed is commonly found in Manitoba, Ontario and Minnesota.

In Ontario, these Blackduck ceramic types are found in most Woodland strata. The Lady Rapids site (DcKc-1) produced the following proportions; Osufsen Cord and Punctate (31.3%), Waskish Vertical Cord and Punctate (22.3%), Schocker Cord Impressed (12.5%) and miscellaneous 37.5%. Wenasaga Rapids (EdKh-1), on the east side of the Wenasaga River, revealed ceramics that were 40% Osufsen Cord and Punctate, 33.3% Waskish Vertical Cord and Punctate, and 13.3% that were a variant of Waskish (Smith, 1981). One of the greatest mixtures of Blackduck ceramic styles was found at Long Sault, which had 18.84% Osufsen Cord and Punctate, 17.39% Waskish Vertical Cord and Punctate, 11.59% Schocker Cord Impressed, as well as Nett Lake Cord and Punctate (13.04%), Nett Lake Vertical Cord (23.19%) and Nett Lake Plain (1.45%).

The Blackduck recoveries from Bundoran reflected a mixture of the three main ceramic decorative motifs in proportions that resembled those found at the Wenasaga Rapids site. The dating of the Blackduck component from this site is difficult. The fact that much of the

Table 23: Blackduck and Selkirk Dates

<u>BLACKDUCK DATES</u>	
<u>SITE</u>	<u>DATE</u>
MARTIN BIRD SITE	A.D. 480 (?)
BALLINAMORE (DkKp-9)	A.D. 940
SMITH SITE	A.D. 965
SMITH SITE	A.D. 1165
ASH RAPIDS (DjKq-5)	A.D. 1230
The PAS	A.D. 1460
LADY RAPIDS (DcKc-1)	A.D. 1480
The PAS	A.D. 1485
WUSKAWATIN	A.D. 1495
BALLYNACREE (DkKp-8)	A.D. 1650
ASH RAPIDS east (DjKq-4)	A.D. 1690

SELKIRK DATES

<u>SITE</u>	<u>DATE</u>
NECK SITE	A.D. 760
SMITH SITE	A.D. 1165
HUNGRY HALL	A.D. 1202
MEEK (DjKp-3)	A.D. 1350
MEEK	A.D. 1410
RUSHING RIVER PARK	A.D. 1650
TRADE LAKE *	A.D. 1685
LONG SAULT (DdKm-1)	A.D. 1750
* Saskatchewan	

Blackduck and Selkirk materials were mixed adds to the difficulty. Some insight is gleaned, however, from the date of the Laurel component. There is no evidence that the Laurel and Blackduck components were contemporaneous, as the Laurel component was almost totally isolated. Therefore, it can be said that the Blackduck component at Bundoran was laid down after A.D. 900. Evidence is also available in the types of Blackduck ceramics recovered from Bundoran. As shown by the master ceramics charts, the "early" Blackduck decorative motifs, cord marks, paddled bodies, and round punctates, appear in only 18 sherds representing 10 vessels. The remaining sherds, representing 22 vessels, all show the characteristics of a lack of cord marking and/or non-round punctates. This would suggest two Blackduck occupations at Bundoran, a small, perhaps short-lived occupation just after A.D. 900, and a later occupation, after the retreat of Laurel from the area, after A.D. 1200. The similarity of many of the later Blackduck vessels to those recovered from the Blackduck component at the Lady Rapids site suggests that the late Bundoran Blackduck ceramics may have been deposited as late as A.D. 1500. If this is indeed the case, then the Blackduck and Selkirk components, which were mixed to a certain degree, may show some contemporaneity at Bundoran.

Selkirk Dates

Overlap between Blackduck and Selkirk occupations, as represented by their ceramics, occurs in Ontario and Manitoba, but not in Minnesota. Selkirk groups were found to live further north in Manitoba than were the Manitoba Blackduck. Selkirk in Ontario first appeared around the tenth century A.D., but the majority of the occupations took place between A.D. 1300-1600. "Selkirk components have been discovered from northeastern Saskatchewan..., eastward to the north shore of Lake Superior as far east as Michipicotan..., and from northern Minnesota...northward to the Hudson Bay Lowlands"(Rajnovich, 1985:52).

Selkirk ceramics are notable for the fabric impression on their surfaces, including necks and sometimes lips. As with the Blackduck ceramics, groups of Selkirk ceramic motifs have been given their own terminology (MacNeish, 1958), which continues to be used in the face of expanding ceramic collections. Also like Blackduck, certain Selkirk ceramic decorative motifs can be grouped geographically. The type most often associated with southerly Selkirk groups is Alexander Fabric Impressed, displaying fabric impressed rims and lips, with a plain interior. In contrast, in the most northerly sites, Clearwater Lake Punctate ceramics dominate. These are fabric impressed ceramics that display one row of punctates on the rim. Other varieties include Sturgeon Punctate (fabric impress with two rows of punctates), Sandy Lake (cord wrapped paddled bodies, plain rims and paddled lips), and Sturgeon Falls Fabric Impressed (CWS on fabric impressed rims, diagonal CWS lips, plain interiors). The more northerly Selkirk sites have also been indentified by the presence of ceramic "plates", and some sites, including Bundoran, have recently produced native ceramic pipe bowls.

In the Selkirk component at Bundoran, Alexander Fabric Impressed is by far the dominant Selkirk ceramic decorative type. Placing the Selkirk component within the Selkirk chronology for northwestern Ontario may be possible if the above mentioned contemporaneity with the Blackduck component holds true. A similar date for the Selkirk component at Bundoran is given added credence if one compares the Selkirk vessels with those recovered from other Selkirk sites. The Bundoran Selkirk ceramics are similar to ceramics recovered from the Spruce Point site (DjKq-1). This site has been dated to approximately A.D. 1500-1600. This makes a Blackduck/Selkirk overlap at Bundoran a definite possibility, however, any final statement on this topic is difficult. As mentioned previously, the mixing of Blackduck and Selkirk components through historic disturbance makes placing components into a date seriation difficult. The fact that Blackduck and Selkirk overlapped spatially and temporally in northwestern Ontario, however, leaves open the possibility of Blackduck/Selkirk interaction at Bundoran.

Such interaction has been documented at other sites. Reid has stated that "...a Selkirk/Blackduck cooccupation of large areas of northwestern Ontario has previously been defined...and it would seem that on the basis of this date (A.D.1750)... [for the Long Sault site] ...and that from Lady Rapids... that the Wanikan (Sandy Lake) people just south of the study area may have been interacting with both Blackduck and Selkirk neighbors over a considerable length of time" (Reid, 1984:39). This assumes that Blackduck and Selkirk groups, indicated by their pottery styles, were individual, identifiable cultures, which shared few traits. This has been proven to be neither true nor false, therefore assumptions based upon the truthfulness of the above statement must be made cautiously.

The dating of the Laurel, Blackduck and Selkirk components at the Bundoran site has had to have been carried out through relative means. The fact that all the components at Bundoran were most likely deposited within a 500 year span makes the site an important indicator of the social and cultural dynamics of the late Middle and Late Woodland. This will be developed in the following chapter.

CHAPTER VI

LAUREL RESIDENTIAL AND SETTLEMENT PATTERNS

Laurel Movement

Through its existence, the Laurel culture occupied a wide area of north central and northeastern North America. Described as a "basically independant cultural development" (Lugenbeal, 1976:637) the Laurel culture has been found to have lived in Western Quebec, northern Ontario and northern Manitoba, east-central Saskatchewan, northern Minnesota and Michigan (Dawson, 1983). These occupations did not occur simultaneously, however. The early history of Laurel shows expansions from the northwestern Ontario/northern Minnesota core, east to Lake Superior, and north to Manitoba and northwestern Ontario. Laurel then contracted to the west after A.D. 800 (Rajnovich, Reid, Shay, 1982). Due to this contraction, Laurel sites in Michigan and Minnesota disappear from the archaeological record earlier than from sites in Ontario and Manitoba (Buchner, 1979).

Shifts in Laurel ware types over time were, for the most part, used to date the above periods in the Laurel archaeological record, just as shifts in ware types were used in the previous chapter to date the components at the Bundoran site. The causes of these shifts are not definitely known, because there is currently no conceptual framework to account for the archaeological data; however, there are several possible explanations for the dispersal of Laurel culture sites over time. Beacause the reasons for Laurel ceramic decorative elements

going in and out of favor are not known, a certain amount of conjecture is necessary if one is to be aware of all possible factors regarding Laurel ware type dispersal.

Certain ceramic decorative elements are associated with vessels that are said to have been produced by the Laurel culture (see Chapter IV). The reasons for choosing certain decorative elements over others may initially be as simple as potters choosing decoration based on personal preferences, or what is "in style". The disappearance of "traditional" Laurel vessels from Minnesota after A.D. 800 may then be the result of Laurel-style vessels falling out of favor with the residents of that area. Further along this line, ceramic decorative styles may be the result of potters who, living in areas that border different cultures, as in Syms co-influence sphere model (Syms, 1980), adapt some of their pottery styles to mix with their own. This would appear as a new pottery style in the archaeological record, and may be misinterpreted as representing the disappearance of the former culture.

The apparent movement of pottery types may also be the result of marriage. If one assumes that most Laurel potters were women, as Rogers and Black (1976) have noted for the 19th century Ojibwa, then the decorative styles of the pottery would move if the new bride joined her husband's family. The northward move of Laurel pottery after A.D. 800 may then be the result of increased intermarriage with northerly groups. Geographical shifts in zones where certain styles are popular among potters may also explain Laurel site dispersal. A change in the function of Laurel vessels may also cause the archaeological record to imply the occupation and desertion of certain areas. If vessel shape and decoration change to reflect a new function, a stable population may seem to "disappear" from the archaeological record.

Another possible cause of the dispersal of Laurel sites over time is the actual physical movement of the groups that exclusively produced Laurel-style ceramics. The possible movement of the Laurel people from south to north is evident in the archaeological remains of several Laurel sites. Lugenbeal (1976) noted a south to north ceramic patterning. Also, the sites along the "Boundary Waters/Rainy Lake/Lake of the Woods and Winnipeg River"

system have been dated, and show a chronological sequence from the southeast to the north (Reid, 1984). The methods and causes for this movement may also be found within these sites. The site sequence follows the direction of the water flow in the aforementioned system, indicating the most simple pattern of Laurel movement.

One possible cause of Laurel expansion may have been climatic changes in the regions north of the Lake of the Woods area. In his report on the 1978 Caribou Lake project in northern Manitoba, Buchner (1979) notes that a slight shift in ecozones is evident at the site, and he questions whether they may have been the impetus for Laurel people to move north, pushing out the existing Archaic people from the area. This question has not yet been resolved.

The movement that did take place generally went from west to east before A.D. 800, and east to west after A.D. 800. Laurel movement was limited to certain areas, for example "...the Albany River system, although known and used by the Laurel people, was on the fringe of their sphere of influence" (Riddle, 1981:256). The reason for Laurel expansion stopping at the Albany River may be due to the same factors that inspired their movement in the first place, a change in ecozones. In surveys of the Albany River area, Riddle interpreted a deliberate shift away from the northern Lowland environmental zones on the part of the Laurel culture. "The smaller sample of Laurel ceramics on the eastern end of the Albany River, when compared to the recoveries made from the western portion of the river, may indicate less use was made of the periphery of the sheild near the edge of the Hudson Bay Lowland/Canadian Sheild interface. The differences in the environment between the sheild and the Lowlands may have caused the population to view the lowlands with disfavor" (Riddle, 1981:256).

For Laurel groups, site selection meant especially setting up camp near water (Janzen, 1961:101). In Ontario, the Laurel predilection towards camping near watercourses is evident as Smith noted in her 1980 surveys where 46% of sites are found along lakes and rivers, and where "...islands provide ideal summer conditions" (Smith, 1980:122). The

reason for these types of locations being selected as camp sites relates to the easy access to resources on a seasonal basis. Rogers (1967) reported that the Mistassini built their summer structures close to the shoreline of lakes or rivers, while their winter structures were 100-200 metres inland. He also noted that winter occupations generally were located on an easterly-facing piece of land, to shelter the camp from the prevailing west winds. If an ethnographic analogy can be made with Laurel encampments such as Bundoran, which is adjacent to water on a westerly-facing piece of land, then a summer seasonal reference may be inferred. Based upon the prevalence of fish remains in Laurel sites (see Subsistence), spring and summer fishing may have been an important part of Laurel subsistence. These fishing camps might have also be used as an opportunity to take part in social and/or political activities with other Laurel groups. After the prime fishing season was over, the camp might have been broken into smaller hunting camps. Syms has stated his theories on Laurel subsistence strategy for the three main areas of Laurel occupation: (1) seasonally intense utilization of fish on the Upper Great Lakes followed by diffuse hunting; (2) seasonal shifts across Mixed Conifer-Hardwood and Parkland biomes in northern Minnesota, and (3) scattered distribution of sites relying on diffuse resources in eastern and northern Manitoba and adjacent Ontario" (Syms, 1977;quoted in Rajnovich, Reid, Shay, 1982:101).

The later history of the Laurel culture shows it disappearing from the southerly and easterly sites, retreating westward and north into Manitoba. Perhaps not so coincidentally, the end of the Middle or "Initial" Woodland and the beginning of the Late or "Terminal" Woodland periods coincided with a "climatic amelioration" a period of warming temperatures, in which the edge of the boreal forest was appearing further north. South of this came mixed woodland forests, which had been more fully exploited by another people, the Blackduck. "This was an era of temporal overlap with the Laurel culture which extended over three hundred years"(Dawson, 1983:20). The decline of Laurel and the concurrent rise of Blackduck and later Selkirk in northwestern Ontario might have been

partially the story of climatic change and adaptations of a different culture group in the area. It may also have been the result of intermarriage between groups, or a change in the ceramics of the Laurel culture itself. The ultimate cause of the disappearance of the Laurel culture from the archaeological record is not known.

Laurel House Structures

In order to attempt the reconstruction of a particular culture's residential patterning, archaeologists have analyzed the remains of house structures in several sites. House structure studies have been found to be of great value in this area, as the reconstruction of the living and work spaces indicated in an archaeological site often lead to inferences as to the social customs of that past culture. As noted by Fletcher; "Structures are important not only for their material function in providing shelter and storage, but also because they form the coherent frame for community life and reflect its regularities"(Fletcher, 1977:55).

The analysis of house structure in the past has been attempted through the creation of arbitrary units of analysis, from small and fairly simple units to large and complex units. Flannery defined his smallest unit of analysis as the "activity area", that is , "areas (that) are spatially restricted areas where a specific task or set of related tasks has been carried on, and they are generally characterized by a scatter of tools, waste products, and/or raw materials; a feature or set of features may also be present"(Flannery, 1976:34). This was useful to Flannery in his analysis of Mesoamerican village sites, and this unit of analysis would also be useful in northwestern Ontario, where features such as hearths often have associated scatters of lithic and/or ceramic artifacts.

Winter (1976) introduced a concept that might be even more useful in the study of houses in northwestern Ontario the "household cluster", which includes the analysis of the house and the associated hearths and work areas together. The household cluster is a useful concept because the levels of analysis begin with the house itself, then includes features often associated with houses, such as hearths, storage and refuse pits. Perhaps

more important than a simple description of the house and its contents, "The household cluster concept is useful because it provides a center in which pits, burials, house remains and other features can be understood not simply as isolated cultural features, but as manifestations of a specific segment of society" (Winter, 1976:25). If the household cluster represents social units, as is suggested by Winter, then this concept will help to interpret the archaeological recoveries in terms of making social and cultural inferences as to the occupants of that house.

Other archaeologists have further elaborated on human settlements and the living patterns they indicated. Chang (1958) declared two definitions of residential patterning, "... (1) Settlement pattern: the manner in which human settlements are arranged over the landscape in relation to physiographic environment. (2) Community pattern: the manner in which the inhabitants arrange their various structures within the community and their communities within the aggregate" (Chang, 1958:299). This sort of community study has not yet been attempted regarding Laurel settlement, because the scope of the Laurel culture house building has only recently been revealed. The extent of the Laurel house building and the inferred activities and community patterning shown in Laurel house sites, however, has been tentatively described.

The Laurel house structure at the Bundoran site is one of several structures discovered at Laurel sites in northwestern Ontario. The Ballysadare site (DkKp-10), near the source of the Winnipeg River, is thus far the earliest Laurel structure discovered, with a date of 2100 +/- 165 B.P., or 150 B.C. The house itself is represented by "...a surrounding line of small rocks and by a distinctive soil change with light grey-brown hard packed fine loam inside the feature surrounded by the darker, coarser loose loam of the general occupation zone" (Reid and Rajnovich, 1985:6). Soil was not the only difference between the inside and outside of the structure. Internally, there were five times more artifacts discovered than externally.

A slightly later site, the Fisk site (DIKp-1), is situated on the MacFarlane River, four kilometres southwest of the Ballysadare site. The MacFarlane flows into the Winnipeg River. The house at Fisk is represented by a line of small rocks, with associated post moulds, and, like Ballysadare, the soil, while all fine brown loam, was hard packed on the inside of the structure and loosely packed on the outside. There were also more artifacts recovered from inside the structure than outside.

This house contained several features; (1) a circular pit 60 cm in diameter and 9-30 cm deep. It contained hard packed black loam, Laurel ceramics, and a large yellow ochre nodule, (2) a hearth, partially destroyed. It was up to one metre in diameter and up to 34 cm deep. Inside was ash, burnt bone, fire-cracked rocks Laurel ceramics and red ochre flakes, (3) a second hearth, oval in shape, 1.3 metres long and up to 48 cm deep. This hearth contained similar remains to those listed for the previous hearth. And (4), a circular pit, 40 cm in diameter, and 18 cm deep. It contained black loam and some Laurel ceramics.

The Meek site, (DjKp-3) is located on an island in Tranquil Channel, in the Lake of the Woods. The house consisted of a small line of rocks and post moulds. Like the previous sites, more artifacts were discovered inside the house than outside. The dates for this site ranged from A.D. 280 to A.D. 450. A later northwestern Ontario site is Ballynacree (DkKp-8). It is located at the northwest end of Tunnel Island, at the source of the Winnipeg River in the town of Kenora, Ontario. An oval line of rocks with associated post moulds was discovered here, much like the sites mentioned above. Also like the above sites, soil was hard packed on the interior of the house, and loosely packed on the exterior, and artifact concentrations were higher inside than out. One slight change from the previously mentioned sites is that the house at Ballynacree appears to have been burned. Three dates from this site place it from A.D. 1240 to A.D. 1270. (Reid and Rajnovich, 1985)

In the northern Lake Michigan area, the Summer Island site is comprised of four structures, three circular houses and an elongated lodge. These structures, dated around A.D. 250 +/- 100 years, was the home base for approximately 30 individuals. (Brose,

1970a) These structures also displayed a similar patterning of hearths, artifact concentrations and soil changes as revealed by the previous sites.

The Bundoran site (DjKn-5) fits well in the pattern that has been revealed in the above sites. It too reveals an oval line of rocks and post moulds, with hard packed soil in the interior, and loosely packed soil in the exterior. There were also more artifacts inside the house than outside (see Chapter Two), and the artifact patterning inside showed clustering of ceramics and lithics in units 35, 36 and 37.

Laurel Residential Patterning

The result of the investigations at Bundoran and the other sites is a description of the Laurel house remains, their internal activity areas, and the entire household cluster. The Laurel structures described above have been variously described as either houses or lodges. The lodges, in general, were 6-8 metres long and 3-5 metres wide. It is possible that poles, sharpened at one end, were set vertically into the ground and bent inward. This would account for the post moulds found at Bundoran and other sites. The covering of the lodge was probably either hide or birchbark. Inside there was a central hearth, or more likely, several hearths, and storage pits, which would be located next to the walls (Reid and Rajnovich, 1985). The houses were generally circular or oval in shape. The construction techniques were the same as used for building the lodge, as well as would the inclusion of interior hearth and storage pits. Most of these estimates were based on the remains from the sites listed above and on analogies to Mistassini and Cree bands (Rogers, 1973), and Ojibwa (Rogers and Black, 1976), who constructed similar dome-shaped lodges.

The change in soil colour and compactness that is found at Bundoran and other sites is a result of concentrated human traffic over a small area over a period of time. Laurel structures were probably built during inclement weather (early spring), and Reid has theorized that woven mats, placed on the floors during these periods of poor weather for

extra warmth and protection in the lodge, would result in the compacted floors found in Laurel structures. (Reid and Rajnovich, 1985)

The orientation of Laurel houses is generally in an east to south direction. Reid commented that this may be due to the Laurel people wanting to have the entrance of the lodge facing the rising sun in the morning. If this is true, it is probably the earliest incidence of this sort of preference. As Reid notes, this pattern is not generally found in Archaic sites, but seems to be found in later Selkirk sites.

Laurel lodges may have housed around eight to ten people, and this was probably an extended family unit (Brose, 1970b). This very tentative estimation was based on ethnographic analogies to Rogers (1967) work, and a resulting calculation of 28.0 square feet of living space per occupant.

Artifact distribution within Laurel houses and lodges seems to indicate that different job stations were assigned within the structure. The living areas would be expected to show a high concentration of ceramics and lithics, with associated hearths. The hearths themselves, represented by patches of charcoal or fire-stained soil, contain concentrations of ceramics, lithics, and fire-cracked or burnt rocks. A refuse pit or midden contain low to moderate concentrations of ceramics and lithics, while chipping stations show high concentrations of lithics. There may or may not be other artifacts at the chipping stations (Hamilton, 1981). At larger Laurel sites, such as the Summer Island site (Janzen, 1968) described, there would be two main activity areas. The first would be for the activities of a single family, such as flint working, the second would be for "diversified activities", a workshop for group activities.

Another large Laurel site, Summer Island, was described by Brose (1970 a,b) and consisted of three circular houses and one elongated lodge. The thirty individuals he says lived there occupied the site from first spring thaw (the time of the building of the house) to late summer, April to September in that region. This fits the supposition by Reid that the houses were built during inclement weather (early spring). It also gives a possible seasonal

reference for the occupation at Bundoran. Brose goes on to say that, when it came time to leave the lodge, the poles would be left, and the hides or coverings would be taken to the next camp site. Inside the lodge, Brose has theorized the use of posts for screens, racks and possibly for use as a spit.

The structural analysis that Brose conducted led him to several hypotheses, some of which may help define activity areas at the Bundoran site. He has stated that as the number and weight of fire-cracked rock increases in the refuse pits, so does the number of different artifacts. This is due to the fact that the artifacts dropped near the hearth would be thrown out with the refuse. He goes on to state that a central hearth is the norm, and that if there are two hearths, the southern one will be larger and deeper. While four hearths appear at Bundoran, the most southerly one is the largest and deepest. The number of hearths at Bundoran may represent consecutive occupations, or separate hearths for separate group members, though the true cause of the four hearths is not definitely known.

Brose continues, and states that refuse pits tend to be dug along walls, and that there will be fewer artifacts in refuse pits that are farthest from the hearths. As for storage pits, he states that once they were empty, their primary function was as refuse pits. Brose sums up his analysis by stating that care was taken to keep the hearth area clear, and the area with the least traffic, along the walls, had more refuse placed there. This is somewhat evident at DjKn-5, where clusters of ceramics and other artifacts were found near or within the rock outline.

Broses' analysis of chipping stations was also quite detailed. He states that raw cores were produced outside the structures, while blades and bifaces were produced in the southeast part of the structure, and bipolar cores were produced in the northwest and northeast part of the structure. He goes on to say that bipolar blades were produced outside the east wall. At Bundoran, a lithic chipping station does seem to occur in units 35, 36, 37 and 44 around the largest and most southerly hearth. In these four units, 179 non-utilized flakes and debris were recovered from level CI, the highest and latest of the Laurel strata.

Also, units 49, 50 and 55 produced 123 non-utilized flakes in the midst of high ceramic concentrations. The remaining 20 units produced only 160 total non-utilized flakes. This seems to indicate that the area around the southerly wall may have been used as a refuse dump. As for the applicability of the rest of Brose's findings, a bipolar core was recovered from unit 61, the northwest corner of the excavation. However, since the entire structure was not revealed during excavation, it is difficult to say with any certainty whether that particular unit represents the most northwesterly part of the structure.

The final working of biface flakes into projectile points, Brose states, took place inside the structure, roughly between the entrance and the hearth. This is probably true for other tool reductions as well as projectile points at Bundoran. He also states that block cores were reduced to usable flakes at the west and north end of the structures. The lack of having the entire structure revealed also makes application of this statement to Bundoran difficult.

Brose addresses the question of food production areas as follows. He states that the preparation of food, butchering, etc., took place outside the structure. Inside, near the hearths, women may have retouched scrapers prior to their use in food preparation. This also may account for the lithics discovered near the hearths at Bundoran. There were bone tool production areas, according to Brose, which, with nearly all stone tool production, was the duty of the adult males. The adult females would be responsible for the final food and skin preparation. The women would also have clothing manufacture areas which, by nature of the materials used would not appear in the archaeological record, and do not at Bundoran.

The final outcome of Brose's analysis is an investigation into the Laurel household patterning based on archaeological remains, a risky venture at the best of times. He reviewed existing theories on Laurel social organization, and made an attempt to eliminate some outdated or inaccurate data: "If the results of the studies by Deetz and Longacre are

valid, then the residence patterns displayed by the ceramics at Summer Island argue against a matrilocal, matrilineal social organization."(Brose, 1970a:55)

Brose goes on to state his own theory: "The only other post-nuptial residence pattern remaining is one of preferred patrilocality"(Brose, 1970a:55). If this is indeed the case with Laurel, then Brose has contributed to the study of prehistoric social organization and give other archaeologists a basis on which clearer distinctions of residential patterning may be based. However, his "process of elimination" method of deciding on the residence pattern displayed by the Laurel houses should be viewed cautiously. While human variation does not permit rigid patterning of sites, the general patterning of Laurel houses shows a degree of consistency which should be applicable for future sites.

The Bundoran Laurel component, analyzed as a "household cluster", tentatively reveals an economic and social unit that was engaged in activities that possibly included fishing as its main focus. Different tasks were possibly assigned to different areas of the house, and one area was identified as having possibly been used as a chipping station. The relationship of this household cluster to other Laurel household clusters is not known. Burials are thus far found in relation to houses only at the Long Sault site, where a major group of burial mounds is located. Why other Laurel house sites contain no burial mounds, or any other discovered burials, is also not known.

Subsistence

In order to reconstruct the past lifeways of Middle and Late Woodland people, a certain amount of ethnographic data may be applied to their study. Brose did this at Summer Island regarding residence patterns, and it can also be applied to subsistence strategies. As for ethnographic comparisons regarding the Laurel, Blackduck and Selkirk cultures, Buchner (1979:125) has stated that "...all these groups followed a way of life most similar to historic Algonkian-speaking peoples residing in the area...". In regarding subsistence for the groups mentioned, certain general parameters may be applied. The basic principles of

subsistence are (1) to seek food resources based on easy accessibility, (2) to distribute human population to reduce time and energy spent on hunting, etc., and (3) have contingency plans. The ability of a group to quickly adapt to new conditions was an important factor in their survival. As Rogers and Black (1976:32) noted in their ethnographic analysis of the Weagamow Ojibwa, "the flexibility of group size, along with the mobility of persons and households between groups, cannot be overstressed in considering the adaptive strategies by which these people succeeded in surviving."

The way in which this flexibility was carried out was by having base and satellite camps to acquire food. The "base camps", located on waterways or points of land extending into lakes or rivers, were occupied for the longest period of time throughout the year, with satellite camps established seasonally on waterways or in the hinterland. The size of the satellite camps was dependant upon the type of resources that were to be exploited there. "The technology for securing fish was more complex than that employed in hunting and gathering"(Rogers and Black, 1976:6). Access to resources was also a factor in subsistence strategy, as certain game was only available on a limited basis. Rogers and Black suggest that certain game was only sought if no other options were available."It appears that caribou were generally sought only when fish were difficult to catch and hare were scarce, a condition that might occur in late winter"(Rogers and Black, 1976:10).

The applicability of these guidelines to the Woodland cultures is supported well in the archaeological record. The Laurel people, though known primarily for their reliance on fishing, had to maintain a varied diet over the changing seasons. The scope of this diet has been suggested by Smith (1981:50) when she stated that, "Laurel people may have followed a seasonal round of activities and evidence exists that settled village life was also practised. Large and small mammals, fish, birds, and possibly wild rice were eaten." The acquisition of fish was mainly a spring or fall activity, and sites where this took place would show few projectile points, and many uniface scrapers (Buchner, 1980). One of the most often acquired fish by the Laurel people was probably the Lake sturgeon, a large fish

useful for its' flesh, skin and oil. The prime sturgeon fishing season coincides with the proposed season of occupation at the Bundoran site, spring or early summer. "Spawning occurs in the spring or early summer. It (the sturgeon) may ascend streams for this purpose or spawn in the shallow water of lakes"(Scott, 1974:7). As mentioned previously, the Laurel component at Bundoran contains a small amount of projectile points with a large amount of scrapers. While the coincidence of these factors does not in itself prove that sturgeon were the prime resource taken at the Bundoran site, it does suggest its possibility.

The exploitation of faunal resources at other sites follows this pattern. At the Summer Island site, sturgeon, small mammals, occasional moose, deer and local plants were all utilized. The proportions (weighed in grams) found to have been used at Summer Island are as follows; mammal 14.28%, fish (mainly sturgeon) 84.62%, birds 0.35% and turtle 0.15% (Brose, 1970b). This compares well to other Laurel sites. At Juntunen, the proportions were mammal 8.8%, fish 87.6%, bird 1.9% and turtle 1.7%. McInstry Mound I had mammal 36.5%, fish 62.3%, bird 0.7% and turtle 0.6%. The Smith site Laurel component displayed a more even faunal collection, with mammal 47.1%, fish 52.5% bird 0.4% and turtle 0.2%. (Lugenbeal 1976:366) One site where this trend is reversed is the Long Sault site. Here, Arthurs notes that during the late McInstry phase, mammals represented 51.20% of faunal recoveries, while fish was only 23.68% of faunal recoveries, weighed in grams. The Bundoran site faunal recoveries, while small, consisted of 64.2% fish, 32.8% mammal and 3.0% avian, by weight in grams. The interpretation of the faunal remains at these sites is hazardous. Comparing the amount of particular types of faunal remains by weight may skew the results to indicate a greater number of mammals used at the site, as mammal bones are generally heavier than fish and avian bones (Lugenbeal, 1976:355). Comparing bone types by number, however, may also produce misleading results, as the more fragile bones, fish and avian, may fragment more often, and produce a bone count that inaccurately reflects the procurement of faunal resources at that site. The percentages listed above, however, based on bone weight, are useful in making some

general statements as to animal resource use at these sites. Whatever the margin of error is contained in these statistics, one can still state with some certainty that fish were generally utilized in far greater numbers at most of the sites than mammal or bird.

What one can infer from these figures is admittedly tentative. The sites that Lugenbeal discusses are assumed to be spring and summer occupations, based upon ethnographic analogies with the Ojibway (Lugenbeal, 1976:376) and, on finding that the beaver remains from these sites were all immature individuals. Therefore, the inferred seasonality of these sites is largely the result of circumstantial evidence, which points to possible, but not definite, spring and summer occupation. The reversal of this trend at the Long Sault site has not been explained by this reasoning.

The subsistence orientation of the Blackduck culture was, though similar, more balanced and diversified than that of the Laurel culture. Early Blackduck components at the Smith site showed a faunal collection that contained 24.4% mammal remains, 74.6% fish, 0.8% bird and 0.3% turtle. In contrast, the late Blackduck component at the same site produced 54.2% mammal remains, 45.3% fish remains, 0.4% bird and 0.2% turtle. (Lugenbeal, 1976:366) In addition to the resources listed above, Hamilton (1981:22) states that the Blackduck people who utilized the Aspen Parkland area of southwestern Manitoba adapted their subsistence strategy to include large-scale exploitation of bison.

Laurel Transition

Within the past ten years, certain Middle and Late Woodland sites have produced ceramic vessels that show motifs that seem to combine traditional Laurel and Blackduck styles. These "transitional" vessels, such as found at Wenasaga Rapids, Lady Rapids and Potato Island are the basis of a supposition that the Laurel culture gradually changed into, or became part of, what became recognized as the Blackduck culture. At Potato Island, Koezur, Wright and Dawson (1976) claimed that the period A.D. 600-800 was the time of this transition, and described the ceramics found at that site as follows; 43.2% is

Blackduck, 31.8% is Selkirk, 20.5% is "transitional" and 2.3% is Sandy Lake. There were no strictly Laurel ceramics found. They also state that at Howells Lake, 48.9% of the vessels recovered there were Selkirk, 16.2% were "transitional" and 34.9% were Laurel. Callaghan (1982) also has postulated a tentative relationship between Laurel and Blackduck.

The theory that "Laurel becomes Blackduck" is a vague and rather weak one. Even the proponents of the idea admit that there are problems with such a theory. In referring to the Howells Lake materials, the authors state that, "it could not be determined whether one replaced the other or whether they were in part contemporaneous"(Koezur, Wright, Dawson, 1976:76).

That there is some temporal overlap between Laurel and Blackduck is certain; however, rather than a cultural transition as an explanation for the existence of the vessels, Hamilton (1981) has suggested a different reason. This is, that Woodland occupations of northwestern Ontario, by and large, consisted of the main residence areas surrounded by peripheral activity areas. It would be in these peripheral areas, where "standardized" ideas about motifs would be their weakest, and most receptive to new influences. This would seem to be most likely, especially during late Laurel times, when the centre of area of influence was moving north and west, and would be vulnerable to intrusive Blackduck influences. Perhaps a Woodland version of Syms' co-influence sphere model (Syms, 1980) would help to describe the ultimate disappearance of the Laurel culture in the archaeological record.

CHAPTER VII

Summary and Conclusions

In the preceeding chapters, data from the classification and analysis of the artifacts and features recovered from DjKn-5 have been used to describe the Middle and Late Woodland occupations represented at the Bundoran site. The study of the lithic collection was intended to show whether certain tool types were preferred by different cultural occupations at the site, and whether the distribution of utilized stone artifacts and non-utilized (waste) lithics between strata would indicate preferred work areas at the site. The study also intended to illustrate raw material use among the cultural strata and discover if there were any demonstrable preferences for raw material use in specific tools, or by specific cultures.

The findings indicated that local quartz and rhyolites were the most commonly used materials. Diagnostic lithics were distributed fairly evenly across the site, with the exceptions of corner-notched projectile points and unifacial end scrapers being recovered in greater numbers in strata C, Area C, the Laurel component. Also in this component, the proportion of waste stone to utilized lithics rose from between 2-1 to 3-1 up to 5-1 to 6-1 in units that bordered on hearth features. This indicated preferred work areas for tool making or retouching.

The analysis of the ceramic collection was intended to identify cultural strata through ceramic decorative elements, as well as date these strata through ceramic seriation. Some of the technical and functional elements of the Middle and Late Woodland ceramics were also

discussed, and possible uses for ceramic vessels among the cultures present at Bundoran were mentioned. The ceramic analysis showed that the Laurel component was limited to Area C, strata C, the strata containing the house structure remains. The rest of the site contained Blackduck and Selkirk deposits, often in the same strata. The components of the site were dated as follows: Laurel; A.D. 900, Blackduck; A.D. 1200-1500, and Selkirk; A.D. 1500. The function of the ceramic vessels at Bundoran was not precisely known, although cooking and storage were the most likely uses.

The main focus of the analysis of the Bundoran site was upon the largest feature of the site, an arched alignment of rocks with associated artifacts, post moulds and hearth/storage pits that was identified as a Laurel house. The house was one of seven such features discovered in northwestern Ontario and northern Minnesota, and comparisons between the Bundoran house and the other house sites were made. The remaining Blackduck and Selkirk components were described and dated through ceramic seriation.

The results of the analysis of the Bundoran site components were as follows. The Laurel component contains the remains of a Laurel house, and the occupation of this house was dated through ceramic seriation to approximately A.D. 900. The site was likely occupied in spring or early summer, and the main subsistence activity was probably fishing. These conclusions were reached through comparative studies with other house sites, the presence of many unifacially retouched end scrapers in the Laurel component (this tool has often been associated with suspected fishing camps), and the general site location. In addition, analogies to historic Algonkian groups showed a similar site selection with regards to the season and the purpose of the encampment. It was estimated that the house possibly contained 8-10 persons, either a single extended family or several nuclear families. The Blackduck and Selkirk occupations were likewise probably fishing camps, but further speculation was impossible due to the mixed nature of the deposits from these cultures.

Overall, the Bundoran house site fits well into the collection of recently discovered Laurel houses in northwestern Ontario. Since these sites have only been discovered in the past 10-15 years, analysis of Laurel houses thus far has been limited to site descriptions and tentative comparisons. The point has now been reached, however, at which enough data exists to serve as the foundation for a model of Laurel houses.

The application of models created for other settlement studies, such as Flannery (1976) and Chang (1958) are of value to the northwestern Ontario situation. The Laurel house remains at the Bundoran site and the other Laurel house sites listed in the text show consistently similar remains, therefore it may be concluded that the house, as an analytic unit, shows a circular or ovoid formation of rocks demarcating the house walls, with associated post moulds indicating posts on which the house covering was laid. The "activity area" concept showed tool production or retouching areas near hearths inside the house, and the "household cluster" concept revealed a circular or oval house outline, with multiple hearths and storage pits inside, as well as activity areas at the hearths.

The research methods employed in this thesis were useful in producing a description of the recoveries from the Bundoran site excavations in 1977 and 1978, and in producing tentative dates for the site components. The approach to analyzing the Laurel house structure was helpful in making a comparative and descriptive study of the archaeological remains found at Laurel house sites, and what should be expected from Laurel house sites in the future. This methodology was not sufficiently refined, however, to be able to make more than generalized comments about the organization in the Laurel household. In order to make specific inferences regarding Laurel social and economic roles within the household, a more thorough analysis of "activity areas" and "household clusters" would have to be carried out on a larger and more detailed data base.

The next goal for researchers into Laurel houses should be to define the nature of the social units that used the structures that have been described. The number and kinds of people that occupied Laurel houses, their relationship to each other, and the reasons for

using that site are all data that, with further refinement of this model, may be inferred from the analysis of the Laurel house. By applying some of the units of analysis suggested by people such as Flannery and Winter to Laurel house sites in northwestern Ontario, and with further substantive research into Laurel houses, archaeologists may be able to address the problem of the organization of the Laurel household. In addition to this, continuing research into "social archeology", such as done by Deetz (1968) and Redman (1977), will be necessary to fully analyze the social systems of the Laurel culture.

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APPENDIX

• • • - punctates

-CWS

100 - stamp

|| -incised lines



Fig. 8 Laurel Master Ceramic Chart


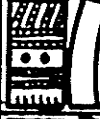


















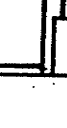
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Fig. 9 Blackduck Master Ceramic Chart


























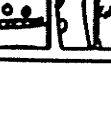


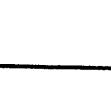


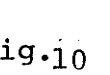

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						1			

Fig.10 Blackduck Master Ceramic Chart

			A	B	C	D	E	F	G	L	M	N	P	T	U	V	W	X	Y					
			7	3	1	4	2	1	8		4	2		3	2		1							
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Fig.11 Selkirk Master Ceramic Chart

RIM SHERD ANALYSIS SHEET

1. SITE:

2. PROVENIENCE: A - UNIT:

B - LEVEL:

3. CATALOGUE NUMBER: R _____

4. METRIC ATTRIBUTES

A - LIP THICKNESS (nearest 0.5mm):

B - NECK THICKNESS (nearest 0.5mm):

5. PUNCTATES

A - MORE THAN ONE ROW (Yes/No):

(If "Yes", add data for each below using "/", eg. -"Yes/Yes/No")

B - EXTERIOR (Yes/No):

Bb - ASSOC. INT. BOSSES (Yes/No):

C - INTERIOR (Yes/No):

Cc - ASSOC. EXT. BOSSES (Yes/No):

D - DISTANCE BELOW LIP (mm):

E - DISTANCE APART, AVERAGE (mm):

F - SHAPE (C=circular, O=oval, S=square, etc.)

G - DIAMETER OR MAXIMUM LENGTH (mm):

6. PASTE/TEMPER

A - WELL FIRED (W), POORLY FIRED (P), LAMINATED (L):

B - TEMPER SIZE (L, M, S):

C - IDENTIFY TEMPER? (Yes/No, if "Yes" enter):

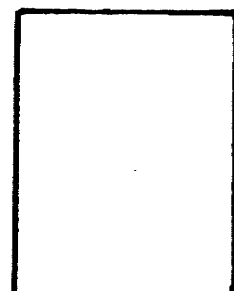
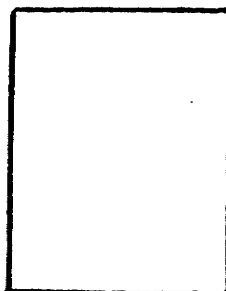
7. FORM AND DECORATION

A - PROFILE
(Ext. to left)

EXTERIOR

LIP

INTERIOR



(If shoulder present, draw
full profile on reverse side)

Start of neck

B - LEGEND FOR DECORATIVE TECHNIQUES (if rim is broken near
lip, black out the missing portion of neck in 7A above)

8. ADDITIONAL DATA

A - COIL BREAKS (Yes/No):

D -

B - TYPE:

E -

C -

F -