

Archaeological Investigations in the Alberni Valley

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INTRODUCTION

This report is intended as a descriptive summary of archaeological research directed by the authors near Port Alberni, British Columbia in the summer of 1973. Fifteen weeks of field work yielded the first excavated data on the prehistory of the Alberni Valley. One of the research goals was to investigate archaeologically the published comments of Franz Boas (1890) and Edward Sapir (1913, 1915), indicating, on linguistic and ethnographic evidence, that Nootka culture has only recently displaced an earlier Gulf of Georgia orientation in this area. This article deals only with the 1973 excavations although subsequent work has been carried out by the authors on the same site. A more extensive report is in preparation.

ETHNOGRAPHY

Two Nootka-speaking bands, the Sheshaht and the Opetchesaht,¹ have occupied the Alberni Valley since at least the early historic period. Both bands occupy reserves in the Alberni area today. Inter-marriage and very close interaction between the bands have removed most linguistic or other cultural differences which may have formerly existed. But traditions of a very different cultural history are still strong.

The Sheshaht are considerably the larger of the two bands and have the largest reserve in the area. They are typical central Nootkan people, with a tradition of having moved into the Alberni Valley from Barkley Sound at a late time period (Boas 1890:584; Drucker 1950:157; 1951:5; Sproat 1868:179). This tradition was affirmed and elaborated upon by our informants, who described an alliance with the Ohiat to take

¹ The spelling used here for the two Alberni bands is the official spelling of the Indian Affairs Branch. Alternate spellings for Sheshaht include Tse-shaht, Tsishaht and Sheshart. The term is written phonetically by Sapir (1911) as Tslicy'a_gatH_a. Similarly, Opetchesaht has been written as Hupachisat and Hopitchisath, and is transcribed by Sapir as Hopátcl_{as} atH_a.

over the rich salmon fishery of the lower Somass River, near the head of the Alberni Inlet. The Sheshaht retained their sealing and fishing sites in Barkley Sound and these are held today as reserves, although the entire on-reserve band population now resides in the Alberni area. Several of our informants recall the traditional pattern of seasonal migration for localized resources, spending part of each year in Barkley Sound and part in the Alberni Valley. Ties are very clearly felt to lie with the other "west coast" people, particularly with such central Nootka bands as the Ohiat and Clayoquot.

The Opetchesaht, on the other hand, maintain the tradition of having always occupied the Alberni Valley, living along the Somass River and at Sproat Lake and Great Central Lake. As ethnographically known, they were aberrant for a Nootkan group, being primarily a lake and river people and relying heavily on such forest resources as deer (Clutesi 1969:142; Drucker 1950:157; 1951:10). Strong ties to the Gulf of Georgia Salish appear to have been long-standing. Sapir has suggested that the Opetchesaht were once Salishan-speakers, who adopted Nootka culture after intensive contact with the Barkley Sound groups. From linguistic traits he considered Salishan remnants in their speech, Sapir (1915:19) associated their original dialect with Pentlatch, a now-extinct Salishan language spoken on eastern Vancouver Island. Boas (1890:584) had earlier reported a similar situation, although the Salishan dialect he associated with Opetchesaht was Nanaimo.

SITE DESCRIPTION AND STRATIGRAPHY

Archaeological fieldwork consisted of excavation at a single site (DhSe 2), located on Shoemaker Bay, a small body of salt water in the Somass River delta at the head of the Alberni Inlet (fig. 1). The river drains an area of 320 square miles and has a delta of approximately two square miles, with tidal and intertidal mudflats of equal extent (Paish and Associates 1973:2). The vegetation of the delta corresponds to that of a brackish wetland, ranging from a typical secondary coast forest to the grass, rush and sedge meadows that are the main plant communities of the delta uplands (Paish and Associates 1973:14).

Although Alberni has a west coast marine climate, its mean annual precipitation of 74.49 inches is considerably less than that of Barkley Sound and the open west coast of Vancouver Island. The mean annual temperature is 49°F., with the summer highs having a mean of 63.9°F., and the winter lows a mean of 34.2°F. (Paish and Associates 1973:10).

There are few undisturbed areas remaining in the Somass River delta.

The northern portions are used for agriculture and an airport, with sewage and effluent lagoons situated in the southern region. While extensively disturbed by industrial activity, Shoemaker Bay offers one of the few opportunities for archaeological excavation. Much of the site, however, has been destroyed by road construction and much of what remains has been used as a dump area for industrial waste. Excavation was possible only in what would have been a small portion of the original site. Even here the original surface is missing, leaving a depth of deposit ranging from 0.5 meters to slightly over one meter.

Twenty-seven units, each two meters by two meters, were excavated by a crew ranging from five to eight people working from late May until the end of August. Members of both local native bands were included in this crew. All cultural deposits were trowelled and screened, and the exact provenience of each artifact measured in three dimensions. All vertebrate faunal remains and a representative qualitative sample of molluscan remains were retained for analysis, along with soil samples from each matrix of each unit. Excavation units were initially selected to place a grid across the relatively undisturbed section of the site. When excavation revealed subsurface structural features, the emphasis changed to opening a large central block to fully expose these. This task required a subsequent field season on the site.

Although the stratigraphy is complex and discontinuous, three major zones of cultural deposit can be distinguished across most of the excavated area (fig. 2). The most recent, designated Zone I, consists of bands of dark soil and finely crushed clam and mussel shell. This is the only zone which allowed full preservation of bone and antler, so is by far the richest in artifacts and faunal remains. It is comparatively thin, being absent from the northern sections of the excavated area. Zone II is a very dark-stained soil with no shell. Ash patches are common. Zone III, the earliest cultural matrix in most of the excavated area, is slightly lighter in colour and contains great numbers of small rounded pebbles. At the eastern edge of the central excavated block this was underlain by a thin layer of light brown to grey sand (Zone IV), containing large quantities of crystal and obsidian detritus, as well as microblades. Sterile water-deposited gravels (Zone V) lie at the base of this cultural sequence. Frequent cultural intrusions were evident from higher matrices into the basal gravel. A total of 2074 artifacts was excavated during the 1973 field season. Due to preservation factors, stone artifacts predominate, with bone, antler, and shell tools largely restricted to the uppermost zone of the site.

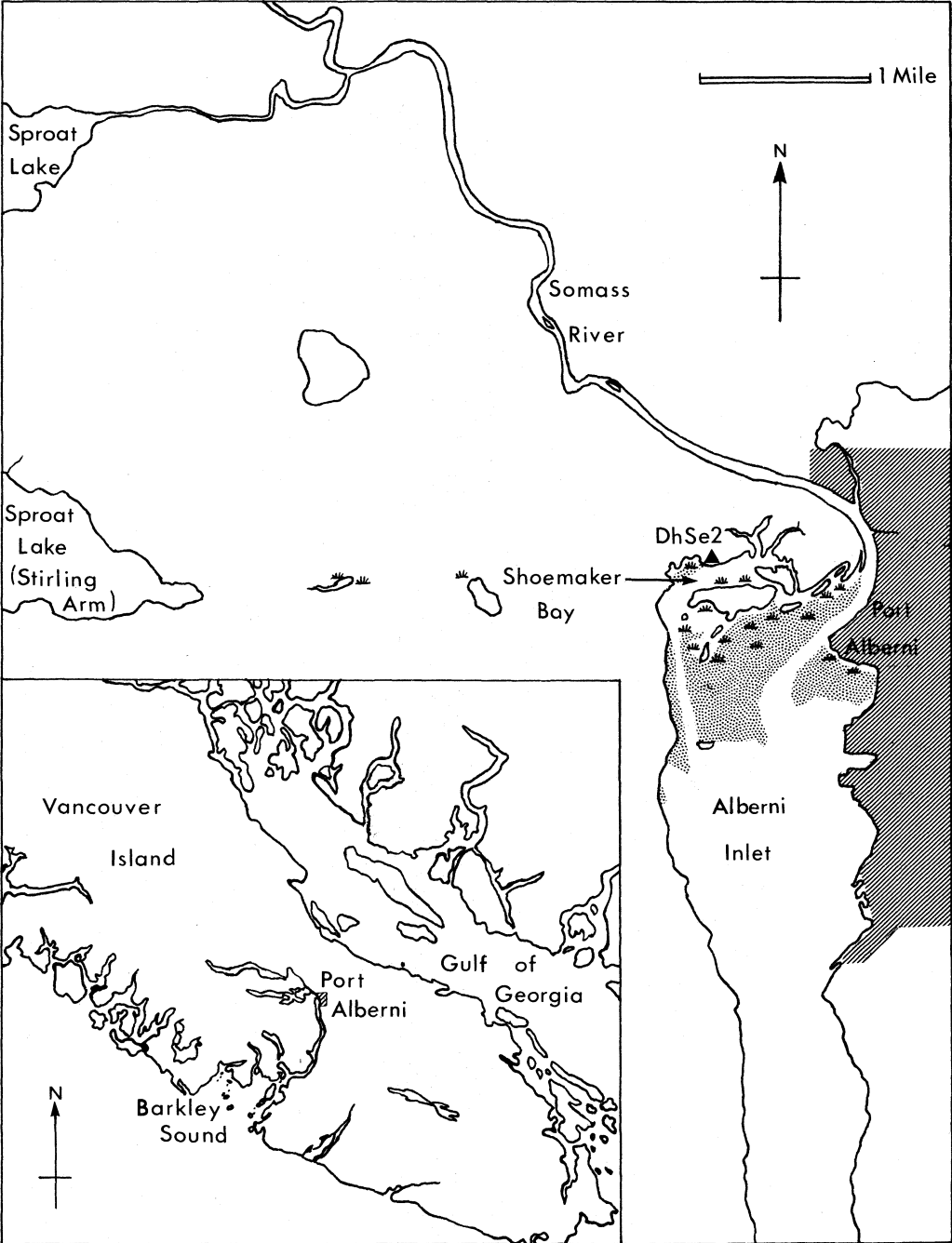


FIG. 1. Map of Alberni area with Vancouver Island inset.

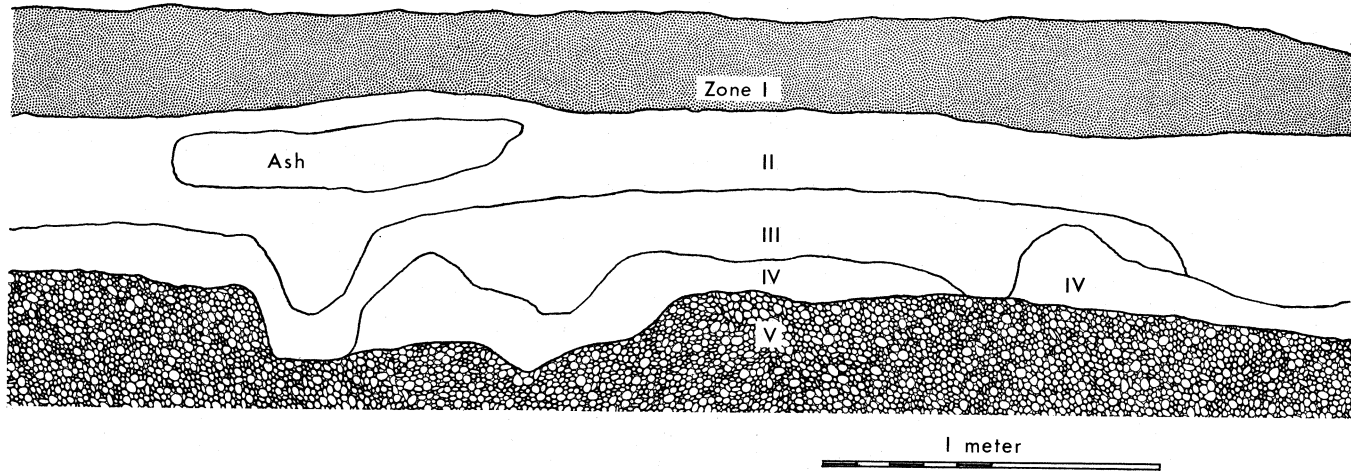


FIG. 2. Stratigraphic profile at E:18, S:4-8.

- Zone I Finely crushed shell, dark soil
- II Dark brown soil
- III Medium brown soil with many small pebbles
- IV Light brown sandy soil
- V Sterile water-deposited gravel

ARTIFACTS

Because of the apparent overlap of two culture areas in the Alberni Valley, affinities to the excavated materials were sought in both the Gulf of Georgia² region and the west coast of Vancouver Island. The pre-history of the former has been synthesized by Mitchell (1971a). Specific sites consulted include those reported by Borden (1950, 1962, 1968, 1970), Calvert (1970), Capes (1964), Carlson (1960, 1970), Charlton (1972), Kidd (1971), King (1950), Mitchell (1968a, 1968b, 1971a, 1971b, 1972, and Smith (1903, 1907). The territory of the Nootka-speaking tribes has received surprisingly little attention. References are made to the Nootka Sound sites of Yuquot (Folan and Dewhirst 1969, 1970; Dewhirst, pers. comm.) and Coopte (McMillan 1969), as well as Hesquiaht and Ozette. References to the latter two sites are based on personal observation of the collections. Only for unusual specimens will references be made to sites further afield.

The number of specimens in each category is given after the heading. All measurements are in centimeters and all weights in grams. Unless specified, any measurement given is the maximum for that attribute. Parentheses indicate that the specimen is fragmentary in that dimension.

Chipped Stone Artifacts

stemmed points (8)

Seven examples are basalt, ranging in length from 2.6 to 5.1 cm. (fig. 3f, g). All have contracting stems, although the width of the stem greatly varies. Several specimens very closely resemble those illustrated by Mitchell (1971a, figs. 31, 33) for Montague Harbour I. Contracting stem points are commonly reported from sites in the Gulf of Georgia.

The remaining example, measuring 3.8 x 2.1 x 0.5 cm., is a point of brown chalcedony. Long, roughly parallel flake scars over the entire surface show the fine workmanship. It is basally notched, with indentations on each side to create corner barbs, and bears some resemblance to what Carlson (1960, fig. 5Du) calls "San Juan stemmed and barbed."

triangular projectile points (7)

All examples are basalt and straight sided, forming rough isosceles triangles (fig. 3h, i). The base is occasionally asymmetric — in one case markedly so. Most are based on flakes, with the greatest amount of

² While technically this body of water is the Strait of Georgia, the earlier term "Gulf" is firmly entrenched in the literature (see Mitchell 1971a:2).

retouch on the more convex surface. Lengths range from 2.8 to 6.1 cm., width from 1.5 to 2.4 cm., and thicknesses from 0.3 to 0.7 cm. Similar triangular points are fairly commonly reported for the Gulf of Georgia. They are listed by Mitchell (1971a:48) as distinctive of the Gulf of Georgia culture type, although relatively rare.

leaf-shaped points or knives (10)

Five complete and five fragmentary specimens, all of basalt, have been placed in this category. They are medium to large in size, with considerable variation. The largest (9.9 x 3.7 x 1.3; fig. 3a) is clearly distinct. Its unique feature is a marked thinning of the base, presumably for hafting. With the greatest thickness (1.3 cm.) occurring near the tip, it thins rapidly to a basal measurement of only 0.3 cm. It may have been hafted as a knife, or possibly on a thrusting spear. Considerable polish is evident on the high points of each face for the full length of the artifact.

The remaining complete specimens (figs. 3b, c) range from 5.4 x 2.8 x 0.7 cm. to 7.1 x 3.0 x 0.9 cm. Two display polishing over the high points on each surface. One specimen, from the basal gravel, is water-rolled.

Of the five incomplete examples, two appear to be basal fragments. Both show considerable polish over each surface.

stemmed knives (3)

Artifacts in this category are fairly large and crudely fashioned. One specimen (fig. 3d), measuring 6.4 x 3.8 x 0.7 cm., is based on a flat flake of greenish chert. Rough bifacial retouch only extends a short distance in from the edges. Its features include convex edges, a sharply pointed tip, pronounced asymmetric shoulders, and a slightly contracting stem. A second example (fig. 3e) measuring 6.5 x 3.6 x 1.2 cm., is made of amygdaloidal basalt. The poor quality of the raw material has resulted in a rather crudely fashioned implement with convex sides, a steep shoulder on one side only, and a thick base. Another example of the same material measures 4.5 x 2.5 x 0.9 cm. and is very similar except for a broken and reworked blunt tip.

crude unstemmed knives (4)

This is a heterogeneous category. One specimen is very crude, with bifacial flaking only around the edges. It is roughly leaf-shaped, with convex sides leading to a thick blunt tip. Two more finely-made specimens are based on large flakes of grey basalt. The final example is a small leaf-shaped basalt implement with a blunt tip and thick base.

chipped slate and schist knives (7)

These artifacts tend to be oval in outline, although two are almost round and one almost rectangular. The raw material ranges from slate through phyllite to schist. They are all thin (0.4 to 0.8 cm.), with maximum lengths ranging from 5.8 to 7.4 cm. Each artifact has been chipped around at least three sides to produce a rather blunt cutting edge.

Similar artifacts, chipped of slate, shale and sandstone, are described by Mitchell (1971a:99) for Montague Harbour I, and in lesser numbers for Montague Harbour II and III (1971a:156,187). They have also been reported for Cattle Point (King 1950:24-26), Fossil Bay (Kidd 1971:43), Dionisio Point (Mitchell 1971b:154) and Locarno Beach I (Borden 1950:15).

bifacially chipped pebbles (3)

These vary considerably. One (7.5 x 6.3 x 2.1) is a smooth beach pebble of greenish quartzite which has been bifacially chipped at one end, producing an irregular cutting edge. The others, of quartz and fine-grained basalt, are smaller and are baked over much of their surface.

roughly chipped sandstone (4)

Several sandstone cobbles show evidence of chipping or battering. One (11.5 x 7.0 x 1.3) is flat, nearly triangular with rounded edges in outline, and is bifacially notched on each side near the base. Although assigning a function would be pure speculation, this artifact would be serviceable as a sinker. A second specimen (9.7 x 8.2 x 2.6) is oval in outline and has several flakes removed from each side. The remaining two show heavy battering, with many flakes removed. This may be intentional but is more likely the result of use as hammerstones.

retouched flakes (7)

Four flakes of basalt and two of obsidian show retouch to produce a scraping or cutting edge. One other small flake, possibly a green chert, shows slight retouch and considerable wear.

crystal microblades (63)

Microblade measurements are summarized in Table I. All are of clear quartz crystal (fig. 4). Fragmentary examples account for much of the total. Microscopic examination to determine wear and possible function has not yet been undertaken. No microblade cores were encountered.

Microblades have considerable temporal persistence in the Gulf of Georgia (Mitchell 1968a) and are being reported for an ever-increasing

number of sites. They are listed as characteristic of the Marpole and Locarno Beach culture types by Mitchell (1971a:52,57). As with other finely-made chipped stone tools, they are virtually unknown from other excavated sites in Nootka territory. However, one crystal microblade fragment was obtained at Hesquiaht.

crystal detritus (212)

Artifact numbers were given to all fragments of clear quartz crystal. Individual pieces range in weight from tiny slivers to 2.5 grams. They were consistently associated with the microblade-producing levels.

obsidian detritus (47)

As with crystal, all flakes of obsidian recovered were given artifact numbers. These ranged from tiny fragments to 7.7 grams. Many were found mixed with the crystal detritus and microblades.

Preliminary source analysis³ of six specimens indicates that five are from an unknown and presumably local source. Obsidian from the same source has been identified in archaeological collections from Port Hardy and Courtenay (R. Carlson, pers. comm.). The remaining example was traced to Glass Buttes, a source in central Oregon. Obsidian from this source occurs in a number of lower mainland and Gulf Islands sites (E. Nelson, pers. comm.).

small cores (6)

All appear to be heavily battered core remnants, ranging in weight from 1.0 to 8.2 grams. Five are quartz crystal and one is greenish obsidian. Despite being found in close proximity to areas of microblade concentration, none show any microblade facets.

Ground Stone Artifacts

ground stone points (63)

Fourteen large, generally fragmentary points have been grouped together (fig. 5f, g). Those with bases intact are either non-stemmed or slightly indented near the base to produce a short wide stem. Only two specimens, 7.3 cm and 8.8 cm. in length, are complete. A number of the fragments, ranging up to (12.3) cm., would clearly have been much larger points. The raw material varies, but a greenish schist and phyllite are common.

³ Obsidian source analysis was carried out by Dr. Erle Nelson, Archaeology Department, Simon Fraser University, as part of a project funded by Canada Council.

Ten specimens can be classified as small triangular points (figs. 5a-c). Slate is the most common raw material. Seven are particularly well made, with thinned flat or convex bases. They range from 4.0 x 1.3 x 0.2 cm. to 6.4 x 2.0 x 0.4 cm. These would be effective as cutting blades on composite toggling harpoon heads. Similar artifacts are commonly reported for the Gulf of Georgia region, particularly for the later phases. The remaining three examples are similar in size and shape but may be too crude and thick at the base for this function.

Two small stemmed points were excavated. The body of one, (4.5) x 2.3 x 0.4 cm., is an isosceles triangle, with ground notches from the corners producing an expanding stem with a convex base (fig. 5d). Similar artifacts are illustrated for Comox by Smith (1907, fig. 102b) and for Johnson Strait by Mitchell (1972, fig. 9j). The second specimen, (4.2) x 2.0 x 0.4 cm., has gently curving sides, a tapering stem, and a flat base (fig. 5e). Reasonably similar stemmed points are illustrated for Montague Harbour I and II (Mitchell 1917a, figs. 45m, 79e).

Most implements in this category are too fragmentary to place into types. Sixteen fragments are nearly complete but lack the base. Twenty-one appear to be basal or mid-section fragments. Slate, phyllite and schist are the raw materials.

This material trait is a major distinction between the Gulf of Georgia and Nootka territory. Ground stone points are ubiquitous in the Gulf of Georgia. They are characteristic of the Locarno Beach, Marpole, and Gulf of Georgia culture types, as defined by Mitchell (1971a:48,52,56). The greater variety of raw materials at Alberni may represent only a scarcity of available slate. Ethnographically, Barnett (1939, element 979) credits all the Gulf of Georgia Salish except the Cowichan with the use of ground slate arrow points. Squamish and Sechelt informants also reported to Suttles (1952:13-14) the use of harpoon heads armed with ground slate cutting blades. However, ground stone points seem to be lacking in other excavated sites in Nootka territory. Ethnographically, Drucker's (1951:91) Nootka informants denied the practice of grinding stone to produce a cutting edge.

knives (8)

Two distinct forms are recognized. One implement (fig. 5h), based on a dark slate-like material, measures 7.2 x (3.8) x 0.35. It has been extensively modified, being ground over the entire surface to produce a general ulu form with a convex cutting edge along a single long surface. Similar artifacts are common in Gulf of Georgia sites. Mitchell (1971a) lists

"thin ground slate fish knives" as distinctive of the Gulf of Georgia and Marpole culture types, and points to their particular abundance along the Fraser River. Barnett (1939, element 349) lists nine of thirteen Gulf of Georgia groups as using a semilunar slate knife and illustrates a hafted ethnographic example (1955:62).

The remaining seven artifacts are based on flakes; five of basalt and two of a slate-like material (fig. 5i, j). Modification is restricted to bifacial bevelling, producing a cutting edge opposite the bulb of percussion. They range in size from 4.8 x 4.7 x 1.3 to 10.7 x 6.3 x 1.0 cm. No similar specimens have been encountered in the literature.

sandstone saws (24)

All specimens are of common local sandstone. They vary considerably in degree of modification, ranging from spalls with no grinding other than bifacial bevelling along one edge to specimens which have been carefully worked over their entire surface. Many show extensive wear. The eight examples complete in length range from 6.0 cm. to 11.8 cm. The width ranges from 3.0 to 6.9 cm. and the thickness from 0.4 to 1.8 cm.

celts (28)

Measurements are summarized in Table 2. Twenty-two specimens tend toward a similar shape, while varying greatly in size. They are generally rectangular, with parallel sides, a slightly arched poll, and a bit which is usually straight and symmetric (fig. 6d). A number clearly show saw grooves and ridges produced during their manufacture. Several are battered at both poll and bit, showing extensive use. Nephrite is the most common raw material, but several other materials, including basalt, were used.

One complete celt is clearly distinct from those described above. It is an oval beach pebble, measuring 6.8 x 3.7 x 1.5 cm., which has been ground at one end to a curving bit and roughly chipped on the side, possibly to facilitate hafting (fig. 6e).

Five other artifacts appear to be celt fragments.

Celts, used as adze blades and chisels, played an important role in the well-developed wood-working complex of Northwest Coast cultures. Rectangular examples, similar to the most numerous group here, are common in the Gulf of Georgia. Small pebble celts have a more limited distribution. Celts based on pebbles were recovered from the Nootka sites of Yuquot and Hesquiaht, but these tend to be more extensively modified than the specimen described here.

drilled stone artifacts (3)

One example is a roughly circular flat disc of green phyllite, 4.1 cm. in diameter, with a large biconically-drilled hole near the centre. The second, measuring 4.1 x 2.7 x 1.2 cm., is abraded mudstone, with a small hole drilled near the top. The final artifact is a sandstone fragment with a small drilled hole. It is assumed that all three artifacts served an ornamental function.

grooved stone artifacts (2)

Both examples are too fragmentary to determine shape or function. One, measuring (2.5) x 1.1 x 0.7 cm., has been flattened on the sides and top, with a deep groove encircling the artifact near the end. The second, measuring (3.7) x 2.5 x 1.7 cm., is thicker, with a more roughly-made groove and a rounded end.

notched stone pendant (1)

The shape of this complete phyllite artifact, measuring 3.7 x 1.2 x 0.3 cm., is that of a long isosceles triangle, with flattened sides and a flattened slightly convex base. Each side has been deeply notched near the tip, presumably for suspension.

possible earspool fragment (1)

This specimen is fragmentary in all directions. It appears to be part of a round or elliptical ring, with an inner diameter of just over two cm., and an outer diameter in excess of four cm. The ring width on this fragment is 1.1 cm. While fragmentary in thickness, most of a pulley edge is discernible. The raw material appears to be a reddish-brown argillite.

Earspools are unknown ethnographically on the southern coast. However, they have been excavated at a number of Gulf of Georgia sites. Borden (1962, 1968, 1970) reports earspools for Locarno Beach phase sites in the Fraser Delta. Recent excavations at the well-known Marpole site have also produced several complete and fragmentary earspools. Duff (1956:52, fig. 3F) illustrates specimens from South Pender Island and Puget Sound. Mitchell (1971a:118) also reports a fragment from Montague Harbour I. They are listed by Mitchell (1971a:52,57) as distinctive of the Marpole and Locarno Beach culture types.

lignite artifact — labret? (1)

One complete lignite artifact, measuring 4.9 x 3.3 x 1.0 cm. was recovered. It is oval in outline, with one concave and one convex surface (fig. 6b, c). The convex surface has been further modified. First a groove was

sawn for most of the length of the artifact near the upper surface. The lower side of the groove has apparently been removed by abrasion, leaving a ridge at the upper surface. This has been drilled twice from the top, with both holes emerging at the sawn groove.

This specimen would appear to be part of a composite labret, held to its flange by two pins. If this interpretation is correct, the closest affinities lie to the north, in the Pacific Eskimo region.

Lignite artifacts occur in a number of Gulf of Georgia deposits. Elliptical labrets of lignite are reported for the Locarno Beach site (Borden 1950:15; 1970, fig. 30y) and the Locarno Beach phase at Musqueam North-east (Borden and Archer 1974:26).

edge-ground cobbles (3)

All are smooth flattened beach cobbles with one or both edges ground to a flat facet. No modification other than edge grinding is evident. They range in size from 10.2 x 6.0 x 2.5 to 12.9 x 7.2 x 3.4 cm.

Edge-ground cobbles are not common on the southern coast. Two very similar artifacts are illustrated by Mitchell (1972, fig. 11a, c) for Johnson Strait, and King (1950:35) lists "pebbles with edges or surfaces ground" for Cattle Point. A similar specimen comes from Ozette. Further to the north, MacDonald (1969:250) reports edge-ground cobbles as "frequent" for the lower horizon of sites in the Prince Rupert area.

faceted slate artifacts (5)

All are fragmentary thick slate bars. In cross-section, two are hexagonal, two are trapezoidal, and one is nearly rectangular. Only one appears to be converging to a point.

abrasive slabs (25)

These have been separated from the other abrasive stones on the basis of size, being too large to be comfortably held in the hand. They range from 21.7 x 15.7 x 3.6 to 68.0 x 27.6 x 7.3 cm. Most are sandstone, ranging from fine-grained to very coarse. Most show extensive wear, but on only one surface. A few have shaped edges.

shaped abrasive stones (20)

This category includes only those specimens on which all surfaces have been carefully prepared. Ten are thin tapering bars (fig. 6f). Two other tapering bars are much thicker. Rectangular examples number six. Two specimens have bevelled edges showing considerable wear, indicating that they were also used as saws. All are fine-grained sedimentary rocks.

irregular abrasive stones (840)

All other abrasive stones are included here. Many are fragmentary. Most display little or no edge modification, being simply irregular slabs of sandstone or other abrasive material which show signs of use wear.

Such artifacts are commonly encountered in virtually all Northwest Coast sites. The large proportion of the artifact total, however, seems most closely matched with Nootka sites such as Hesquiaht.

miscellaneous ground stone (43)

These are generally too fragmentary to be assigned to other categories. Many are fragments of finely-finished sedimentary rock, which may be from well-made abrasive stones. Others are abraded slate or schist, some with edge bevels present, which may be knife or point fragments. A few large pieces of ground stone are also included.

Pecked and Ground Stone Artifacts

hammerstones (2)

One large beach cobble shows extensive use. One end and the length of one side are so heavily battered as to be almost flattened. The second specimen shows only slight pitting on one end. Two roughly chipped sandstone artifacts described earlier may also have functioned as hammerstones.

edge-pecked cobbles (4)

Three examples are porphyry beach cobbles with pitting along one or both sides. They may have been used as hammerstones but show only slight pitting at the ends. The final example is a small sandstone cobble which has been battered or pecked to an almost flat surface around the entire circumference except for a small area at each end.

grooved sinker fragment (1)

This fragmentary sandstone specimen measures (7.0) x 4.0 x 3.8 cm. Broken at both ends, it still shows an encircling pecked groove at the centre. It is fire-cracked, having been found as part of a hearth feature.

Similar grooved sandstone sinkers are illustrated for Montague Harbour I and II (Mitchell 1971a:119,161, figs. 51, 52, 86, 87). Other grooved sinkers are reported from North Saanich (Smith 1907, fig. 124), Cattle Point (King 1950, fig. 12) and St. Mungo Cannery (Calvert 1970:70). Ethnographically, Barnett (1939, element 93) records grooved stone sinkers among six Gulf of Georgia groups. They are denied for the

Nootka, with the exception of a "sometimes" response from a Sheshaht informant (Drucker 1950, element 74).

perforated stone disc (1)

This sandstone disc is round in outline, with flattened faces and edge, and a central biconically-drilled perforation (fig. 6a). It has a maximum diameter of 7.1 cm. and a thickness of 2.5 cm. The pecked hole is 2.9 cm. at the outside diameter and 1.7 cm. at its narrowest.

Drucker (1943, table 9) lists perforated stone discs as occurring among the Tsimshian, Bella Coola, Southern Kwakiutl, and in the Strait of Georgia. One specimen from Comox is illustrated by Smith (1907, fig. 112). These are usually referred to as targets in a variant of the well-known hoop and spear game. Boas (1935:36), referring to the Southern Kwakiutl, describes "the game of throwing perforated disk-shaped stones, which the players try to hit with spears."

club handle (1)

Only the handle remains of what appears to have been a large stone club (fig. 6h). It measures (8.7) x 6.0 x 2.2 cm. Both faces have been ground flat and show biconical perforation, presumably for suspension at the wrist. This perforation has a maximum diameter of 2.3 cm. at the outside surfaces and decreases to an inside diameter of 0.6 cm.

Similar stone clubs, although thicker and more diamond-shaped in cross-section, are known from the Marpole site (Smith 1903, fig. 39a; 1907, fig. 176a).

Miscellaneous Stone Artifacts

incised stone (1)

Designs have been incised on a roughly rectangular piece of reddish-brown siltstone, measuring 8.0 x 6.5 x 1.8 cm. One face has a leaf-like design covering most of the surface (fig. 6g). On the other face five straight lines, all but one roughly parallel, run the length of the artifact.

Stones incised with geometric or zoomorphic designs are not uncommon in the Gulf of Georgia. Recently, a large number of small incised pebbles, many with designs very similar to the ones described here, has been excavated at Ship's Point, south of Courtenay (Don Mitchell, pers. comm).

sawn stone fragments (9)

All show evidence of sawing, but no further modification. Most would appear to be detritus from the manufacture of stone tools.

ochre samples (12)

Nine small samples of red ochre and three which may be yellow ochre were collected. Ochre was well-known to all coastal groups and was extensively utilized as a pigment.

Bone Artifacts

barbed points (14)

Sixteen barbed points, presumably fixed in use, were found. Two appear to be of antler and have been described under that heading. Those remaining form two loose categories.

All eleven specimens in the largest category are fragmentary. With the possible exception of one small basal fragment, all are unilaterally barbed. One has several low isolated barbs; on all others the barbs are low and enclosed. The most complete example has eleven closely-spaced low barbs (fig. 8b).

Similar artifacts are commonly reported for the southern coast. The Gulf of Georgia Salish used such points on the multi-pronged bird spears (Barnett 1955, fig. 32) and as arrow points for hunting and warfare (Barnett 1939, elements 975-977). Although barbed arrow points have been denied for the Nootka (Drucker 1950, elements 497-500; Sproat 1868:82), they are shown in old engravings, are reported for sea otter hunting (Drucker 1951:32), and were used by the Makah (Swan 1870:48). Multi-point bird arrows are also reported for both Alberni Valley groups (Drucker 1950, element 508).

The form of the remaining three barbed bone points suggests a different function. Each is a small, sharply bipointed form, with a single barb (figs. 8d, e). They range in length from 4.5 to 7.7 cm. Very similar implements, with a wide range in size, were relatively numerous at Yuquot (Folan and Dewhirst 1969, fig. 5) and occur at Ozette. They appear to be less common in the Gulf of Georgia, with single specimens reported for the Marpole phase at Helen Point (Carlson 1970, fig. 35), Montague Harbour II (Mitchell 1971a:169, figs. 92b, 93s), and Port Hammond (Smith 1903, fig. 17a). Their most probable function is as barbs on composite fish hooks.

small unbarbed points (111)

The great majority (92 examples) of small unbarbed bone points recovered are characterized by a basal portion which tapers to a blunt wedge shape (figs. 7c-f). The two faces rarely converge, but leave a thin flat base. Careful workmanship is evident over all surfaces on most speci-

mens. Drucker (1943, figs. 6a-d) illustrates four slightly varying types, all of which are included here. Measurements are summarized in Table 3.

All of these artifacts are assumed to have been the arming points in composite toggling harpoon heads. Two specimens were found in place in their companion valves (figs. 7a, b). They were found at the same level, about 35 cm. apart, and may represent both heads of a single harpoon with diverging foreshafts. Salmon harpoons of this type were in common use by both the Coast Salish (Barnett 1939, element 24; 1955:83) and the Nootka, although denied for the Opetchesaht (Drucker 1950, element 40).

Similar discoveries of wedge-base points intact in their valves are reported by Mitchell (1968b:36, fig. 7t) for the Rebecca Spit Earthworks and Charlton (1972, fig. 52d) for Belcarra Park. The points are commonly reported for the southern coast.

Four other complete points are virtually identical but lack a thinned base. This difference is unlikely to be significant and these probably also armed composite toggling harpoon heads.

Five complete specimens, in outline similar to the above two groups, have rounded bases (fig. 7j). All have their greatest width in the upper half of the artifact. Again, it is felt that these artifacts were arming points for composite toggling harpoons. The valves for these points would be channelled rather than slotted — a type which did occur but was relatively rare at this site. Suttles (1952:10) mentions a round bone point as characteristic of the Salish salmon harpoon heads.

Four more points are distinguished by being narrower and almost round in cross-section throughout their length. Their bases are polished to a flat surface. While many functions are possible, these may have been herring rake teeth. Herring rakes were used by all Gulf of Georgia Salish (Barnett 1939, element 92) and by the Nootka, although denied for the Opetchesaht (Drucker 1950, element 96).

The remaining six artifacts are roughly bipointed, with the greatest width occurring near the blunter of the two tips (fig. 7k).

medium unbarbed points (4)

These four quite uniform slender points are generally slightly larger and less carefully finished than those considered harpoon arming points. They range from 5.9 to 6.9 cm. in length, 0.7 to 0.9 cm. in width, and are all 0.4 cm. in thickness. They are all carefully sharpened at the tip but are left much rougher over the lower surface. They likely functioned as barbs on composite fish hooks.

large unbarbed points (19)

Nine have been classified as having a wedge or rectangular base. Most are fragmentary, but all show thinning toward the base, suggesting that they were hafted. The three specimens complete in length range from 7.9 to 10.4 cm.

Two are large bipoints, 7.9 and 10.5 cm. in length. The greatest width of each occurs about the centre of the artifact. No constrictions or other means of line attachment are evident.

The remainder are stout pointed tools, all but one missing the base. The complete specimen is 7.3 x 0.9 x 0.6 cm. and has a rough base, with only slight polishing over the natural surface. All are oval to round in cross-section. Seven are fashioned from land mammal bone, but the largest, (11.4) cm. in length, is from a sea mammal. It may have been a foreshaft, but comes to a sharper point than would be expected for such a purpose. One of the others also may have been a foreshaft, having a slightly rounded tip and sharply tapering where it is broken near the base. The others could have served a variety of functions, including barbs on large halibut hooks, parts of leisters, or even as pins for clothing.

slender bipoints (3)

All are well-made slender symmetrical sharp bipoints (figs. 7n, o). The longest is missing one tip, and would have been about 6.2 cm. in length. The others measure 4.4 and 5.2 cm. Each is round in cross-section, and is 0.2 to 0.3 cm. in diameter. Two have a noticeably worn area around the centre of the artifact, presumably where a line was attached.

These artifacts were likely gorge hooks, a type of implement in common use ethnographically, not only for taking fish but also aquatic birds. Barnett (1955, fig. 27) illustrates a similar artifact used by the Gulf of Georgia Salish on set lines, particularly for catching flounder. The Makah used gorge hooks for small fish such as perch (Swan 1870:41). Drucker (1951:34) describes a trap used by the Nootka for catching diving waterfowl as consisting of many baited bone gorges tied to an anchored pole.

deer ulna tools (12)

Five examples are complete while seven are missing the modified tip but show polish on the remaining shaft and base. All are based on deer ulnae, with at least five being from immature animals.

The complete specimens range from 9.5 to 17.6 cm. in length. Near their tips, two are almost circular in cross-section, two have flattened

sides and are rectangular in cross-section, and one has been polished to an edge which would be serviceable as a knife.

Ethnographically, similar tools are best known as fish knives, particularly for herring. Drucker (1951:91) describes an "awl-like" ulna herring knife for the Nootka. Elsewhere (1960, element 107), however, it is denied for the Opetchesah. At Hesquiaht, a stout deer ulna tool, round in cross-section near the tip, was found covered in fish scales (J. Haggerty, pers. comm.). Deer ulna tools were found in some quantity at Yuquot, where they were identified as fish knives, awls, and bark splitting tools (Folan and Dewhirst 1969, fig. 8). Ulna tools have considerable temporal persistence among the Nootka, being in common use well into the historic period. At the time of this study, one elderly Sheshaht woman had only recently abandoned the deer ulna knife for slitting fish.

Such tools also occur in most Gulf of Georgia sites where bone is preserved. However, they are not recorded ethnographically by Barnett (1939, 1955).

ulna wedges (2)

One complete specimen, 19.4 cm. in length, is based on the thick ulna of a black bear (*Ursus americanus*). The proximal end is unmodified but shows battering. Polish from use is evident on the shaft. The bit, 1.4 cm. in width, has been shaped by abrasion from both faces. The second is a bit fragment which is virtually identical to that of the complete artifact.

chisel fragments (2)

Both are bit fragments based on land mammal bone. In each case the curved bit has been bevelled from one side. One example has been finished to a very steep sharp cutting edge, while the other is much narrower and more gently tapered.

split cannon bone awls (2)

Two complete examples, 10.6 and 11.3 cm. in length, were found of awls based on the split cannon bones of immature deer (fig. 8g). Both are well made and show considerable polish over the entire surface.

bird bone awls (6)

Two artifacts are based on complete bird limb bones, with the proximal head left intact. One, 6.9 cm. in length and with a shaft diameter of 0.8 cm., is based on the limb bone of a large goose (*Branta* sp.). The awl tip has been formed by cutting on an angle and abrading the entire

surface (fig. 8h). Considerable polish is evident. The second specimen, with a length of 7.5 cm. and a shaft diameter of 0.4 cm., is based on the limb bone of a glaucous gull (*Larus glaucescens*). It shows abrasion and polish for its entire length.

A similar artifact, 7.9 cm. in length, differs by lacking an intact head. A fourth is a tip fragment, similar to the previous examples. The final two artifacts are splinters of large bird bones which have sharpened points.

rib awls (5)

All are based on small mammal ribs. Most are modified only near the tip. The two complete examples are 8.2 and 9.2 cm. in length.

land mammal bone splinter awls (77)

Awls based on splinters of land mammal limb bone are particularly numerous. They vary greatly in size and in the stoutness and sharpness of the tip. Most show minimal modification, with only a small area of grinding to produce a point. The 65 examples considered complete in length showed a range of 2.9 to 14.1 cm., with a mean of 6.9 cm.

fragments of pointed bone tools (28)

All in this category are tip fragments from pointed tools of land mammal bone. A great heterogeneity indicates that they are from a variety of tools.

gouges (7)

All are complete, with a range in length from 5.8 to 13.2 cm. Each has one end abraded to a spatulate bit, which would be useful as a gouge or chisel. In several cases the bit is left very roughly finished and most polish appears to be from use. However, one example has a very finely-finished tapering rounded bit. In the Drucker (1943) classification, one would be type IA — a mammal limb bone with the head intact and one end cut away in a long bevel to produce a rounded tip (fig. 8k). In this case, the implement is based on the cannon bone of an immature deer. A second specimen is type IB — a split mammal limb bone with a portion of the head intact. The remainder are based on splinters of land mammal limb bone — type IC. Drucker (1943:53) suggests that such tools could have served for scraping hides and removing edible inner bark layers.

stemmed bone point (1)

One stemmed bone projectile point, measuring 4.5 x 1.4 x 0.3 cm.,

was excavated (fig. 8f). It is bevelled from the centre, and is finely-finished over the entire surface.

A stemmed bone point, of somewhat different form, was excavated at Yuquot (Folan and Dewhirst 1970:282-3). Ethnographically, similar artifacts are illustrated for both the Nootka (Koppert 1930, fig. 29) and the Gulf of Georgia Salish (Barnett 1955, fig. 38), although both sources attribute a length of about six inches to them. This is over three times that of the excavated example.

fish hook shanks (6)

Only two are complete. One (fig. 71), 7.6 cm. in length, has three shallow incised lines but no vertical groove at the proximal end. A smaller example, 5.0 cm. in length, completely lacks any grooves for line attachment. One large, highly polished fragment (fig. 7m) has three deep notches and a vertical groove for suspension. Two others are mid-sections. The final example is included here as the most likely guess. It is a splinter of land mammal bone with a groove and two notches at one end, and may be a crude fish hook shank.

Bone fish hook shanks were found in some quantity at Yuquot (Folan and Dewhirst 1969:236, 1970:282) and seem to show considerable variability. They also occur in several Gulf of Georgia sites.

bird bone tubes (5)

Only one specimen is complete and it is obviously distinct from the others, having a much larger diameter and being rather short. It is 5.8 cm. in length and has a maximum diameter of 1.2 cm. Both ends have been cut and the whole artifact shows considerable polish. The other four are fragments of bird limb bones, 0.6 to 0.7 cm. in diameter, with each having one end which has been abraded flat. Two show considerable polish along their length.

Similar artifacts are commonly reported as drinking tubes, being used during a girl's puberty isolation among the Salish (Barnett 1939, element 1554; 1955:151). While such implements are denied for the pubescent Nootka female (Drucker 1950, element 1172; 1951:138), bone drinking tubes served other functions, such as being part of the canoe equipment for a whale hunt (Drucker 1965:135-6).

bird bone bead (1)

This highly polished, well-made tubular bead is 1.3 cm. in length. It is based on a section of a large bird limb bone, varying in diameter from 0.9 to 1.2 cm. Both ends have been cut and polished.

rounded sea mammal bone fragments (4)

Four sea mammal bone artifacts, all incomplete in length, appear to be fragmentary harpoon foreshafts. The longest specimen (16.9 cm.) is flattened on each face and shows cutting to shape along each side. It may be an early stage in the manufacture of a foreshaft. Another specimen, 7.0 cm. in length, is abraded over the entire surface, is oval in cross-section, and is worked to a tapering tang. At the other end, however, it has been grooved around the circumference and snapped at that point, making it no longer functional. The other two fragments are mid-sections.

perforated sea mammal bone (1)

A fragmentary sea mammal vertebral disc, approximately 11.5 cm. in diameter and 2.0 cm. thick near the centre, has a central perforation 1.8 cm. in diameter. In shape and size it resembles the spindle whorls used ethnographically by the Coast Salish (Barnett 1939, element 797; 1955:118). Spindles were not in common use historically among the Nootka (Drucker 1950, element 724), although Drucker's (1951:94) informants indicated that this trait may have been only recently abandoned.

A very similar artifact, also based on a sea mammal vertebral disc, is reported for an historic Haida house (Fladmark 1973:60, fig. 6g). In the Gulf of Georgia bone spindle whorls have been excavated at Cattle Point (King 1950:49) and Stselax (Borden 1968:21; 1970:112).

unidentified sea mammal bone artifacts (12)

One implement is well-made and highly polished, consisting of a body with flat faces and rounded sides, with a tang extending from it (fig. 81). Measurements are (15.7) x 3.2 x 1.4 cm. A similar artifact, with the addition of a drilled hole near the base of the body, was excavated at Yuquot (J. Dewhirst, pers. comm.). That example was considered to be a preliminary stage in the manufacture of a large harpoon.

Seven artifacts, including some large fragments, show abrasion or polish. Four exhibit chopping marks, which may mark a preliminary stage in their manufacture, along one or more edges.

worked bone fragments (117)

All show modification by abrasion or sawing, but their function cannot be determined nor can they be otherwise classified. Most are simply unidentifiably small fragments, but some large examples may be pur-

posely crude tools or preliminary stages in tool manufacture. With the exception of two bird bone fragments, all are of land mammal limb bone.

Antler Artifacts

barbed harpoons (2)

One is almost complete, with a reconstructed length of 10.3 cm. It has a single high barb near the tip and a single pronounced shoulder tapering to a wide flattened base (fig. 8a). The second is a large mid-section fragment with two intact high enclosed barbs.

Barbed antler harpoons, with several methods of line attachment, are reported for many coastal sites. In the Gulf of Georgia they are considered diagnostic of the Marpole phase (Borden 1970:96,103; Mitchell 1971a:52).

barbed points (2)

One small fragment has a single low barb intact. One complete point, 8.1 cm. in length, has two low isolated barbs and comes to a roughly rectangular base.

wedge fragments (2)

Both are bit fragments based on antler tines. One comes to a sharp narrow (1.3 cm.) rounded bit, while the other is wider (2.6 cm.) and relatively blunt.

Antler wedges are common in the Gulf of Georgia, being represented at virtually all sites with preservation of organic artifacts. Among the Nootka, Drucker (1950, element 424) lists "horn" or bone wedges as occurring only among the two Alberni Valley groups.

composite toggling harpoon valves (58)

Details are given in Table 4. The vast majority are slotted or scarfed to hold a flat point or wide cutting blade (figs. 7h, i). They would correspond to Drucker's (1943:39) Type II, although lacking the lashing groove of his illustrated specimen. Forty-one of the 58 examples fall into this category. Only four channelled valves (Drucker's Type I), to hold a point with a rounded base, were found (fig. 7g). Of the remaining 13 artifacts, five are valve blanks or unfinished specimens and eight are too fragmentary to be placed in either type. All tend to be of comparatively small size. None show any lashing groove or other modification for line attachment.

Composite toggling harpoon valves of antler are frequently reported for

the southern coast, particularly the late prehistoric period. Ethnographically, they were employed in fishing by almost all coastal groups (Barnett 1939, element 26; Drucker 1950, element 41). The same style of valve, larger in size and with a stone, bone, or mussel-shell cutting blade, was used in the hunting of sea mammals (Drucker 1950, element 125; Suttles 152:10; Barnett 1955:98). The generally small size of the valves from this site would suggest that they were used in the rich salmon fishery of the nearby Somass River.

miscellaneous antler artifacts (57)

Antler fragments showing evidence of cutting, adzing, sectioning, or polishing were fairly common. The most numerous are pieces of sectioned cortex, ranging from quite small to 13.5 cm. Almost all show clear signs of having been sawn from two sides and detached. Large beam sections showing adzing or cutting were also common. Five small cut or abraded tines may have served as flakers or punches.

Artifacts of Other Materials

dentalium shell bead (1)

This complete shell is 2.6 cm. in length and varies from 0.3 to 0.4 cm. in diameter. One incised line encircles the artifact near the smaller end.

Only one dentalium shell was found, despite the proximity of the ethnographically-known dentalia beds of Barkley Sound (Drucker 1951:112). Dentalia were in common use among the Nootka, who were the only Northwest Coast group to develop ingenious methods of obtaining these deep-water shellfish (Drucker 1951:111-3; 1965:151-2). Dentalia were used for necklaces, nasal pins, and pendants from the ears (Drucker 1950, elements 623, 631, 652).

The Gulf of Georgia Salish did not use dentalia for ornamental purposes or as a measure of value (Barnett 1939, elements 1134, 1137, 1152; 1955:76). However, dentalium shells have been found archaeologically at a number of sites. Dentalia beads are common inclusions in Marpole phase burials (Mitchell 1971a:52).

shell disc bead (1)

This bead is 1.1 cm. in diameter and 0.4 cm. thick, with a biconically-drilled hole 0.3 cm. in diameter. It appears to be clam shell.

Shell disc beads have a wide distribution. Mitchell (1971a:52) lists "disk beads of clamshell or shale" as distinctive of the Marpole culture type.

ground mussel shell (4)

All are fragments of large mussel (*Mytilus californianus*) shell which have been ground flat on the exterior surface. Three show no evidence of function, but one has been bevelled from the inner surface to produce an adze or chisel edge.

Similar artifacts are reported for a number of Gulf of Georgia sites. Mussel shell adzes are characteristic of the Locarno Beach phase of the Fraser Delta (Borden 1970:96, fig. 304). Ethnographically, Barnett records their use as fish knives (1955:62-3), hide scrapers (1955:125), and as wood-carving tools among the Cowichan (1939, element 612).

Mussel-shell artifacts are common in Nootka sites, where their availability makes them a favoured raw material. Drucker (1951:91) points to the importance and common use of the mussel-shell fish knife. Elsewhere (1950, element 106), however, mussel-shell knives are not reported for either Alberni group. Other Nootka uses for mussel shell include wood-working tools (Sproat 1868:86; Swan 1870:36; Koppert 1930:24), hide scrapers (Curtis 1970:179; Koppert 1930:52; Drucker 1951:103), and whaling harpoon cutting blades (Waterman 1920:31; Koppert 1930:60).

canine tooth pendants (9)

Nine canines have been modified for suspension, either as pendants or in necklaces (figs. 8i, o). The four largest are canines of the black bear (*Ursus americanus*). Of the smaller canines, three are dog or wolf (*Canis* sp.) and two are from harbour seal (*Phoca vitulina*). All are ringed or notched for suspension. In eight cases the modification is at the root end, but one is grooved near the enamel tip.

beaver tooth tools (4)

Four beaver (*Castor canadensis*) incisors have been modified, probably for use as small woodworking tools. Two have been split lengthwise and abraded along the edge produced. Extensive modification is evident on the bit of one, with a number of facets producing a sharp cutting edge. Another is fragmentary, but shows lengthwise splitting. The fourth tool is a complete tooth, which has been notched and abraded near the bit.

Beaver incisor tools are commonly reported for sites in both areas. Ethnographically, however, the use of beaver tooth knives in woodworking is denied by Nootka informants (Drucker 1950, element 432) and is affirmed for only two groups in the Gulf of Georgia (Barnett 1939, element 614).

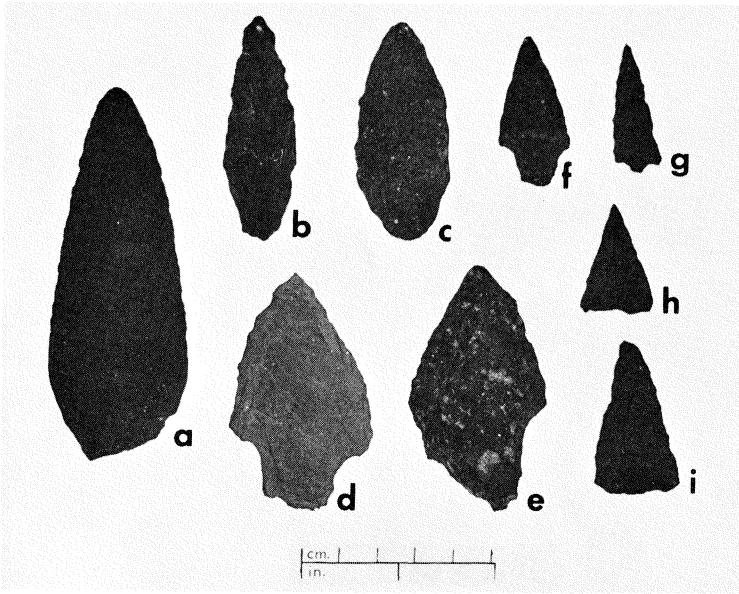


FIG. 3. Chipped stone projectile points and knives. a-c, leaf-shaped; d,e, stemmed knives; f,g, contracting stem points; h,i, triangular points.

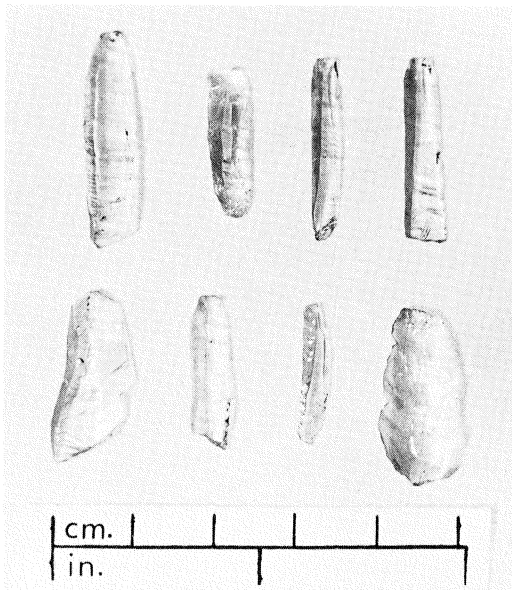


FIG. 4. Microblades — all of quartz crystal.

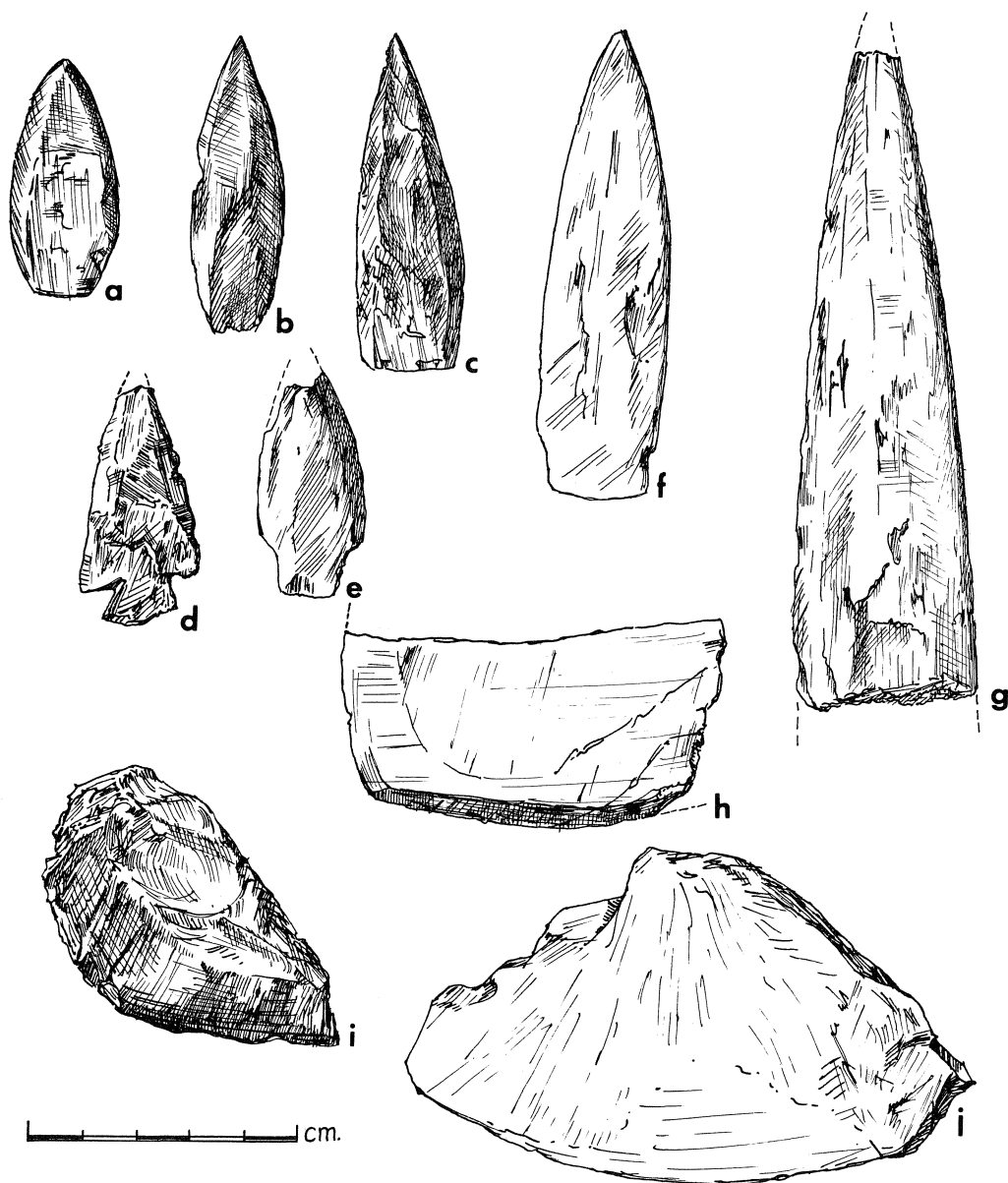


FIG. 5. Ground stone artifacts. a-g, projectile points; h-j, knives.

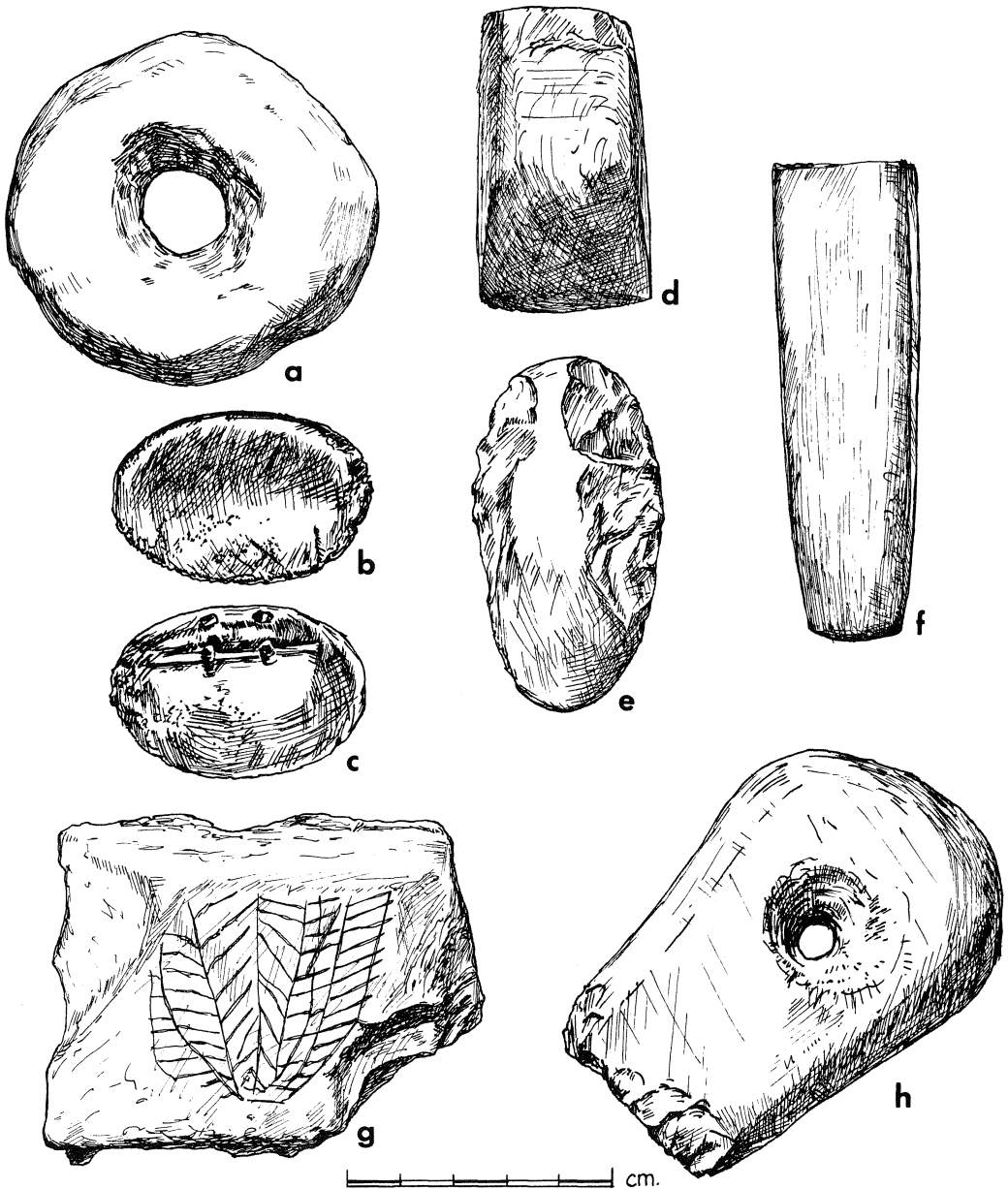


FIG. 6. Miscellaneous stone artifacts. a, perforated stone disc; b,c, both faces of possible lignite labret; d,e, celts; f, bar abrasive stone; g, incised stone; h, club handle.

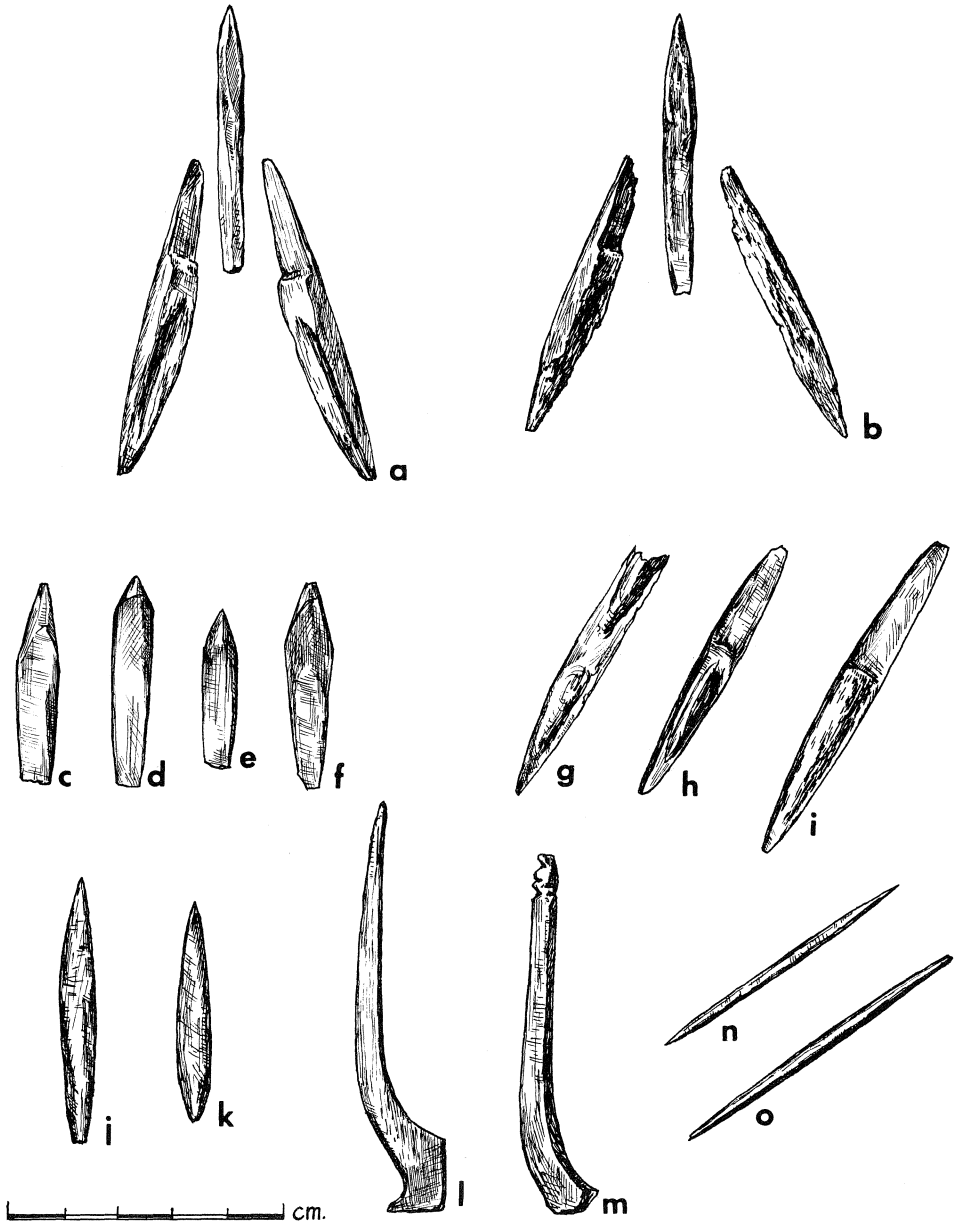


FIG. 7. Miscellaneous artifacts. a,b, three-piece composite toggling harpoon head found *in situ*; c-f, wedge-base bone points; g-i, antler harpoon valves; j,k, small bone points; l,m, bone fish hook shanks; n,o, bone gorges.

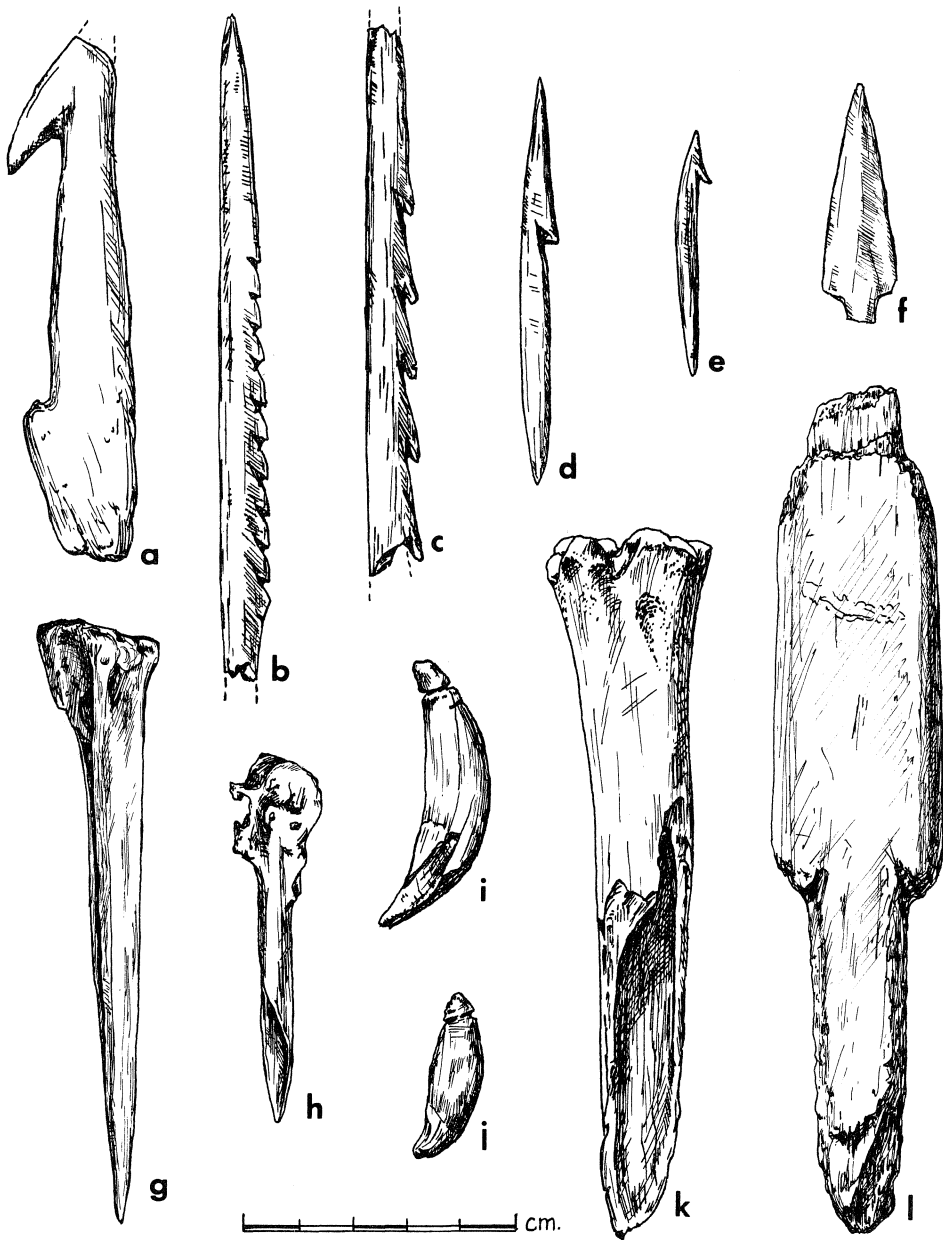


FIG. 8. Miscellaneous artifacts. a, antler harpoon; b-e, barbed bone points; f, bone projectile point; g, cannon bone awl; h, bird bone awl; i, j, canine pendants; k, bone gouge; l, sea mammal bone artifact of unknown function.

dogfish dorsal spine awls (17)

Artifact numbers were given to dorsal spines of the dogfish (*Squalus acanthias*) which seemed to exhibit use wear. The criteria used were: blunting of the sharp spine tip, wearing away at the tip of the shiny surface cover, and pinching at the base of the spine. Many specimens show a high degree of tip wear and basal pinching. As dogfish flesh was only rarely an item of diet among the Nootka (Sproat 1868:53; Swan 1870:29) and is denied for the Gulf of Georgia Salish (Barnett 1955:63), the presence of dorsal spines in the deposit may be a result of their utility as awls and the use of the skins as an abrasive material.

TABLE 1
Microblades

<i>Attribute</i>	<i>Range</i>	<i>Mean</i>	<i>S.D.</i>	<i>Number</i>
length	1.6 to 3.2 cm.	2.0 cm.	0.4 cm.	21
width	0.35 to 1.1	0.62	0.18	63
thickness	0.05 to 0.4	0.18	0.1	63

TABLE 2
Celts

<i>Attribute</i>	<i>Range</i>	<i>Mean</i>	<i>S.D.</i>	<i>Number</i>
length	2.8 to 8.3	5.09	1.52	16
width	1.8 to 6.0	3.42	1.03	24
thickness	0.7 to 2.8	1.33	0.41	27

TABLE 3
Wedge-base bone points

<i>Attribute</i>	<i>Range</i>	<i>Mean</i>	<i>S.D.</i>	<i>Number</i>
length	2.1 to 6.3	4.17	1.02	74
width	0.5 to 1.0	0.73	0.10	89
thickness	0.2 to 0.7	0.42	0.09	89

TABLE 4
Composite Toggling Harpoon Valves

<i>Attribute</i>	<i>Range</i>	<i>Mean</i>	<i>S.D.</i>	<i>Number</i>
length	4.7 to 6.9	5.55	1.01	29
width	0.7 to 1.3	0.87	0.12	58
thickness	0.4 to 0.9	0.54	0.12	58
length of slotted point bed on Type II examples	1.3 to 2.7	1.94	0.35	30

FEATURES

Twenty-four features were recorded during the 1973 excavations. Over half of these were associated with Zone III, with many indicating a large house structure at this initial occupation period. The two succeeding zones contained progressively fewer features.

Two very large post molds, extending from near the base of Zone III into the sterile gravel, are the best structural evidence for this prehistoric house. They are 0.85 meters and 1.0 meters in diameter and are about four meters apart at their centres. The presence of a large plank house, perhaps not too different from those ethnographically known for the southern Northwest Coast, is inferred, although the data are too incomplete to allow more detailed statements on size and form.

Six smaller post molds, ranging from 25 to 50 cm. in diameter, were scattered throughout the central area of excavation in this zone. Four of these were closely spaced in a slightly curving line in what may have been the central area of the house structure. Another was found in the same area but deeper in the deposit, extending 35 cm. into the basal gravel. This post mold was in close association with an irregularly shaped depression (65 x 55 x 20 cm.) in the sterile gravels. The remaining post mold was small (25 cm. in diameter), lined with several large rocks, and extended 20 cm. into the gravel.

Zone III also contained four hearth features, either near or sitting directly on the basal gravel. One was somewhat unusual in appearance, consisting of one large (40 cm. diameter), flat central stone closely surrounded by a ring of smaller ones. Associated ash and charcoal confirmed the hearth designation.

Several large trench features of unknown function also occurred at the

base of Zone III. One consisted of a two meter long trench, 35 to 50 cm. wide and approximately 40 cm. deep, running in an east-west direction. The entire depth was excavated into the sterile gravels. A loose semi-circle of eight rocks extends from the southern edge of this trench.

The largest and most intriguing feature in the site is somewhat similar but apparently unassociated. This is a large straight trench, 35 to 45 cm. wide, that has been dug to a depth of 50 or 60 cm. into the sterile gravel. It is filled with the dark stained matrix of Zone III. Near its top are very large rounded cobbles, up to 50 cm. in length. Usually two, but occasionally three, are placed side by side, closely following the contours of the trench for its entire length. At its eastern end the trench makes a right-angle turn and extends one meter in the direction of a large house post mold six meters to the north. The trench was exposed for a distance of eight meters but the western extremity was not reached. One of the major goals of the subsequent 1974 excavation was to determine the full extent and dimensions of this feature. The function of such a structure is unknown, and the archaeological literature for the Northwest Coast shows no close parallels. The most similar structures, the large stone slab alignment at Cattle Point (King 1950:64) and the long double rows of large stones once reported for southern Vancouver Island (Pickford 1947:245), clearly served different functions. This feature does, however, seem to be associated with the house remains, and perhaps served as the foundation for such an external structure as a palisade or breakwater. One interpretation which comes constantly to mind is a drain, although it would be difficult to see how this could possibly function as such.

In Zone II, three of the five features are hearths. All are roughly circular rock-filled shallow depressions with associated ash and charcoal. Another feature consists of ten rocks forming a straight line. One post mold, 40 cm. in diameter, extends to near the base of Zone III.

Of the three features in Zone I, two are faunal remains. One consists of a whale vertebra and nine intervertebral discs situated in a general north-east-southwest line for a distance of 1.5 meters. The other faunal feature is an articulated dog skeleton. One hearth feature, with a large number of fire-cracked rocks and associated ash stains, was also uncovered in Zone I deposits.

Three features occurred in three excavation units located to the east of the main excavation area. In these somewhat isolated units the idealized stratigraphy of clearly defined zones is not easily applied. Two hearths are either immediately above or excavated into the basal gravel deposits and are probably identifiable with the Zone III features. One included a large

depression (50 x 60 x 50 cm.) with sloping sides excavated into the sterile gravels. The remaining feature in this area is also a hearth but occurs higher in the deposits and its relationship to any of the stratigraphic zones is uncertain.

HUMAN SKELETAL REMAINS

A partial human skull was found in the uppermost portion of Zone II. All the face and lower parts of the skull and almost all of the cranial vault is missing. A narrow ring of skull including the top of one orbit is all that remains. A few pieces of burnt cranial fragments lay in the centre of the ring. The two complete composite toggling harpoon heads described earlier were in close proximity and may possibly be associated.

One relatively complete human burial was recovered from Zone III. It lay in a flexed position on its left side in an east-west direction with the face turned to the north. The sex has not been conclusively determined due to the incomplete and fragmentary condition of the pelvic bones. The skull shows marked artificial deformation, a trait characteristic of both the Marpole and Gulf of Georgia culture types (Mitchell 1971a: 48,52) and in common ethnographic practice among both the Gulf of Georgia Salish (Barnett 1939, element 1144) and the Nootka (Drucker 1950, element 641).

FAUNAL REMAINS

Each species identified⁴ in the excavated faunal remains is listed in tables 5 to 9. Relative abundance is difficult to quantify meaningfully when dealing with fragmented and scattered remnants as found in the archaeological deposit. In an attempt to convey this relative abundance, each table indicates the number of excavation units which yielded remains of that species, the number of levels in which it was found, the weight in grams and the percentage of the total weight. While measurement by weight skews the figures to the larger species, it is a convenient way to deal with fragmented remains.

Land mammal bones (Table 5) dominated the faunal assemblage at DhSe 2. By far the most common land mammal species (74.72% by weight) was the coast deer (*Odocoileus hemionus*), indicating a heavy reliance upon this resource. About one-third of the remains were from immature animals. Of the two bands presently situated in the Alberni

⁴ Species identification of the faunal remains was carried out by Deirdre La Forest, through the courtesy of the Archaeology Division, British Columbia Provincial Museum.

Valley, the Opetchesaht were known to have relied heavily upon deer as a food source. Lengthy hunting expeditions to the head of the valley and the surrounding mountains were a common yearly occurrence.

Sea mammal remains (Table 6) were much less common. The most frequently encountered were those of the harbour seal (*Phoca vitulina*),

TABLE 5
Land Mammals

<i>Species</i>	<i>units</i>	<i>levels</i>	<i>weight</i>	<i>% of total</i>
Coast deer (<i>Odocoileus hemionus columbianus</i> [Richardson])	23	74	4499.95	74.72%
Domestic dog (<i>Canis familiaris</i> Linnaeus)	3	9	1057.40	17.55%
Dog or Wolf (<i>Canis</i> sp.)	15	18	214.60	3.56%
Beaver (<i>Castor canadensis</i> Kuhl)	7	8	100.60	1.67%
Black bear (<i>Ursus americanus</i> Pallas)	2	3	89.25	1.48%
Marmot (<i>Marmota vancouverensis</i> Swarth)	3	5	29.15	.48%
River otter (<i>Lutra canadensis</i> [Schreber])	3	4	24.50	.40%
Mink (<i>Mustela vison</i> Schreber)	1	1	2.85	.04%
Marten (<i>Martes americana</i>)	2	2	1.90	.03%
Red squirrel (<i>Tamiasciurus hudsonicus</i> [Erxleben])	4	4	1.30	.02%

TABLE 6
Sea Mammals

<i>Species</i>	<i>units</i>	<i>levels</i>	<i>weight</i>	<i>% of total</i>
Harbour seal (<i>Phoca vitulina richardi</i> [Gray])	17	24	493.90	5.60%
Whale (Sp.?)	10	13	7279.75	82.66%
Northern sea lion (<i>Eumetopias jubata</i> [Schreber])	6	6	998.65	11.33%
Harbour porpoise (<i>Phocoena vomerina</i> Gill)	1	1	32.50	.36%
Dolphin (Sp.?)	1	1	1.90	.02%

TABLE 7

Fish

<i>Species</i>	<i>units</i>	<i>levels</i>	<i>weight</i>	<i>% of total</i>
Salmon (<i>Oncorhynchus</i> sp.)	22	82	892.91	68.18%
Rockfish (<i>Sebastes</i> sp.)	20	53	161.42	12.32%
Herring (<i>Clupea harengus pallasi</i> Valenciennes)	4	6	118.55	9.05%
Sculpin (Sp.?)	4	5	56.30	4.29%
Ratfish (<i>Hydrolagus colliei</i> [Lay & Bennett])	19	37	35.85	2.73%
Lingcod (<i>Ophiodon elongatus</i> Girard)	9	10	17.80	1.35%
Halibut (Sp.?)	3	3	11.10	.83%
Pile seaperch (<i>Rhacochilus vacca</i> [Girard])	6	7	8.20	.61%
Dogfish (<i>Squalus acanthias</i> Linnaeus)	15	29	7.00	.53%
Pacific cod (<i>Gadus macrocephalus</i> Tilesius)	1	1	.50	.03%

TABLE 8

Birds

<i>Species</i>	<i>units</i>	<i>levels</i>	<i>weight</i>	<i>% of total</i>
Mallard duck (<i>Anas platyrhynchos</i> Linnaeus)	15	19	57.90	7.40%
Shoveler (<i>Spatula clypeata</i> [Linnaeus])	15	28	52.75	7.37%
Common merganser (<i>Mergus merganser</i> Linnaeus)	15	18	36.32	5.08%
American widgeon (<i>Mareca americana</i> [Gmelin])	8	9	25.05	3.50%
White-winger scoter (<i>Melanitta deglandi</i> [Bonaparte])	4	9	15.90	2.22%
Harlequin duck (<i>Histrionicus histrionicus</i> [Linnaeus])	3	3	2.40	.03%
Duck (<i>Anas</i> sp.)	7	10	18.55	2.59%
Canada goose (<i>Branta canadensis</i> [Linnaeus])	13	17	79.90	11.17%

TABLE 8 (Continued)

Birds				
<i>Species</i>	<i>units</i>	<i>levels</i>	<i>weight</i>	<i>% of total</i>
Goose (<i>Branta</i> sp.)	2	2	15.20	2.12%
Western grebe (<i>Aechmophorus occidentalis</i> [Lawrence])	10	14	29.70	4.15%
Horned grebe (<i>Podiceps auritus</i> [Linnaeus])	5	5	2.95	.41%
Grebe (<i>Podiceps</i> sp.)	3	3	4.05	.56%
Common murre (<i>Uria aalge</i> [Pontoppidan])	12	17	69.60	9.73%
Glaucous-winged gull (<i>Larus glaucescens</i> [Naumann])	8	15	45.20	6.32%
Herring gull (<i>Larus argentatus</i> Pontoppidan)	5	7	7.70	1.07%
California gull (<i>Larus californicus</i> Lawrence)	1	1	.35	.04%
Gull (<i>Larus</i> sp.)	5	7	11.75	1.64%
Common loon (<i>Gavia immer</i> [Brunnick])	8	9	37.20	5.20%
Red-throated loon (<i>Gavia stellata</i> [Pontoppidan])	2	2	21.30	2.97%
Arctic loon (<i>Gavia arctica</i> [Linnaeus])	2	2	3.60	.50%
Bald eagle (<i>Haliaeetus leucocephalus</i> [Linnaeus])	7	11	110.80	15.49%
Great blue heron (<i>Ardea herodias</i> Linnaeus)	5	6	21.50	3.00%
Double-crested cormorant (<i>Phalacrocorax auritus</i> [Lesson])	2	2	10.30	1.44%
Cormorant (<i>Phalacrocorax</i> sp.)	3	3	10.25	1.43%
Northwestern crow (<i>Corvus caurinus</i> Baird)	2	2	9.60	1.34%
Tufted puffin (<i>Lunda cirrhata</i> [Pallas])	3	7	7.85	1.09%
Goshawk (<i>Accipiter gentilis</i> [Linnaeus])	1	1	3.10	.43%
Marbled murrelet (<i>Brachyramphus marmoratus</i> [Gmelin])	1	1	.80	.11%
American coot (<i>Fulica americana</i> Gmelin)	2	2	.34	.04%

TABLE 9
Shellfish

<i>Species</i>	<i>units</i>	<i>levels</i>
California mussel (<i>Mytilus californianus</i> Conrad)	19	42
Blue mussel (<i>Mytilus edulis</i> Linnaeus)	7	8
Mussel (<i>Mytilus</i> sp.)	14	23
Horse clam (<i>Schizothaerus</i> sp.)	19	44
Butter clam (<i>Saxidomus giganteus</i> [Deshayes])	15	38
Little-neck clam (<i>Protothaca staminea</i> [Conrad])	16	18
Short-spined purple (<i>Thais emarginata</i> Deshayes)	8	10
Wrinkled purple (<i>Thais lamellosa</i> Gmelin)	4	5
Dire whelk (<i>Searlesia dira</i> Reeve)	6	9
Red turban (<i>Astrea gibberosa</i> Dillwyn)	2	3
Lewis moon-snail (<i>Polinices lewisii</i> Gould)	2	2
Limpet (<i>Acmea</i> sp.)	2	2
Dentalium (<i>Dentalium pretiosum</i> Sow)	1	1
Barnacle (<i>Balanus</i> sp.)	17	29

although they are greatly outweighed in the chart by whale remains of unknown species. One concentration of whalebone, which may represent a single animal, accounts for almost half of the total weight. As it is uncommon for whales to venture into enclosed waters such as the long and narrow Alberni Inlet, it is possible that the prehistoric inhabitants ventured down the inlet to exploit the varied resources of Barkley Sound. Such was the ethnographic pattern. The occurrence of northern sea lion (*Eumetopias jubata*) remains further supports this supposition.

Predictably, fish remains (Table 7) were largely those of salmon. The rich salmon fishery of the Somass River and its ethnographic importance have already been mentioned. Herring, rockfish, ratfish, and sculpin were also important.

A wide variety of avifauna is represented (Table 8). The salt marshland of the Somass delta has long attracted great numbers of waterfowl. Various ducks, geese, gulls and many other avian species were a major component of the prehistoric diet. Certain other birds, such as the Bald Eagle (*Haliaeetus leucocephalus*), were likely as intensively sought for their feathers as their flesh. A fall to spring occupancy of the site is suggested by the number of species which are seasonal residents, being absent or uncommon during the summer months. These include the White-winged Scoter (*Melanitta deglandi*), Horned Grebe (*Podiceps auritus*), Western Grebe (*Aechmophorus occidentalis*), Shoveler (*Spatula clypeata*), Arctic Loon (*Gavia arctica*), Herring Gull (*Larus argentatus*) and California Gull (*Larus californicus*).

As broken shellfish remains formed the dominant matrix for the upper zone of the site, no weight measurements are given for this category. Several species of mussel and clam were subsistence staples during the late occupation of the site. The frequent occurrence of *Mytilus californianus*, an open coast-line shellfish, also indicates that the resources of Barkley Sound were being exploited. Barnacles, while crustaceans rather than molluscs, were consistently associated with molluscan remains and are included in Table 9.

ARTIFACT DISTRIBUTION AND CHRONOLOGY

Few cultural breaks are evident in the artifact distribution, suggesting an overall continuity. Most stone tools are distributed throughout the three zones. Microblades, with associated obsidian and crystal detritus, constitute the major exception, being consistently located near the base of the cultural deposit. Poor preservation of organic materials in all but the upper zone hampers comparison.

The earliest radiocarbon age determination for this site is 2080 B.C. \pm 105 (GaK-5105). It is based on carbon collected from the top of beach gravels and presumably dates the initial occupation. Several water-rolled chipped leaf-shaped projectile points were found in similar contexts. Microblades and detritus of crystal and obsidian were largely concentrated near the interface with Zone III and in Zone IV, where this thin band of sandy soil appeared at the eastern edge of the excavated area. A flaking station appears to be indicated by the heavy concentration of detritus in a small area.

A radiocarbon estimate of 910 B.C. \pm 90 (GaK-5104) is based on a sample of charcoal collected from Zone III matrix within the rock-lined

trench feature. This date may approximate the beginning of intensive occupation of the site. Two additional charcoal samples, collected near the base of Zone III, yielded dates of A.D. 220 \pm 90 (GaK-5106) and A.D. 220 \pm 80 (GaK-5107). These relatively late dates must be considered suspect. Microblades, along with crystal and obsidian detritus, were common near the base of this zone. Chipped basalt points, including leaf-shaped, stemmed, and triangular forms, occurred here, as did the single stemmed chalcedony point. Triangular ground stone points, sandstone saws, celts, and the lignite artifact which may be part of a composite labret were also obtained from this zone. Abrasive stones were numerous.

Zone II is undated and is often difficult to distinguish from Zone III. Microblades and detritus of crystal and obsidian are rare. Chipped basalt points tend to be stemmed. Large ground stone points, sandstone saws, and celts are represented. Abrasive stones are numerous. Ornamental items consist of the notched stone pendant, the drilled siltstone, and a number of the canine pendants, which come from the top of this zone where some preservation of organic materials occurs.

The shell matrix of Zone I yielded an estimate of A.D. 500 \pm 80 (GaK-5108). This zone is characterized by improved preservation of organic materials, with awls based on splinters of land mammal bone, wedge-base bone points, and antler composite harpoon valves being the most common implements recovered. Triangular and leaf-shaped chipped basalt points and small triangular ground stone points are represented. Sandstone saws and celts are relatively common. Abrasive stones are abundant. Ornamental items include several of the canine pendants, the dentalium and shell disc beads, the perforated stone disc, and the possible earspool fragment. Also from this zone are the club handle and the incised stone.

DISCUSSION

The radiocarbon age estimates given above indicate a considerable span of occupancy for the site, from the initial settlement at the beginning of the second millennium B.C. until at least the sixth century A.D. From the earliest stratigraphic unit, archaeological data indicating winter village settlement in large plank houses suggest full development of the climax Northwest Coast cultural pattern. At the latest occupation level, when improved preservation allows fuller reconstruction of subsistence activities, we see a culture adapted to such localized resources as the rich salmon run of the Somass River, the varied avifauna of the Somass Delta, and the abundant deer in the surrounding mountains.

Obvious affinities in the artifact assemblage to the Gulf of Georgia region occur throughout this time span. Specific archaeological and ethnographic comparisons for each artifact category have already been made. A number of artifact types have been considered characteristics of the Marpole phase in the Gulf of Georgia, but are rare or absent at other excavated sites in Nootka territory. These include chipped basalt projectile points, microblades, ground stone points and knives, and such items of personal ornamentation as labrets and earspools. The proximity of the Gulf of Georgia appears to have been a major factor shaping cultural development.

While the artifact assemblage shows considerable continuity, two components can be tentatively isolated. An early component, consisting of Zones II and III, shows a general similarity to the Marpole culture type, as established in the Gulf of Georgia region (Borden 1970; Mitchell 1971a). The shell matrix of Zone I contains the late component.

This late component is largely characterized by a major shift in economic pattern, with the intensive utilization of shellfish as a food source. Contact with the west coast of Vancouver Island, as shown by faunal remains, particularly the high proportion of *Mytilus californianus* in the shell matrix, becomes evident at this time. Certain artifact types unique to this zone also more closely resemble those from Nootka sites such as Yuquot and Hesquiaht. As these are of bone, their later appearance in the site could be a preservation factor. However, they could also reflect increased contact with west coast groups as a result of increased exploitation of Barkley Sound resources. The overall affinities of the artifact assemblage in this late component continue to lie to the east, most closely resembling the Gulf of Georgia culture types as defined by Mitchell (1971a:48). This is assumed to represent a way of life essentially similar to that of the ethnographic Gulf of Georgia Salish.

The radiocarbon date of A.D. 500 \pm 80 from this zone is interesting as it is considerably older than estimates generally given for the most recent Gulf of Georgia phase (Borden 1970; Carlson 1970; Mitchell 1971a). However, at least two Gulf of Georgia sites, Dionisio Point and Fossil Bay, have yielded very similar dates from their most recent, Coast Salish-related component (Mitchell 1971b:167). Thus it appears increasingly likely that the gap which had previously existed between the disappearance of the Marpole phase around A.D. 400 or 500 and the appearance of cultures approximating the historic pattern may be filled by cultures of essentially the recent type. The cultural continuity seen at this

site also supports Mitchell's (1971a) views of a direct continuity from the Marpole culture type to the ethnographic Gulf of Georgia Salish.

As it is difficult to assign linguistic affiliation to archaeological cultures with any degree of certainty, the comments of Boas and Sapir cannot be tested directly. Comparison with other excavated sites, however, shows closer relationship to the Gulf of Georgia area, historically the homeland of the Coast Salish, than to ethnographic Nootka territory. As the Alberni Valley lies east of the divide of land, with relatively easy access to the east coast, this need not be surprising. However, the Alberni Inlet provided a highway to the open west coast as well. Large west coast shell middens, dating to "more than 4000 years" at Yuquot (Folan and Dewhirst 1970:284) and about 2500 years at Hesquiaht (Haggerty and Boehm 1974:9), indicate a continuous independent development to ethnographic Nootka culture. While culture contact is likely during the late component, the assemblage at this site still remains basically similar to the Gulf of Georgia. While no definitive statements can be made on the basis of a single site, and excavations are needed at sites extending into the historic period, archaeological data indicate an earlier Gulf of Georgia related culture in the Alberni Valley, supporting the ethnographic and linguistic indications of long-standing Salishan occupancy. It would appear that while native people have occupied this area for at least 4000 years, the advent of Nootka culture was a relatively recent event.

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