

THE ARCHAEOLOGY OF HELEN POINT, MAYNE ISLAND

by

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ABSTRACT

This thesis consists of an extensive examination and description of prehistoric and historic cultural materials recovered during archaeological investigations at Helen Point on Mayne Island, British Columbia. The excavations, which were conducted by the British Columbia Provincial Museum in 1968, had as their primary objective the salvage of cultural information from a midden which at the time was endangered by erosive tidal action. Analysis of the recovered data indicated that there had been three discrete and temporally sequential occupations of the site in prehistoric times. While many traits were shared by these cultural units, each could be readily distinguished by traits which were either unique to the unit or chiefly confined to the unit. In chronological order from earliest to latest, these units were named respectively; Helen Point Ib, Helen Point II, and Helen Point III. When compared to similarly conceived units at other archaeological sites, it was found that each of these components could be considered manifestations of previously described and documented prehistoric cultures in the Gulf of Georgia Region. Helen Point Ib exhibited an admixture of traits from two previously isolated phases, the Mayne phase and the Locarno Beach phase. Helen Point II was found to be most closely related to components of the Marpole phase,

while Helen Point III was comparable to components of the Stselax and San Juan phases.

While precise dating of the three components has not been established, comparison with similar dated assemblages suggests the following relative chronology: Helen Point Ib, 1300-800 B.C.; Helen Point II, 100 B.C. - A.D. 300; and Helen Point III, A.D. 1200-1400. These ranges roughly estimate the earliest probable date of occupation for each of the components.

The descriptive analysis of these components should prove to be invaluable as an informative base upon which further research in the region can be planned and directed.

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Among those many persons to whom I am indebted in varying degrees for the final outcome of this thesis, there are several who deserve special mention and thanks. Firstly, I would like to thank Dr. Carlson, my senior supervisor and Chairman of the Archaeology Department, who did not attempt to impose his ideas or answers but encouraged me to seek my own. I would also like to express my gratitude to Philip Hobler who was always willing to discuss problems that arose, no matter how miniscule they were. Also deserving special mention is Grant Dickinson, a friend who spent many frustrating hours drawing the artifacts included in this thesis. In addition, I would like to thank Donald Abbott and John Sendy of the British Columbia Provincial Museum for their co-operation and assistance, and for the loan of artifacts and field notes from the Helen Point Site. Last but by no means least, I thank my wife Ann, a source of constant encouragement at times when it was needed most.

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CHAPTER I
INTRODUCTION

This thesis is concerned with a description of pre-historic and historic cultural materials recovered during excavations of a single site on Mayne Island in 1968. The excavations which were directed by John Sandy of the British Columbia Provincial Museum were primarily concerned with the salvage of artifacts and other cultural remains from a midden which would shortly have been completely destroyed by the tide. While a salvage project normally entails sacrificing the more esoteric methods of archaeological research, it was possible in this case to complete the excavations with a minimal loss of cultural information. As few excavations in the Gulf of Georgia Region had been adequately reported, it was decided that this thesis should describe, analyze, interpret and compare the recovered data to the fullest extent possible. Accurate detailed descriptions of pre-historic cultures with special reference to their spatial and temporal relationships must be the first step toward a problem-oriented approach to prehistory in the region. The ultimate value of this thesis then, must lie in its contribution to a rapidly expanding body of empirical cultural data on the basis of which archaeologists may direct future research.

CHAPTER II

THE ISLAND

Location and Landforms

Mayne Island is situated near the southern end of the Strait of Georgia and forms part of a chain of islands collectively referred to as the Gulf Islands. (Fig. 1) Forming part of the Nanaimo Lowland, it lies on the western side of the Georgia Depression and is flanked on the west by the mountains of Vancouver Island and on the east by the Coast Mountains. Characteristic features of the area are low wooded ridges separated by narrow valleys. Hard sandstone and conglomerate beds underly the ridges while the valleys consist of shales and softer rocks. A north-westerly elongation of the ridges and of the Gulf Islands has resulted from differential erosion of sedimentary rock which is of Upper Cretaceous age. During the pleistocene the already low relief of the area was further reduced by glacial erosion and by deposits of glacial and fluvio-glacial materials (Holland 1964).

Climate

A summer-dry maritime type climate is characteristic of the Strait of Georgia Region (Kerr 1951; Putnam 1965). The area, which is sheltered from the normally prevalent westerly winds by the Olympic and Vancouver Island

Figure 1

Gulf Island and Location of Selected
Archaeological Sites

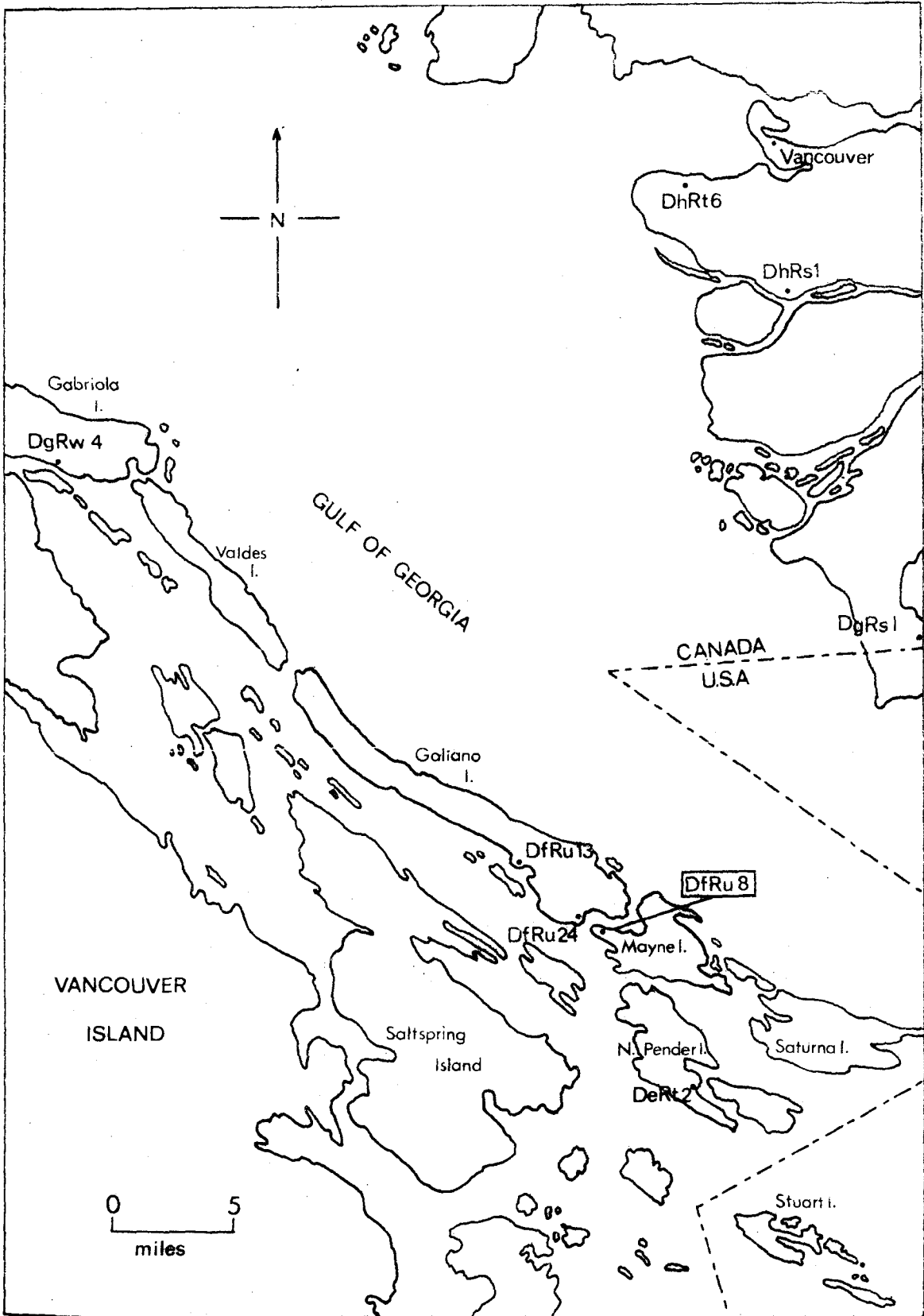


Figure 1

Mountains, receives an annual rainfall of less than forty inches. Seventy-five percent of this rain falls in the period from October to March and a water deficiency of between five and ten inches is characteristic of the summer months. The average annual temperature range is less than 25 degrees, with a July mean of 63 degrees and a January mean of 38 degrees Fahrenheit. General climatic traits of the region are cool dry summers and humid mild winters.

Flora and Fauna

Mayne Island falls within the Gulf Islands Biotic Area of Munro and Cowan (1947). Over the large part of this area Garry Oak (Quercus garryana) and Madrona (Arbutus menziesii) constitute a climax vegetation, while elsewhere this type gradually gives way to a coniferous climax (Cowan 1965:26). Douglas fir and Western red cedar are typical of the latter and are prominent in the vicinity of DfRu8.

No land mammals are restricted to the boundaries of this area, but the wandering shrew (Sorex vagrans Vancouverensis), white footed mouse (Peromyscus maiculatus angustus), and Townsend vole (Microtus townsendi tetraminus) are more numerous here than elsewhere. Absent from the area are; timber wolf, marten, weasel, wolverine, black bear, beaver, and wapiti (Munro and Cowan 1947:35).

Sea mammals common to the Georgia Strait Region include; harbour seal (Phoca vomerina), northern sea lion (Eumetopias jubata), California sea lion (Zalophus californicus), sea otter (Enhydra lutris), Baird dolphin (Delphinus bairdi), Pacific striped dolphin (Hagerorhynchiis obliquidens), Dall porpoise (Phocaenoides dalli), Killer whale (Grampus rectipinna), humpback whale (Megaptera novaeangliae), pike whale (Balaenoptera acutorostrata), and gray whale (Eschrichtius glaucus) (Cowan 1965:28).

The shore of Mayne Island supports a marine community typical of other rocky shorelines in the Georgia Strait Region (Carl 1971:14). Common fishes include the rockfishes (Sebastes spp.), greenlings, lingcod (Ophiodon elongatus), sea perches (various species), herring, coho (Oncorhynchus kisutch), and spring salmon (O. tshawtscha). Also present offshore are: Dogfish (Squalus suckleyi), Big Skate (Raja binoculata), pink salmon (O. gorbuscha), sockeye salmon (O. nerka), chum salmon (O. keta), silver smelt (Hypomesus pretiosus), flounder (Atherethes stomias), halibut (Hippoglossus stenolepis) and sole (numerous species).

The most common intertidal shellfish of the area include; Blue Mussel (Mytilus edulis), Butter Clam (Saxidomus giganteus), Horse Clam (Schizothaerus capax), Geoduck (Panope generosa), Cockle (Clinocardium nuttalli), Dog whelk (Thais lamellosus), and Sand Clam (Macoma spp.)

CHAPTER III

Setting

The culture bearing deposits at DfRu8 are visible for about 450 metres along the shore of Active Pass and extend approximately 50 metres inland from the beach. The western part of the site is situated near a cluster of contemporary Indian dwellings (2) and outbuildings (3) and fronts on a small bay. While the bay affords protection against strong currents and high seas, the high tides characteristic of the region have succeeded in eroding much of the midden in this area. The eastern part of the site, the boundary of which is marked by a large rectangular house depression, fronts directly on Active Pass. Midden in this area has been preserved to some degree by large beds of conglomerate rock which present their protective surfaces to the sea.

History of Investigations

Mayne Island first came to the attention of social scientists through the investigations of Wilson Duff. In 1955, while investigating a complex of soapstone artifacts that occurred in a number of Gulf Islands sites, Duff discovered seven of these artifacts from Mayne Island in the Provincial Museum collections. These had been donated in 1944 by Mr. and Mrs. F.J. Barrow of Sidney

who had collected a number of artifacts from the surface of the site. A report on the results of Duff's research was subsequently published by the Museum (Duff 1955) and interest in the culture history of the Gulf Islands was stimulated as a result.

In 1966 the first archaeological investigation of Mayne Island was undertaken by the Archaeological Sites Advisory Board. Excavations were centered on an eroded midden deposit situated near the head of a small cove on the north side of Helen Point. Four 2 x 2 meter squares yielded 662 artifacts, one feature, and three burials. On the basis of investigations that year, John Hall (1968) compiled a report which allowed for the division of the Helen Point cultural sequence into three components. From earliest to youngest these were named respectively: Helen Point I, Helen Point II, and Helen Point III.

In 1968, further excavations of the Helen Point site were undertaken by the Archaeological Field School of Simon Fraser University. These excavations, which were situated toward the eastern end of the site, yielded a total of 2,580 artifacts, eight burials, and a number of habitation features. According to Carlson (1970:114), the combined data indicated that there had been, "three sequent occupations of the excavated parts of the site punctuated by periods of abandonment." Each of these periods of occupation was characterized by a distinctive

complex of artifacts and each was thus given separate phase status. In chronological order, from earliest to latest, these three phases are: the Mayne phase, the Marpole phase, and the San Juan phase.

The excavations with which this report is concerned were undertaken by the British Columbia Provincial Museum between May and August of 1968. Consisting of three spatially separate test cuts, these excavations were concentrated in the central and western areas of the site. A total of 4,373 artifacts, five burials, and eight cultural features were recovered from the three test cuts.

CHAPTER IV

THE EXCAVATIONS

Excavation Techniques

In the 1968 field season, horizontal control was maintained by means of a metric grid system which was oriented on a north-south, east-west axis. The vertical and horizontal provenience of each artifact and cultural feature was recorded to the nearest centimeter in relation to a fixed datum point. All excavated cultural and faunal material was collected in bags, one for each ten centimeter arbitrary level, and the associated stratigraphic unit noted. While troweling was the primary method of excavation, shovels were employed when sterile or near sterile strata were encountered. All shovelled earth and a greater percentage of trowelled earth was screened on one quarter inch mesh.

Test Cut 1

These excavations were conducted directly behind and to the south of a home belonging to Felix Jack, a member of the Tsartlip Band. The house was apparently occupied until 1967, at which time it was abandoned by the owner and its use discontinued.

A trench, nine metres in length and two metres in width, running east to west, was laid out parallel to

the house and a datum point, Datum B, was established in a tall vertical clothesline pole. (Figure 2) This point was marked by a large iron spike 50 cm. above ground surface. Two, 2 metre squares were excavated to sterile subsoil, while a third 2 metre square was excavated to a depth of approximately 15 cm. below surface. The maximum depth of midden in this area was approximately 60 cm.

Test Cut 2

These excavations, which were situated in the same area as those carried out in 1966 by the Archaeological Sites Advisory Board, used the same Datum point, Datum A. The latter had been established in a large cedar tree to the west of the area to be investigated. The 1966 excavations had been situated on midden bordering directly on the beach in an area threatened by erosive tidal action. In 1968 it was discovered that the midden which remained in this area was again endangered. For this reason, excavations were undertaken which included a 4 x 2 metre test trench and an additional 2 x 2 test square. The latter square was eventually expanded to include a 1 x 2 metre extension to the east and a 1 x 2 metre extension to the north. In addition to the above, a 2 x 2 metre test square that had been partially excavated in 1966 was re-excavated to sterile subsoil. Midden in this area attained a maximum depth of approximately 3.4 metres.

Figure 2

DfRu 8, Spatial Relationships of the
Excavations

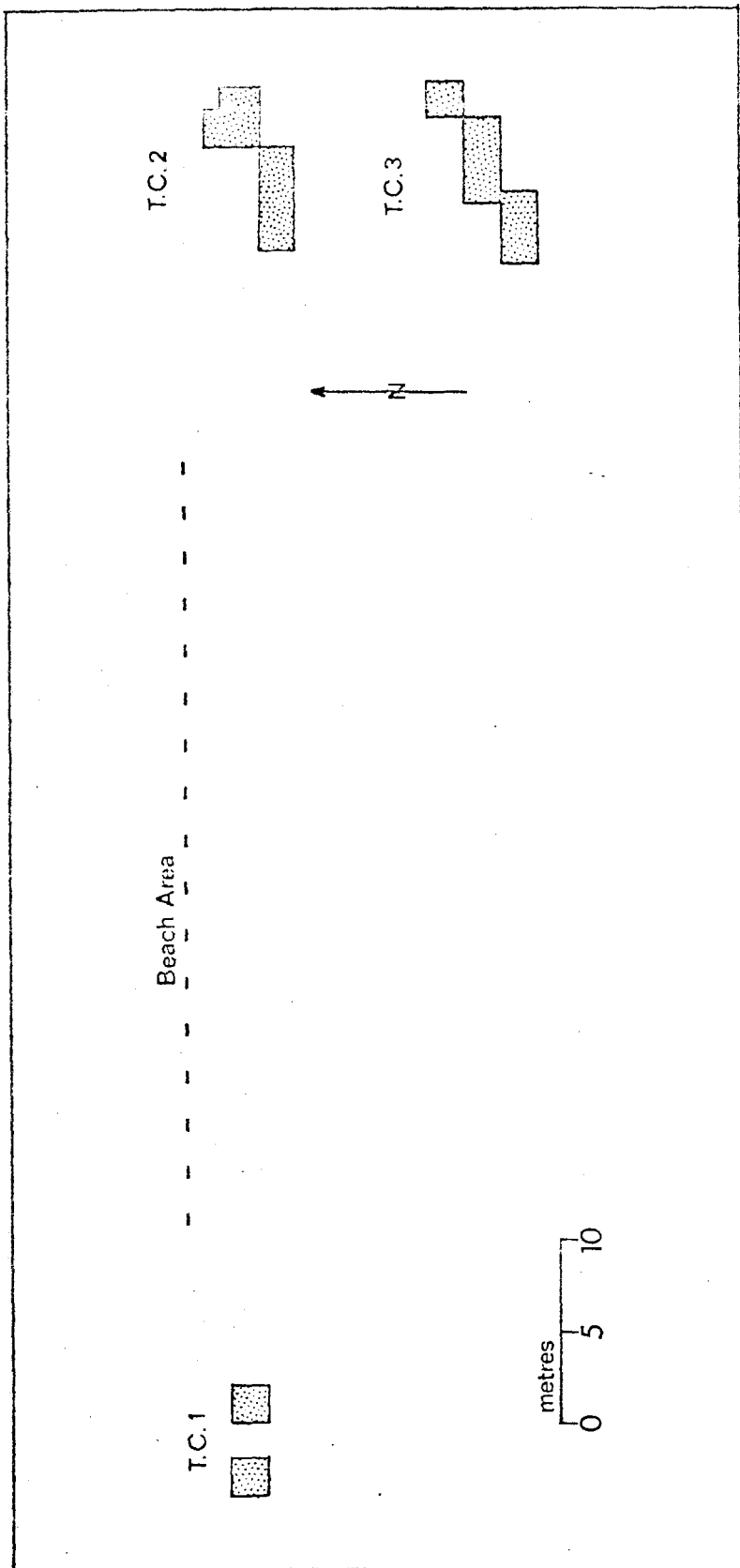


Figure 2

Excavated Areas
1968

Test Cut 3

These excavations were located on a bench a short distance south of Test Cut 2 in an area somewhat further from the beach. A separate datum point, Datum C, was established on the trunk of a large cedar tree, 50 cm. above ground surface. A grid system, oriented on a north-south, east-west axis, was superimposed. Excavations included respectively, a 4 x 2 metre test trench, a 5 x 2 metre test trench, and a 2 x 2 metre test square. All were adjoining and each was situated progressively further east from datum and north toward Test Cut 2 and the shore.

CHAPTER V
PHYSICAL STRATIGRAPHY

An extensive analysis of stratigraphic profiles and photographs from Test Cuts 1, 2 and 3 was undertaken. The results of this examination, combined with an additional study of the positional relationships of cultural material to the observed physical strata, permitted the delineation of three culturally significant strata and two culturally sterile deposits. (Figs. 3, 4, 5).

The earliest deposit consists of a layer of yellow glacial till which has the consistency and appearance of sandy clay. In Test Cut 2 this deposit also contains pea

TABLE I
Distribution of Stratigraphic Units

Stratum	Description	Test Cut		
		1	2	3
C	loose brown humic	x	x	-
B	dark brown to black sandy	x	-	x
A	brown sandy pea gravel	-	x	x

Key: x = Stratum present
- = Stratum absent

Figure 3

Profile of Square: North 0-2 metres, East
0-2 metres, Test Cut 1.

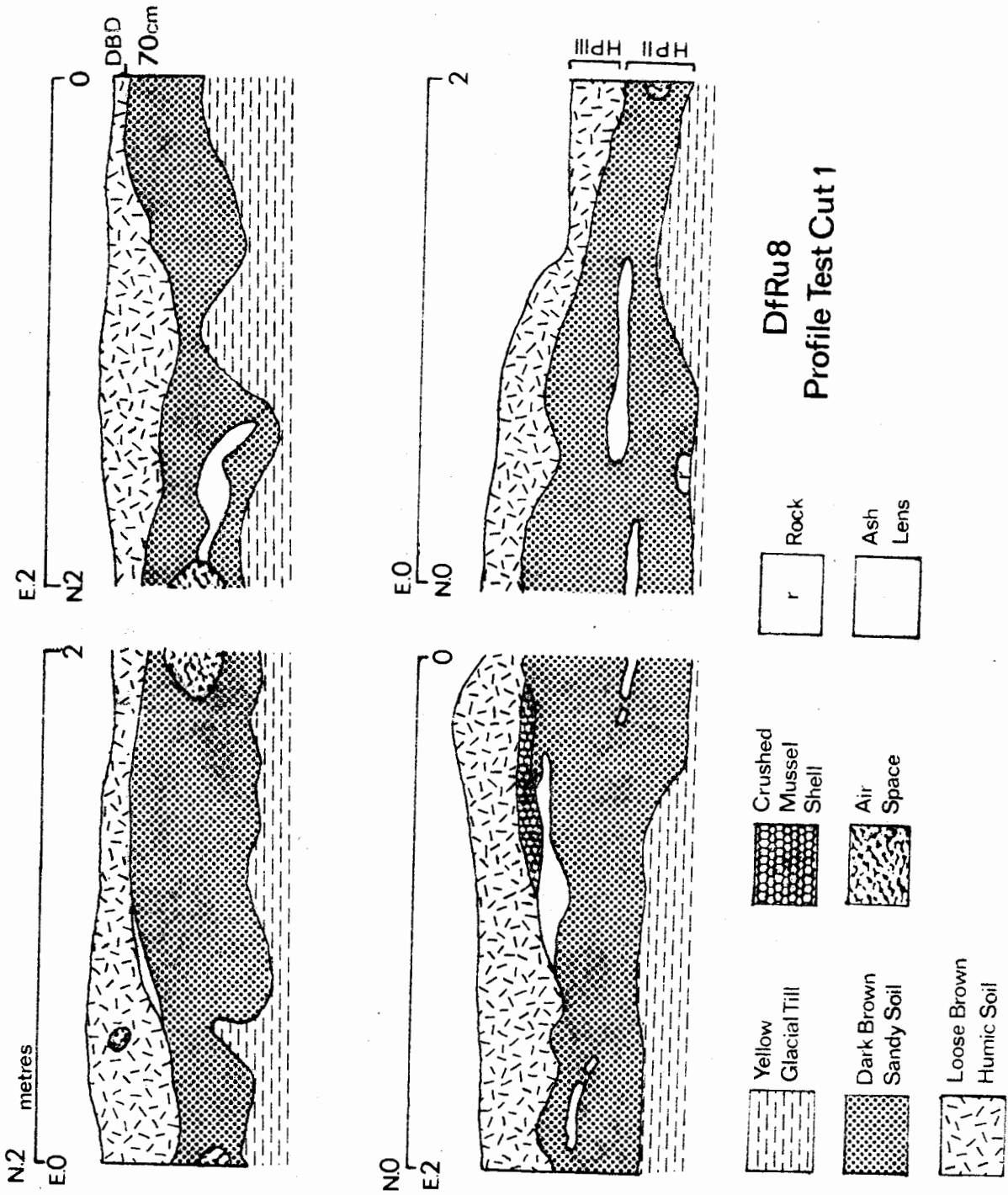


Figure 3

Figure 4

Profiles of North Wall at 0.0 metres,
between East 6-10 metres, Test Cut 2.

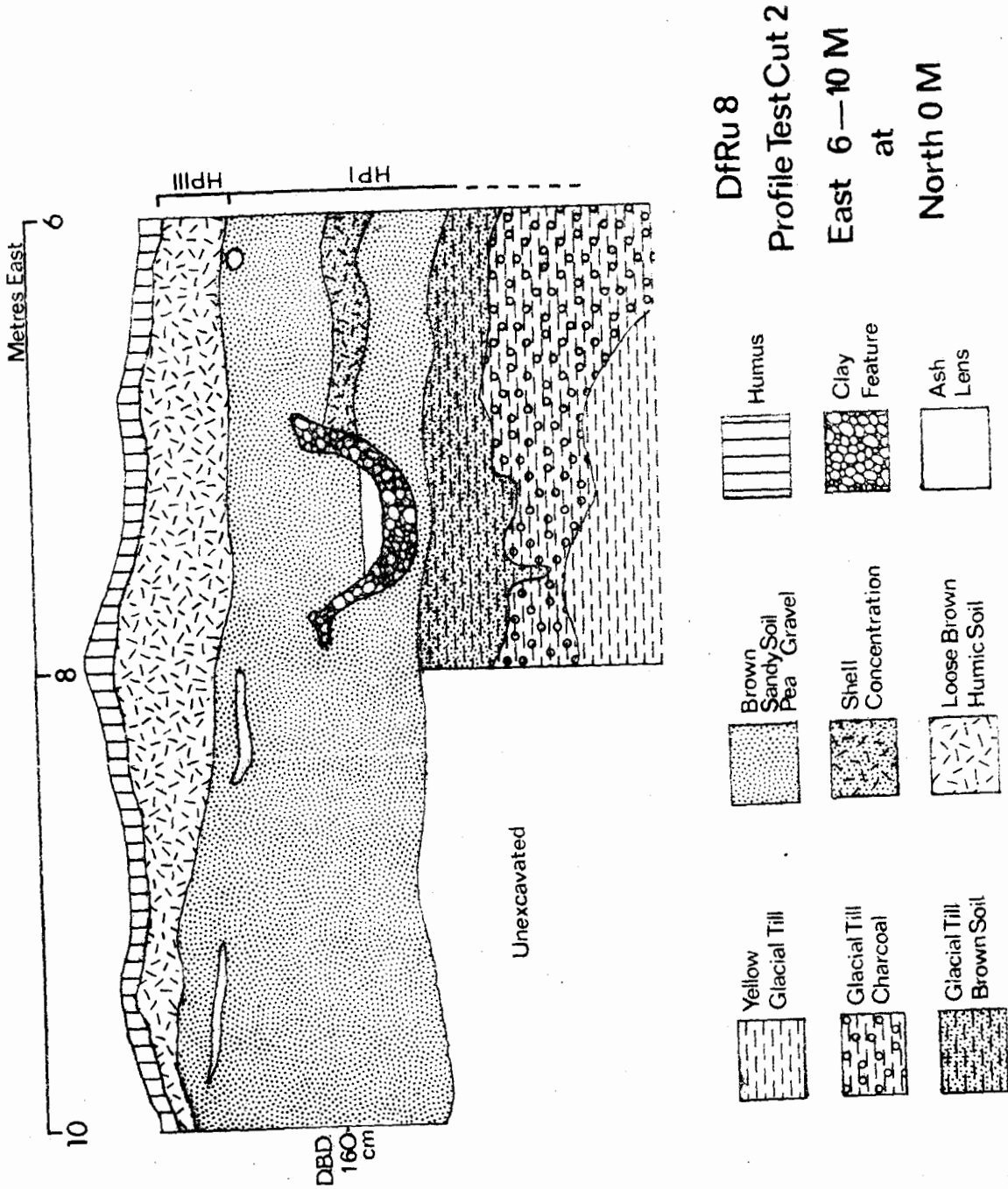


Figure 4

Figure 5

Profiles of North Wall at 2.0 metres,
between East 0-6 metres, Test Cut 3.

gravel. Beneath this glacial unit lies a hard conglomerate of Upper Cretaceous age: a deposit which forms the basic geological foundation of the Island. It is above these two sterile units that the three major culture bearing strata are situated.

Stratum A

The earliest stratigraphic unit is a brown sandy soil containing pea gravel, traces of finely fragmented shell, and sporadically occurring lenses of humus, clay, charcoal, and ash. Fire-cracked rock is liberally scattered throughout this unit. In the area of Test Cut 3 the deposit achieves a maximum thickness of approximately 75 centimetres, with an average thickness of about 45 centimetres. In the area of Test Cut 2 the deposit is somewhat thicker, the maximum vertical extent being approximately 90 cm. and the minimum about 50 cm.

Stratum B

Overlying Stratum A is a deposit of dark brown to black sandy soil. Contained within this matrix are numerous lenses consisting variously of; fragmentary shell, sea urchin spines, orange and yellow ash, sand, and gravel. Some pea gravel is present in this unit and fire-cracked rock is once again scattered throughout. This deposit is generally less compact in Test Cut 1 than in Test Cut 3. The thickness of the deposit in

Test Cut 1 varies from a maximum of about 65 cm. to a minimum of about 25 cm. In Test Cut 3 it achieves a maximum thickness of approximately 40 cm. and narrows to the point of extinction in the northernmost section of the excavation. Extensive root systems in the area of Test Cut 3 have to some extent disturbed the deposit in that vicinity.

Stratum C

A loose brown humic soil is typical of this stratigraphic unit. Shell, while still fragmentary for the most part, is generally more concentrated than in the previous two units. Scattered pockets of whole shell and green and purple sea urchin are encountered, while lenses of light orange ash, yellow ash, and charcoal are also typical contents of this deposit. In all areas this unit is capped by a thin layer of naturally deposited humus. While a number of historic period artifacts were discovered in this deposit, its content was not deemed sufficiently significant to warrant a separate stratigraphic designation.

CHAPTER VI

CULTURAL UNITS

An analysis of the artifact assemblage from DFRu 8 resulted in the isolation of three distinct cultural components. For reasons which are explained more fully in Chapter XI, the following scheme of numbers and letters are used to describe components in the Helen Point sequence.

Helen Point Ia: Refers to the earliest component in the Helen Point sequence. Discovered by Dr. R.L. Carlson during excavations in 1968, it is confined primarily to the eastern area of the site and is known as the Mayne phase. (Carlson 1970:115). This component manifests itself only marginally in the area of the site with which this thesis is concerned.

Helen Point Ib: The assemblage which characterizes this component indicates relationships to both the Mayne phase and to later assemblages described as components of the Locarno Beach phase. It is thought that Helen Point Ib may demonstrate an evolutionary link between the Mayne and Locarno Beach phases.

Helen Point I: The traits shared by Helen Point Ia and Helen Point Ib suggested that they formed part of the same cultural continuum in time and space. It

was therefore decided that a subdivision of a single unit best described their relationship.

Helen Point II: Denotes a relationship to components of the Marpole phase.

Helen Point III: Denotes a relationship to cultural units which have been variously described as the San Juan phase, Stselax phase and Gulf of Georgia Culture Type.

The units with which we are chiefly concerned, Helen Point Ib, Helen Point II, and Helen Point III, are derived respectively from stratum A, stratum B, and stratum C.

The primary method used in the isolation of these components entailed placement of the artifacts on scale stratigraphic profiles which had been superimposed on several large laboratory tables. In this manner the original provenience or context of artifacts was reproduced thus permitting careful analysis of their distribution. A second method, which served as a cross-check on the foregoing, involved separation of the artifacts by ten centimetre vertical units and twenty centimetre horizontal units. Usage of the above methods revealed that distinguishing criteria for the three components were basically of two kinds: (1) The presence in one component of artifact types which were not present in others, and (2) Significant differences between the components in the proportional occurrence of artifact types or classes which were shared.

The results of a distributional analysis of artifact types by component (Table III), indicated that 8 artifact types were confined to Helen Point I, 3 to Helen Point II, and 5 to Helen Point III. Nine of these sixteen artifact types occur in numbers of two or less in the component in which they are isolated and are known to occur in different cultural contexts at other sites. They therefore should not be considered diagnostic. Artifact types consisting of three or more specimens which are confined to a single component include for Helen Point I: Gulf Islands Complex Artifacts, Cobble and Pebble Choppers, and polished pebbles, for Helen Point II: none, and for Helen Point III: Triangular ground slate points, composite toggling harpoon valves, herring rake barbs, and ulna knives.

A number of shared artifact types are considered significant in separating the components as their occurrence in one of the three components is significantly greater than in others: for Helen Point I these included: microblades, contracting stem chipped stone points, leaf shaped chipped stone points, chipped slate knives, and leaf shaped ground slate projectile points; for Helen Point II: Triangular and Leaf-Triangular chipped stone projectile points; and for Helen Point III antler wedges, bi-pointed bone objects, and ground slate knives.

A distributional analysis of artifact classes by component also provides a valid means of distinguishing between the three components. Table II presents the relevant data

on a percentage basis.

TABLE II

Distribution of Artifact Classes by Component
(Expressed in Percentages)

CLASS	COMPONENT		
	I	II	III
Chipped Stone	63.3	68.6	10.7
Ground Stone	8.2	2.9	9.6
Pecked & Ground Stone	4.5	2.9	1.5
Bone	13.6	14.8	61.3
Antler	8.9	10.8	13.8
Shell	1.5	.0	3.1

Using the criterion of artifact classes, the defining characteristics of each component can be summarized in the following manner:

Helen Point Ib

- An emphasis on chipped stone artifacts which is about equal proportionately to Helen Point II, but significantly greater than Helen Point III.
- A use of ground stone which is approximately equal to Helen Point III but proportionately greater than Helen Point II.
- Of the three components it is characterized by the greatest emphasis on artifacts of pecked and

TABLE III

Distribution of Artifacts by Component

Class	Component			Site
	I	II	III	
STONE				
Chipped Stone				(267)
leaf-shaped points	4	1	0	5
triangular points	2	5	0	7
leaf-triangular points	1	3	1	5
diamond-shaped points	2	0	0	2
contracting stem points	9	2	0	11
stemmed & barbed points	1	0	0	1
stemmed triangular points	0	0	1	1
point fragments	25	8	4	37
chipped preforms	7	2	1	10
microblades	11	3	0	14
modified basalt flakes	22	18	10	50
modified quartz flakes	43	16	1	60
obsidian flakes	5	1	0	6
jasper flakes	0	1	0	1
cobble-spall tools	5	2	2	9
split-cobble tools	4	1	0	5
cobble cores	5	1	0	6
pebble choppers	5	0	0	5
miscellaneous core tools	1	1	0	2
chipped slate points	3	1	0	4
chipped slate knives	17	3	1	21
slate flakes	4	1	0	5
Ground Stone				(46)
leaf-shaped points	4	0	3	7
triangular points	0	0	5	5

TABLE III
Distribution of Artifacts by Component

Class	Component			Site
	I	II	III	
STONE				
Chipped Stone				(267)
leaf-shaped points	4	1	0	5
triangular points	2	5	0	7
leaf-triangular points	1	3	1	5
diamond-shaped points	2	0	0	2
contracting stem points	9	2	0	11
stemmed & barbed points	1	0	0	1
stemmed triangular points	0	0	1	1
point fragments	25	8	4	37
chipped preforms	7	2	1	10
microblades	11	3	0	14
modified basalt flakes	22	18	10	50
modified quartz flakes	43	16	1	60
obsidian flakes	5	1	0	6
jasper flakes	0	1	0	1
cobble-spall tools	5	2	2	9
split-cobble tools	4	1	0	5
cobble cores	5	1	0	6
pebble choppers	5	0	0	5
miscellaneous core tools	1	1	0	2
chipped slate points	3	1	0	4
chipped slate knives	17	3	1	21
slate flakes	4	1	0	5
Ground Stone				(46)
leaf-shaped points	4	0	3	7
triangular points	0	0	5	5

TABLE III Continued

Class	Components			Site
	I	II	III	
Ground Stone Continued				
point fragments	1	0	2	3
slate knives	1	0	5	6
slate punch	1	0	0	1
ground slate fragments	0	3	3	6
Gulf Islands Complex	8	0	0	8
labrets	2	0	0	2
polished pebbles	3	0	0	3
adze blades	1	0	0	1
sandstone saws	1	0	1	2
modified concretion	0	0	1	1
zoomorphic object	1	0	0	1
Pecked and Ground Stones				(18)
grooved or notched	1	1	0	2
hammerstones	5	2	0	7
handstones	3	0	2	5
red ochre	1	0	1	2
mica	2	0	0	2
Miscellaneous Stone				(3795)
unmodified basalt flakes	1635	974	100	2709
unmodified quartz	219	117	3	339
unmodified slate blanks	386	73	39	498
abrasive stones	140	66	43	249
BONE				(172)
unilaterally barbed bone				
points	2	1	3	6
large unbarbed bone points	1	0	1	2
bipointed bone objects	3	2	64	69
small single pointed bone objects	0	0	4	4

TABLE III Continued

Class	Components			Site
	I	II	III	
BONE Continued				
wedge-based bone points	1	0	1	2
split bone awls	1	0	2	3
ulna knives	0	0	3	3
bone wedge	0	0	1	1
needles	2	0	0	2
pendants	0	1	0	1
dagger-like objects	0	1	1	2
perforated bone objects	1	1	0	2
bird bone tube	0	1	0	1
beaver-tooth tool	1	0	1	2
miscellaneous bone	26	8	38	72
ANTLER				(65)
unilaterally barbed antler points	3	1	0	4
bilaterally barbed antler harpoon	1	0	0	1
composite toggling harpoon valves	0	0	6	6
foreshafts	1	0	0	1
wedges	4	2	9	15
antler-tine objects	0	2	2	4
pendants	2	0	0	2
pointed antler object	1	0	0	1
miscellaneous antler	15	6	10	31
SHELL				(10)
Mytilus californianus tools	<u>4</u>	<u>0</u>	<u>6</u>	<u>10</u>
Total	2660	1332	381	4373

ground stone.

Helen Point II

- The highest incidence of chipped stone artifacts of all three components.
- The lowest incidence of ground stone artifacts of all three components.

Helen Point III

- Least use of chipping techniques for working stone of all three components.
- A significantly greater emphasis on grinding techniques for working stone than evidenced in Helen Point II but approximately the same, proportionately as in Helen Point I.
- A much greater occurrence of bone tools than in either of the two earlier components.

CHAPTER VII

DESCRIPTION OF ARTIFACTS FROM THE HELEN POINT MIDDEN

Introduction

The following discussion of artifacts employs a descriptive system based on the concept of type. A type may be defined as a group of artifacts which share a consistently recurring range of specified attributes. In some cases artifacts are grouped further into what might be called sub-types. These may be defined as sub-groups within the type which share an even higher level of affinity. In the naming and description of types terminology which implies a specific function is used where ethnographic analogy permits or where the author feels that such terminology would facilitate comparison with artifact types in assemblages from other sites. Non-functional terminology is used where ethnographic analogy has failed or where types were previously unknown and/or undescribed.

As the metric system was used in the measurement of artifacts all values of size are expressed in centimetres except where otherwise indicated, measurements of length, width and thickness always refer to the maximum length, width and thickness of particular artifacts and the respective weights of artifacts, where applicable, are expressed in grams. All drawings in the thesis are

life size.

CHIPPED STONE ARTIFACTS

Unstemmed Projectile Points

A. Leaf-shaped

Eight specimens are representative of this type; seven of dense basalt, and one of fine-grained or vitreous basalt. Flaking on all specimens is generally crude and irregular, none of the finished artifacts being particularly symmetrical. The single specimen produced in fine-grained basalt is considerably more thinned and symmetrical than others in this category, suggesting that the general crudity of these artifacts is due primarily to the quality of the raw material. Two sub-types of leaf-shaped points were isolated on the criterion of base form and are described in detail below.

A.1. Leaf - Convex Base (Fig. 6,a) (Fig. 7, d-h)

Five points occur in this category, one specimen exhibiting a plano-convex cross-section, the other four examples bi-convex cross-sections. Although there is a tendency toward asymmetry, the edges of all points are generally convex. In general, flake scars are large, except on the edges where the points have been more finely retouched.

A.2. Leaf - Straight Base (Fig. 6, b) (Fig. 7, a-c)

The three points representative of this category all display bi-convex cross-sections. Flaking is once

Figure 6

Unstemmed Projectile Points

- a. leaf-shaped point, convex base
- b. leaf-shaped point, straight base
- c. leaf-triangular point
- d-e. diamond-shaped points
- f. triangular point, convex base
- g. triangular point, concave base
- h. triangular point, straight base



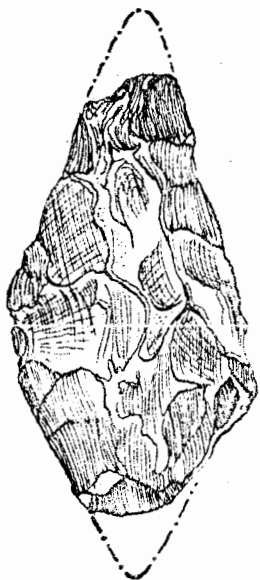
a



b



c



d



e



f



g



h

Figure 6

Figure 7

Leaf-shaped Projectile Points

a-c. leaf, straight base

d-h. leaf, convex base

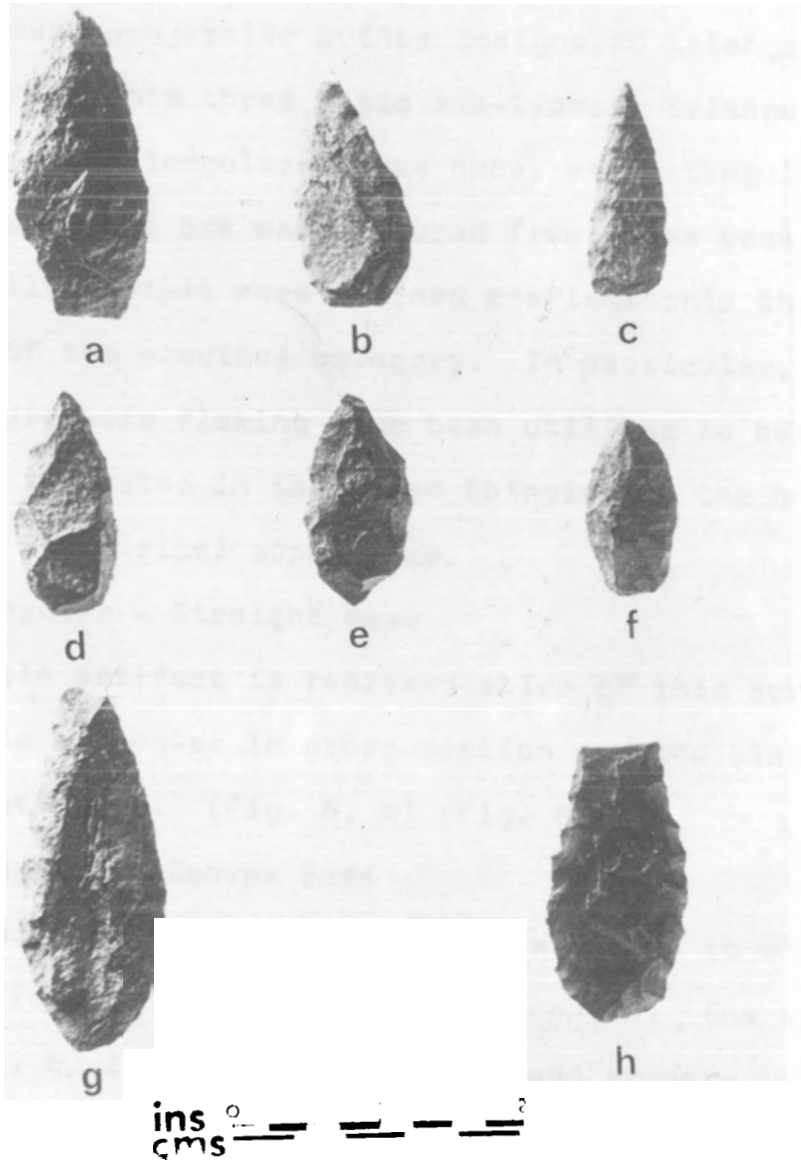


Figure 7

again crude and irregular and the resulting artifacts not particularly symmetrical.

B. Triangular

The seven projectile points designated triangular unstemmed fall into three basic sub-types; triangular - straight base, triangular convex base, and triangular - concave base. All are manufactured from dense basalt and generally exhibit more refined craftsmanship than specimens of the previous category. In particular, techniques of pressure flaking have been utilized to better advantage, indicated in increased thinning of the body and a more symmetrical appearance.

B.1. Triangular - Straight Base

A single artifact is representative of this sub-type. It is bi-convex in cross-section and the blade edges are straight. (Fig. 6, h) (Fig. 8, a).

B.2. Triangular - Convex Base

The edges of this type vary from straight to slightly convex, while the bases are uniformly convex. One specimen (Fig. 8, c) is unifacially flaked and appears to have been utilized in this state without further modification. The other two projectile points representative of this sub-type are bifacially flaked and exhibit bi-convex cross-sections. (Fig. 6, f) (Fig. 8, b, d)

B.3. Triangular - Concave Base

The three specimens representative of this sub-type

Figure 8

Triangular Projectile Points

- a. triangular, straight base
- b-d. triangular, convex base
- e-g. triangular, concave base



a



b



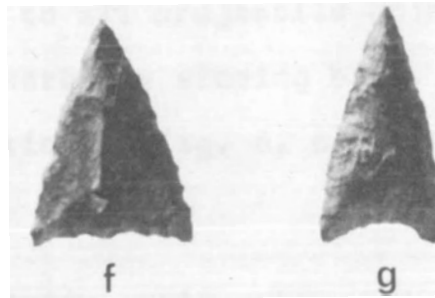
c



d



e



f

g

ins
cms — — — —

Figure 8

are characterized by straight to slightly convex edges and concave bases. One specimen exhibits a plano convex cross-section while the other two exhibit bi-convex cross-sections. (Fig. 6, g) (Fig. 8, 3-g).

C. Leaf - Triangular

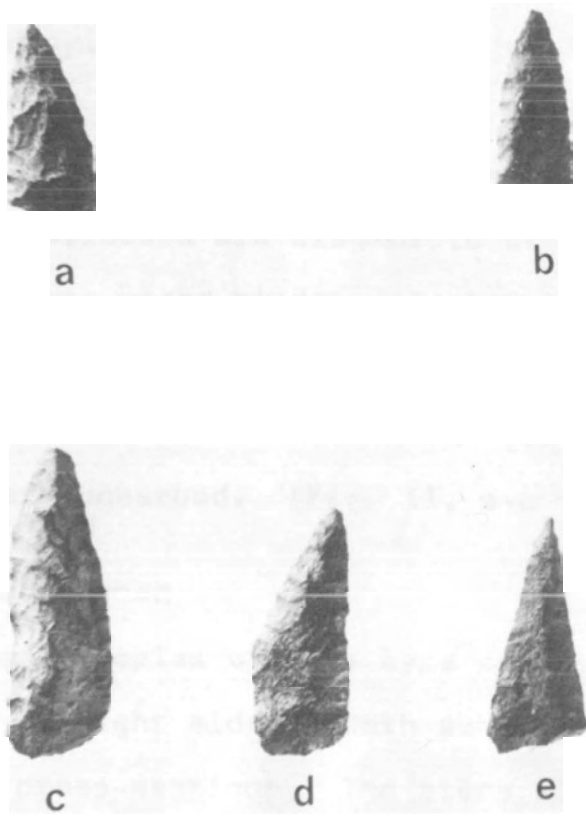
This type is similar in most respects to the Leaf-Triangular type of King (1950:16) and Carlson (1954:19). Carlson describes the shape of the blade as convex on one side and straight on the other and the base as straight to irregular. Of the five projectile points from DfRu 8 considered representative of this type, four exhibit blades which are convex on one side and straight on the other. The fifth exhibits two straight sides of unequal length. (Figure 9, e). However, the one defining characteristic, common to all projectile points of this type from DfRu 8 is a markedly sloping base. All are bi-convex in cross-section. (Fig. 6, c) (Fig. 9, a-e).

D. Diamond

Two projectile points, while outwardly very similar to the Contracting Stem types which follow, do not possess the slight shouldering which is characteristic of this group. Roughly diamond shaped, they are reminiscent of projectile points illustrated by Carlson for the Mayne Phase. (1970:116). Vertical provenience and stratigraphic association of the two indicates that they occur early in the Helen Point I component. (Fig. 6, d, e)

Figure 9

Leaf-Triangular Projectile Points



ins⁰
cms 1 2

Figure 9

(Fig. 12, d, e).

Stemmed Points

A. Contracting Stem

Of the ten examples representative of this type, eight are of dense basalt, one of vitreous basalt and one of chalcedony. The latter two projectile points, manufactured from finer materials, are smaller, more finely flaked, and less asymmetric than the former.

Several attributes are diagnostic of this type, including: convex sided blades, sloping shoulders, and contracting stems. Eight of the points exhibit bi-convex cross-sections while the remaining two are plano-convex. All examples are unbarbed. (Fig. 11, a-c Fig. 10, a-f).

B. Stemmed and Barbed

Of the two examples of this type one is convex sided and the other straight sided. Both exhibit slight barbs and bi-convex cross-sections. The stems although partially truncated, appear to have been contracting. (Fig. 11, d) (Fig. 12, a, b).

C. Triangular - Stemmed

A single projectile point exhibits straight blade edges and an asymmetric stem. The raw material used was chalcedony. (Fig. 7, e) (Fig. 12, c).

Figure 10

a-f. Contracting-stem Projectile Points

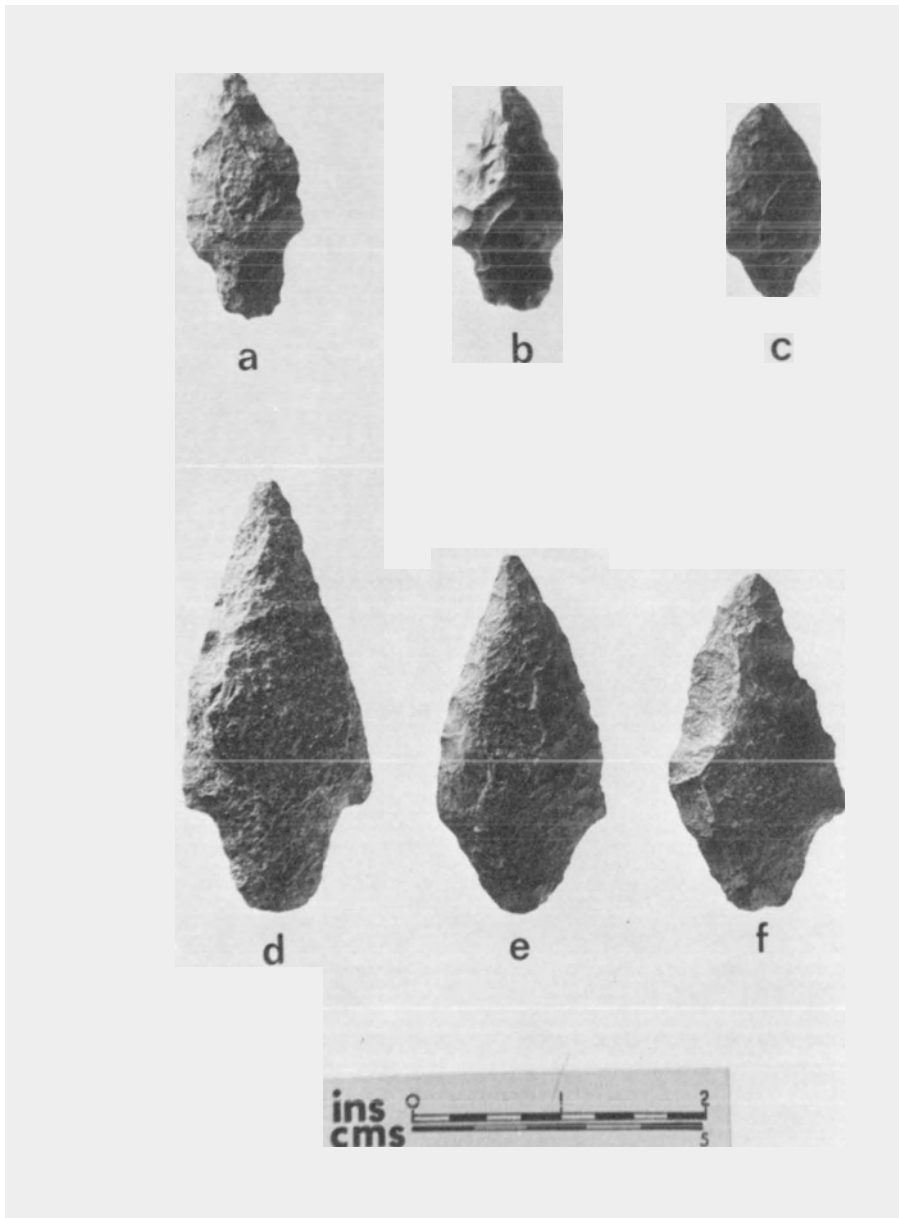


Figure 10

Figure 11

Stemmed Projectile Points

- a-c. contracting-stem points
- d. stemmed and barbed points
- e. triangular point, asymmetric stem



a



b



c



d



e

Figure 11

Figure 12

Miscellaneous Projectile Points

- a, b. stemmed and barbed points
- c. triangular point, asymmetric stem
- d, e. diamond-shaped points

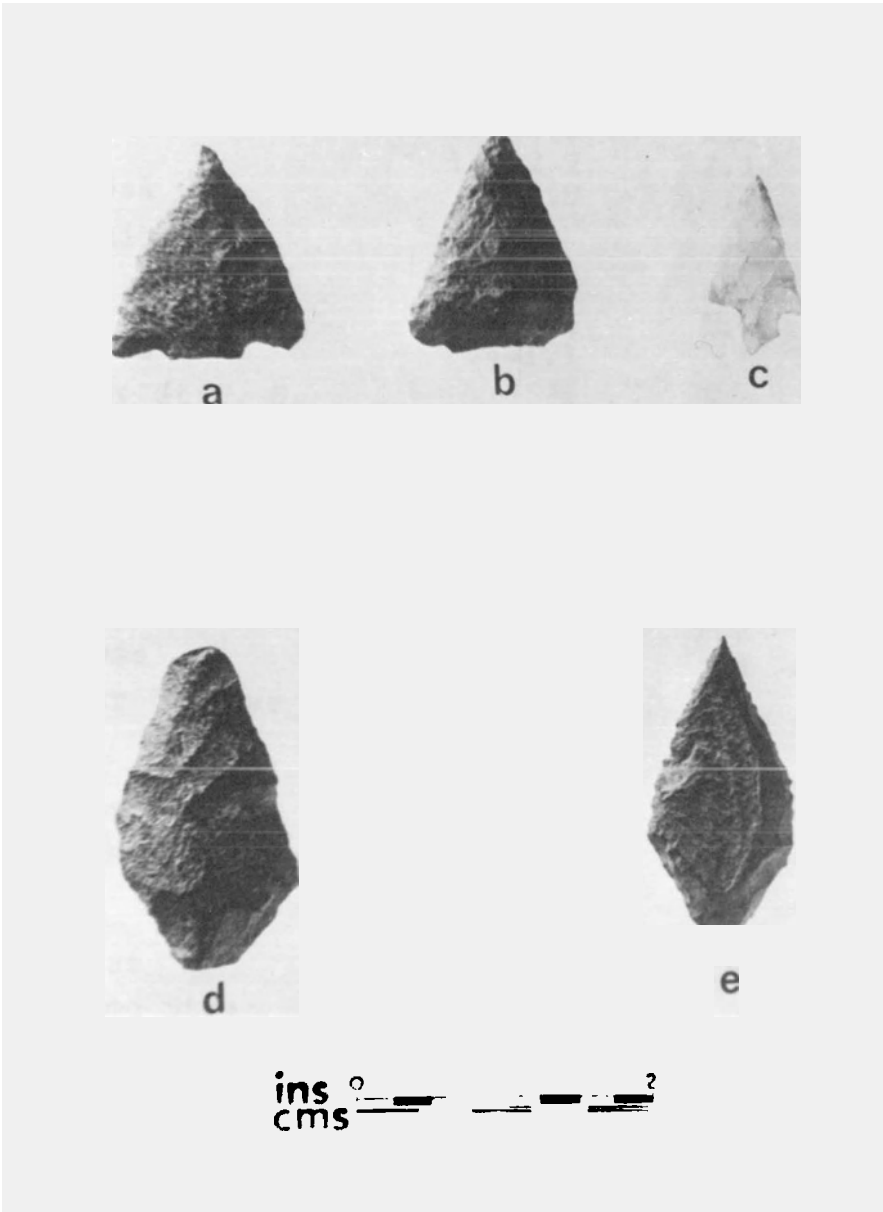


Figure 12

TABLE I /
Projectile Points

Attribute	Range	Mean	Number
Leaf Convex Base			
length	3.9-6.7	4.4	4
width	1.8-2.5	2.1	5
thickness	.5-1.0	.7	5
Leaf Straight B.			
length	3.7-5.3	4.4	3
width	1.5-2.3	1.9	3
thickness	.4-1.1	.8	3
Triangular Strt. B.			
length	3.7	---	1
width	2.3	---	1
thickness	.6	---	1
Triangular Convex B.			
length	2.9-4.6	3.9	3
width	1.7-3.5	2.8	3
thickness	.5-1.1	.8	3
Triangular Concave B.			
length	4.0-6.7	5.0	3
width	2.3-3.0	2.7	3
thickness	.4- .8	.66	3
Leaf-Triangular			
length	3.7-5.7	4.4	5
width	1.4-1.9	1.7	5
thickness	.5- .8	.7	5
Contracting Stem			
length	3.4-7.4	6.0	6
width	1.2-3.3	2.1	6
thickness	.6-1.3	.97	6
Stemmed Barbed			
length	---	---	0
width	2.9	---	1
thickness	.8	---	1
Diamond			
length	5.3	---	1
width	2.5-3.1	2.8	2
thickness	.7-1.0	.85	2

continued.....

TABLE IV Continued

Attribute	Range	Mean	Number
Triangular - Stemmed			
length	3.1	---	1
width	1.7	---	1
thickness	0.5	---	1

Projectile Point Fragments

Thirty-seven unclassifiable fragments were recovered from the site, including eighteen basal fragments and nineteen tip fragments. Those designated basal fragments exhibit traits that would be considered essential in the process of hafting, such as a sufficiently broad and generally thinned surface. In addition, many exhibit increased narrowing toward the point of fracture indicating that the missing portion was probably the point tip. All artifacts designated tip fragments are pointed and, in addition, become significantly broader toward the point of fracture.

Chipped Preforms

Ten artifacts exhibit morphological traits generally ascribed to projectile points but were probably not utilized as such. Generally, they are asymmetric with large flake scars, thick cross-sections, and little, if any, secondary modification. A number actually retain

portions of the cortex of the original core. All are associated with other more symmetric and refined projectile point types. None have been flaked in a manner which would permit alternate usage. In addition, most are too thick to facilitate hafting and appear to have been abandoned at a stage when they were too small to permit further thinning or refinement of the body.

Microblades

The fourteen complete specimens were subjected to microscopic analysis. The classification system evolved by Sanger (1970:50-69) for the Pacific Northwest and Interior Plateau areas was found most beneficial for purposes of description.

TABLE V
Microblades

Attribute	Range	Mean	Number
Obsidian			
length	3.1-3.2	3.17	3
width	.6- .8	.7	4
Quartz			
length	1.0-1.5	1.28	6
width	.3- .6	.48	9

Upon examination, three general types of microblades were delimited. These were:

- A. Microblades exhibiting modification of one or more edges.
- Eight specimens.
 - (3 Obsidian, 5 transparent quartz)
- B. Microblades which have been distally modified and are probably related to burin or graver tool types.
- Three specimens.
 - (1 Obsidian, 2 transparent quartz)
- C. Microblades whose edges are unmodified.
- Three specimens.
 - (3 transparent quartz)

Within each of these general types considerable variability was found to exist with respect to the type and location of modification. A summary of details relating to modification for Type A is presented in Table VI. Those of Type B and C require separate discussion.

Microblades Type B.

#3846 The distal end of this artifact consists of a slanted facet that forms an oblique angle with the left lateral edge and an acute angle with the right lateral edge. The point of coincidence of the latter two edges creates a highly functional point that exhibits use wear in the form of extremely small flake scars. The remainder of the distal facet exhibits some larger flake scars that

TABLE VI

Microblade Attributes, Type A

Artifact Number	Attribute
4192	- Use retouch of right lateral edge Dorsally
3517	- Use retouch of right lateral edge Dorsally and ventrally
4199	- Use retouch of left lateral edge Dorsally
3520	- Use retouch of left lateral edge Dorsally and ventrally
4208	- Use retouch of right and left lateral edges Left lateral edge dorsally Right lateral edge ventrally
4215	- Use retouch of right and left lateral edges Both dorsally
4307	- Intentional modification of left lateral edge dorsally Use retouch of right lateral edge ventrally and dorsally
4310	- Intentional modification of both lateral edges and distal portion Ventrally and dorsally

may have been intentional. These factors indicate that the probable function of the artifact was graving, or other highly specialized cutting operations.

#4256 A number of small flakes have been removed from the ventral surface of the left lateral edge toward the distal end. This flaking has produced an indented or concave lateral edge and a sharp distal tip. This artifact is similar to those in Sanger's Group 3 (1970:65).

#4120 The left edge of the distal portion of this microblade has been truncated at an angle while a small flake has been struck from the right lateral edge toward the proximal end. The truncation of the left edge and the removal of the flake from the opposite edge have created a highly functional point which would have served admirably in graving operations. The lateral edges are otherwise unmodified.

Microblades Type C.

The three microblades included in Group C exhibit no modification, intentional or otherwise. Presumably, if microblades function in cutting operations, the presence or absence of chipping resulting from usage would depend on the abrasiveness of the material being cut and on the length of time the microblade was in use. This may explain the absence of chipping on microblades included in this group.

Unifacially Modified Flakes

Fifty flakes, all of dense basalt, exhibit one or occasionally two unifacially pressure-flaked edges. A primary distinction can be made between these artifacts on the basis of the location of the modified edge, which is either laterally or distally located in relation to the bulb of percussion. Further distinction can be made on the basis of edge shape, which is either convex, concave or straight. Details of a classification by component, on the basis of these two attributes are given in Table VII.

TABLE VII
Attributes of Unifacially Modified Flakes

Modification	Blade Shape	Component			Total
		I	II	III	
Distally	Convex	6	3	3	12
Distally	Straight	3	1	1	5
Distally	Concave	0	1	0	1
Laterally	Convex	7	7	4	18
Laterally	Straight	6	5	1	12
Laterally	Concave	0	1	1	2
					50

In addition to the above classification an insight as to the functional nature of these artifacts was gained

through analysis of their respective edge-angle values. Studies of lithic material on this basis have been carried out by E. Wilmsen (1968, 1970), who suggests that differential functional capacities are reflected in differential ranges of edge-angle values (1968:156). His study of Palaeo-Indian material indicated that edge-angle values were clustered in three different ranges; from 26-35 degrees, from 46-55 degrees, and from 66-75 degrees. He inferred three corresponding categories of functional effectiveness for each of these ranges (1968:156). These were:

26-35 Range

Inferred function:

- Cutting operations

46-55 Range

Inferred function:

- Skinning and hide scraping
- Sinew and plant fibre shredding
- Heavy cutting (bone and horn)
- Tool Back blunting

66-75 Range

Inferred function:

- Woodworking
- Bone working
- Skin softening
- Heavy shredding

Analysis of modified flakes from DfRu 8 indicated a somewhat different distribution of edge-angle values. Data are summarized in Table VIII, and represented graphically in Fig. 13 and Fig. 14.

TABLE VIII

Distribution of Edge-Angle Values
for Unifacially Modified Flakes by Component

Edge Angle	Component			Site
	I	II	III	
26-35	2	1	2	5
36-45	8	6	3	17
46-55	6	7	4	17
56-65	5	3	1	9
66-75	1	1	0	2

Edge-angle values for DfRu 8 are seen to cluster primarily in the lower intermediate ranges (36-55 degrees) and to taper off in the higher intermediate ranges (56-65 degrees). Corresponding areas of functional effectiveness would include primarily those inferred for Wilmsen's middle range (46-55 degrees). For those edge-angle values lying toward either extreme of the primary clustering in DfRu 8, a functional overlapping with Wilmsen's acute or extreme range is suggested.

Noticeably few artifacts from DfRu 8 occur in either the acute angle range (26-35 degrees) or in the steep angle

Distribution of Edge-Angle Values
for Unfractally Modified Flakes by Component

Figure 13

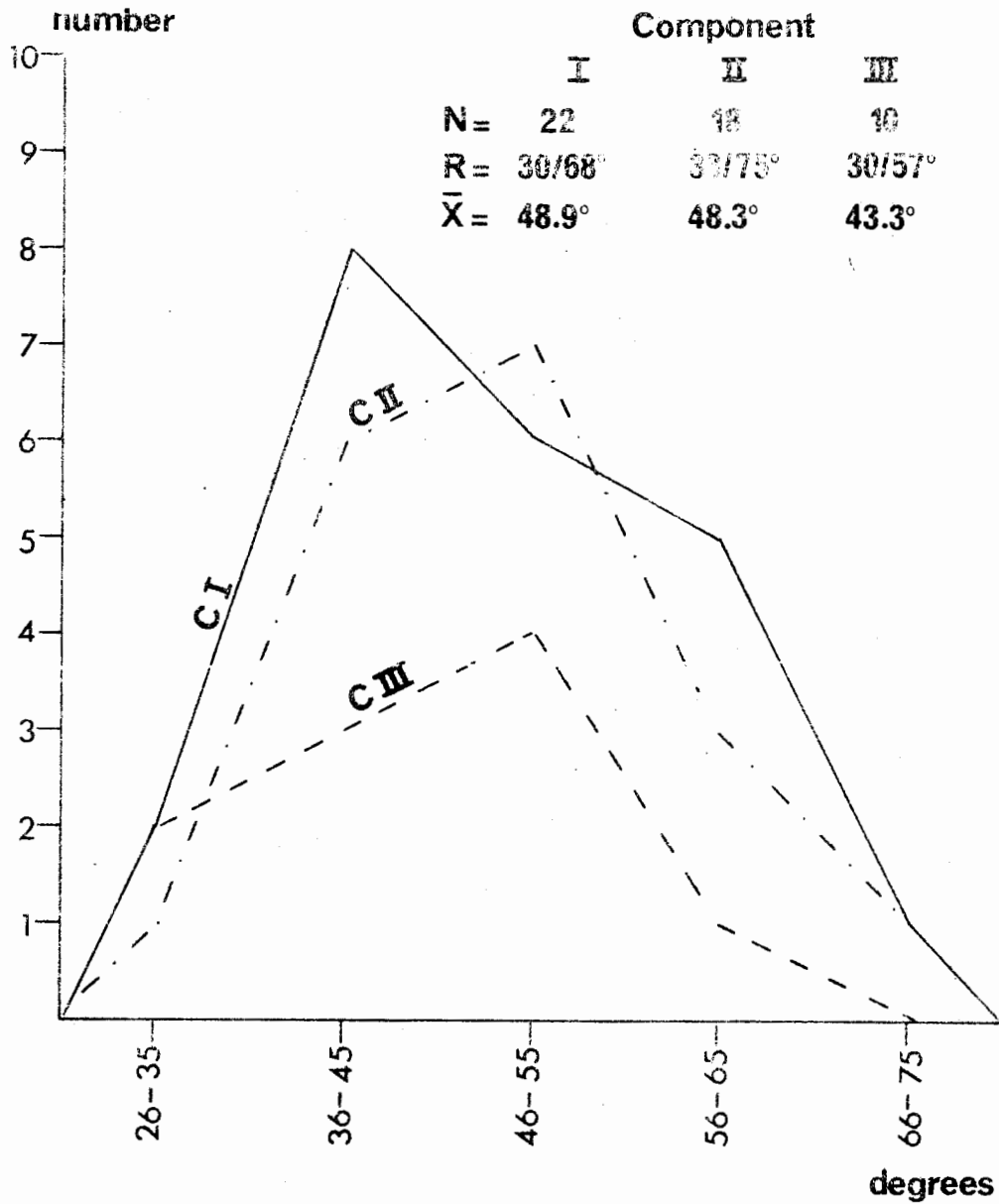


Figure 13

Figure 14

Comparative Distribution of Edge-Angle Values
for Distally and Laterally Modified Flakes

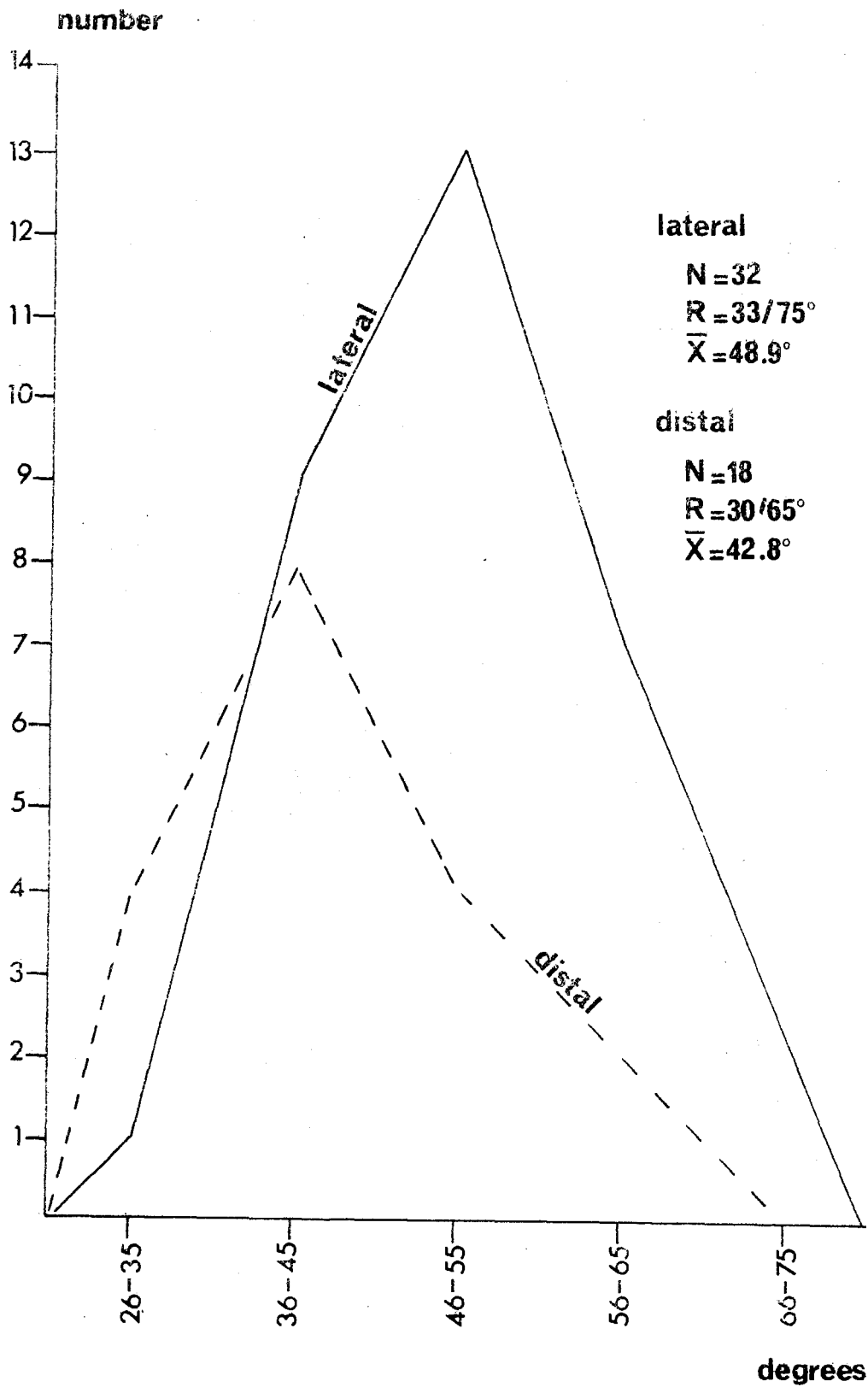


Figure 14

range (66-75). This is perhaps best explained by the difference in technological specialization and sophistication between Wilmsen's Paleo-Indian culture and that reflected in the assemblage at DfRu 8. Specifically, the technological level expressed in the Helen Point midden is such that specialized tools fulfill most of the functions covered by these two ranges. In the acute angle range, where cutting operations are inferred, we have the presence of ground slate knives, microblades, ulna knives, and Mytilus californianus knives. In the steep angle ranges, where woodworking, skin softening, and heavy shredding are inferred, we have the presence of adzes, antler and bone wedges, hammerstones and cobble-choppers.

While the above conclusions are tentative, owing to small sample size, further studies of this nature should reveal a similar patterning in other North West Coast sites on the same technological level.

Unmodified Primary Flakes

Unmodified basalt flakes comprise the largest category of waste products recovered at the site. None exhibit evidence of either intentional modification or of utilization. While it is possible that many of these apparently unmodified flakes played a significant role in the activities of the prehistoric inhabitants of the site, it is equally probable that the majority represent by-products of tool manufacture.

Cobble Spall Tools

TABLE IX
Cobble Spall Tools

Attribute	Range	Mean	Number
length	5.9-11.4	8.1	9
width	5.2- 7.6	6.3	9
thickness	1.0- 2.4	2.2	9

Based on spalls from waterworn cobbles, these artifacts have been unifacially modified to serve in cutting, scraping, and chopping operations. (Fig. 15). All but one of the nine examples exhibit a flaked edge or edges on their non-cortical face. The latter exhibits a flaked edge on the cortical face. (Fig. 15, f).

Split Cobble Tools

TABLE X
Split Cobble Tools

Attribute	Range	Mean	Number
length	7.9-13.0	10.6	5
width	8.4-11.2	9.6	5
thickness	3.3- 6.0	4.6	5

Figure 15

a-h. Cobble Spall Tools

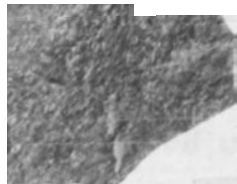


Figure 15

While similar to the previous category in that one face of each of these artifacts consists of the original cortex of a waterworn cobble, they differ in the respect that they are based on a considerably greater part of the cobble. All five specimens exhibit coarse retouch on one edge, two unifacially, and three bifacially. Their size, weight, and coarsely retouched edges, indicate that chopping was probably their primary function. (Fig. 16 a-d).

Pebble Choppers

TABLE XI

Pebble Choppers

Attribute	Range	Mean	Number
length	6.3-11.4	8.3	5
width	5.5- 9.4	7.6	5
thickness	2.8- 5.6	4.7	5
weight	161-531.0 gm	398.3 gm	5
edge angle	51-65°	58°	5

Artifacts subsumed under this category are based on round to oval beach pebbles which have been unifacially modified. These tools retain varying percentages of the original cortex of the pebble. The five artifacts composing this group are characterized by a single crudely flaked edge which is perpendicular to the long axis of the pebble. Other than this single working edge the

Figure 16

a-d. Split Cobble Tools

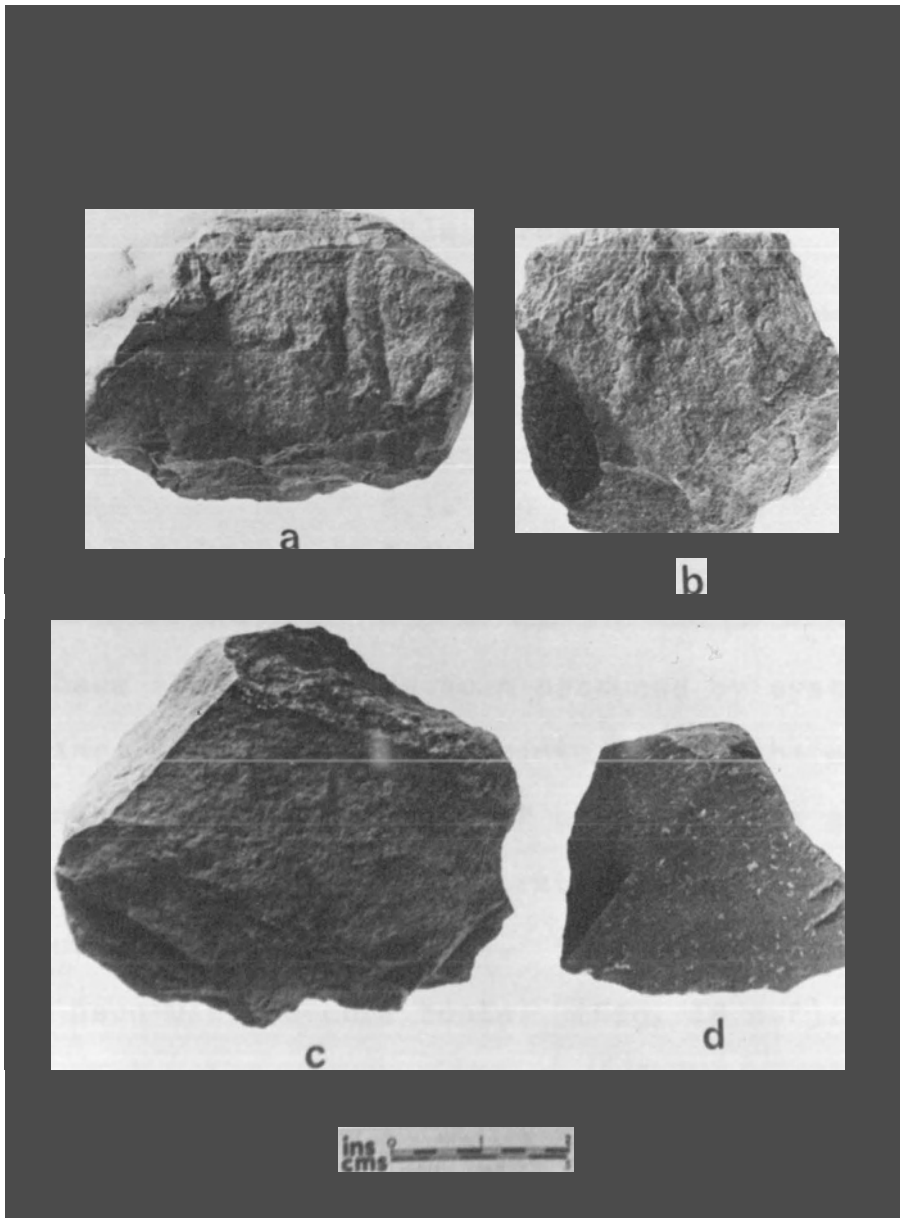


Figure 16

cortex of the pebble remains intact. Edge shape varies from roughly convex (Fig. 17 a, b, e) to straight (Fig. 17 c), to asymmetric (Fig. 17 d).

Cobble Cores

TABLE XII
Cobble Cores

Attribute	Range	Mean	Number
length	6.3-10.1	8.7	6
width	6.1- 7.9	6.9	6
thickness	3.6- 6.2	5.3	6

These six cores have been produced by systematically detaching flakes at various points around the perimeter of a cobble. The detachment of usable flakes appears to have been the primary purpose rather than the production of a cutting or chopping edge. None bear evidence of having been used as core tools. (Fig. 18 a-f).

Miscellaneous Core Tools

Two large bifaces, one with a straight working edge (Fig. 19 b), the other with a convex working edge (Fig. 19 a), are probably multipurpose tools, chopping, scraping, and cutting, being the primary functions. The dimensions of the former, #3965, are 8.9 x 6.5 x 4.1 cms, while the dimensions of the latter, #3979, are 10.2 x 7.8 x 4.6 cms.

Figure 17

a-e. Pebble Choppers

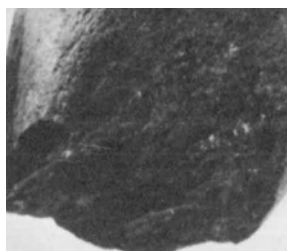


Figure 17

Figure 18

a-f. Cobble Cores

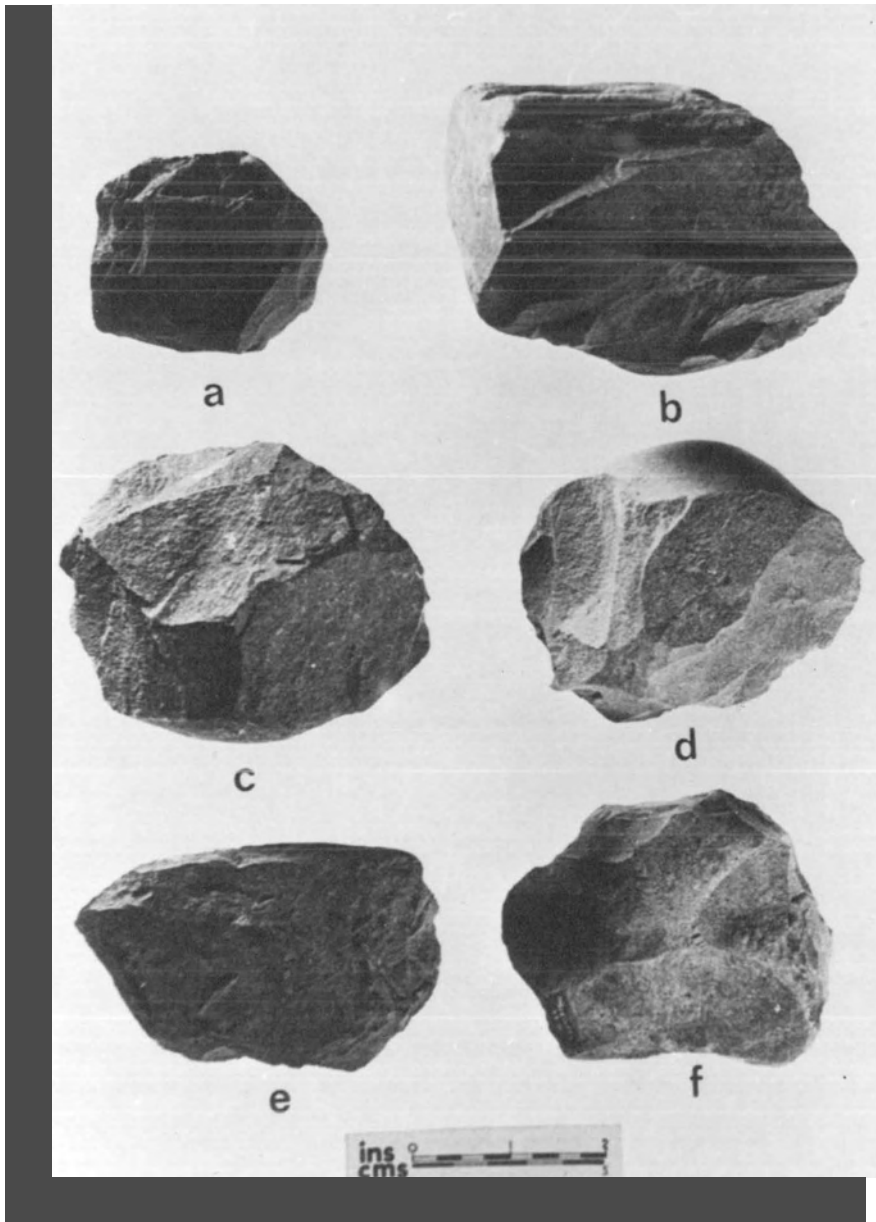


Figure 18

Figure 19

Miscellaneous Core Tools

- a. Biface, convex working edge
- b. Biface, straight working edge



58b

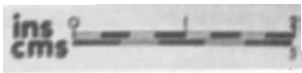
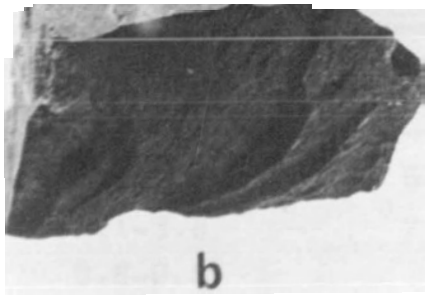


Figure 19

Chipped Slate and Schist Projectile Points

Although the three slate points included in this category are of a general leaf-shaped configuration with convex edges, all are quite asymmetric in appearance. While the body of each point is characterized by large, disjointed flake scars, the edges and base of each also exhibit marked irregularity. (Fig. 20, b) (Fig. 21, b, c).

A chipped schist point also shares these characteristics. In its case however, the base exhibits a definite concavity as opposed to the asymmetry observable in the former specimens. (Fig. 20, a) (Fig. 21, a).

TABLE XIII

Chipped Slate and Schist Projectile Points

Attribute	Range	Mean	Number
length	5.5-6.3	6.0	4
width	2.1-2.8	2.4	4
thickness	0.6-0.8	.7	4

While it is possible that these points were utilized without further modification, it is equally possible that they represent a primary stage in the manufacture of ground slate points. Their rarity, in combination with the fact that ground slate points are present in all components, would lend some support to this argument.

Figure 20

Chipped Slate and Schist Projectile Points

- a. schist point, concave base
- b. slate point, asymmetric base

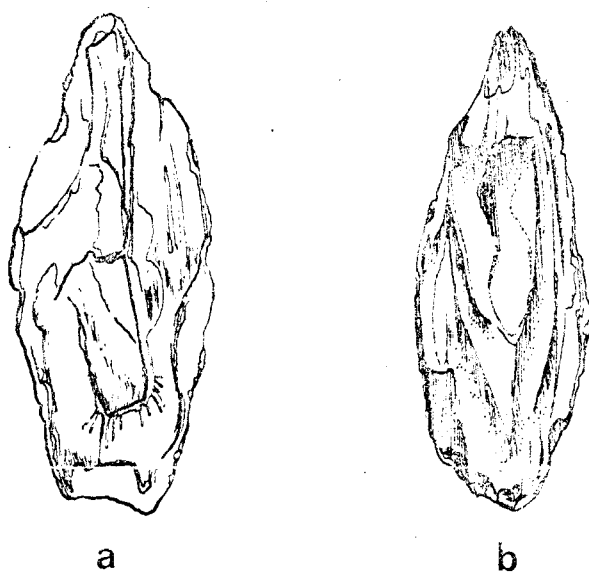
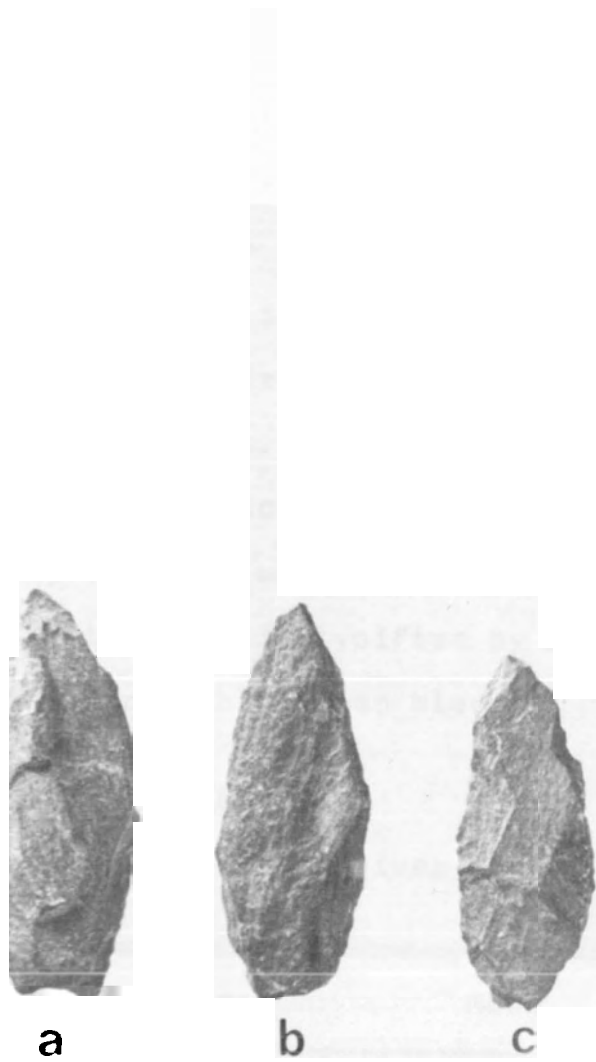


Figure 20

Figure 21

Chipped Slate and Schist Projectile Points

- a. schist projectile point
- b-c. slate projectile points



ins : ————
cms ————


A horizontal scale bar with markings in centimeters and millimeters, used for size comparison.

Figure 21

Chipped Slate Knives

The twenty-one artifacts included can be divided into four major types. The first two, defined on the basis of outline, are respectively semi-ovoid and rectanguloid knives. Specimens included in each of these types vary considerably in regard to size. The third type, best defined with reference to more specific attributes, is a back-blunted blade with a sloped curvilinear edge. This type is reasonably constant with regard to size and formal appearance. A fourth group is typified by a generally asymmetric outline and double-edged blades.

TABLE XIV
Chipped Slate Knives

Attribute	Range	Mean	Number
length	6.8-14.0	9.5	21
width	2.6- 6.6	4.6	21
thickness	.5- 2.3	1.2	21

semi-ovoid knives

The semi-ovoid type is represented by three large and two small specimens. While all artifacts in this category are similar with respect to general shape, three exhibit a single modified edge and two display double edge modification. All edges are convex.

While bifacial flaking appears to have been the

primary method of edge modification, certain sections of the blade exhibit unifacial flaking only. All specimens bear some evidence of use-wear. (Fig. 22, g-i).

rectanguloid knives

The rectanguloid type, represented by three large and four small specimens, is characterized by a single straight to asymmetric use-worn edge. All examples have been bifacially modified. (Fig. 22, d-f).

back blunted knives

The third type, represented by six examples, is characterized by a single sloped curvilinear edge and a straight to asymmetric blunt back. While considerably smaller and lighter than artifacts of the previous two groups, wear patterns indicate that they served similar functions. Five have been unifacially modified while the sixth has been bifacially modified. (Fig. 22, a-c). The backs of the knives have been obliquely flaked to produce a blunted effect.

asymmetric knives

Three bifacially modified slate knives are relatively asymmetric in appearance. The edges of two are straight, while that of the third is convex. Use wear primarily in the form of lateral striations is evident on all specimens.

Unifacially Modified Slate Flakes

Five slate flakes recovered at DfRu 8 each display

Figure 22

Chipped Slate Knives

a-c. Back Blunted knives

d-f. Rectanguloid knives

g-i. Semi-ovoid knives

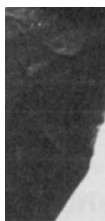


Figure 22

a single unifacially modified edge, and parallel in size, shape, and construction their counterparts in basalt. Two are rectangular in shape, one having been distally modified, the other, laterally modified. Two others are triangular in shape and have been distally modified while the fifth is ovate, and distally modified. All exhibit convex edges except for the single laterally modified rectangular specimen.

Unmodified Slate

A large number of unmodified pieces of slate was recovered from the site. Some are large enough (Range: 7-15 cm. in length, 4-8 cm. in width) to serve as raw material for the manufacture of tools while others are smaller (Range: 4-7 cm. in length, 3-4 cm. in width) and may be by-products resulting from the chipping of larger slate pieces. Their distribution by component is recorded in the accompanying Table.

TABLE XV

Distribution of Unmodified Slate

Unmodified Slate	Component			Site
	I	II	III	
Large Blank	91	11	6	108
Small Blank	<u>295</u>	<u>62</u>	<u>33</u>	<u>390</u>
Total	386	73	39	498

Obsidian

Six small obsidian flakes bear no evidence of secondary modification. It is probable that the sharp edges characteristic of primary flakes of this material could have served well in cutting operations without further modification.

Jasper

A single primary flake of jasper was recovered in the excavations. There is no visible evidence of secondary modification.

GROUND STONE ARTIFACTS

Ground Slate Points

Of fifteen ground slate points recovered from the excavation, ten are fragmentary specimens. Despite this limiting factor, a number of basic observable attributes were isolated and utilized in the formulation of types. Blade shape proved the most discriminating criterion and was used in delimiting basic types, while cross-section was employed as a secondary attribute in the formulation of sub-types.

TABLE XVII
Ground Slate Points

Attribute	Range	Mean	Number
Leaf-shaped			
length	6.3-7.9	6.9	3
width	1.7-3.0	2.2	7
thickness	.4- .8	.5	7
Triangular			
length	3.6-6.0	4.4	2
width	2.2-2.6	2.3	3
thickness	.3- .5	.4	5

1. Leaf-shaped

(a) Hexagonal Cross-section

Three specimens are representative of this sub-type, all of which exhibit double-beveled convex edges, and hexagonal cross-sections. A differentiating feature of these points lies in the form of the base. One of the artifacts has been bifacially beveled at the proximal end to produce a wedge-shaped base. (Fig. 23, a) (Fig. 25, a). Another has been notched at the center of the base and, in addition, a short flute created on either side of the blade by longitudinal grinding. (Fig. 23, c) (Fig. 25, b). Unfortunately, the base of the third specimen is broken. (Fig. 23, b) (Fig. 25, c).

Figure 23

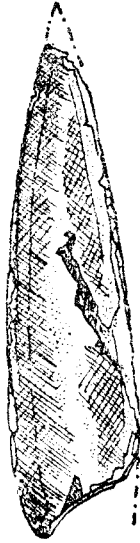
Leaf-shaped Ground Slate Points

a-c. hexagonal cross-section points

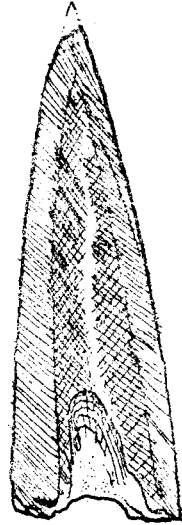
d,e. rectangular cross-section points



a



b



c



d



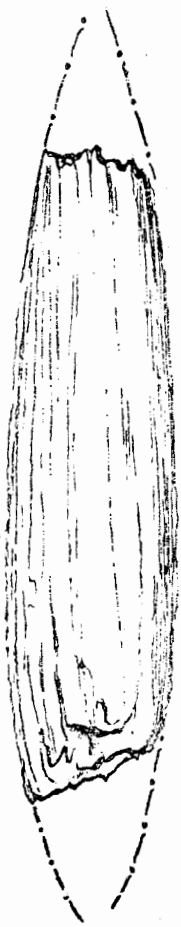
e

Figure 23

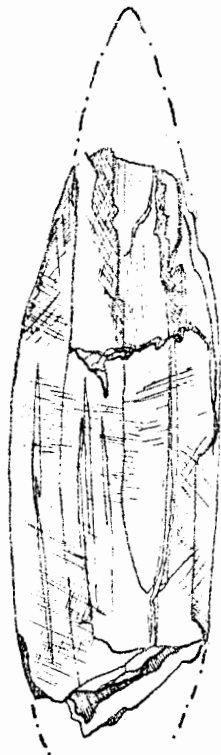
Figure 24

Ground Slate Points

- a,b. leaf-shaped, bi-convex cross-section
- c. fragment, plano-convex cross-section
- d,f,g. triangular, hexagonal cross-section
- e. fragment, partially ground



a



b



c



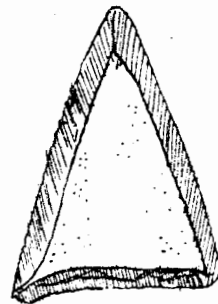
d



e



f



g

Figure 24

(b) Bi-convex Cross-section

The two artifacts included in this category are characterized by convex edges and bi-convex cross-sections. (Fig. 24, a, b). Both faces of the blade have been smoothly ground over the entire surface and there is no indication of faceting. (Fig. 25, k, m). Although the artifacts are fragmentary, a gradual narrowing at both ends of the blade indicate that they were probably bi-pointed.

(c) Rectangular Cross-section

The edges of both specimens are convex. The faces of the blade on both artifacts have been only partially ground. (Fig. 23, d, e) (Fig. 25, d, e).

2. Triangular

All five specimens exhibit straight, double-beveled edges and hexagonal cross-sections. Although two of the artifacts are fragmentary, (Fig. 25, f, j) the remainder can be differentiated with reference to type of base, one exhibiting a concave base (Fig. 24, g) (Fig. 25, i) and the other two thinned convex bases. (Fig. 24, d) (Fig. 25, g).

Unclassifiable Fragments

#3742 This fragment, probably a medial section, is straight edged with a plano-convex cross-section. While all surfaces have been ground, there are no indications of faceting. (Fig. 24, c) (Fig. 25, l).

#3161 This fragment, once again a medial section,

Figure 25

Ground Slate Points

- a-c. leaf-shaped, hexagonal cross-section
- d,e. leaf-shaped, rectangular cross-section
- f-j. triangular, hexagonal cross-section
- k,m. leaf-shaped, bi-convex cross-section
- l. fragment, plano-convex cross-section
- n. fragment, unifacially ground
- o. fragment, convex edges

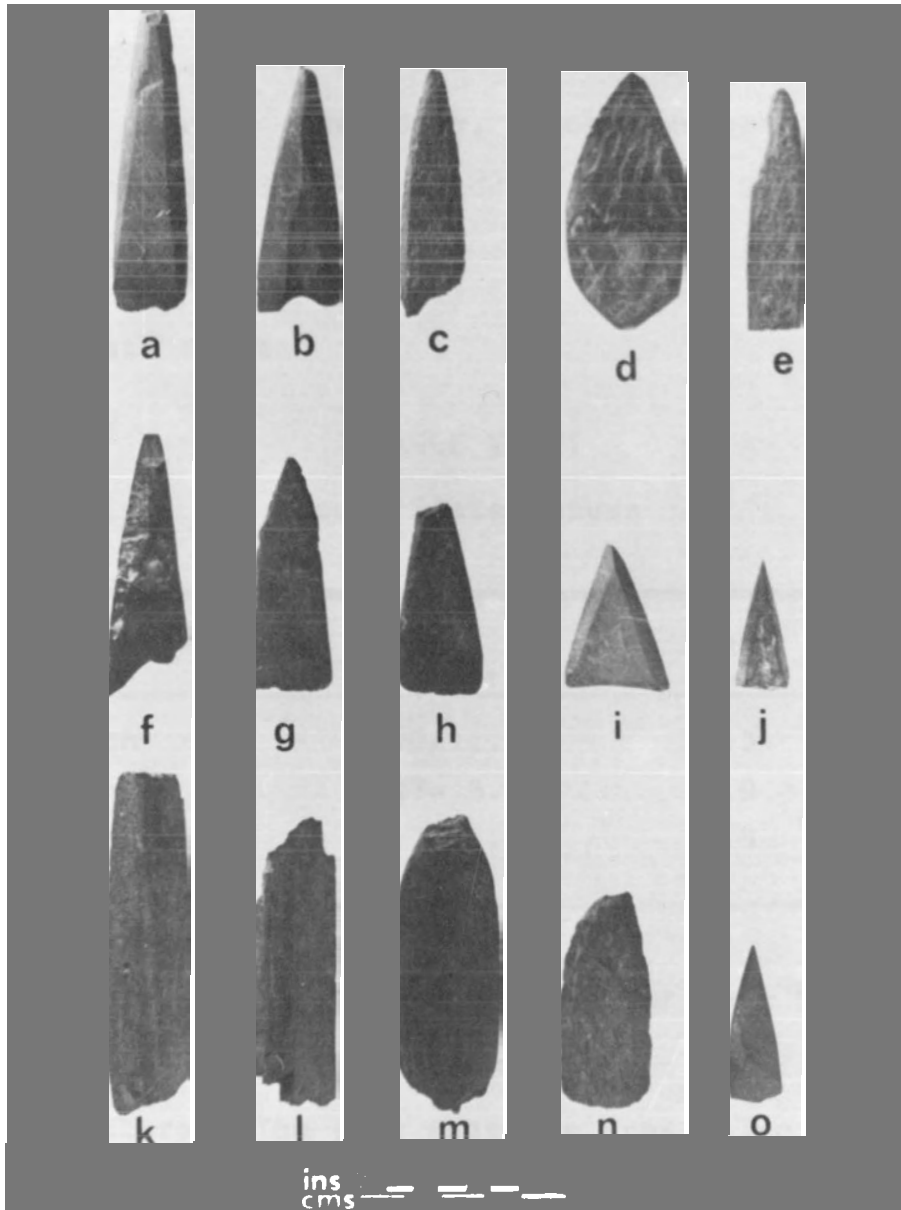


Figure 25

is unifacially ground with one central facet and a less broad facet on either side forming the respective edges. (Fig. 25, n).

#3552 Both faces of this fragment have been only partially ground. The edges, which have been slightly beveled on both sides, are convex. (Fig. 24, e) (Fig. 25, o).

Ground Slate Knives

TABLE XVIII
Ground Slate Knives

Attribute	Range	Mean	Number
length	9.0-11.7	10.3	2
width	4.7- 5.1	4.9	5
thickness	.3- 1.0	.5	5

The six examples representative of this tool type display considerable variation in shape and in technique of manufacture. The four examples from Helen Point III are uniformly thin with a mean thickness of .36 cm. and a range of from .3 - .4 cm. In contrast the single specimen from Helen Point I is 1.0 cm. in thickness. The latter, while possessing a use-worn double-beveled edge, has been only partially ground on both faces. (Fig. 26, a) (Fig. 29, b).

Figure 26

Ground Slate Knives

- a. from Helen Point I
- b-f. from Helen Point III
 - b. #3061
 - c. #3304
 - d. #3002
 - e. #3058
 - f. #3559

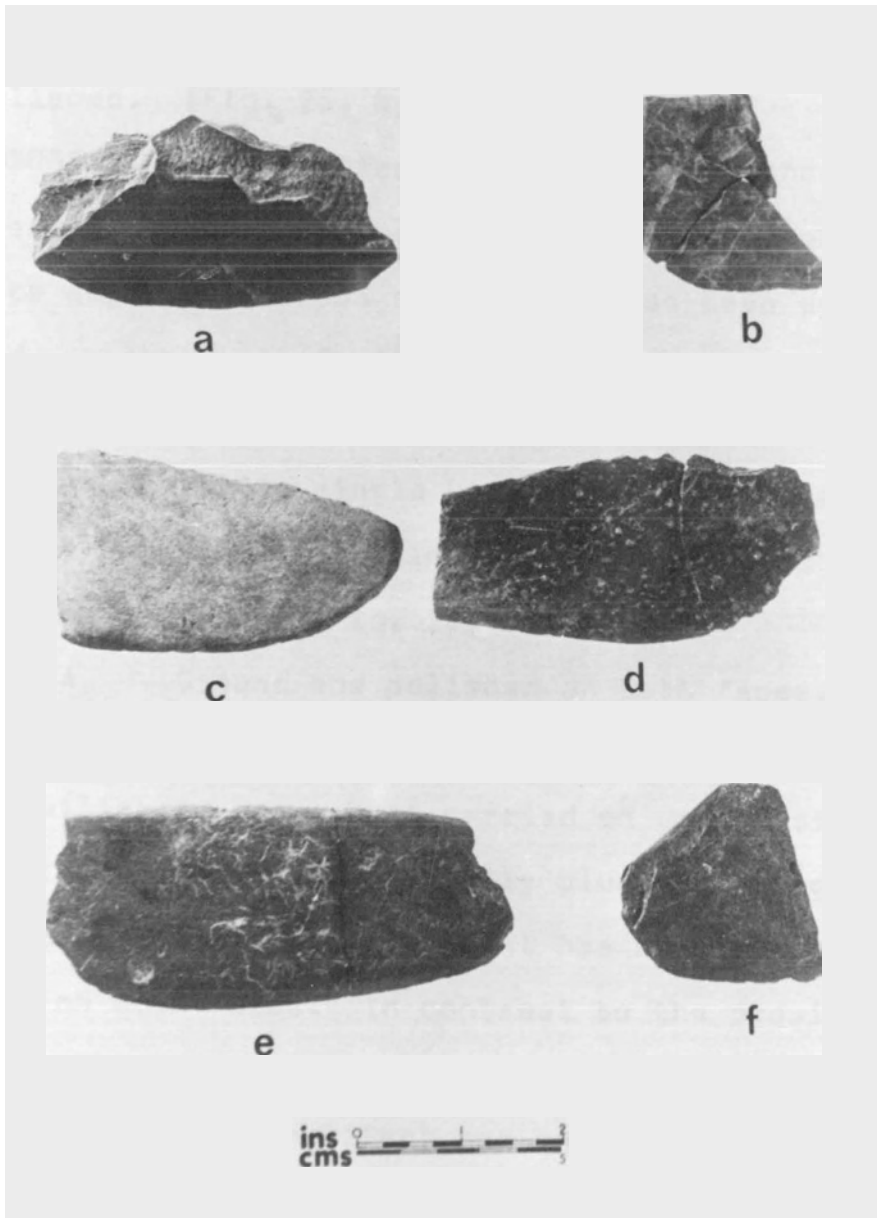


Figure 26

Each of the four knives from Helen Point III is slightly different, and warrants individual description.

#3061 This fragmentary knife is characterized by a single double-beveled edge. Both sides have been ground and polished. (Fig. 26, b).

#3058 This artifact, ground and polished on all surfaces, possesses a double-beveled cutting edge. The opposite edge, while less sharp, has also been double-beveled, probably to facilitate hafting. (Fig. 26, e).

#3002 Ground and polished on one face only, this specimen exhibits two single beveled edges. No wear patterns were evident, indicating that this artifact is probably unfinished. (Fig. 26, d).

#3304 Ground and polished on both faces, this specimen displays a double-beveled cutting edge. Beveling of the cutting edge has been carried on up one side to the back, which has been intentionally blunted. (Fig. 26, c).

#3559 This small fragment has been ground and polished on both faces. In contrast to the previous examples, whose edges appear as angular facets the sharp cutting edge of this artifact has been produced by a gradual thinning of the body toward the edge. (Fig. 26, f).

Soapstone Artifacts

Gulf Islands Complex

Seven carved and polished soapstone artifacts all from Helen Point I are best classified with reference to Duff's

typology of Gulf Islands Complex Artifacts. (1955:45-55).

One artifact falls within Duff's Type E and is most similar to an example illustrated from the Montague Harbour surface collection (Mitchell 1971): (Fig. 48, b). Both artifacts are generally rectangular in outline with slightly concave ends and flattened oval cross-sections. Both exhibit two biconically drilled holes toward their centers. The Mayne Island specimen is of black soapstone and its dimensions are 3.3 x 2.1 x 0.6 cm. (Fig. 27, f) (Fig. 28, l). Duff describes three additional E type artifacts from Active Pass.

Three artifacts, one complete, and two fragmentary (Fig. 28, c, d), can be subsumed under Duff's Type C. The complete specimen consists of a small stone bar with a deep groove running from one end to the other, which gives the artifact a three sided appearance and C-shaped cross-section. (Fig. 27, b) (Fig. 28, h). The side of the artifact opposite the groove is flat while the remaining two sides are convex. One of the ends is straight in profile while the other is sloped. This artifact is distinct from Duff's eight examples in being made of crystalline limestone. Its dimensions are 3.5 x 2.0 x 0.5 cm. The two fragmentary specimens exhibit the C-shaped cross-section characteristic of this type. One is of black soapstone, the other of grey.

One artifact is very similar to Duff's Type A,

Figure 27

Gulf Islands Complex Artifacts
and Labrets

- a. fragment of double studded labret
- b. Gulf Islands Complex, Type C
- c. Gulf Islands Complex, Type A
- d. Gulf Islands Complex, Type D
- e. Gulf Islands Complex, Type I
- f. Gulf Islands Complex, Type E

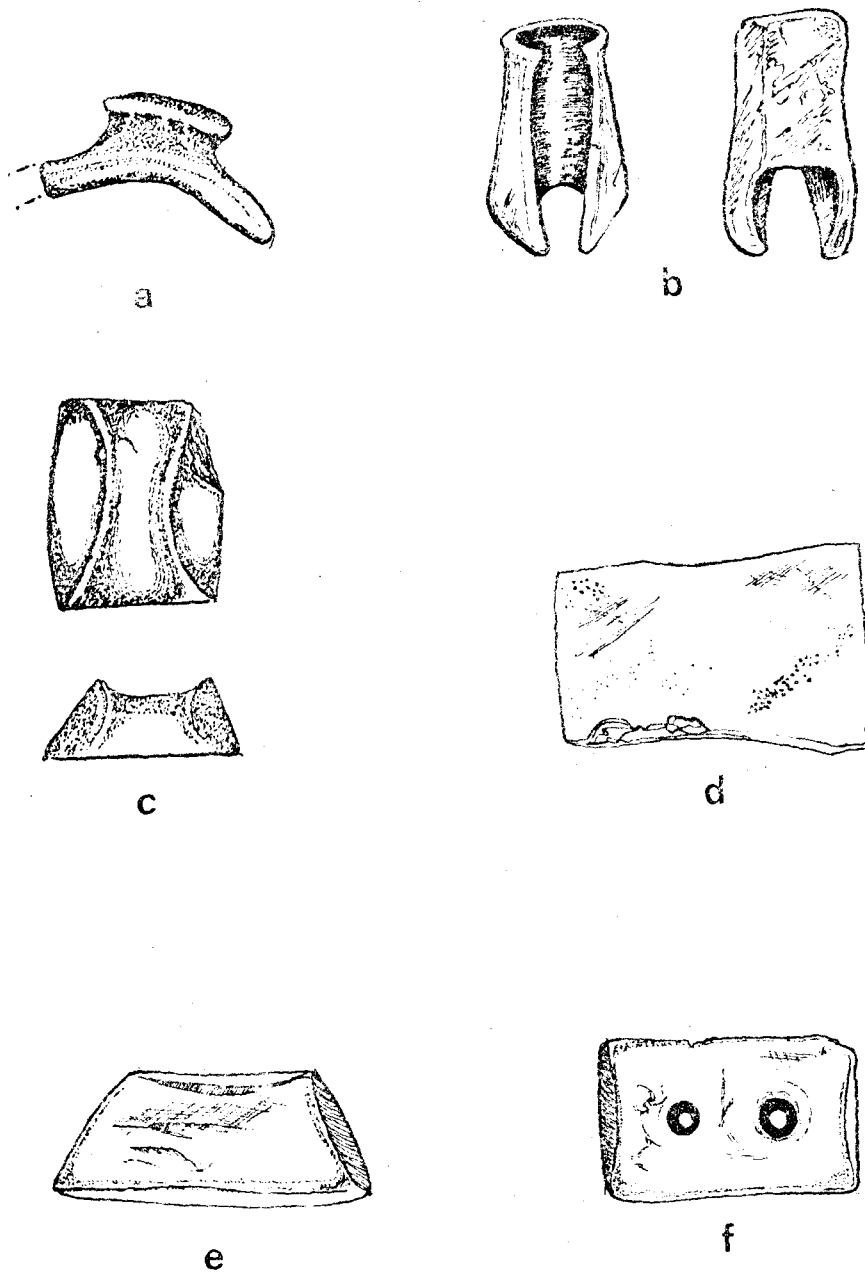


Figure 27

Figure 28

Gulf Islands Complex Artifacts
and Labrets

- a. fragment of double studded labret
- b. fragment of elliptical labret
- c,d,h. Gulf Islands Complex, Type C
- e. fragmentary soapstone object, #4188
- f. rectanguloid soapstone artifact
- g. Gulf Islands Complex, Type A
- j. Gulf Islands Complex, Type D
- k. Gulf Islands Complex, Type I
- l. Gulf Islands Complex, Type E

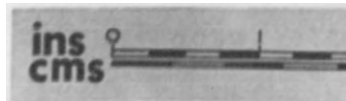


Figure 28

example 4, which is also from Active Pass. One side of this rectangular shaped artifact exhibits a wear polished groove which is somewhat wider at the ends than in the middle. (Fig. 27, c) (Fig. 28, g). The other side is flat and also highly polished. A grey-green soapstone was the raw material. Its dimensions are: 2.6 x 2.3 x 1.0 cm.

An artifact of grey-green soapstone is similar to Duff's Type D. While generally rectangular in design, its two longer sides are concave and have been polished through use. The specimen is rectangular in cross-section. Its dimensions are: 4.1 x 2.8 x 1.3 cm. (Fig. 27, d) (Fig. 28, j).

One specimen is most similar to Duff's Type I, of which there is one other example from the Canal Site on Pender Island. (Fig. 27, e) (Fig. 28, k). Its dimensions are: 4.2 x 1.9 x .7.

Two additional soapstone objects (#4188 and #4077), probably belong with this artifact complex, but are too fragmentary for definite classification. (Fig. 28, e, i).

A small rectangular soapstone object has been ground and polished on all surfaces. Its size and shape tend to preclude a utilitarian function and it is probable that the object served in a decorative or perhaps ceremonial sense. (Fig. 28, f). Its dimensions are: 1.9 x .7 x .4 cm.

Labrets

Two labret fragments were recovered in the excavations,

both from Helen Point I. One of the artifacts, manufactured from grey-green soapstone, appears to represent one half of a double studded labret. (Fig. 27 a) (Fig. 28, a). The positional relationship of the stud which remains to the curvature of the inner surface of the labret, indicates that an additional stud with flange would be necessary to maintain the symmetry of the artifact. The faces of the stud and flange are highly polished, while the sides of the stud, which are concave, are less so.

The second labret, (Fig. 28, b) while very fragmentary, bears some resemblance to Duff's J-5 Type which is composed of examples from Active Pass and the Canal Site, Pender Island (1955:49). Manufactured from black soapstone, the artifact is elliptical and exhibits no flanges. Borden illustrates a similar artifact for the Locarno Beach Phase (1970:100, Fig. 30:4).

Zoomorphic Stone Object

Carved from a relatively soft sedimentary rock, the exact zoomorphic form intended by the craftsman is not clear. A bird of some type seems most likely and requires the least abstraction on the part of the observer. (Fig. 29, c) (Fig. 30, b). Its dimensions are: 5.8 x 2.9 x 1.4 cm.

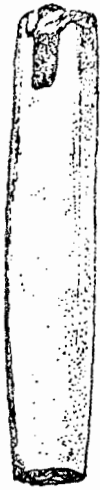
Slate Punch

This is a long, thin, pencil-like object of ground slate with an ovoid cross-section. (Fig. 29, a) (Fig. 30, c).

Figure 29

Miscellaneous Ground Stone Artifacts

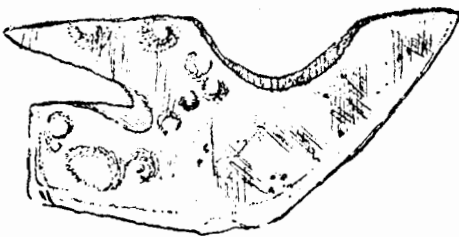
- a. ground slate punch
- b. ground slate knife, Helen Point I
- c. zoomorphic stone object
- d. adze blade



a



b



c



d

Figure 29

Definite battering at one end may indicate that this tool was imposed between a hammering device of some type and material that was to be modified. As the opposite end is broken, it is difficult to speculate as to any more specific function.

Modified Concretion

A concretion, naturally shaped in the form of a U, is oval in cross-section, and has been modified by a process of incising so that its perimeter is deeply grooved. (Fig. 30, d).

Adze Blade

The single adze blade recovered in excavations at DfRu 8 is most similar to those recorded by Mitchell for Montague Harbour I (1968:202), and by Borden for Locarno Beach I (1950 a:15, 1962-63). Distinctive in its relatively small size, 4.2 x 2.2 x 1.0 cm., and rectangular cross-section, the artifact is widest at the bit, 2.2 cm., and tapers to 1.9 cm. at the poll. It is somewhat asymmetric in that one of the edges is slightly longer than the other (4.2 as opposed to 3.7 cm.). The poll, which has been arched to a maximum height of 2 mm. is, as a result, also asymmetric. The bit exhibits a semi-lunar facet on its less acutely angled side and two rectanguloid facets on the opposite side. The cutting edge exhibits use wear in the form of chipping. (Fig. 29, d) (Fig. 30, a).

Figure 30

Miscellaneous Ground Stone Artifacts

- a. adze blade
- b. zoomorphic stone object
- c. ground slate punch
- d. modified concretion

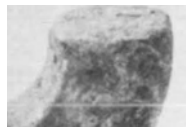


Figure 30

Sandstone Saws

Two fragmentary sandstone objects bear a superficial resemblance to ground slate knives, however their respective edges, which have been beveled on both sides, are not sharp enough to have functioned well in cutting operations. Instead, these artifacts were probably used in sawing bone and antler. The graininess of the material would certainly facilitate such tasks. Apart from their double beveled edges they are otherwise unmodified. Both specimens are approximately one centimetre in thickness.

Miscellaneous Ground Stone

Nine artifacts, including three polished pebbles and six fragmentary pieces of ground slate cannot be classified with reference to the previous categories.

Polished Pebbles

The pebbles, two of black soapstone and one of jadeite, have been ground and polished. In none of the examples however, has the original cortex of the pebble been completely obliterated by grinding or has the pebble been worked to a symmetrical shape. They are uniformly small, none measuring over 2.5 x 2.0 x 2.0 cm. Mitchell (1968:296), records several of these pebbles from the Montague Harbour Midden as does King from the Cattle Point site (1950:39).

Ground Slate Fragments

The six pieces of ground slate are probably fragments of larger artifacts such as ground slate knives or points. However, because of their fragmentary nature, it is difficult to make a more explicit classification.

Mineral

Red Ochre

One large sample of red ochre was collected from Test Cut 2. The only other reference to ochre in the excavation records is in regard to its association with Burial #4. Historically, ochre was used extensively by the Gulf of Georgia Salish as a cosmetic and paint in both mundane and ritual practices. (Barnett 1955:74).

Mica

Two small fragments of mica were recovered from the lower levels of Test Cut 3. They are thin, translucent, and asymmetrically shaped. Neither of the pieces provides any clue as to their function, although they may have been simple decorative objects.

PECKED AND GROUND STONE

Hammerstones

TABLE XIX
Hammerstones

Attribute	Range	Mean	Number
length	6.8-16.6	11.9	7
width	5.6-11.3	8.6	7
thickness	3.6- 5.9	4.7	7
weight	237-540	454.7	7

Naturally round to oval beach cobbles which show evidence of having been used in pounding and pecking operations are generally ascribed to a class of artifacts referred to as hammerstones. Evidence of use is usually in the form of scarring and pitting of one or more edges of these artifacts.

Only one of the seven hammerstones from DfRu 8 exhibits battering around the entire perimeter. Two are scarred at one end perpendicular to the long axis of the cobble. One of the latter has had one side abraded to a smooth flat surface and may have doubled as a handstone. Three artifacts are scarred at both ends of the cobble, again, perpendicular to the long axis. One of these, is noticeably pitted on both faces in addition to the scarred edges. The sixth exhibits use wear on two edges, one parallel and one perpendicular to the long axis of the cobble.

Handstones

TABLE XX

Handstones

Attribute	Range	Mean	Number
length	5.8-10.2	8.2	4
width	5.5- 9.2	7.6	4
thickness	2.9- 4.2	3.4	5

Based on naturally rounded beach cobbles the five artifacts in this category are of granite, and exhibit extensive wear on both faces. (Fig. 31, a-e).

Abrasive Stones

Two hundred forty-nine abrasive stones were recovered from the site. About twenty percent appear to have been purposefully shaped while the remainder are asymmetric in appearance. There is no correlation between shaped abrasive stones and any specific component expressed at the site. Both irregular and shaped abrasive stones are expressed in all components.

Grooved and Notched Sinkers

Two sandstone artifacts from the site can be classified as sinkers. One is encircled by two continuous grooves, one at either end, which run in the direction of its short axis. Its dimensions are 20.1 x 10.7 x 8.8 cm.,

Figure 31

a-e. Handstones

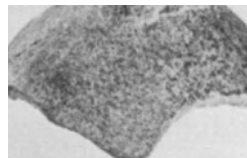


Figure 31

and its weight is 547 gms. The second has been broken in half and exhibits a single notch only. The latter is 5.9 cm. in thickness.

ARTIFACTS OF BONE

Bi-pointed Bone Objects

TABLE XXI

Bi-pointed Bone Objects

Attribute	Range	Mean	Number
length	3.5-8.5	5.6	16
width	.5- .8	.6	16
thickness	.3- .6	.4	16

Of the 69 artifacts subsumed under this category, thirty-eight are too fragmentary for classification beyond the simple and tentative designation, "bi-pointed" bone object. The latter specimens consist of tapered and pointed fragments whose configuration is closely similar to that of the complete artifacts in this category. The remaining artifacts, consisting of twenty-one complete specimens and ten classifiable fragments, form the basis of the following classification.

Type A

The largest group of bone bi-points consists of 21

specimens. These artifacts possess most of the morphological characteristics of the historic salmon hook barb. They are generally small in size, and taper from a thick center to a point at either end. The point, which is circular in cross-section, is in all cases, somewhat longer than the base, the thickest portion of the body taken as the point of measurement. The base, which is plano-convex or rectanguloid in cross-section, is flat on at least one side for scarfing against the shank of the hook. (Fig. 32, a-1). Carlson suggests that this type may also have functioned as the barb of the historic leister. (1954:26).

Type B

While very similar to the preceding group in form, a second group differs with respect to the cross-section of the shorter taper or base. The bases of this group are circular in cross-section and in four of the five examples, exhibit a polish. The longer taper or point in each case is also polished, indicating that both points were exposed to polishing agents. The thicker central portion of these points is flat on at least one side, suggesting that they were hafted and formed part of a composite tool, possibly a leister or fish hook. (Fig. 32, m-q).

Type C

A third group is formed by five, thin, somewhat asymmetric bird bone splinters. (Fig. 32, u-x). Grinding has

Figure 32

Unbarbed Bone Points

- a-l. bi-pointed bone objects, Type A
- m-q. bi-pointed bone objects, Type B
- r-t. herring rake barbs?
- u-x. splinter barbs
 - aa. single pointed bone object with conical shaped butt, #3081
 - bb. single pointed bone object with square cross-section, #3543
 - cc. single pointed bone object, #3264
- dd,ee. wedge-based bone points
 - ff. large unbarbed bone point with cylindrical cross-section
 - gg. large unbarbed bone point with ovoid cross-section.

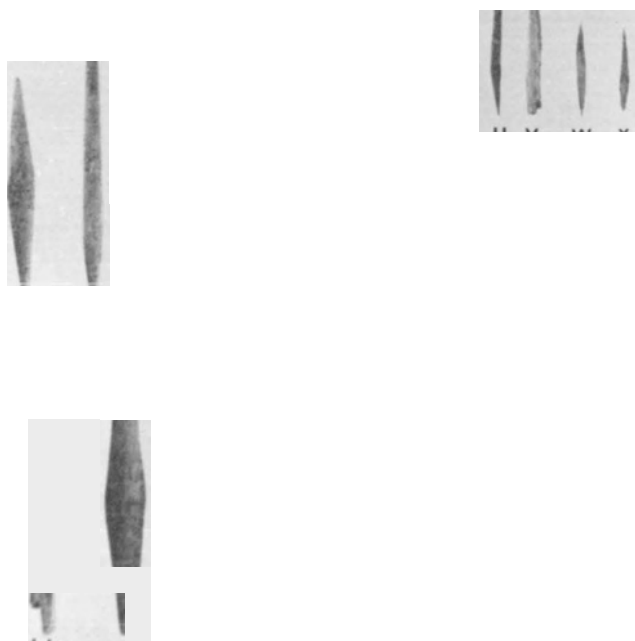


Figure 32

been applied at one or two ends of the splinters, producing sharp single-pointed or bi-pointed objects that may have armed a type of composite fish hook. (Carlson 1954:26).

Single Pointed Bone Objects

Herring Rake Barbs

TABLE XXII
Herring Rake Barbs

Attribute	Range	Mean	Number
length	2.8-4.7	3.7	4
width	.25-.35	.27	4
thickness	.10-.20	.16	4

A group of four small symmetric bone barbs may be parallel in function to the iron nail of the historic herring rake. The points of these barbs are circular in cross-section while the proximal ends have been abruptly ground to form a wedge-shaped base. (Fig. 32, r-t). Carlson (1954:Plate 3:15,17) illustrates several examples of this type.

Wedge-based Bone Points

Two bone points or blades with flattened bodies and rectanguloid cross-sections are similar to Drucker's Type BIA (1943:41). They exhibit carefully tapered wedge-shaped

hafting portions, and slightly thicker, abruptly sharpened points. (Fig. 32, dd, ee). Points or blades of this type probably armed toggling harpoons with flattened blade beds. Also in the Gulf of Georgia, Mitchell has recorded six of this type from the Montague Harbour III assemblage (1968: 302). Carlson (1960:579) also notes their presence in the San Juan Islands.

Miscellaneous Single Pointed Bone Objects

A number of pointed bone objects defy a functional interpretation and are therefore described in detail below.

#3264 This artifact tapers from a wider and thicker center to a sharp point, the cross-section of which is a flattened oval. The base, which is also tapered, is rectangular in cross-section and squared off. The point and base are approximately the same length. While its use in the flat bedded toggling harpoon is a possibility, the general configuration of the artifact does not fit the stylistic pattern of artifacts in this class. (Fig. 32, cc). Its dimensions are: L. 7.3 cm., W. 1.1 cm., Th. 0.4 cm.

#3081 The tip, body, and base of this point are uniformly circular in cross-section. The body of the point tapers to a sharpened polished point at one end and to a blunted conical shaped butt at the other. Its dimensions are: 6.5 x .8 x 0.8 cm. (Fig. 32, aa).

#3543 The body of this point, which is nearly

square in cross-section, tapers from a conical shaped butt at one end to a circular cross-section point tip at the other. (Fig. 32, bb). Its dimensions are: 7.2 x .6 x 0.5 cm.

Large Unbarbed Bone Points

Two large unbarbed bone points were recovered in the excavations. The first, from Helen Point I, exhibits a curved profile, ovoid cross-section, and ground, straight base. The closest ethnographic parallel for this artifact is the leister side point. Its dimensions are: Length: 13.5 cm. Width: 1.1 cm. Thickness: 0.8 cm. (Fig. 32, gg) (Fig. 33, a). The second point, from Helen Point III, is straight in profile with a cylindrical cross-section. The artifact, which is fragmentary, tapers gradually from the point of truncation toward the point. (Fig. 32, ff) (Fig. 33, b).

Unilaterally Barbed Bone Points

The 6 artifacts of this type from DFRu 8 are best described using the classification scheme evolved by A. McMurdo (1972). While all specimens exhibit traits which are generally ascribed to points of Class II (fixed, straight profile points), they can be further subdivided into two types contained within this class; Types I and VIII.

Points belonging to Type I are characterized by square

Figure 33

Large Unbarbed Bone Points
and Unilaterally Barbed Bone Points

- a. unbarbed bone points, straight base,
ovoid cross-section
- b. unbarbed bone point, cylindrical
cross-section
- c. barbed bone point, Type I
- d. barbed bone point fragment, Type I



Figure 33

enclosed barbs, conical bases, and long, slender, straight profiles. (Fig. 33, c, d) (Fig. 34, a-d). While they are most often associated with Late Prehistoric Coast Salish phases, these points have also been found in Marpole and Mayne phase components (McMurdo 1972:60). Of the five points of this type from DfRu 8, three are associated with the latest component Helen Point III, and two from the earliest component Helen Point Ib.

Type VIII points are distinguished by low straight extended barbs, and in the majority of cases, conical bases. McMurdo (1972:72) tentatively associates the majority of these points with the Marpole phase. The single point of this type from DfRu 8 is derived from the middle deposits of Test Cut II indicating that its age falls within the expected range. (Fig. 34, e).

Ulna Knives

The three artifacts of this type are distinguished in having markedly thinned tips and blades. The tips and blades are flattened and somewhat asymmetric in cross-section as opposed to the cylindrical cross-section and sharp point tip of the ulna awl. They have been produced by lateral, ventral, and dorsal grinding of the tip and blade. (Fig. 37, j, k). The blade of the single complete specimen is 11.3 cm. in length.

Split Mammal Bone Awls

Two artifacts can be assigned to this category. One

Figure 34

Unilaterally Barbed Bone Points

a-d. Type I

e. Type VIII



Figure 34

possesses a relatively long tip (2.2 cm.) that tapers gradually from the main body and is cylindrical in cross-section. (Fig. 35, c) (Fig. 36, g). A polished appearance resulting from usage has obliterated most evidence of grinding. A second awl tapers gradually from a straight butt at one end to a sharp polished point at the other. Its cross-section is uniformly rectangular. The butt has been thinned by a series of longitudinal cuts, probably to facilitate the addition of a small haft. (Fig. 35, e) (Fig. 36, h). Its dimensions are: 9.1 x 1.0 x 0.5 cm.

A large, rectangular cross-section tip fragment may belong in this functional grouping. (Fig. 37, d)

Bone Wedge

A small wedge of split mammal bone possesses a symmetrical, rounded bit that has been laterally ground. The implement is highly polished from use, and the butt bears evidence of battering. (Fig. 35, d) (Fig. 36, d). Its dimensions are: breadth of bit: 1.4 cm. Length: 4.7 cm.

Bone Dagger-like Objects

The two examples are of split mammal bone and have been modified by variable grinding of the body and tip. While the edges of the two specimens are relatively dull, the tips are sharp and pointed, indicating that these were thrusting rather than slitting tools (fleshers). The dimensions of the incomplete specimen, #3364, are:

Figure 35

Miscellaneous Bone Artifacts

- a. split mammal bone chisel
- b. split mammal bone gouge
- c. split mammal bone awl, cylindrical cross-section tip.
- d. bone wedge
- e. split mammal bone awl with rectanguloid cross-section.
- f,g. bone dagger-like objects.

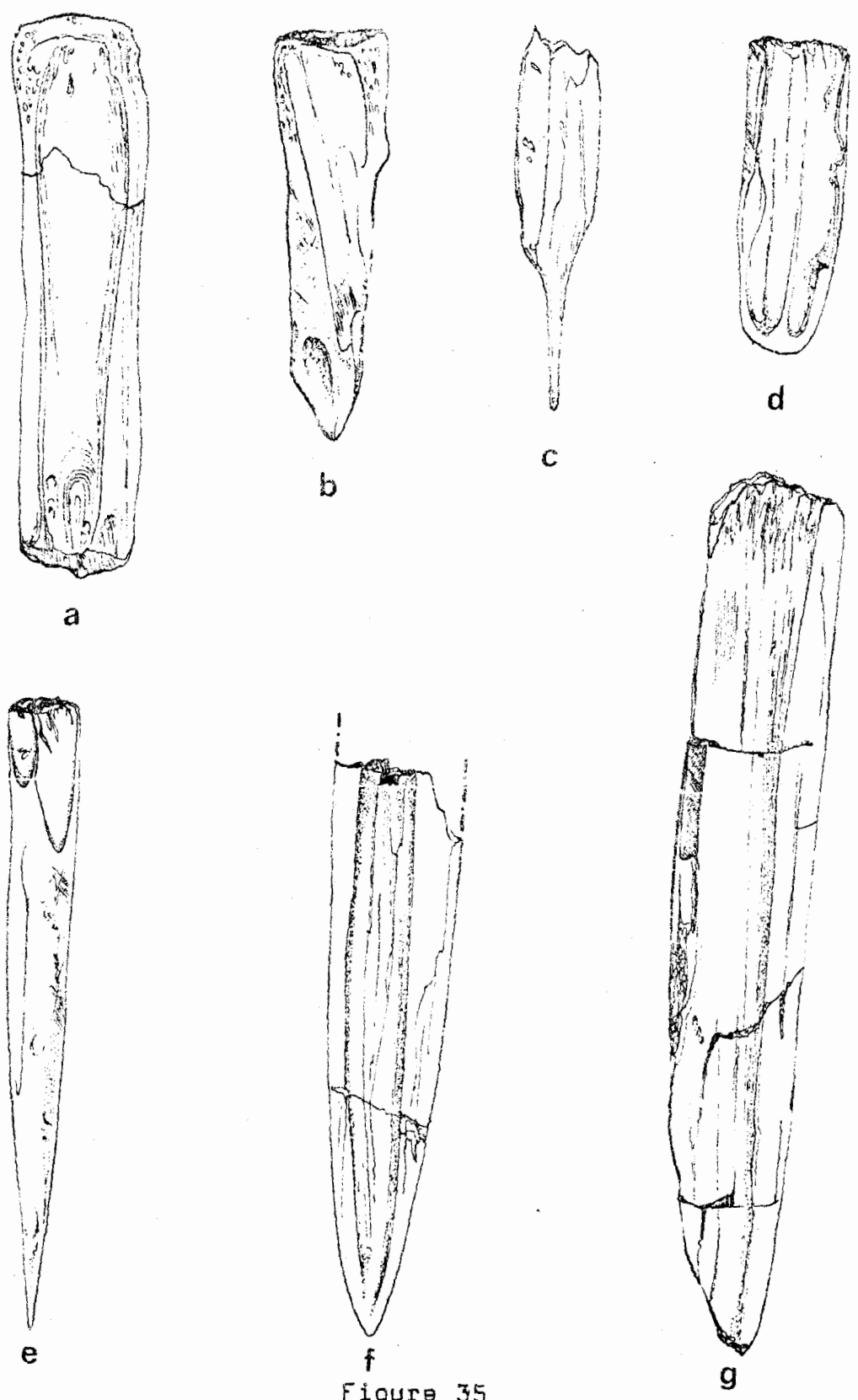


Figure 35

Figure 36

Miscellaneous Bone Artifacts

a,b. gouge-like objects

c. chisel-like object

d. bone wedge

e,f. dagger-like objects

g,h. split mammal bone awls

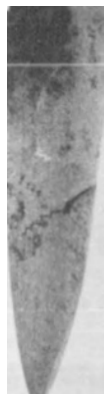


Figure 36

-- x 2.2 x 0.8 cms, while #3780 measures 13.4 x 2.0 x 0.9 cms. (Fig. 35, f, g) (Fig. 36, e, f).

Bone Needles

Manufactured from mammal bone, the single complete specimen is characterized by multi-plane grinding of the point to produce a nearly cylindrical cross-section and very sharp tip. The wedge shaped butt has been biconically drilled to produce an eye 2mm. in diameter. The dimensions of the specimen are: 6.4 x 0.7 x 0.6 cm. (Fig. 37 i) (Fig. 38 a). The second example is a small pointed and perforated fragment. While the piece appears to be a tip section, it could just as easily be a pointed base fragment. (Fig. 37 n).

Bone Pendant

A single laterally perforated bone pendant was recovered in the excavations. A shallow groove which follows the periphery of the artifact is visible only from the side. Both faces of the pendant have been finely polished and the artifact in general has been skillfully made. Carlson (1970:118 Fig. 35, e) illustrates a similar pendant, manufactured from soapstones, in regard to artifacts characteristic of the Marpole phase on Mayne Island. The dimensions of the specimen here are: 2.6 x 1.6 x 0.3 cm. (Fig. 37, b) (Fig. 38, e).

Perforated Bone Objects

Two fragmentary bone artifacts have been biconically perforated. One of the objects, which appears to have been rectangular in shape, has been centrally perforated. The remnants of a second perforation are visible slightly to the right of center. Its dimensions are: 5.2 x -- x 0.5 cm. (Fig. 37, c) (Fig. 38, b).

Chisel-like Object

Manufactured from split mammal leg-bone this artifact exhibits a chisel-shaped bit which is triangular in cross-section. The epiphysis of the original bone is partially evident at the butt end. (Fig. 35, a) (Fig. 36, c).

Gouge-like Objects

These artifacts exhibit partially ground triangular-shaped bits. The butt-end, in one case, is formed by the epiphysis of a split mammal bone. (Fig. 35, b) (Fig. 36, a). The butt and tip of the second artifact have both been broken. (Fig. 36, b). The second artifact, which exhibits a slight polish, may be a simple bone pendant. (Fig. 37, a) (Fig. 38, f). Its dimensions are: -- x 1.1 x 0.3 cm.

Bird Bone Tube

A section of bird bone has been carefully ground and polished and may have functioned as a drinking tube. At one end, the opening or mouth has been beveled and ground smooth. Unfortunately, the other end is broken. (Fig. 37, e)

Figure 37

Miscellaneous Bone Artifacts

- a,c. perforated bone objects
- b. laterally perforated bone pendant
- d. tip fragment of ulna knife
- e. bird bone tube
- f,g. ground beaver incisors
- h. bone needle fragment
- i. bone needle
- j,k. ulna knives

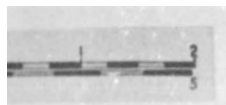


Figure 37

Figure 38

Miscellaneous Bone Artifacts

- a. bone needle
- b. perforated bone object fragment
- c. bird bone tube
- d. ground beaver incisor
- e. laterally perforated bone pendant
- f. perforated bone object fragment

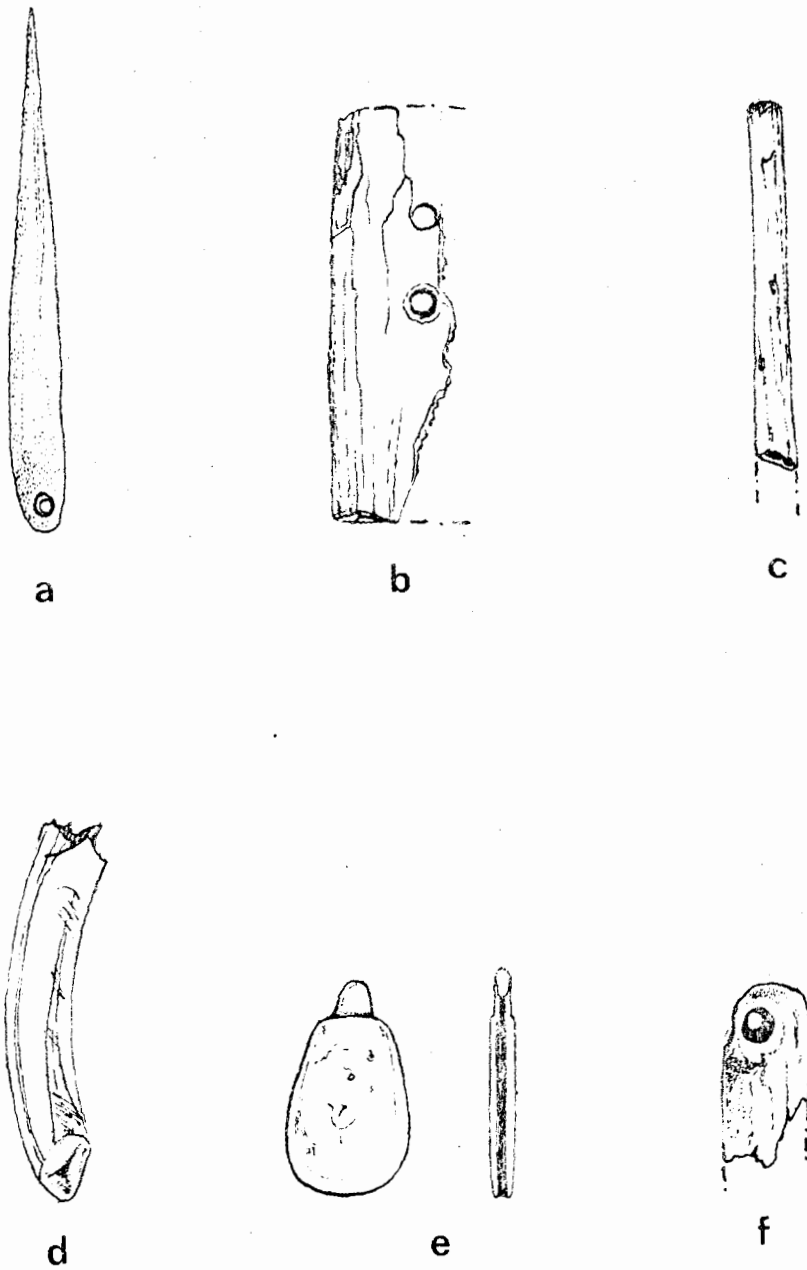


Figure 38

(Fig. 38, c). The diameter of the tube is 0.7 cm.

Miscellaneous Bone

Seventy-two pieces of bone have been either adzed, sawn, ground, or incised, but cannot be further classified as to form or function owing to their fragmentary nature. While some may represent fragments of finished artifacts, it is probable that most are waste material. Included in this category are two sawn sections of whale bone, one measuring 7.7 x 2.5 x 1.8 cm., and the other 6.5 x 3.5 x 1.8 cm.

Ground Beaver Incisors

Two fragmentary examples of this tool type were recovered in the excavations. The dorsal side of the incisor tip has been ground in both cases. (Fig. 37, f, g). In one specimen an additional facet has been created by lateral grinding of the normally convex and smooth dorsal body. This second facet intersects with the primary facet on the incisor tip and is about 1.4 cm. in length. (Fig. 38, d).

ARTIFACTS OF ANTLER

Composite Toggling Harpoon Valves

Two complete pairs of valves, a single fragmentary valve, and a blank for the manufacture of another, were recovered in excavations at DFRu 8.

The two complete valve pairs, while very similar in

the details of their construction, are decidedly different in regard to size; one pair measuring 7.7 x 1.7 x 0.9 cm., (Fig. 39, d, e) (Fig. 40, a, b, c), and the other pair, 6.7 x 1.1 x 0.7 cm. (Fig. 39, b, c) (Fig. 40, e, g). Both exhibit well defined lashing grooves which are interestingly of about the same length in both specimens, 1.6 cm. for the larger, and 1.5 cm. for the smaller. A flat point bed for cutting blade formed by relatively long, 3.8 cm. for the larger, 2.7 cm. for the smaller, but narrow, 0.6 cm. for the larger. 0.5 cm. for the smaller, anterior portions is characteristic of both pairs of valves. Dimensions of the socket halves for the larger pair are, 0.9 cm. wide, and 4 cm. deep, and for the smaller pair, 0.6 cm. wide and 0.4 cm. deep. Toward the center of the valve interiors of both pairs are small flat surfaces which meet when the valves are united. These planes are approximately 1.5 cm. in length in the larger pair and 1.1 cm. in length on the smaller, and extend the width of both. The size of the blade slot in each indicates that the average thickness of the cutting blade must have been about 4 mm. in the larger pair and 2 mm. in the smaller.

While much of the anterior portion of the fragmentary valve is missing, enough remains of the point bed to indicate that it was channeled and concave in cross-section. This type would naturally have been used in conjunction with a circular cross-section bone point rather than a

Figure 39

Composite Toggling Harpoon Valves

- a. partially ground and carved valve
- b,c. complete valve pair
- d,e. complete valve pair
- f. fragmentary valve with concave
point bed

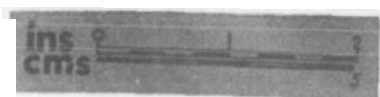


Figure 39

Figure 40

Composite Toggling Harpoon Valves

- a. interior of single valve with flat point bed
- b. exterior of single valve with lashing groove
- c. profile of joined valve pair
- d. partially ground and carved valve
- e. interior of single valve
- f. interior and profile of valve with concave point bed
- g. interior and profile of single valve with flat point bed

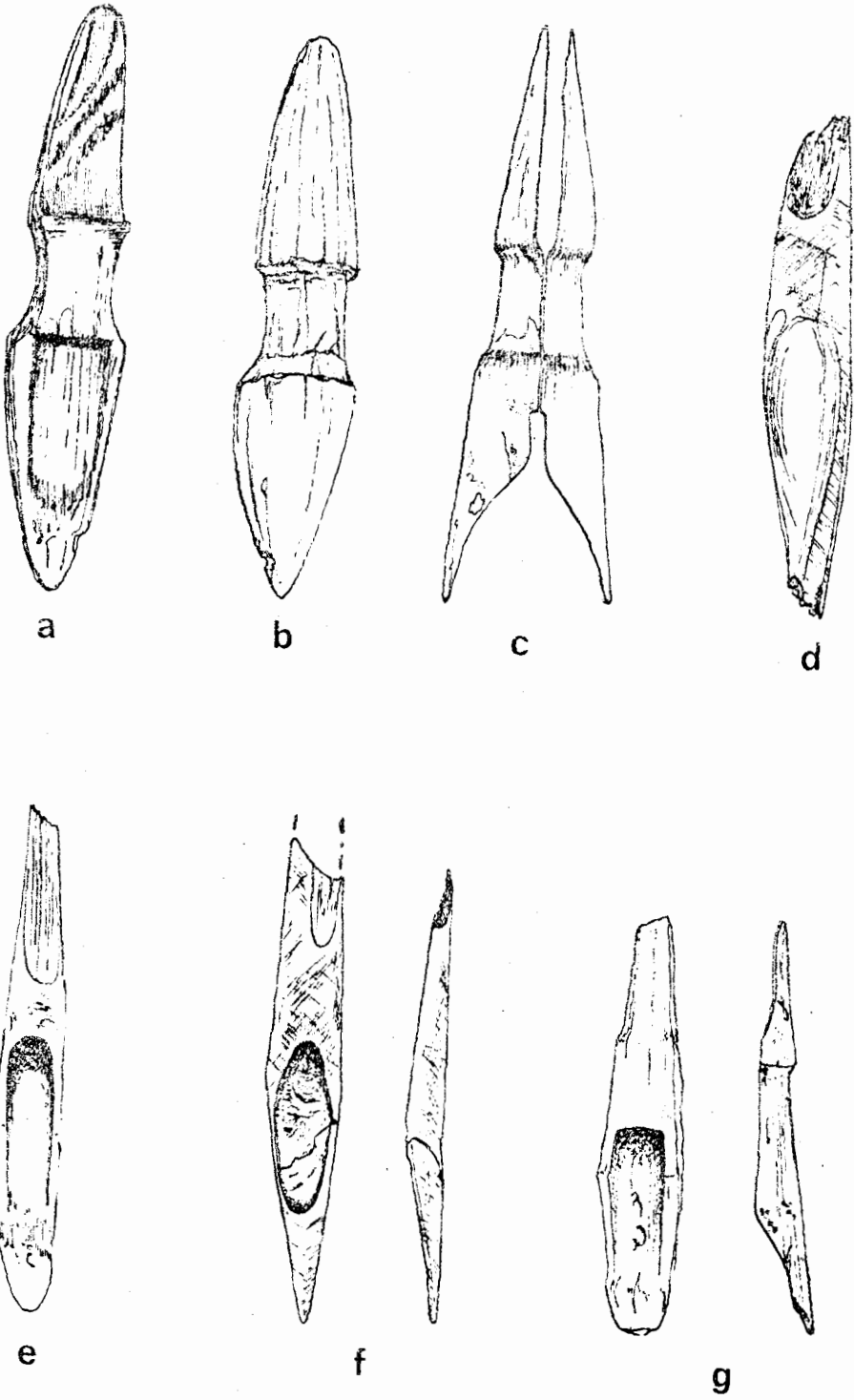


Figure 40

cutting blade. Lashing grooves are absent. (Fig. 39, f) (Fig. 40, f). The unfinished valve has been carved and partially ground. The general outline has been roughed out and the socket half is discernible. (Fig. 39, a) (Fig. 40, d).

Antler Wedges

Fifteen wedge-like antler artifacts were recovered in the excavations. All were fragmentary to a greater or lesser degree. Five specimens are wedges which have been longitudinally split. Of these, the proximal end or bit is intact in only two cases. Eight of the artifacts consist of bit fragments, four complete, and four longitudinally split. The two remaining wedges are complete with the exception of partially fractured bits. The latter two specimens appear to have been utilized without too much preparation of either shaft or bit, and in cross-section are considerably thicker than the other wedges.

The bits of all wedges are generally rounded and have been manufactured primarily through a process of unifacial beveling. The unbeveled side of the bit exhibits a polish which is easily mistaken for beveling. (Fig. 41).

Unilaterally Barbed Antler Points

Four antler points from DfRu 8 are of the fixed, straight profile variety defined by Ann McMurdo (1972:68), and thus conform to her Class II division. The points can

Figure 41

Antler Wedges

- a-c. bit fragments
- d. profile of longitudinally split wedge
- e,f. wedges with partially fractured bits

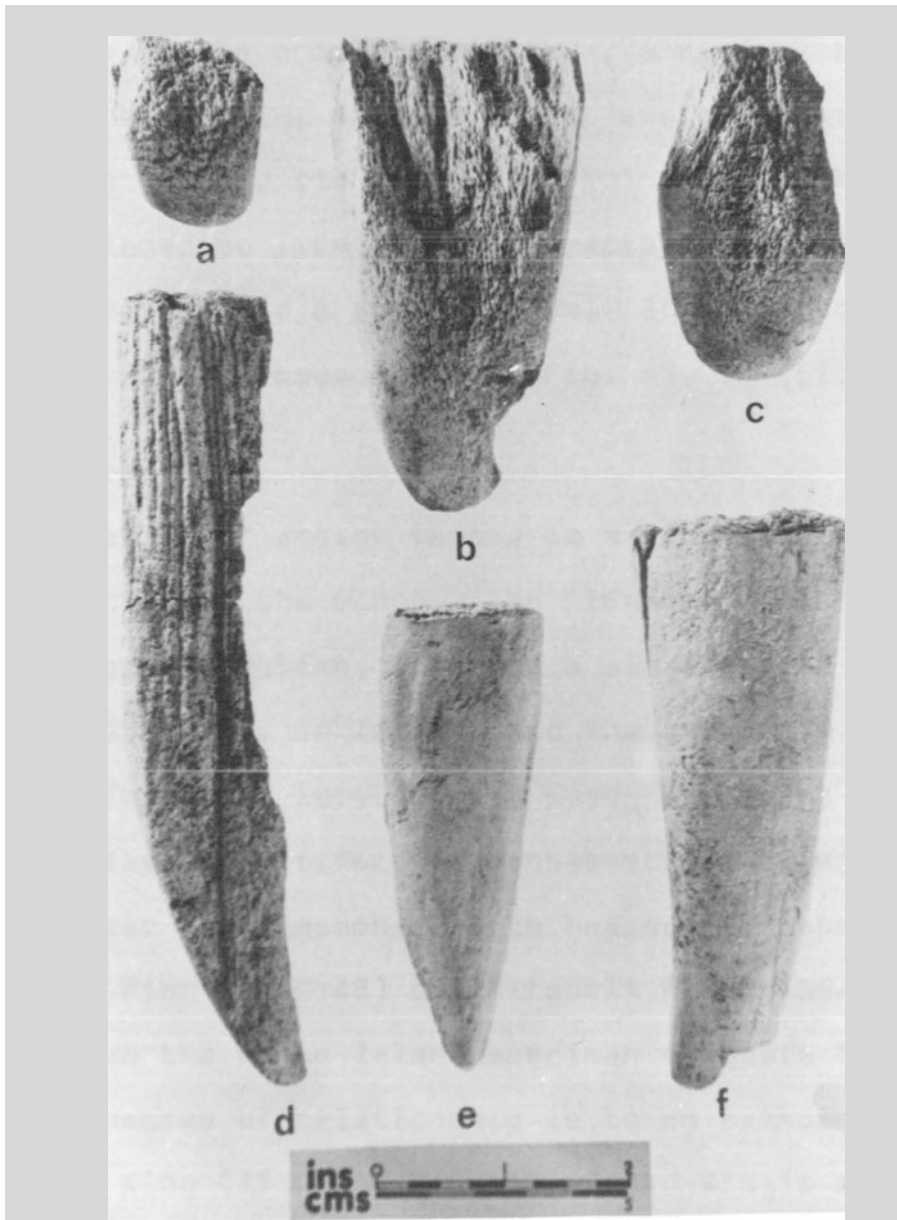


Figure 41

be further subdivided into types II and VII (Class II), of the McMurdo classification. The 3 points which can be assigned to Type II exhibit square, enclosed barbs, and in the single complete specimen, a conical base. (Fig. 42, a-d) (Fig. 43, a-d). Two are associated with Helen Point I, and one with Helen Point II. The single point assigned to Type VII is characterized by low straight, extended barbs, and a conical base. It is associated with the Helen Point I assemblage. (Fig. 42, f) (Fig. 43, f).

Antler Foreshaft

A section of antler tapers to a blunt point at one end and is broken at the other. The fragment, which is circular in cross-section, exhibits a single notch on each side, one, 1.3 cm. in length, and the other 1.0 cm. in length. These are located just above the point of truncation. While the artifact is problematical by any standard, it does bear some resemblance to harpoon foreshafts described by King (1950:48) and Mitchell (1971:138-139). The notching on the Mayne Island specimen suggests that the greatest degree of relationship is to an example illustrated by King (1950:43, Fig. 13 #36). King's example exhibited a wide slit for a point at the distal end. Immediately behind this slit was a shallow notch ringing the foreshaft, presumably to facilitate line attachment. The base of the foreshaft tapered to a blunt point. The Mayne Island artifact may also relate to those described

Figure 42

Unilaterally and Bilaterally Barbed

Antler Points and Harpoons

- a-d. unilaterally barbed antler points,
Class II, Type II
- f. unilaterally barbed antler point,
Class II, Type VII
- e. bilaterally barbed antler harpoon



Figure 42

Figure 43

Unilaterally and Bilaterally Barbed

Antler Points and Harpoons

- a-d. unilaterally barbed antler points,
Class II, Type II
- f. unilaterally barbed antler point,
Class II, Type VII
- e. bilaterally barbed antler harpoon



Figure 43

by Mitchell (1971:138), in which case the blunted point would fit a socket formed by two valves. Its dimensions are: Length 6.9 cm. Diameter 1.6 cm.

Bilaterally Barbed Antler Harpoon

The barbs of this point are extremely worn but still sufficiently distinct to permit classification under this heading. From the small, rounded protrusions which remain it can be ascertained that the barbs were probably of the enclosed type and somewhat asymmetric. The butt, which is tapered and oval in cross-section, exhibits three lashing grooves; two on one side and one on the other. (Fig. 42, e) (Fig. 43, e).

Similar artifacts are illustrated by Carlson (1970:116, b and c), in regard to artifacts diagnostic of the Mayne Phase. Those cited by Carlson however, are longer and broader than the specimens described here. Its dimensions are: -- x 1.1 cm. x 0.7 cm.

Antler Pendants

A small ground antler object has been incised on one face and appears to have formed part of a somewhat larger artifact. The incising is symmetrical enough to suggest that a decorative design was intended. The remnants of a small perforation are visible on the broken edge of the artifact, indicating that it may have been a pendant. (Fig. 44, f) (Fig. 45, a). Its dimensions are: 7.1 cm. x -- x 0.3 cm.

Figure 44

Miscellaneous Antler Artifacts

- a-d. antler tine objects
- e. pointed antler object
- f,g. antler pendants

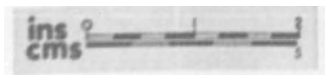


Figure 44

Figure 45

Miscellaneous Antler Artifacts

a,b. antler pendant

c. pointed antler object

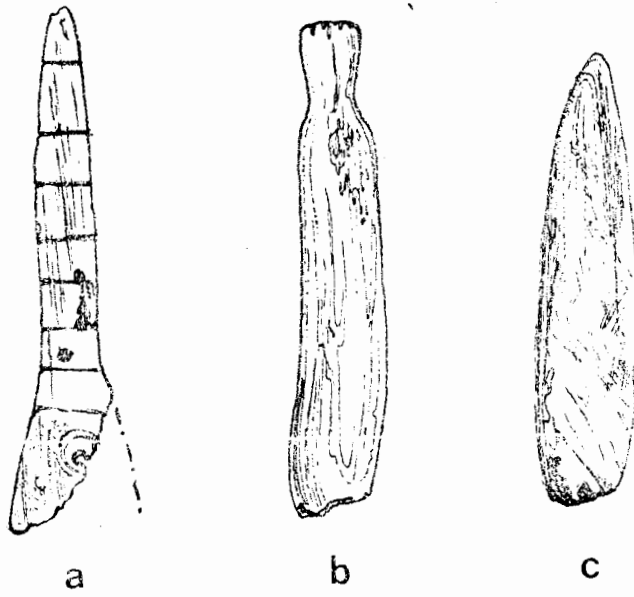


Figure 45

A second artifact has been crudely girdled at one end and seems most likely to have been used as a pendant. The object is rectangular in cross-section at the girdled end and tapers to a squared off wedge shape at the other. (Fig. 44, g) (Fig. 45, b).

Antler Tine Objects

TABLE XXIII
Antler Tine Objects

Attribute	Range	Mean	Number
length	4.2-9.0	6.5	4
width	1.8-1.9	1.9	4
thickness	1.3-1.6	1.5	4

While of uncertain function, four antler tines show definite signs of having been both modified and utilized. Three of the artifacts have been adzed proximally, presumably a result of their removal from the main antler shaft. The fourth has been randomly adzed over the greater part of its body. The tip of two of the antler tines appear to have been intentionally burned. All of the artifacts exhibit use-wear at the distal end. It is possible that these artifacts functioned as flaking tools. (Fig. 44, a-d).

Pointed Antler Object

A short, relatively broad, leaf-shaped antler point has been ground on one side only, resulting in a plano-convex cross-section. The edges of the point have been ground to a convex shape, while the base is straight and slightly thinner than the body of the point. The thinned base indicates that the artifact formed part of a composite tool, however, its exact function is uncertain. (Fig. 44, e) (Fig. 45, c). Its dimensions are: 5.8 x 1.5 x 0.1 cm.

Miscellaneous Worked Antler

Thirty-one fragments of antler have been variously adzed, graved, or ground, but defy further classification. Some of these worked objects undoubtedly represent fragments of finished artifacts while others may be waste material or unfinished artifacts.

ARTIFACTS OF SHELL

Mytilus Californianus Tools

Ten artifacts of *Mytilus californianus* exhibit single bevel grinding of their interior edge. Grinding, on all but one specimen, is most marked on the natural convex edge at the end of the body opposing the umbo. The remaining artifact, a fragment of shell umbo and its adjoining hinge, exhibits single bevel grinding on these portions.

All of the shells have been ground and smoothed

externally. In some cases the natural external ribbing has been entirely removed, while in others the external surface has been only partially modified. Although a functional meaning is implied, it is probable that grinding of the external surfaces served primarily to remove the encrustations which are common to this shell type. (Fig. 46).

The wide range of functions attributed to these artifacts in the ethnographic literature suggests that they were multi-purpose tools. Barnett (1955:62, 125, 63) makes several references to the function of similar shell tools, including, their use as; fish knives (p. 62), hide scrapers (p. 125), and in the removal of the cambium layer of maple, alder and hemlock (p. 63). This ethnographic evidence combined with the morphological characteristics of these artifacts strongly suggests their use in both scraping and cutting operations.

HISTORIC ARTIFACTS

While descriptive and distributional data regarding historic artifacts are summarized in Table XXIV, some types require further elucidation and are discussed below. It is interesting to note that only four of the 309 historic artifacts were recovered from Test Cut III. These excavations are located approximately 15 metres farther from the beach than the others indicating that this was not a preferred area of settlement in the historic period.

Figure 46

Mytilus californianus Tools

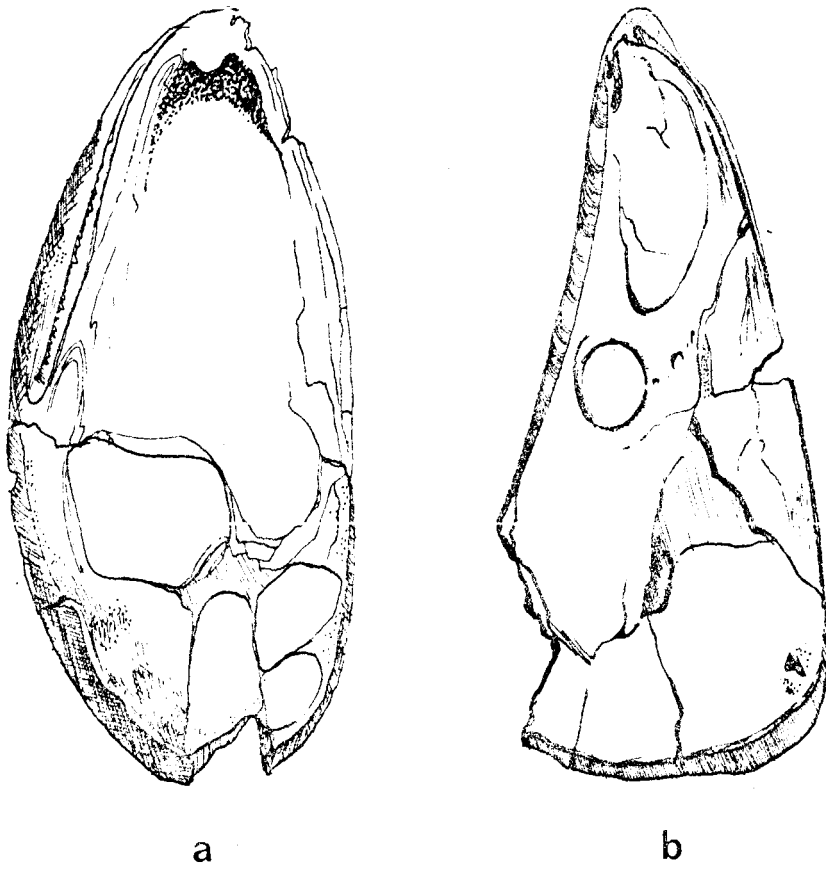


Figure 46

Clay Pipe Stem Fragments

No complete clay pipes were recovered from the site. Four of the five artifacts consist of tapered stem sections all of which have a bore diameter of 2mm. While the origin of the latter fragments was not possible to determine, the fifth stem fragment bore the inscription, "L. Fiolet, à S^e. Omer, Depose." The company of L. Fiolet had its beginnings in St. Omer, France in 1764 and continued in business until 1920 (Humphrey; 1969:17). The bore diameter of this pipe is 2.5 mm.

Buttons

Details regarding buttons are summarized below.

<u>Material</u>	<u>Number</u>	<u>Notes</u>
Brass	4	Inscription: "Improved Patent" 2 eyes
Brass	1	Inscribed abstract design 4 eyes
Glass	2	Plain 4 eyes
Mother of Pearl	1	Plain 2 eyes

Miscellaneous

Seventeen of the eighteen artifacts classified as miscellaneous metal consist of unidentifiable fragments of tin, iron, and brass. One is a section of folded copper about 0.2 cm. in thickness and 0.8 cm. in width.

The rifle cartridge recovered is of the center fire type but of unknown origin. The single shotgun shell bears the inscription, "U.M.C. Co., N^o 10, New Club."

TABLE XXIV
Historic Artifacts

Artifact	Test Cut			Site
	1	2	3	Total
Metal				
Square Nails	65	67	0	132
Round Nails	8	4	0	12
Metal Buttons	2	2	1	5
U-shaped Fish Hooks	8	0	0	8
Rifle Cartridge	0	1	0	1
Shotgun Shells	1	0	0	1
Miscellaneous	12	5	1	18
Glass				
Bottle Glass Frags.	54	45	1	100
Buttons	0	1	1	2
Other				
Clay Pipe Stem Frags.	0	5	0	5
China Fragments	17	5	0	22
Leather	0	1	0	1
Plastic	1	0	0	1
Mother of Pearl Button	0	1	0	1
	168	136	4	309

CHAPTER VIII
CULTURAL FEATURES

Helen Point Ib

Feature A : Clay Bowl Structure (Test Cut 2)

The rim of a large bowl-shaped clay structure was visible to excavators at a depth of 1.6 metres below datum (ca. 90 cm. below surface), and when totally exposed was found to extend 51 cm. from top to bottom. Approximately 110 cm. in diameter measured at the top from lip to lip, the bowl-like structure tapered to a 50 cm. diameter at the bottom. The walls of the feature, which were composed of highly compact unfired clay, varied in thickness from five to eighteen centimetres. In the bottom centre of the bowl lay a large, horizontally situated sandstone slab which was covered with a lens of black charcoal and clay. The inner slope of the walls adjacent to the slab had been stained orange, indicating contact with fire. A wooden structure of unknown design appears to have formed part of the feature, judging from the presence of seven small post molds which have been randomly spaced around the perimeter of the upper lip.

Adjacent, and immediately to the east of this feature lies a second area of compact clay covering an area of approximately four square metres. While of the same consistency as the clay bowl structure, this feature follows

no definite symmetrical pattern, but does slope from the outer lip toward the bottom to a depth of about 30 cm.

The clay bowl structure described above has a number of close parallels in other sites in the Gulf of Georgia Region. While none are identical, similar structures are associated with King's Maritime Phase (1950:69), Mitchell's Montague Harbour I component (1968:239), with the lower stratum at Crescent Beach (Personal Observation), and at the Carruthers Site (D. Crowe-Swords:Personal Communication). While various functions have been suggested for structures of this type there are no close historical parallels that would support any single interpretation. However, a cooking arrangement seems the most likely intended use.

Feature B : Hearth-like rock concentration (Test Cut 2)

A crescent-shaped formation of rocks, associated with a circular lens of orange ash about 45 cm. in diameter, lies due east of Feature A. Its depth below datum is roughly equal to the maximum vertical extent of the latter; about 200 cm. While this feature does not adhere strictly to the formal hearth definition it probably served a similar function.

Feature C : Possible Living Floor (Test Cut 2)

A floor plan drawn at 1.6 metres below datum corresponds in vertical provenience to the upper surfaces of Feature A (Clay Bowl Structure) and reveals two large

concentrations of fire-cracked rock, an ash lens, and two post molds. The post molds, which were respectively 23 cm., and 25 cm. in diameter, suggest an intermediate sized structure. Although no further post molds were discovered at this level, additional sampling of the area may have revealed others.

Feature D : Post and Stake Molds (Test Cut 3)

A floor plan drawn at the sterile sub-soil level in Test Cut 3 indicates the presence of ten post molds ranging in size from 11-15 cm. in diameter, and eleven stake molds ranging in size from 4-8 cm. in diameter. While six of the post molds form a reasonably straight line and may have served as structural uprights, the remaining post and stake molds form no discernible pattern. All were probably intruded from more recent strata, the compact clay zone forming a stable structural foundation.

Additional associated features include a pit about 25 cm. in depth, measuring 64 x 34 cm., and a concentration of flat sandstone slabs. Whether either of these features is of cultural origin is difficult to determine. While the sandstone slabs are associated indirectly with Burial #2, lying slightly below and to the east of it, such positioning may be entirely coincidental. The pit, which lies immediately east of a straight line of six post molds, is associated with no other cultural manifestations.

Helen Point II

Feature : Rock Concentration (Test Cut 1)

A single feature of unknown function was recorded for component II. It consisted of five large rocks ranging in size from 30 x 17 cm. to 30 x 35 cm. which were arranged around a lens of sandy clay and pea gravel. While resembling a hearth, the absence of ash or charcoal would tend to preclude this interpretation.

Helen Point III

Feature A : Living Floor (Test Cut 2)

A floor plan drawn at 120 cm. below datum in Test Cut 2 indicates the presence of a large concentration of fire-cracked rock covering the total area of excavations (Eight square metres). Associated are at least two definite hearth areas, three ash lenses, and a single post mold in the north east corner of the excavated area.

An additional floor plan drawn at a depth ranging from 5 to 20 cm. below the latter, probably represents the basal portion of the same living floor. Two post molds and seven stake molds contained within a large area of compact orange-grey ash are the most notable features. The post molds are respectively 16 cm. and 12 cm. in diameter, while the stake molds range from 4 cm. to 5 cm. in diameter. Two separate concentrations of fire-cracked rock and a grey-brown ash lens also form part of this living floor.

Feature B : Rock Concentration (Test Cut 1)

A feature composed of small fire-cracked rocks was exposed in Test Cut 1. Traces of ash were scattered throughout the feature which ranged in depth from 0 to 25 cm. below surface. A large sea mammal bone was associated with this feature.

Historic Period

Feature : Possible Living Floor (Test Cut 2)

A feature ranging in depth from 81 cm. to 101 cm. below datum, may represent a living floor at the bottom of the historic period zone. Composed of two major areas of compact yellow ash and a large hearth area, the feature is associated with a number of square iron nails. The hearth consists of a concentration of fire-cracked rock, ash, and lumps of charcoal.

CHAPTER IX

BURIALS

Helen Point Ib

Burial #1

Burial #1 was completely disarticulated with the exception of one femur and an innominate bone. The sex of the individual was determined as female on the basis of the angle formed by the sciatic notch. Age however, was more difficult to determine owing to the absence of large portions of the skeleton. A range of from twenty-three to twenty-eight years was arrived at through comparison of dental wear with other more accurately aged specimens from the site.

Burial #2

Preservation of Burial #2 was relative good, the frontal section of the maxilla being the only missing portion. Sex was determined as female and age at between thirty and thirty-five years.

The skeleton was semi-flexed and lay on its right side facing south. While the specific grave type is uncertain, the body appears to have been contained within a pit. A large sandstone slab lay immediately south of the cranium.

Burial #3

Preservation of Burial #3 was generally poor. As the pelvis was missing, determination of sex relied primarily on cross comparison of less accurate features, such as the mastoid processes. The skeleton appears to be that of a female between the ages of thirty-five and forty-five.

Parts of the skeleton are burned indicating that the body may have been cremated while the skull appears to have been crushed by a large flat slab of granite which lay about it. It was not possible to determine the position of the body.

Burials #4 and #5

Burials four and five almost certainly represent a simultaneous double burial. The left arm of Burial #5 is extended around the head of Burial #4 and together they are contained within a definite, roughly oval pit with an homogeneous matrix. The two skeletons lie in a semi-flexed position on their backs, Burial #5 facing north and Burial #4 facing north east.

The remains of Burial #4 were ascertained to be those of a thirty-five to forty year old male. A number of dental anomalies are noteworthy in this individual. Hypercementosis is present in the lower third molar and the upper first molar while differential wearing has resulted in the complete destruction of the upper first molar above the roots. In addition, an enamel pearl is present on the

root of the upper second molar.

Burial #5 represents the remains of a female between seventeen and twenty-five years of age.

While no features or artifacts were associated with either of these burials, a dark red stain below the left radius of Burial #4 may be the remnants of ocher.

Helen Point II and III

No burials were associated with either of these components.

CHAPTER X
FAUNAL REMAINS

Shellfish

Shellfish remains were collected for the purpose of obtaining a representative sample of each species by component. Sources employed in the study included (Quayle: 1970), (Griffith:1967), (Keen:1963), and (Morris:1952). The results of the final analysis are recorded in Table XXV. Noteworthy is the fact that several species are present in significantly high numbers throughout the tri-component sequence; these are: Saxidomus giganteus (Butter Clam), Thais lamellosa (Wrinkled Purple Whelk), and Venerupis tenerrima (Thin-shelled Little-neck Clam). Below, listed in decreasing order of their relative numbers, are the species most common to each component.

Helen Point Ib

Thais lamellosa (Wrinkled Purple Whelk)

Saxidomus giganteus (Butter Clam)

Venerupis tenerrima (Thin-shelled Little-neck Clam)

Acmoea Pelta (Shield Limpet)

Balanus spp. (Barnacle)

Clinocardium nuttalli (Basket Cockle)

Helen Point II

Thais lamellosa (Wrinkled Purple Whelk)

Venerupis tenerrima (Thin-shelled Little-neck Clam)

Saxidomus giganteus (Butter Clam)

Balanus spp. (Barnacle)

Acmoea digitalis (Fingered Limpet)

Helen Point III

Saxidomus giganteus (Butter Clam)

Thais lamellosa (Wrinkled Purple Whelk)

Venerupis tenerrima (Thin-shelled Little-neck Clam)

Homalopoma carpenteri (Carpenter Dwarf Turban)

Balanus spp. (Barnacle)

Clinocardium nuttalli (Basket Cockle)

Mytilus edulis (Blue Mussel)

TABLE XXV

Distribution of Shellfish Remains

Key: A= Abundant, X= Trait present, R= Rare, -= Absent
Component

	I	II	III
<u>Clinocardium nuttalli</u>	X	X	X
<u>Saxidomus giganteus</u>	A	A	A
<u>Mytilus edulis</u>	X	-	X
<u>Mytilus californianus</u>	X	-	X
<u>Schizothaerus nuttalli</u>	R	R	R
<u>Schizothaerus capax</u>	R	-	-
<u>Protothaca staminea</u>	-	-	R
<u>Venerupis tenerrima</u>	A	A	A
<u>Hinnites multirugosus</u>	R	R	-
<u>Ostrea lurida</u>	-	-	R
<u>Acmoea pelta</u>	A	-	R
<u>Homalopoma carpenteri</u>	R	R	X

continued....

TABLE XXV Continued

	Component		
	I	II	III
<u>Searlesia dira</u>	R	R	R
<u>Ceratostoma foliatu</u>	-	-	X
<u>Ocenebra interfossa</u>	R	X	R
<u>Thais lamellosa</u>	A	A	A
<u>Thais canaliculata</u>	X	-	R
<u>Acmoea digitalis</u>	R	X	R
<u>Polinices lewisii</u>	R	-	-
<u>Natica clausa</u>	R	-	-
<u>Balanus spp.</u>	A	X	X
<u>Cancer spp.</u>	-	-	R
<u>Strongylocentrotus spp.</u>	X	X	X
<u>Katharina tunicata</u>	X	X	X

Mammals

Coast Deer (Odocoileus hemionus), by far the most common mammalian species recovered at DFRu 8, was abundant relative to other species in all components. Species of dog (Canis) were also represented in significant numbers in all components and one positive identification of Canis familiaris was made in association with Helen Point III. However, remains from other components were fragmentary to the extent that identification of species was impossible.

Fragments of bone derived from sea mammals of the Order Pinnepedia (Seals and Sea Lions) were also recovered from all components. Two species were identified, Eumetopias jubata (Northern Sea-lion) and Phoca vitulina

richardi (Hair Seal), both of which were associated with Helen Point II. Also of interest were the fragmentary remains of Cetacea (whales). Two large sections of adzed whale bone were recovered in association with the Helen Point Ib assemblage but were too fragmentary to permit positive identification of species.

The remains of American Beaver (Castor canadensis), Short-tailed weasel (Mustela erminea), Marten (Martes americana), Wapiti (Cervus canadensis), and Harbour Porpoise (Phocaena vomerina) were also identified but appear to have played a less decisive role in the subsistence of the site occupants. It is interesting to note at this juncture that marten, weasel, beaver, and Wapiti, are apparently absent from the Gulf Islands historically (Munro and Cowan 1947:35), indicating that their exploitation in the past may have been greater than suggested by their representation in the cultural deposits at DfRu8.

Birds

The task of identifying the remains of birds at DfRu8. was complicated by the absence of key indicators of species. Primarily, however, the remains appear to be those of the Order Anseriformes (Screamers, Swans, Geese, and Ducks). In general these birds appear to have formed a consistent, but probably supplemental part of the diet of the site's prehistoric occupants.

Fish

Four species of fish were identified at DfRu 8 including; salmon (Oncorhynchus spp.), rockfish (Sebastes spp.), lingcod (Ophiodon elongatus), and herring (Clupea pallasii). While the Helen Point II and III deposits contained the highest proportion of fish remains per cubic volume of earth removed, it seems likely that differences in frequency are due primarily to factors of preservation rather than of culture. The pressure of overlying midden, and the possibility of submergence of parts of the midden in earlier times, may both have contributed to the deterioration of remains of some of the smaller species.

TABLE XXVI

Distribution of Mammal, Fish, and Bird Remains at DfRu 8

Key: A= Abundant, X= Trait present, R= Rare, -= Absent

<u>Mammalia</u>	Component		
	I	II	III
<u>Odocoileus hemionus columbianus</u>	A	A	A
<u>Canis spp.</u>	A	A	X
<u>Cervus canadensis</u>	-	R	R
<u>Martes americana</u>	-	-	R
<u>Mustela erminea</u>	R	-	-
<u>Castor canadensis</u>	X	R	X
<u>Cetacea</u>	R	-	-
<u>Pinnipedia</u>	R	R	R
<u>Eumetopias jubata</u>	-	R	-
<u>Phocaena vomerina</u>	R	-	-
<u>Phoca vitulina richardi</u>	-	R	-
<u>Aves</u>			
<u>Anseriformes</u>	X	X	X
<u>Pisces</u>			

continued....

TABLE XXVI Continued

<u>Pisces</u>	<u>Component</u>		
	I	II	III
<u>Oncorhynchus spp.</u>	X	X	X
<u>Sebastes spp.</u>	X	R	X
<u>Ophiodon elongatus</u>	X	X	X
<u>Culpea pallasii</u>	-	-	X

The broad range of fauna exploited throughout the sequence at DfRu 8 suggests a subsistence pattern geared to total environmental exploitation. Excluding the possibility of differential rates of decay for different types of bone (i.e., sea mammal bone vs. land mammal bone), the results of the analysis provide some worthwhile insights as to the nature of prehistoric economies in the region. The tendency throughout the short but intensive history of archaeological research in the area has been to emphasize the hunting of sea mammals as an integral and decisive part of prehistoric subsistence. Judging from the faunal analyses at Helen Point, Cattle Point, and Montague Harbour, this view must be reassessed. Quantitative analyses at Helen Point and Cattle Point indicate that species of deer and dog outnumber species of sea mammal by significant margins. At Cattle Point the remains of sea mammals account for less than 13% of the total number of mammal remains (King 1950:90). At Montague Harbour, Coast deer and Wapiti again predominate throughout the sequence and interestingly, sea

mammal remains are entirely absent from Montague Harbour I, a component of the Locarno Beach Culture Type (Mitchell 1971:150). When the number of sea mammals at these sites is considered in the context of the fauna count as a whole, the effect is to greatly diminish their relative frequency and in turn indicate their somewhat meagre contribution to subsistence. A faunal analysis at five other lower mainland and Gulf Island sites reveals a similar pattern (Galdikas-Brindamour 1972:199-205). Calculating from the number of individuals of each species at the sites we arrive at the percentage distribution of sea mammals compared to land mammals shown in Table XXVII.

TABLE XXVII
Percentage Distribution of sea mammals and
land mammals at five sites

	DeRt 1	DeRt 11	DhRc 1	DhRr 6	DgRr 6
land mammals	75	80	100	83	93.3
sea mammals	25	20	0	17	6.7

Studies of sea mammal hunting among the historic Coast Salish indicate that the larger species were hunted by few groups and then only by a restricted number of specialists. Sea-lions, for example, were hunted only by the Penelekut

group in the vicinity of Porlier Pass (Suttles 1952:18). Among the Penelekut the carcass was not divided equally among the people of the village but was "Divided according to a formula following the order of striking." (Suttles 1952:13). The fact that the occupation was restricted to an "elite" with special ritual and practical knowledge, and the fact that division of a carcass was restricted to this group, implies that the subsistence base of the population at large must have been much broader in scope and concerned with more readily available resources.

While the extent and form of sea mammal hunting at Helen Point and at other prehistoric sites in the Gulf of Georgia can be only tenuously inferred from the historic record, the faunal analyses at these sites would tend to indicate a similar pattern in this aspect of the economy. This pattern may have conformed to the following set of hypotheses:

1. (a) The hunting of large sea mammals was probably restricted to only a very few groups in the Gulf of Georgia Region.
(b) The act of hunting may have been performed by an elite within these restricted groups.
2. The significance of sea mammal hunting may have been social rather than economic (It was the skill and cooperation required rather than the contribution to subsistence that gave the sea mammal hunt its

cultural significance.)

3. The hunting of smaller sea mammals (porpoise and seal) was probably common to all groups in the region.
4. The sea mammal hunt was probably only one aspect of a subsistence economy which was totally exploitative and generalized rather than restricted in scope.

CHAPTER XI

INTRA-SITE CORRELATION OF CULTURAL UNITS

As three separate archaeological excavations have been conducted at DFRu 8, a valid reconstruction of the culture history of the site requires that the results of each be compared and integrated. As cultural content varied significantly between excavations which were spatially separated, the site is divided into three distinct areas; East, Central, and West. Excavations in the Eastern area were undertaken by the Archaeological Field School of Simon Fraser University in 1968. The Central area, which is situated some seventy-five metres West of the latter, includes excavations undertaken by the Archaeological Sites Advisory Board in 1966 and also Test Cut 2 and Test Cut 3 of the 1968 Provincial Museum excavations. The Western area includes Test Cut 1 of the 1968 Provincial Museum excavations and is situated 60 metres West of the Central area. Table XXVIII summarizes data relevant to the association of cultural units and spatially separated areas.

TABLE XXVIII

Spatial Distribution of Cultural Units at DfRu 8

Component	Phase	Site Area		
		East	Central	West
Historic	Historic	_____	_____	_____
Helen Point III	San Juan	_____	_____	_____
Helen Point II	Marpole	_____	_____	_____
Helen Point Ib	Locarno Beach	-----	_____	_____
Helen Point Ia	Mayne	_____	-----	_____

Key: ----- = marginally expressed cultural unit
 _____ = fully expressed cultural unit

Archaeological Sites Advisory Board Excavations 1966

The first archaeological investigation of Mayne Island was undertaken by the Archaeological Sites Advisory Board in 1966. Excavations were centered on an eroded midden deposit situated near the head of a small cove on the north side of Helen Point. Four 2 by 2 metre test squares were excavated, yielding 662 artifacts, one feature, and three burials. On the basis of investigations that year, John Hall compiled a report using statistical means to determine the cultural sequence expressed at the site. (Hall:1968). Based on the frequency distribution of certain raw materials used in the production of artifacts and on specific techniques used in the working of stone, he was able to separate the Helen Point midden into three

components. These components, as defined by Hall, exhibit the following characteristics:

Helen Point I

- A greater emphasis on chipping techniques for working stone as compared to the upper two components.
- A significantly less extensive use of bone as compared to the uppermost component.

Helen Point II

- Lesser dependence on chipping techniques as compared to Helen Point I.
- More extensive use of grinding techniques for stone working than in Helen Point I.
- Bone excluding antler not extensively used as a raw material for the manufacture of tools.

Helen Point III

- Least dependence on chipping techniques for working stone of all three components.
- Greater reliance on grinding techniques than evidenced in Helen Point I, but approximately the same, proportionately, as in Helen Point II.
- A much higher incidence of bone tools than in either of the two lower components.

The distribution of the above traits by component

for both the 1968 and 1966 excavations are compared in Table XXIX. Values are expressed in percentages.

TABLE XXIX
Comparative Distribution of Selected Artifact
Classes for 1966 and 1968 Excavations at DfRu 8

Class	1966			1968		
	I	II	III	I	II	III
Chipped Stone	53	30	17	65	26	9
Ground Stone	19	41	40	44	8	48
Bone	17	15	68	26	9	65

From this comparison the following observations can be made. Firstly, in both excavations, the percentage value of chipped stone is greatest in Component I, proportionately less in Component II, and of least importance in Component III. Secondly, in both excavations, bone is most extensive in Component III, of secondary importance in Component I, and of minor importance in Component II. Thirdly, the distribution of ground stone artifacts differs significantly for the two excavations. While the greatest incidence of ground stone occurs in Component III in both excavations, the 1966 excavations are characterized by a greater percentage in Component II than in Component I. The reverse of the latter situation occurs in the 1968 excavations. Several factors may be

considered in explaining the latter dissimilarity. As the 1966 excavations directly adjoin Test Cut 2 of the 1968 excavations, valid technological differences are possible but highly unlikely. A partial answer could prove to be faulty stratigraphic analysis. Zones were chosen arbitrarily by visual observation and owing to the erratic nature of the strata it was not possible to cross-check on the validity of these zones by dividing the stratigraphy into metrical levels and analyzing the distribution of artifacts on this basis. An analysis of the site contents in this manner may have resulted in somewhat different findings. Despite the possibility of the latter, sample size is the most probable reason for distributional differences in only one of the three classes of artifacts. One cannot expect to build a complete or accurate picture of the culture history of a site this size with information derived from four 2 x 2 metre test squares. Certainly, a comparison of the distribution of certain diagnostic artifacts indicates a high degree of correlation between the two excavations (Table XXX).

TABLE XXX

Comparative Distribution of Selected Diagnostic
Artifacts for 1966 & 1968 Excavations at DFRu 8

Artifact Type	1966			1968		
	I	II	III	I	II	III
Projectile Points						
Contracting Stem	4	2	1	9	2	0
Leaf-shaped	6	2	2	4	1	0
Triangular	0	5	1	2	5	0
Stemmed - Barbed	2	0	0	1	0	0
Microblades	4	1	0	11	3	0
Bipointed - Bone objects	1	3	51	3	2	64

In summary, taking into consideration the close proximity of the excavations and the few isolated differences and numerous parallels that exist between them, they should be considered highly similar in terms of the cultural sequence they express.

Eastern Area

Excavations Conducted by the S.F.U. Archaeological
Field School

Additional excavations were undertaken in 1968 by the Archaeological Field School of Simon Fraser University. These excavations, which were situated some two-hundred metres east of those conducted by the Provincial

Museum revealed a somewhat different cultural sequence than was expressed in other areas of the site (Carlson 1970:113-123). Of particular interest and importance were the artifacts and features characteristic of the Mayne Phase, a component associated with the earliest stratigraphic unit in the eastern area of the site. The associated assemblage for which there is a radio-carbon date of 2,000 + 260 B.C. (WSU 1191), contains a number of artifact types and features which serve to isolate it as distinct from other cultural phases previously delineated for southern British Columbia. Among these traits are included small bilaterally barbed antler harpoon heads and unilaterally barbed antler points with lashing grooves which Carlson reports are particularly diagnostic of the phase (1970:115). Also peculiar to the phase are diamond-shaped chipped basalt points and extended burials.

The central area of the site yielded little evidence for the Mayne Phase. In Test Cuts II and III of the Provincial Museum excavations a single bilaterally barbed antler harpoon head and two diamond-shaped projectile points were recovered from the extreme lower levels of stratum A. The results of Archaeological Sites Advisory Board excavations in 1966 were also inconclusive in this regard. Here, three bilaterally barbed harpoon fragments (#368, #361, and #431), and a bipointed projectile point (#540) roughly equivalent to Carlson's diamond-shaped type

were recovered (Hall 1968). These too were unearthed in the lower levels of the earliest stratigraphic unit. In the Western area of the site Mayne Phase artifact types, in addition to representative Helen Point I types, are entirely absent. Certainly it would appear that the quantity of Mayne Phase artifact types is inconclusive for the purposes of delimiting a separate component in the central or western areas of the site. However, the stratigraphic context of these types is definitely indicative of age greater than that expected for the larger proportion of artifacts included in Helen Point Ib. When one also considers that these artifacts are analogous to Mayne Phase types, it seems logical to consider them as manifestations of that phase rather than as strictly representative types of the Helen Point Ib assemblage. If such is the case, what are the causative factors involved in the seemingly unorthodox distribution of these types? Distributional data indicate a marked but gradual decrease in Mayne Phase artifact types from east to west in the site, a pattern that may be a reflection of the settlement preferences of the early inhabitants. Location of settlements could be affected by any number of factors chief among which might be traditional, environmental, or purely accidental. In any case it is logical to conclude that deposits in a selected area would contain most material evidence of the culture that

occupied it, and conversely deposits in peripherally situated areas would contain least evidence. It is suggested that a model of this type could very well represent the true archaeological situation at Helen Point. Certainly the distribution of Mayne Phase artifact types would tend to support such a hypothesis.

Further questions as to the cultural relationship of the Helen Point Ib and Mayne Phase assemblages are posed by their close stratigraphic relationship. Separation of the two assemblages is not difficult using the phase concept as the primary descriptive unit (Willey and Phillips 1958:22). Traits which are confined to the Mayne Phase and define it as a separate cultural unit include small bilaterally barbed harpoon heads of antler, unilaterally barbed antler points with lashing grooves, and diamond-shaped basalt projectile points. Traits which serve to differentiate the Helen Point Ib assemblage from the latter include Gulf Islands Complex Artifacts, large leaf-shaped and often faceted ground slate points, adze blades, and toggling harpoons.

Despite the fact that no radio-carbon dates are as yet available for Helen Point Ib, a number of diagnostic artifact types representative of this assemblage can be cross-dated with similar types from other sites in the region. In the Gulf of Georgia, the earliest date yet recorded for Gulf Islands Complex artifacts and large faceted ground

slate points is 1210 ± 130 years B.C. from Montague Harbour I, Galiano Island (Mitchell 1971:63). A time gap of 800 years or more is indicated between this date and those for the Mayne Phase, arguing once again for the division of the two assemblages.

However, apart from their obvious differences, the number of traits shared by the two assemblages seem to indicate a definite evolutionary linkage. Particularly significant parallels between them include large numbers of contracting stem projectile points, pebble choppers, flaked basalt artifacts, basalt debitage in quantity, obsidian and quartz microblades, and chipped slate projectile points. As Mitchell has surmised (1971:60), the similarities between Helen Point I and the Mayne Phase are great enough to suggest that they form part of the same culture type. This hypothesis is given added support by the fact of their close stratigraphic relationship. It is for these reasons that the two assemblages are here considered related parts of a single unit, and named respectively Helen Point Ia and Helen Point Ib.

Carlson (1970) records the presence of components of two later phases in the eastern part of the site. These are respectively the Marpole Phase and the San Juan Phase. The Marpole Phase as defined by Carlson for Mayne Island (1970:119), is equivalent to Helen Point II in the Western part of the site. Parallels include significant quantities

of flaked basalt artifacts including numerous triangular projectile points, unilaterally barbed fixed points of antler, laterally perforated pendants, and bone daggers. Unilaterally barbed harpoon heads of antler, and adze blades or celts are not represented in Component II of the 1968 Provincial Museum excavations but are present in the identical physical stratum in the adjoining test cut of the 1966 Archaeological Sites Advisory Board Excavation (Hall 1968:Table 5). The San Juan Phase as defined by Carlson (1970:120), directly parallels Component III in the Western part of the site. Among the shared characteristics are; composite toggling harpoon valves, thin triangular ground slate points and knives, barbs for composite fish hooks in quantity, herring rake barbs, and a marked de-emphasis in artifacts of chipped stone.

CHAPTER XII
EXTERNAL RELATIONSHIPS

Gulf of Georgia Region

A cultural sequence nearly identical to that on Mayne Island is represented at Montague Harbour on Galiano Island and has been described in detail by D.H. Mitchell (1968, 1971). Mitchell describes three components at the site. These are respectively; Montague Harbour I, which is grouped with components of the "Locarno Beach Culture Type", Montague Harbour II, which is grouped with components of the "Marpole Culture Type", and Montague Harbour III, which is grouped with components of the "Gulf of Georgia Culture Type".

Key artifact types which are held in common by related components at Montague Harbour and Helen Point are listed below.

Component I

- Leaf-shaped points of chipped stone
- Contracting stem points of chipped stone
- Gulf Islands Complex artifacts
- Microblades
- Chipped slate or shale knives
- Clay bowl structures
- Antler foreshafts

Component II

- Triangular projectile points of chipped stone
- Leaf-triangular projectile points of chipped stone

Microblades

Unilaterally Barbed Harpoons

Component III

- Triangular ground slate points
- Small single pointed and bi-pointed bone objects
- Composite toggling harpoon valves

Evidence for cultural sequences duplicating those at Montague Harbour and Helen Point have not as yet been found in the Gulf Islands group, however, one or more related components are represented at a number of sites in the region. For purposes of clarity the external relationships of each of the components expressed at Helen Point are described separately.

Helen Point Ib

What appears to be a single component site has been tested at Pender Canal on North Pender Island (DeRt 2 and DeRt 1). The artifact content of the site is reminiscent of the Locarno Beach Phase although the single radio-carbon date of 250 B.C. \pm 120 (Mitchell 1971:62) suggests that it is a later variant of the type represented at Helen Point and Montague Harbour.

The Tolan Site (DfRu 24) situated directly across Active Pass from Helen Point yielded a date of 870 \pm 100 B.C. (Provincial Museum n.d.) for the earliest component. While a site report is not yet available, cultural material from the early levels appears to be comparable to that from Helen Point I and Montague Harbour I (J. Sendy

1972:Personal Communication) (Mitchell 1971:63).

Outside of the Gulf Islands group, there are other sites bearing components which are roughly comparable to Helen Point I. Among these are Locarno Beach (I & II) and Whalen I which have been discussed at length by C. Borden (1968, 1970). Generally speaking these components show a degree of relationship strongly indicative of a common or shared culture and not surprisingly a similar economic emphasis is indicated in their respective artifact inventories. Shared traits include toggling harpoons and antler foreshafts, large faceted ground slate points, leaf-shaped and contracting stem chipped basalt projectile points and other traits too numerous to mention here (see Mitchell 1971:57). The earliest date obtained from the two known mainland sites bearing components of the Locarno Beach Phase is 500 B.C. \pm 160 for Whalen I (DfRs 3), (McCallum and Dyck 1960:77) indicating considerably greater time depth for this phase in the Gulf Islands.

Components of two sites on Vancouver Island, Bowker Creek (DcRt 13) and Quicks Pond (DcRu 38), also appear to be related to Helen Point I. The two radio-carbon dates available for Bowker Creek, 790 B.C. \pm 100 and 960 B.C. \pm 100 (Mitchell 1971:63), indicate that components of this type on Vancouver Island may also prove to predate those on the mainland. While it is as yet too early to state with confidence, the temporal and spatial distribution of

Locarno Beach phase components indicates that this culture may be primarily a development of the Islands of Georgia Strait, manifesting itself only later on the mainland, possibly in the form of seasonal occupations. The technological roots of this culture may be represented in what Carlson (1970) has named the Wayne Phase, an assemblage which while differing in some respects, bears overwhelming evidence of a direct relationship with the Gulf Islands variant of the Locarno Beach phase.

Helen Point II

Island sites in the Gulf of Georgia bearing components comparable to Helen Point II include: the Garrison (SJ-25), and Cattle Point (SJ-1) sites on San Juan Island; (Carlson 1960; King 1950) the Richardson site (SJ-185) on Lopez Island, (Carlson 1960) and the Montague Harbour (DfRu 13) (Mitchell 1968;1971), False Narrows (DgRw 4) (Hoover;Pers. Comm.), and Dionisio Point (DgRw 3) (Mitchell 1971) sites in the Gulf Islands. Two sites on Vancouver Island, North Saanich (DeRu 1) (Mitchell 1971) and Cadboro Bay (DcRt 15) (Mitchell 1968), may also be included in this category. On the mainland, comparable assemblages are found at the Marpole (DhRs 1), Beach Grove (DgRs 1), and Whalen Farm (DfRs 3) sites. (Bordon 1970). While a complete listing and comparison of contents from Marpole components is beyond the scope of this thesis, a few core archaeological features common to all are listed below.

- (1) "Marpole style" unilaterally barbed harpoon with tang and lateral line guard
- (2) Leaf-triangular or asymmetrically triangular chipped stone projectile points
- (3) Unilaterally barbed antler points
- (4) Ornaments of stone or antler
- (5) Microblades
- (6) Adze blades or Celts and antler wedges
- (7) High frequency of chipped stone relative to ground stone artifacts

The antiquity of the Marpole phase has yet to be conclusively determined, however, those dates that have been obtained tend to indicate that this culture has somewhat greater time depth in the Fraser Delta area than in the Islands. The chronology of the mainland sites ranges from an early date of 950 B.C. \pm 170 (Borden 1962, 1963) from the Marpole site to a late date of A.D. 560 \pm 25 (Smith:1964) from the Beach Grove site. Dated sites in the Islands of Georgia Strait include False Narrows (A.D. 280 \pm 90) Dionisio Point IJa (A.D. 70 \pm 90 and 210 B.C. \pm 110) (Mitchell 1971) and Helen Point II. While the lack of radio-carbon determinations for the Garrison and Richardson sites tend to preclude speculation about their antiquity, Carlson (1960:583), indicates that Garrison may contain the earliest of the Marpole components he reports from the San Juan Islands. While parts of the Cattle Point sequence seem to indicate antiquity, it could be contended that the Developmental and Maritime phases which have been considered Marpole related, reflect a curious blending of

both the Marpole and Locarno Beach phases. For example, the majority of harpoon types in both the Developmental and Maritime phases are Locarno rather than Marpole related, consisting of three composite toggling harpoons, one open socket harpoon head, a long bilaterally barbed point and a long unilaterally barbed point (King 1950:46). The point mentioned last bears a marked resemblance to one illustrated by Borden in regard to artifacts diagnostic of the Locarno Beach Phase (1970 Fig. 30, L:100). The sizable number of ground slate points (23) in these components also suggests affinities with Locarno Beach assemblages.

In summary, the chronological pattern established thus far for the Marpole culture suggests that its earliest manifestations occur in the environs of the Fraser Delta and lower mainland areas. In the islands, this culture, to date, has been reflected in relatively late occupations which have included both large village sites (Garrison and False Narrows), and those which appear to have been seasonal. Helen Point II is typical of the latter type. Relatively small, and technologically simple, the assemblage is hardly suggestive of the advanced cultural pattern which Borden suggests for the Marpole phase on the Lower Mainland (Borden 1970:101). The range of artifacts does not include those that would suggest wealth emphasis, stratified society, or even particularly

outstanding achievements in the plastic arts. Rather the assemblage consists primarily of exploitative tools which would most likely have been used in a seasonal context.

Helen Point III

Archaeological features characteristic of Helen Point III are those which are also definitive of Mitchell's Gulf of Georgia Culture Type (1970:47), Carlson's San Juan Phase (1960, 1970), and Borden's Stselax Phase (1970). While quantitative data are unavailable for most of the sites bearing components of this type, some comparisons are possible. The relative percentage of bone artifacts, for example, has proven to be high; for San Juan Phase sites: 69%, for Montague Harbour III (Gulf of Georgia Culture Type): 51.5%, and for Helen Point III: 65%. The low frequency of chipped stone in Helen Point III, 9%, also compares favorably with San Juan Phase sites, 8%, and with Montague Harbour III, 4.1%. Artifact types which are consistently associated with components of this type include:

- (1) Relatively small and thin, triangular ground slate points
- (2) Composite toggling harpoon valves
- (3) Antler wedges
- (4) Numerous single-pointed and bi-pointed bone objects
- (5) Thin ground slate knives
- (6) Unilaterally barbed bone points
- (7) Large quantities of irregular abrasive stones

Artifacts which are conspicuously absent from Helen Point III include flat-topped hand mauls and triangular ground sea-mussel points which Mitchell (1971:48) lists as distinctive traits in the Gulf of Georgia. These types are also absent from San Juan Phase sites (Carlson 1960:579).

In summary, differences in content between components of this culture type are best described as minor variations on a central theme. Those subtle distinctions that are observable may reflect and foreshadow the pattern of seasonal movement typical of the historic Coast Salish, to which each of these components shows a basic affinity. Historically, seasonal movement was associated with a shift in the resource base and consequently in exploitative technology. Archaeological data tends to indicate that this pattern was also characteristic of the antecedent prehistoric culture.

CHAPTER XIII

CONCLUSION

Analysis and comparison of cultural material from DfRu 8 demonstrates the existence of three distinct cultural assemblages in the prehistoric period each of which can be correlated with similar manifestations at other sites in the Gulf of Georgia Region.

As described here, the earliest of these assemblages, Helen Point I, is composed of two related units, Helen Point Ia and Helen Point Ib. While each of these units possesses elements which serve to distinguish it from the other, they also share in common an overwhelming number of traits. This, in conjunction with the fact of their direct proximity in the stratigraphic sequence suggests that they form part of a single cultural continuum linked in an evolutionary sense. The term phase may be applied to this continuum which on the basis of present evidence persisted from about 2000 B.C. to 250 B.C., however, evidence is accumulating to suggest that subdivision may be required in future. Carlson (1970:113-123) has suggested that the term Mayne Phase be used to apply to the earliest part of the sequence. It is possible that the Helen Point Ib, Montague Harbour I, Tolan, and Bowker Creek assemblages may form part of an intermediate period

in the continuum, while assemblages such as those of Whalen I, Locarno Beach, and Pender Canal may compose the later part. It would seem appropriate to use the term sub-phase to apply to each of these temporally separable units. To quote Willey and Phillips (1958:24), "As typological and stratigraphic analyses become more refined, it often becomes desirable to subdivide phases into smaller (primarily temporal) units, and it seems best to regard these as sub-phases...." In this case we would have a single phase, the Locarno Beach Phase, composed of three sub-phases, each in turn composed of components from representative sites. A hypothetical construct might be:

Locarno Beach Phase

1. 2500-1500 B.C. (Helen Point Ia)
2. 1500-750 B.C. (Helen Point Ib, Montague Harbour I, Tolan site, Bowker Creek site)
3. 750 B.C. - A.D. 1 (Whalen I, Pender Canal, Locarno Beach I and II)

Exact chronological and typological distinctions between these sub-phases should be clarified with further research in the region.

The Helen Point II assemblage is similar in content to components assigned to the Marpole Phase. On Mayne Island this phase is represented by a relatively narrow range of utilitarian tools which suggest exploitation of the available local resources on a seasonal rather than permanent basis. Supporting this argument is the absence

of burials and other features that would indicate permanent habitation.

The Helen Point III assemblages embodies most of the technological characteristics of the historic Coast Salish culture to which it is immediately antecedent. Traits which distinguish it as a cultural unit are those which also typify the Gulf of Georgia Culture Type, San Juan Phase, and Stselax Phase.

On a macrocosmic level, the Locarno Beach, Marpole, and San Juan phases, represented respectively by Helen Point Ib, II, and III, are considered together as a single regional tradition. All share a common subsistence base oriented primarily toward the exploitation of maritime resources, a pattern which through time becomes increasingly emphasized. Furthermore, while each of the phases exhibits distinctive elements of its own, there is a basic unity of culture reflected in technological traits which are retained, borrowed, or modified with the passage of time. At present, it is possible to describe each of these phases and to some extent show their relationship to each other in general terms. However, we have not as yet been able to pinpoint the influences of individual factors affecting changes in these cultural units as they relate in the context of a regional tradition. It is to this end that future research must be directed.

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