

Chapter Five: EXCAVATION AT TS'ISHAA (DfSi-16) – BACK TERRACE

Setting

A small, relatively flat, elevated area lies behind the main village site and about three to four metres above it. Although the two areas are joined at the eastern end of the back terrace, there is a substantial gully separating them elsewhere (Figs. 19, 44). As midden deposits are continuous, this area is considered part of the larger site and is included in the same site number.

Probing in 1999 (and by Parks Canada personnel in 1995) revealed shell midden across much of this area. Deep deposits of shell were evident along the slope at the eastern end, while shell disappeared entirely, except for occasional small patches, toward the western end. Probing indicated that cultural matrices covered only a small area, about 45 by 20 metres. Test excavation in 2000 was intended to investigate whether the archaeological remains reflected specialized use of this area, contemporaneous with the primary site occupation, or whether this represented an earlier

period of occupation, associated with higher sea levels. Results of radiocarbon dating suggested the latter, and led to more intensive excavation in this area in 2001.

A number of scholars have examined Holocene relative sea level history for central western Vancouver Island (Friele 1991; Hutchinson 1992; Friele and Hutchinson 1993; Bobrowsky and Clague 1992; Boxwell et al. 2000). Their proposed sea level curve for this area (Fig. 45) is based primarily on data from Clayoquot Sound, although it incorporates some Barkley Sound information. Hebda's work on several of the Broken Group islands in Barkley Sound, for example, indicates that early Holocene sea levels stood at least 10 metres below present levels (Hutchinson 1992:37). From these early Holocene lows, the relative sea level rose rapidly to intersect the modern beach just prior to about 7000 cal BP. In Barkley Sound this sea level rise is marked by freshwater peats in island bogs that are overlain by marine deposits dating to around that time (Hutchinson 1992:37). The



Figure 44. The back terrace excavation area from across the gully behind the main village.

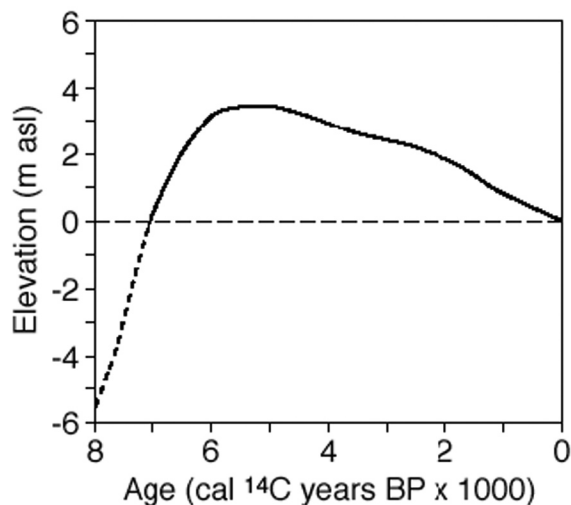


Figure 45. Proposed sea level curve for the central west coast of Vancouver Island (after Friele 1991; Hutchinson 1992; Friele and Hutchinson 1993; Bobrowsky and Clague 1992; Boxwell et. al. 2000).

relative sea level continued to rise, reaching three to four metres above present, where it remained from about 6000 to 4800 cal BP. Friele (1991) has termed this period the Ahous Bay Stillstand. Subsequent gradual emergence of the land relative to the sea throughout the late Holocene is attributed to tectonic uplift (Clague et al. 1982; Friele 1991; Friele and Hutchinson 1993; Boxwell et al. 2000).

The back terrace portion of the site today stands about nine to ten metres above the highest tide line. Its surface is about four metres above that in the large open area of the main village, around EA 1, and about six metres above the middle platform of EA 2. When the depth of cultural deposits in each area is removed from consideration, however, the base of the back terrace is about six to seven metres above the original beach sand and gravel at the base of the main village area. This would place the initial occupation only a few metres above high tide during the Ahous Bay Stillstand. Seven radiocarbon dates from near the base of the back terrace deposits fall between 5900 and 4500 cal BP, corresponding closely with the Ahous Bay Stillstand. During this initial period of occupation, the area that would later become the village of Ts'ishaa was an active beach, with highest tides coming right to the base of the rise up to the back terrace.

Excavation Extent and Methodology

An initial 2 x 2 m test unit excavated in 2000 was extended to a 4 x 2 m unit (coordinates S 58–60 W 59–63) when a large rock feature was encountered near its base. This was followed by much more extensive excavation in 2001, when nine 2 x 2 m units and two 1 x 2 m units were opened, although one of the latter was not completed due to the presence of burials. Except for a 1 x 2 m unit at the top of the eastern slope (grid coordinates S 56–57 W 50–52), all were concentrated in the area just west of the 2000 unit. Coordinates for the most westerly unit are S 54–56 W 77–79. Some of the units adjoin, providing continuous stratigraphic profiles. See Fig. 19 for unit locations. The total area encompassed in these units is 48 square metres.

The horizontal grid used in the main village area was extended to the back terrace. All excavation units were laid out in alignment with magnetic north. A secondary vertical datum was established for this part of the site as the head of a metal spike driven into the trunk of a large spruce tree near the initial unit excavated (just SE of S60 W59). This datum is taken from that used in EA 2 of the main village, which is three metres higher than in the other two excavation areas of the village. From this elevation, unit datums were established as the tops of pegs driven in beside each unit.

Excavation methodology followed that used on the main portion of the site. All cultural deposits were removed by trowelling in ten centimetre levels (Figs. 46, 47), taking care to separate materials from differing natural layers. Artifacts were recorded in three dimensional provenience, while faunal remains were bagged by level and layer. Shell and bone fauna were bagged separately. All trowelled matrix was screened through 1/4" mesh. Column samples (20 x 20 cm bulk matrix samples) were taken from the walls of two units for shell and microfaunal analysis. Charcoal was collected for radiocarbon analysis; unlike the village area, however, charcoal generally was found only as small scattered pieces, requiring that most samples be collected from across one level of the unit. Profile drawings were made of the stratigraphy on all walls.

The depth and nature of the deposit varied considerably across this portion of the site. The unit at the top of the eastern slope contained a thick layer of concentrated crushed shell over two metres in depth. Elsewhere, units varied from 70 cm to just over one metre in depth. The total volume of matrix removed was 44.7 cubic metres.



Figure 46. Ts'ishaa back terrace excavation looking west.



Figure 47. Ts'ishaa back terrace excavation area looking east

Stratigraphy and Chronology

Five adjacent excavation units provide a continuous profile extending 10 metres on a north-south line (perpendicular to the slope). This profile is shown in Figure 48. The stratigraphy of the four metre south wall of the unit excavated in 2000 is shown in Figure 49. The deep shell deposit at the eastern edge is shown in Figure 50. Table 7 presents all radiocarbon dates available from the back terrace area of the site.

The upper layer across all excavated units consisted of black silt (Munsell 7.5YR 2/0), with abundant small pebbles and larger rocks. If shell was present at all, it was only as a trace. This was only a thin layer at the back of the excavated area and in the eastern unit, where it sat directly over shell. Closer to the slope and in the western units, where shell was absent or patchy, this layer was much thicker and sat directly on the underlying silt-clay.

This upper layer is poorly dated. A charcoal sample from above the shell layer was submitted for analysis but the result was rejected as far too recent and probably dates burnt root. This layer is presumed to predate the earliest village occupation, placing its upper levels at about 2500 BP, which is consistent with comparison of artifacts with those of known age elsewhere. Where it sits directly over shell, its lower levels would date to perhaps 3200 BP, based on a number of dates from the upper shell layer. In units to the west, however, where the black silt layer is thicker and sits directly on the lower silt-clay, its lower levels seem to be contemporaneous with the shell. The one date available from such a context is 3670 to 3470 cal BP.

In most excavation units this black silt layer was underlain by a thick deposit of crushed shell, with some black silt, charcoal, and FCR. Where it was thickest, it could be divided into two, with the lower shell layer containing a greater concentration of dark silt. The most extensive shell deposit was in the unit on the eastern point of the back terrace, where it had a depth of almost 2.5 m. In the western units and in those closest to the slope down to the main village, shell was absent or occurred only in small patches.

Twelve radiocarbon results, ranging from about 3200 to 5000 cal BP, date the shell layer (Table 7). The thick shell deposits in the eastern unit provide the fullest evidence of this temporal span (Fig. 50). An age of 3380 to 3210 cal BP came from the upper shell layer,

while one of 3440 to 3000 cal BP was obtained twenty cm lower. Paired AMS dates on charcoal from the column sample, taken about halfway down the deposit, gave identical ages of 3980 to 3730 cal BP. Three dates came from near the base of this shell deposit. An age estimate of 4850 to 4450 cal BP was based on a composite sample, taken from charcoal throughout a 90 cm shovel test to the basal clay. Two paired AMS dates on charcoal from the column sample, taken from near the base of the shell at 2.3 m below surface, yielded ages of 4840 to 4620 cal BP and 5260 to 4870 cal BP.

The lowest matrix was a silt-clay, which varied laterally in colour from dark grey-brown to red-brown (Munsell 5YR 3/2). Charcoal and stone artifacts were found only in the upper levels of this stratum. At the back of the excavated area this was only a thin layer sitting directly on bedrock. Elsewhere it had much greater depth, although excavation only proceeded a few levels into it, at which point no further cultural materials were recovered. In one of the western units, however, an area along one wall was shovelled down to bedrock (at a depth of 1.6 m), exposing a compact yellow-brown coarse sand and gravel layer below the clay. The clay may be of marine origin, deposited at a time of higher sea levels, that was later oxidized under conditions of forest cover (Wilson, Appendix A).

Five radiocarbon dates are available for the upper portion of this lower matrix. The most recent is a determination of 4270 to 3990 cal BP, from a grey-brown silty clay overlying red-brown clay in the lowest unit on the slope. In one of the western units, a date of 4830 to 4410 cal BP was obtained from the upper surface of the brown silt-clay. Several artifacts, including a decorated abrasive stone and a quartzite flake, were recovered from the level below the one that yielded this date. Two nearly identical dates of 5310 to 4830 cal BP and 5320 to 4870 cal BP came from the reddish-brown clay of the central units. A large decorated abrasive slab came from the same level and layer as the former date, while the latter was found with materials (shell and a small number of faunal remains, including a large chunk of sea mammal bone) that may have been tracked into the upper portion of this matrix. The earliest date obtained is 5920 to 5650 cal BP, based on charcoal collected a short distance into the clay at the base of the 2000 unit. That charcoal cannot be conclusively demonstrated as cultural in origin, although this remains a strong possibility.

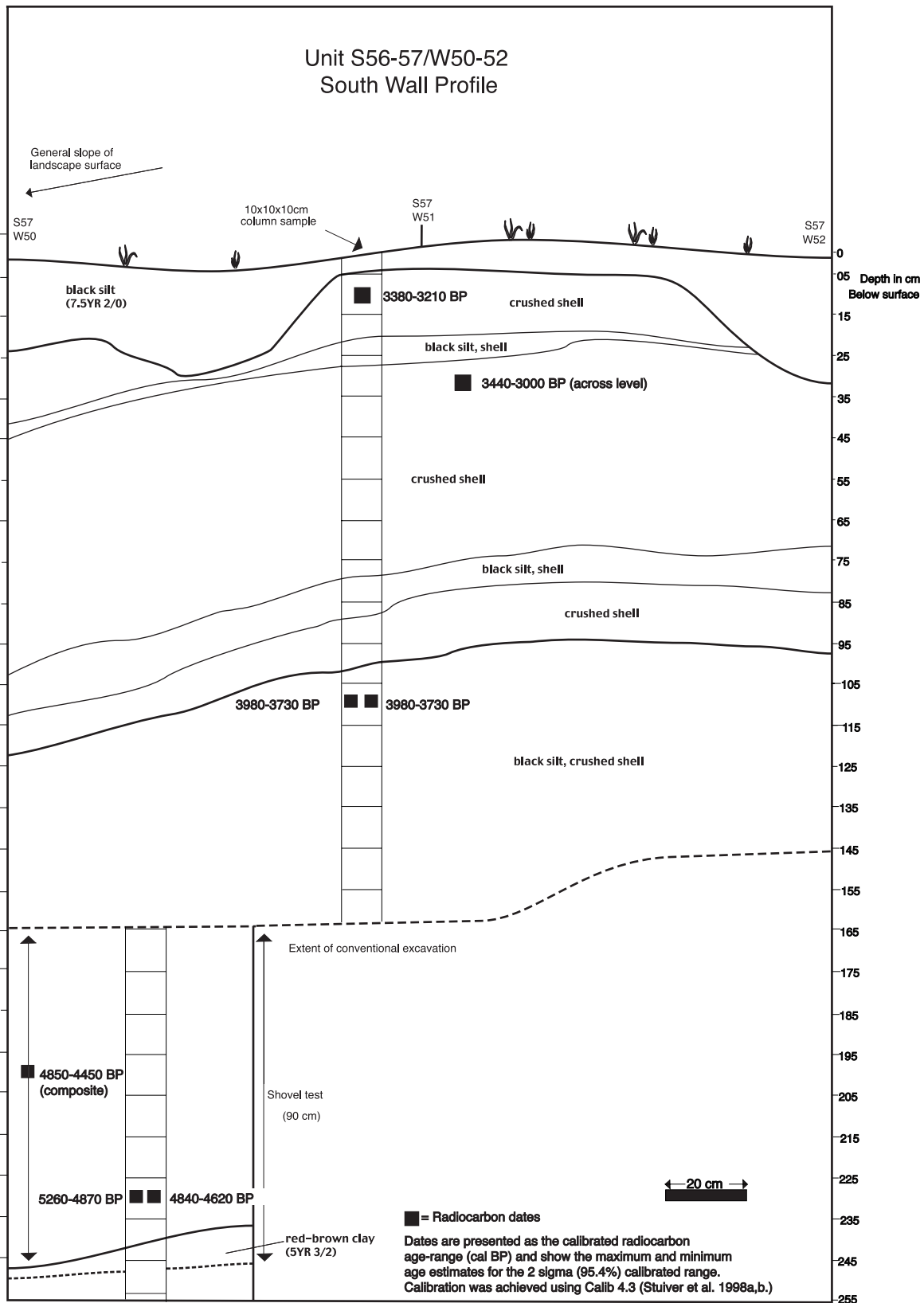


Figure 50. Ts'ishaa back terrace stratigraphic profile (S 56-57 W 50-52, west wall) showing location of radiocarbon dates.

Table 7. Radiocarbon dates from Ts'ishaa back terrace.

Sample No.	¹⁴ C age (BP)	Cal age range (BP)*	Intercept(s)	¹³ C/ ¹² C	Material*	Unit	Lev./ Layer	Comments
Beta-158740	3000±70	3360-2950	3210, 3180, 3170	-25	charcoal	S62-64/ W62-64	5B	Shell layer
CAMS-48305	3770±35	3470-3330	3390	-14.5	marine bone	S62-64/ W62-64	6B	Shell layer
Beta-158741	4470±70	5320-4870	5210, 5190, 5048	-25	charcoal	S62-64/ W62-64	7/8D	From clay, just above bedrock
Beta-158742	3330±70	3810-3390	3620, 3570	-25	charcoal	S58-60/ W64-66	8D	Shell layer
Beta-158743	4430±80	5310-4830	5030, 5010, 4980	-25	charcoal	S58-60/ W64-66	10E	In red-brown clay at base
Beta-158745	4080±70	4830-4410	4570, 4560, 4550, 4540, 4530	-25	charcoal	S54-56 W70-72	8A/B	Top of silt-clay
Beta-147071	3580±80	4090-3640	3870	-25	charcoal	S58-60/ W60-63	9D	Lowest shell layer, among rocks of burial cairn
Beta-147073	5050±60	5920-5650	5860, 5830, 5750	-25	charcoal	S58-60/ W62-63	7E	In basal red-brown clay – cultural?
CAMS-48303	4320±70	4300-3900	4090	-15.0	marine bone	S56-58/ W64-66	7B	Bottom of shell layer
Beta-158739	430±60	550-320	500	-25	charcoal	S54-56/ W64-66	4A	Date rejected – burnt root?
CAMS-48304	4350±45	4270-3990	4140	-14.5	marine bone	S54-56/ W64-66	9B	Brown silt-clay
CAMS-97186	3100±35	3380-3210	3340, 3280, 3270	-25	charcoal	S56-57/ W50-52	1B	Top of shell – AMS date from column sample
Beta-158744	3050±70	3440-3000	3320, 3310, 3300, 3290, 3270	-25	charcoal	S56-57/ W50-52	4B	Near top of shell layer in deepest unit
CAMS-98341	3920±40	3670-3470		-14	marine bone	S56-58 W66-68	6A	Near base of upper black silt layer
CAMS-97176	3585±40	3980-3730	3890, 3880, 3870	-25	charcoal	S56-57/ W50-52	11C	Paired AMS date from column sample, 1.1 m depth
CAMS-97177	3575±35	3980-3730	3870	-25	charcoal	S56-57/ W50-52	11C	Paired AMS date from column sample, 1.1 m depth
BETA-158747	4160±70	4850-4450	4810, 4760, 4700, 4650	-25	charcoal	S56-57/ W50-52	23C	Composite from 90 cm shovel test at base of shell deposit
CAMS-97181	4210±35	4840-4620	4830	-25	charcoal	S56-57/ W50-52	23C	Paired AMS date from column sample – near base of shell, 2.3 m
CAMS-97182	4415±35	5260-4870	5030, 5020, 4980	-25	charcoal	S56-57 W50-52	23C	Paired AMS date from column sample – near base of shell, 2.3 m

*Dates are presented as the calibrated radiocarbon age-range (cal BP) and show the maximum and minimum age estimates for the 2 sigma (95.4%) calibrated range. Calibration was achieved using Calib 4.3 (Stuiver et. al. 1998a,b).

*Marine samples (all fur seal [*Callorhinus*] bone) were calibrated with $\Delta R = 250 \pm 0$ (100% marine) in Calib 4.3 (Stuiver *ibid*). Reservoir estimate is based on discussion in Southon & Fedje (2003).

Artifacts Recovered

A total of 221 artifacts came from the Ts'ishaa back terrace (Table 8). Of these, bone implements account for 29.4%, stone for 68.8%, and shell for 1.8%. Chipped stone artifacts comprise 43.4% of the total. When unmodified and unused flakes and spalls are removed from consideration, stone drops to 58.9% and chipped stone to 25.6% of the total.

In distribution, over half of the artifact total (118; 53.4%) came from the upper layer of black silt. The shell layers yielded another 27.2% of the total, while 19.4% came from the lower silt-clay matrix. This distribution, however, varies considerably by artifact raw material. The majority (56.9%) of the bone artifacts and all the shell artifacts came from the shell deposits. Stone artifacts, however, came primarily from the upper black silt (63.8%),

Table 8. Artifacts from Ts'ishaa (DfSi-16) back terrace.

Bone	
large barbed points	5
large unbarbed point	1
small barbed points	3
bone points	
gradually tapering points	5
small abrupt tip points	10
small slender point	1
tips of pointed bone tools	7
foreshaft	1
small bone bead	1
misc. worked bone (excl. whalebone)	16
whalebone wedges	4
whalebone haft/handle	1
whalebone bark shredder (?)	1
misc. worked whalebone	9
total bone	65 (29.4%)
Ground stone	
large faceted slate points	4
slate pendant	1
celt	1
celt fragments (?)	3
knife	1
worked slate/schist fragments	5
decorated abrader	1
abrasive stones	31
abrasive slab	1
total ground stone	48 (21.7%)
Chipped stone	
obsidian biface	1
obsidian microblade core ridge flake	1
schist knives	14
choppers	10
large cores	3
small cores	2
bipolar cores	3
bipolar bashed pebbles	3
split pebbles	1
large retouched flakes	4
large utilized flake	1
large spall	1
flakes	52
total chipped stone	96 (43.4%)
Pecked stone	
hammerstones	7
anvil stone	1
total pecked stone	8 (3.6%)
Shell	
shell disk bead	1
Olivella shell beads	2
scallop shell ornament	1
total shell	4 (1.8%)
Total	221

with 23.7% from the lower silt-clay and only 12.5% from the shell. Preservation is clearly an issue in the lower deposit, as only seven artifacts of organic materials were found and faunal remains were uncommon, yet stone artifacts were relatively abundant. Percolation of the heavier stone objects downwards in the deposit may also be a factor, as noted by Magne (Appendix B).

Artifacts of bone

Large barbed points (5) Four large flattened artifacts of sea mammal bone were found in close association in the crushed shell layer at the back of the central excavation area. They were found within a pit feature, at the bottom of which was the extended burial of an adult male (see description under features). Fragments of these bone objects were mixed throughout the fill of the pit, rather than being directly associated with the burial. The pieces could be joined to form two large points that are complete or nearly so, plus two large fragments (Fig. 51). All have flattened faces converging at the



Figure 51. Large bone points from Ts'ishaa back terrace.

base to a wedge shape. All have narrow grooves cut at an angle along one side, creating minimal (and apparently functionless) barbs.

One complete example is 26.2 cm in length. Greatest width (2.7 cm) and thickness (0.8 cm) are near the base. The flat faces are faceted to the sides, resulting in a hexagonal cross-section. Along one side of the central portion of the artifact there are four slanting widely-spaced incised lines. Although the lines extend back to the centre of the object on each face, they have not been cut through the bone. Only slight indentations on the side at the end of each incised line create small barbs.

A similar object, also hexagonal in cross-section, is missing only a small area at its tip and a small piece from one side. It is (25.9) cm in length; projection of the sides to compensate for the missing tip indicates that the complete object would have been about 27 cm long. Greatest width (2.4 cm) and thickness (0.6 cm) are near the base. Four slanting widely-spaced incised lines are along one side, producing very shallow, essentially functionless, barbs in the middle portion of the artifact.

Two large fragments, both lenticular in cross-section for most of their lengths, are from very similar objects. Both consist of the wedged base and central portion of the object. Measurements are (15.2) x 2.6 x 1.0 and (13.8) x 2.1 x 0.8 cm. One has three intact widely-spaced slanting incisions, which have produced very shallow barbs. The second has four closely-spaced incised slanting lines along one side, with evidence of a fifth at the break. This object is somewhat more deeply incised, producing more definite barbs.

The fifth object in this category, from the upper silt layer of a different unit, is not associated with the others. It is a relatively small blunt tip fragment of sea mammal bone. This section of the implement is fairly thick, with an oval cross-section. Evidence of two widely-spaced barbs, more pronounced than on the previous examples, remain on this fragment.

Similar artifacts have been found in sites of similar age in the Strait of Georgia region. Mitchell (1971:57; 1990:341) lists large faceted points of bone and slate as characteristic of the Locarno Beach stage in that region. Matson and Coupland (1995:158) illustrate a very similar object, with a wedge base and four shallow barbs along one side, from a Locarno Beach context.

Large unbarbed point (1) This object was found in the same unit and the same burial pit context as the

four large barbed points described above. It was lower in the pit, directly above the pelvis of the burial. It was found pointing up, indicating that it had been deposited as part of the grave fill.

This artifact, based on a flattened fragment of sea mammal bone, is the lower portion of a large point which is lenticular in cross-section (Fig. 51, right). Its dimensions are (9.3) x 2.0 x 0.5 cm. The sides slightly contract at its wedged base. Projection from the gradually converging sides suggests that the complete object may have been as much as 19 cm in length. Although approximately half the artifact is present, it is possible that the missing tip portion may have had shallow barbs, which would place this object in the same category as the others found in the pit.

Small barbed points (3) Two calcined bone objects appear to be fragments of small, well-made barbed points (Fig. 52, upper left). One has a well-made tip and one intact pronounced barb along one side, but is missing its base. It measures (4.3) x 0.9 x 0.3 cm. The other is a basal portion, with one remaining pronounced barb and a small projection below that may be the top of another barb or possibly a line guard (making this a small harpoon head). The former came from the lower red-brown clay, while the latter was found in the upper black silt layer. The third, from the lower silt-clay, is a tip fragment from a stout piece of land mammal bone, with a pronounced notch on one side near the tip which may be a barb.

Bone points (16) The largest category consists of ten artifacts with the greatest width near the abrupt tip (Fig. 52, top). All are of land mammal bone. Most are complete or nearly so. All are small, with lengths of the seven complete points ranging from 2.6 to 3.8 cm (mean = 3.0, S.D. = 0.33). Most have a flat, slightly-wedged base, although one is nearly square and one comes to a rough point at the base. Such artifacts may have served as arming points on composite toggling harpoon heads, although other uses are possible. Two came from the upper layer of black silt, seven from the shell layer, and one from the top of the brown silt-clay.

Five artifacts are gradually tapering points, with greatest widths just below their middle. All are made of land mammal bone. These points are substantially larger than the abrupt tip points. One complete example, measuring 6.8 x 0.8 x 0.4 cm, has a rounded base. Another, measuring 6.4 x 1.0 x 0.3 cm, is missing only a small area at its base. The latter object is markedly asymmetrical at the



Figure 52. Miscellaneous bone and shell artifacts from Ts'ishaa back terrace (top row – barbed points, abrupt tip points; lower row – bone points, foreshaft; right – scallop shell ornament, disc bead, Olivella bead).

tip, and may possibly be an awl, although it is polished over its entire surface. The remaining three artifacts in this category are all large stout well-made points which are missing the basal portions. Most or all would have served as barbs on composite fishhooks. Three came from the upper black silt, one from the shell layer, and one from the lower brown silt-clay.

The final object is a small slender point of land mammal bone, round in cross-section. One end is sharply pointed while the other is missing. It is (3.9) cm long and 0.3 cm in diameter. Greatest width is near the broken end, which is sharply contracting at that point. Possibly this is a bipoint with one end missing. It came from the upper black silt layer.

Tips of pointed bone tools (7) These tip fragments, all of land mammal bone, may have come from a variety of points or awls. One well-made, sharply-pointed, flattened example, broken around the mid-section, is highly polished over its entire intact surface. It closely resembles bone needles recovered from the early component at Ch'uumat'a (McMillan and St. Claire 1996:36, 38), a Toquaht site on the western side of Barkley Sound, al-

though the base is missing and no evidence of a drilled hole remains. Three fragments with rectangular cross-sections appear to be the tips of bone points. Two others are markedly asymmetric at the tip and may be awl fragments. Another possible awl fragment is roughly made, with modification largely restricted to the tip. Two came from the upper black silt layer, four from the shell, and one from the lower brown silt-clay.

Foreshaft (1) A fragment of a pointed implement of sea mammal bone, round in cross-section, is considered a possible harpoon foreshaft (Fig. 52). This fragment, (6.7) cm in length, shows extensive rodent gnawing at its broken base. It came from the deep shell layer in the eastern unit.

Small bead (1) This very small bone bead was found during fine-screening of the column samples. A short section of tubular bone has been cut and polished at the ends to produce this bead. It appears to be bird limb bone as the inside surface is straight but not smooth, indicating that the hole had not been drilled. The bead is 3 mm in diameter and 2 mm long. It came from near the top of the shell layer at the back of the site.

Miscellaneous worked bone (excluding whalebone)

(16) One large fragment of bird bone is the proximal end of the right humerus from a short-tailed albatross (*Diomedea albatrus*). The articular end has largely broken away. At the shaft end, this object has been sawn almost through around its circumference and then snapped. This presumably is a result of artifact manufacture, where the shaft portion of the bone was used for some purpose and this end was discarded.

One elongated artifact of sea mammal bone is spatulate in form. The sides are parallel and the one intact end is rounded. The width is uniform throughout its length. Its measurements are (8.6) x 2.6 x 0.7 cm.

Most of the remaining fragments are of land mammal bone. One is blackened by burning and two are calcined. All show evidence of grinding to shape (or sawing in one case), but are too incomplete to classify further. The shape of one resembles the lower portion of a harpoon valve, but it is too roughly fashioned or unfinished to classify it as such. In distribution, eight came from the upper black silt, six came from shell layers, and two came from the top of the lower brown silt-clay.

Whalebone wedges (4) One finely-made narrow wedge has parallel sides and a rounded, quite thick

bit (Fig. 53, lower right). It is missing the poll. Measurements are (11.7) x 2.6 x 1.3 cm. Two others are rounded bit fragments of much larger flat wedges. The fourth is a long section of sea mammal bone, dished in cross-section, with parallel sides and a rounded bit. At 17.6 x 3.4 x 1.7 cm, it appears to be complete except for a small area at the poll.

All were found in the shell deposit. Two came from the sloping lower shell layer of the 2000 unit, which has a date of 4090 to 3640 cal BP. Another came from the upper portion of the deep shell deposit in the eastern unit, just below a date of 3440 to 3000 cal BP. The fourth, from one of the back units, came from a level with a radiocarbon date of 3360 to 2960 cal BP.

Whalebone haft/handle (1) This object is made from a long curving piece of whalebone, which appears to be a rib section (Fig. 53). It is largely intact, with a length of 26.9 cm. The curving polished handle, which has been split to about half the original thickness, is rectangular in cross-section, with a flattened end. The other end, which is the full thickness of the bone, has been deeply gouged out in its soft cancellous centre, suggesting that this was used as a haft. What material was inserted and



Figure 53. Whalebone artifacts from Ts'ishaa back terrace (upper- haft/handle; lower left – bark shredder?; lower right – two wedges).

the function of the composite tool are unknown. It came from the upper black silt layer.

Whalebone bark shredder (?) (1) This flat whalebone artifact was broken into many fragments, but was largely reconstructed (Fig. 53). Although some pieces are missing, complete measurements (21.1 x 7.8 x 1.1 cm) can be determined for all dimensions. The object is a rounded rectangle in outline, with two flat faces and relatively even thickness throughout. It closely resembles simple rectangular bark shredders, such as those found at Ozette (Fiskens 1994: 372–3). The edges are rounded, rather than bevelled to a chopper edge as would be expected for a shredder, so this identification is tentative. It came from the lower sloping shell layer in the 2000 unit, which had a radiocarbon date of 4090 to 3640 cal BP.

Miscellaneous worked whalebone (9) One very large, roughly rectangular slab of whalebone, 55 cm in length, shows evidence of having been chopped to shape at each end. Another is a pick-like implement, complete at 21.8 cm in length, which curves slightly to a blunt point. A complete smaller example, 14.0 cm in length, is also bluntly pointed, resembling a stout stake. Three flat pieces of whalebone show evidence of grinding to shape over at least one surface. Three narrow elongated pieces show signs of having been sectioned to produce long bone splinters, presumably as a stage in artifact manufacture. Two came from the upper black silt and seven came from shell layers.

Ground stone artifacts

Large faceted slate points (4) The most complete artifact in this category is a large, stemmed, faceted, “bayonet-type” point (Fig. 54). Although it had been broken in half, almost the entire artifact could be reconstructed. Its long straight sides gradually converge to the tip. It has flat faces faceted to the sides throughout its length, resulting in a hexagonal cross-section with six nearly equal sides. It is stepped in from each side near the base, producing a stem with slightly converging sides that is 2.9 cm in length. The stem has flat faces and edges, and is flat on its slightly wedged base. The point is 16.7 cm in length, but when the small missing section at its tip is compensated for by extending the sides, the complete object would have been about 17.1 cm. It is 2.4 cm in width just above the stem and 1.7 cm thick.

A very similar large faceted slate point was

found in immediate association. This example was fragmented into many pieces, but most could be reassembled. The sharp tip and much of the body is intact, but it is missing the base. It closely resembles the more complete example in being faceted along its length, with a hexagonal cross-section consisting of six nearly equal sides. Measurements for this fragment are (15.8) x 2.5 x (0.7) cm.

The remaining two fragments may be portions of one artifact. One is the base section of a large stemmed and faceted point, closely resembling the intact example described above. This fragment is (7.0) cm in length, 2.5 cm wide just above the stem, and 0.6 cm thick. It is stepped in from each side, producing a stem with gradually converging sides which is 2.8 cm in length. The stem has flat faces and edges and is flat on its slightly wedged base. The second fragment, 0.5 cm thick, is from near the tip of the artifact, but is broken at both ends. It has flat faceted faces and straight, gradually converging sides. Both fragments are reddish-brown in colour, compared to the gray larger examples, and appear



Figure 54. Large ground slate points from the Ts'ishaa back terrace.

to have been burnt. Although it is probable that they are from the same object, they cannot be fitted together and were found in adjacent units, separated by a distance of about 1.5 m.

All four objects came from the upper silt layer around the centre of the back terrace units. The two most complete points were found in close proximity, while the tip fragment was a bit more distant in the same unit and level. The base fragment was only a short distance away in an adjacent unit. Their close association near the surface of the site suggests that they had been intentionally placed there, rather than lost or discarded. Adding to this supposition is the discovery of a complete finely-made obsidian biface in the adjacent unit with the point base. This impressive artifact, of a highly-valued raw material, clearly had not been lost or discarded. It was found in the same level as the points, only about 35 cm and 65 cm from the two most complete examples. Some form of ritual offering is suggested, possibly associated with the use of the back terrace as a burial area, although no burials were encountered near these items.

Large faceted ground slate points are one of the characteristic traits of the Locarno Beach culture in the Strait of Georgia region (Borden 1970:98; Mitchell 1971:57; 1990:341; Matson and Coupland 1995:156). Borden (1970:100) illustrates a number

of examples, a few of which are stemmed, and speculates that the larger specimens may have been lance heads. Locarno Beach would be temporally equivalent to this upper layer at the Ts'ishaa back terrace. Croes (1995:216) also reports large faceted ground slate points from the Hoko River site, which dates to roughly the same time, although none of his examples are stemmed.

Slate pendant (1) This elongated but rather stubby artifact, recovered from the upper black silt layer, is roughly round in cross-section although it has flattened facets along its length (Fig. 55). Just below its flat head, this object is markedly indented from each side, presumably for suspension. Below that, the straight sides slightly converge toward the flat base. This object is complete at 3.7 x 0.9 x 0.8 cm.

This artifact likely served as a pendant, although it could possibly be a small weight. A similar schist object, although more elongated and finely-made, came from Shoemaker Bay (McMillan and St. Claire 1982:118, Fig. 73e).

Celt (1) This celt, of greenish nephrite, is complete except for some breakage at the poll and an elongated chip removed from a corner of the bit (Fig. 55). Its measurements are 9.9 x 3.9 x 1.8 cm. It has a rela-



Figure 55. Miscellaneous stone artifacts from the Ts'ishaa back terrace (clockwise from left: celt, knife, two chipped schist knives, slate pendant, decorated abrasive stone).

tively narrow (3.3 cm) straight bit, a rounded poll, and rounded, slightly curving sides. Both faces are flattened, with a flat taper to the bit. The underside is highly polished over all high points, but there are extensive areas of unmodified stone that the polishing did not reach. This celt was found in the upper portion of the shell layer at the back of the site.

Ground stone celts are unknown from the later village portion of the site, although three black slate fragments have been interpreted as possible celt preforms. Similarly, stone celts are absent from the recent Toquaht sites in the western sound, occurring only in the earlier deposits at Ch'uumat'a (McMillan and St. Claire 1996:53).

Celt fragments (?) (3) All are small, relatively thin fragments, incomplete in all dimensions, with one highly polished face. Each has a slight facet on the polished face, possibly toward the side or bit. Two are nephrite and one is an unidentified metamorphic rock. The raw material and highly polished surfaces suggest that these are fragments from celts. Two were found in the upper black silt layer of the same unit, while the third came from the brown silt-clay layer in an adjacent unit.

Knife (1) This is an angular chunk of unidentified stone, possibly andesite, which is unmodified except for bifacial bevelling along a thin side of the artifact to produce a straight cutting edge 3.6 cm long (Fig. 55). It is complete, with measurements of 5.5 x 3.7 x 1.6 cm. It came from the upper black silt layer.

Similar stone artifacts, with modification restricted to bifacial bevelling along a single edge, came from Shoemaker Bay I (McMillan and St. Claire 1982:72). They are not reported for other sites in this area.

Worked slate/schist fragments (5) One slate fragment has been sawn almost through the object from one face, then snapped, leaving a narrow ridge along the base. A schist fragment (in two non-joining pieces) has been sawn through along one long side. In both cases, the sawn edge is the only evidence of modification. A small schist fragment is bifacially bevelled along one side, producing a knife-like edge. Another piece of schist is ground flat on one face and unifacially bevelled along one edge, although it has split in thickness. A small slate fragment has both faces ground flat and a curving flattened edge. All five artifacts came from the upper black silt layer.

Decorated abrader (1) A roughly triangular fragment, with two intact sides converging to a rounded tip, remains of this shaped and finely finished abrader (Figs. 55, 56). Both sides and the lower surface have been carefully polished flat. The upper surface has a slightly raised decorative rim, between 0.5 and 0.8 cm wide, along its outer edge. Although the inner surface of this rim presents a continuous raised lip, triangular shapes have been cut away from the outer edge. The space enclosed by the rim is flat, except for right at the break, where part of a marked elongated depression, presumably produced through use, is evident. This fragment is (7.7) cm long and 1.3 cm thick. It was found in the brown silt-clay, just under a radiocarbon sample which provided a date of 4830 to 4410 cal BP.

Abrasive stones (31) If the unmodified flakes and spalls are discounted, abrasive stones form the largest artifact category in this portion of the site, comprising 29.2% of the stone artifacts and 17.7% of the artifact total. All are of sandstone, ranging

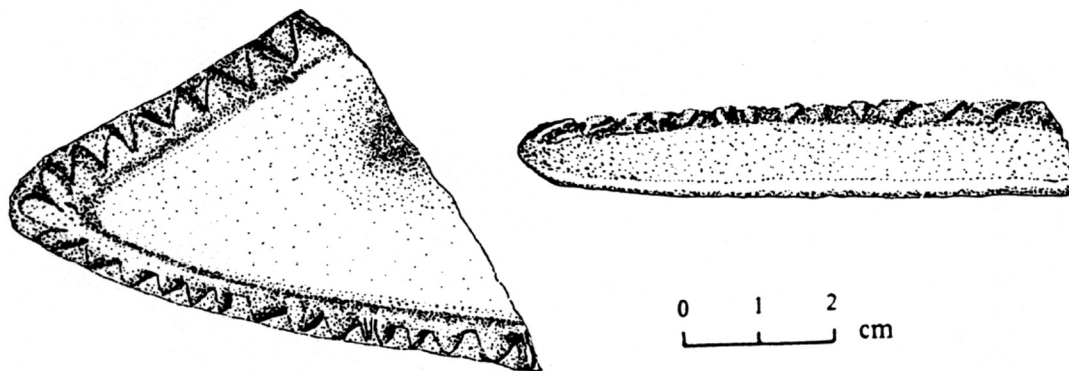


Figure 56. Decorated abrasive stone from Ts'ishaa back terrace.

from very fine-grained to quite coarse. All are of a size that could be held comfortably in the hand, although one is almost too large for this category and could have been considered an abrasive slab. They range from carefully shaped objects, with all intact surfaces ground flat, to rough sandstone slabs or cobbles that show evidence of having been used for grinding but have no further modification. The fragmentary nature of the great majority of abraders hinders classification into categories.

Only four examples were considered to be complete. One large abraded is a rounded sandstone cobble (13.3 x 13.0 x 4.9 cm) that appears to have been chipped along two sides (resembling a chopper) to get a shape and size that can easily be held in the hand. A grooved depression produced through use runs most of the length of one face. Another large example (15.5 x 4.0 x 3.4 cm) could be classified as a shaped abraded as all surfaces show some flattening by grinding; however, it is irregularly-shaped, with five sides, and not carefully finished. Another is an irregular cobble (11.0 x 8.2 x 2.9 cm) with both faces ground flat. The fourth example (8.4 x 6.9 x 1.7 cm) is also irregular in shape, with naturally-rounded edges. One broken edge has been roughly ground flat and both faces are dished through extensive use.

Eight abraded fragments show evidence of having been carefully shaped, with both faces and all intact sides ground flat (Fig. 57). As many others were fragmentary, lacking any complete sides, this category is likely under-represented. Most shaped abraders take the form of an elongated rectangular or a tapering bar.

Most abraders show use on both faces, although use on one might be more pronounced than on the other. Only four with both faces intact show no evidence of grinding on one face. In the great majority of cases, wear has produced a flat surface. On three abraders, however, wear has produced a dished depression (in one case on both faces). Three others show marked narrow grooves (one has two shallow grooves running most of the length of one face). Such wear is likely the result of grinding small artifacts such as bone points to shape. An additional abraded shows extensive pecking around the centre of one face.

Most of the abraders (20; 64.5%) were found in the upper black silt layer. Five (16.1%) came from the crushed shell layer, while six (19.4%) came from the lower brown silt-clay matrix.

The relative abundance of abrasive stones reflects their obvious use in the technology. They were used extensively in woodworking, as well as in the production of bone, antler, shell and stone artifacts that have been ground to shape. They are abundant at almost all archaeological sites along the Northwest Coast.

Abrasive slab (1) This large sandstone slab is distinguished from other sandstone abraders by being far too large to hold in the hand. This suggests that it was stationary in use, with the object being abraded moved over its surface. The shape is irregular, with four non-parallel sides. This object appears to have broken in length at some point but continued in use, as what appears to be the broken edge shows some evidence

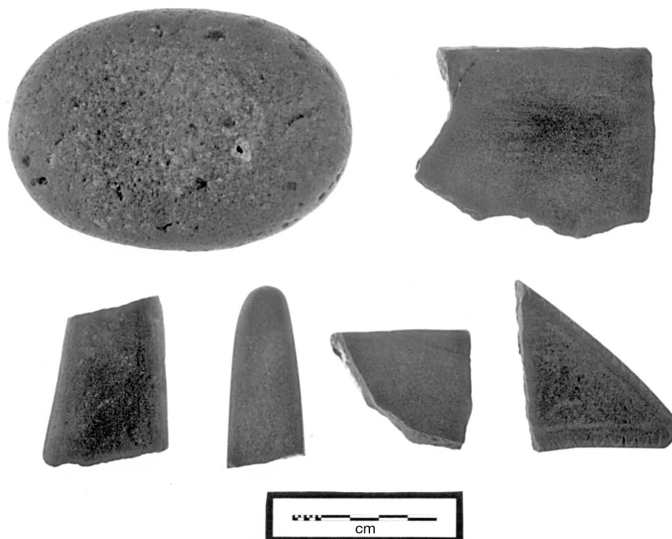


Figure 57. Anvil stone and shaped abrasive stones from Ts'ishaa back terrace.

of wear. As such, it is considered complete at 23.9 x 21.2 x 3.8 cm. Both faces have been worn flat, with extensive grinding right to the edges. The sides show less wear but have all been flattened, giving a rectangular cross-section. Deep grooves on three of the four edges extend across the full thickness of the object. The shortest side has four deeply-sawn V-shaped grooves set closely together near its centre. An adjacent side has two wide but roughly worn grooves, plus a deep sawn groove running perpendicular to the others across the middle of the artifact for almost the full length of the side. A third side has one wide U-shaped groove extending across its width. It is unclear whether these sawn grooves were meant to be decorative or whether they were used in grinding smaller objects, although only a few of the grooves show much wear.

This object was found at the base of the deposit, in the dark red-brown clay. It came from the same unit and level as a radiocarbon date of 5310 to 4830 cal BP.

Chipped stone artifacts

All chipped stone objects were first identified to raw material by Michael Wilson (Appendix A), then classified and analyzed by Martin Magne (Appendix B). The categories listed here follow those established by Magne. Additional comments and measurements for each object are provided in Appendix B.

Obsidian biface (1) One large, finely-made, leaf-shaped obsidian biface was found in the upper black silt layer of a central unit, only about 15 cm from the surface. It is roughly bipointed, although the base is blunter than the tip (Figs. 58, 59). The tip had snapped off, likely because of recent trampling, but both pieces were recovered. The object is complete, at 12.7 x 3.6 x 0.8 cm.

The obsidian, now slightly patinated, is very translucent and smoky in appearance. Source analysis for this material was conducted at the X-ray Fluorescence Laboratory in the Department of Chemistry at Simon Fraser University (James 2001). X-ray Fluorescence (XRF) is a non-destructive technique which measures the relative amounts of trace elements in the material and compares these to the known composition of obsidian from various source areas. This analysis determined that the biface was manufactured from obsidian which came from the Glass Buttes 'B' source in central Oregon. Glass Buttes is a loca-

tion of high-quality obsidian, in close proximity to other noted obsidian sources. Glass Buttes obsidian has been reported for a number of sites in southern coastal British Columbia particularly in the Strait of Georgia region, where they tend to date between 5000 and 1500 BP (Carlson 1994:355). One flake of Glass Buttes obsidian came from the



Figure 58. Large obsidian biface immediately after discovery.

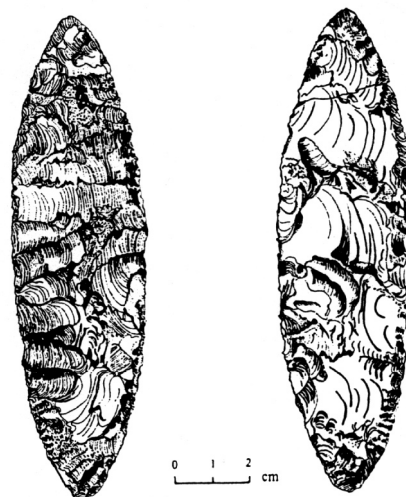


Figure 59. Large obsidian biface from Ts'ishaa back terrace.

early component at Shoemaker Bay (McMillan and St. Claire 1982:70).

The exotic raw material, large size, fine craftsmanship, and complete state of this artifact indicate that it was unlikely to have been discarded or lost at this location. The proximity of the two large, complete, finely-made, stemmed ground slate points (only about 35 and 65 cm away in the same stratum) adds to the likelihood that this was a ritual offering of some sort. This may be related to use of the back terrace as a burial area, although no burials were encountered nearby.

This object is unique in excavated assemblages from western Vancouver Island. However, Mackie (1992) notes that a leaf-shaped obsidian biface with slight side notches, now in a private collection, was found at the upper end of Ucluelet Inlet.

Obsidian microblade core ridge flake (1) This elongated, blade-like obsidian object is identified by Magne (Appendix B) as a ridge flake produced through microblade core manufacture, or possibly a biface edge spall produced by a longitudinal blow. The dorsal face has a steeply retouched, bifacially flaked surface, with a sinuous ridge extending along its length. Its measurements are 4.0 x 0.7 x 0.3 cm. It came from the brown silt-clay deposit in one of the western units, at approximately the same level as a radiocarbon sample in an adjacent unit that yielded an age of 4830 to 4410 cal BP.

This finely-flaked object of exotic raw material seems out of place in this artifact assemblage. No other evidence of a microblade technology exists. Source analysis conducted at the X-ray Fluorescence Laboratory at Simon Fraser University (James 2001) identified the obsidian as having originated from the Newberry Caldera in central Oregon. This is a source of high quality obsidian which was widely traded throughout western North America. Obsidian from this location has been found at a number of sites in south coastal British Columbia, particularly in the Strait of Georgia region (Carlson 1994:336). One flake of Newberry Caldera obsidian was found in the early component at Shoemaker Bay (McMillan and St. Claire 1982:70).

Schist knives (14) Three artifacts are classified by Magne as “schist knives.” Of these, two are complete (measuring 8.4 x 5.6 x 0.6 and 7.7 x 6.0 x 0.6 cm) and one is a large fragment (Fig. 55, right). All three have bifacial retouch along at least one long curving edge. One, essentially oval in shape, is retouched around much of three sides.

The remaining artifacts in this category, classified simply as “chipped schist” by Magne, are likely fragments of similar implements. All but one are flat pieces of schist with intentional, generally bifacial, retouch along at least one intact edge. The exception is a thicker and more rounded elongated fragment, missing one end, which has been bifacially flaked along both long edges, then extensively ground over all intact surfaces.

In distribution, ten chipped schist artifacts came from the upper black silt layer, one from the shell deposit, and three from the lower brown silt-clay.

Numerous additional pieces of schist found during excavation were likely a result of the production of such tools, but only those that exhibited evidence of flaking were collected. One large block of schist found during excavation was probably brought to the site as raw material for artifact production. Schist was not available locally on the island, but could have been obtained from sources to the southeast of Barkley Sound (Wilson, Appendix A).

Similar artifacts came from the early components at Shoemaker Bay (McMillan and St. Claire 1982:64) and Ch'uumat'a (McMillan and St. Claire 1996:26), and were fairly common at the Hoko River site (Croes 1995:210–212). All three sites date to roughly the same time as the Ts'ishaa back terrace deposits. Similar chipped slate and shale knives are commonly reported for sites in the Strait of Georgia region, particularly dating to the Locarno Beach stage (Mitchell 1971:57, 100–01), which is contemporaneous with the sites mentioned above. They are rare or absent in later periods, particularly in the Nuu-chah-nulth region.

Choppers (10) This category is divided into three by Magne (Appendix B): choppers (3), cobble choppers (3), and split cobble choppers (4). All are large cobbles showing evidence of heavy percussion flaking to remove large flakes along one end or edge (Fig. 60). In four cases the cobble had been split prior to creating the chopper edge. Such tools served a variety of heavy chopping tasks. Weights range from 709 g to 1561 g (mean = 1090.5 g). Six were found in the upper black silt layer, one in the shell, and three in the lower brown silt-clay. One from the upper deposit has been heavily water-rolled, obscuring much of the flake removal scars.

Large cores (3) Three large cobbles show evidence of large flake removal, but no evidence of use as tools. Their weights are 1449, 3225, and 3264 g. One is highly water-rolled, partially obscuring

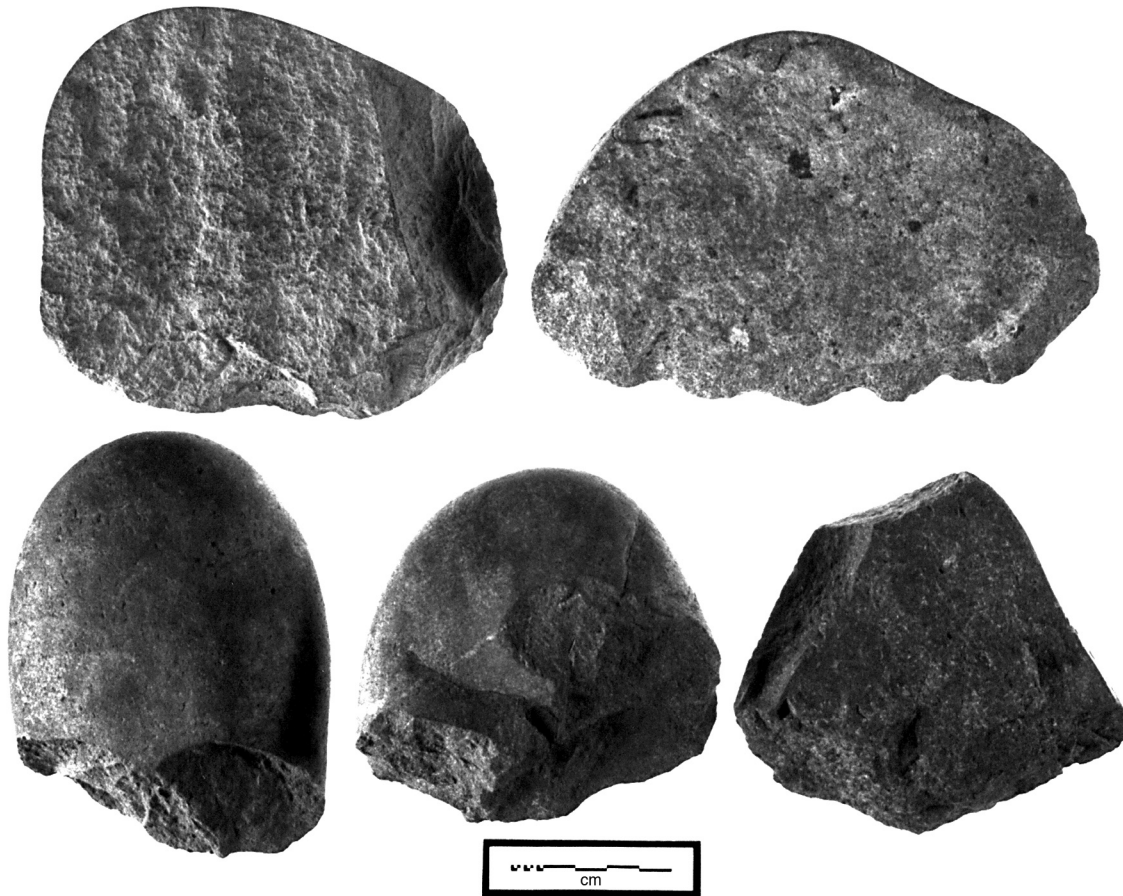


Figure 60. Stone choppers from the Ts'ishaa back terrace.

the flake scars on its surface. Two came from the shell deposit, while one is from the lower brown silt-clay.

Small cores (2) Both are small pebbles exhibiting flake removal. A small green chert example came from the upper black silt layer. The other, tentatively identified as andesite, is heavily water-rolled; it came from a shovel test dug deep into the basal brown silt-clay. Although there is a possibility that the apparent flaking stems from natural processes, this appears to be a small core. It may have sunk or been trampled into the clay at the early levels of the site during initial occupation.

Bipolar cores (3) All are small pebbles with evidence for detachment of flakes sufficiently large to be suitable for use as tools. Crushing at both ends indicates that these flakes were detached using a bipolar technique. Two are of vein quartz. The third is a rounded pebble of very fine-grained diorite with

evidence of flake removal at each end, although water-rolling has obscured the flake scars (Fig. 61). All three were found in the upper black silt layer.

Bipolar bashed pebbles (3) Three small pebbles each exhibit evidence of bashing at both ends, but without removal of suitable flakes for use. Green chert, gneiss, and a fine-grained metamorphic which is probably quartzite are the raw materials. One came from the upper black silt layer, while two came from the lower brown silt-clay.

Split pebble (1) One basalt pebble has been split, but exhibits no evidence for crushing on its ends or any evidence of use. It was found in the upper black silt layer.

Large retouched flakes (4) Four large flakes or spalls, all with some remaining cortex, show some intentional retouch, producing an edge suitable for heavy chopping or scraping purposes. They

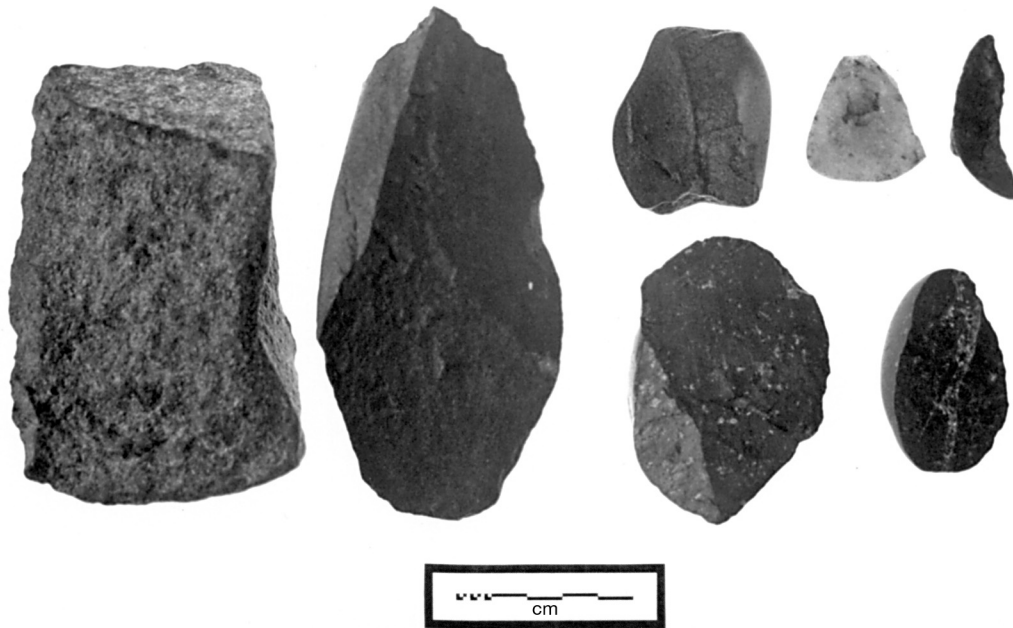


Figure 61. Miscellaneous chipped stone from Ts'ishaa back terrace (left – large retouched flake, large utilized flake; upper right – two bipolar cores, bipolar flake; lower right – split pebbles).

range from 12.3 to 16.5 cm in maximum dimension. The largest is roughly semi-circular in form, while the others are elongated. Two exhibit regular unifacial retouch along the full length of one long side (Fig. 61, left). Gabbro, gneiss, basalt, and fine-grained diorite are the raw materials. One came from the upper black silt, one from the shell deposit, and two from the lower brown silt-clay.

Large utilized flake (1) This large thick elongated flake of fine-grained basalt, 13.8 cm in length, still has some remnant cortex (Fig. 61). It appears to be heavily battered at one pick-like end. Magne (Appendix B) identifies evidence of use wear along one lateral edge. It came from the upper black silt layer.

Large spall (1) This large thick spall of gabbro, with cortex on its dorsal side, appears to have been flaked from a large cobble. It is considered to be debitage as it exhibits no evidence of retouch or use. It came from a shell layer.

Flakes (52) Four objects are classified as “bipolar flakes” by Magne (Appendix B). These are all elongated flakes which show evidence of crushing or bashing at both ends. Two small flakes are of green chert while another is vein quartz; a considerably larger example is of gneiss. Two were

found in the upper black silt and two came from the lower brown silt-clay.

The remaining 48 flakes are small to medium sized pieces of debitage. The 26 flakes considered “small” (under 3 cm in maximum dimension) are predominantly of vein quartz (12) and green chert (8), although there are also examples of basalt (3), gneiss (2), and quartzite (1). The 22 larger (“medium”) flakes, each greater than 3 cm in maximum dimension, are more varied in raw material, comprising gneiss (7), basalt (6), andesite (3), hornfels (2), green chert (2), gabbro (1), and quartzite (1). In distribution, 32 came from the upper black silt layer, 5 from the shell deposit, and 11 from the lower brown silt-clay.

Pecked stone artifacts

Hammerstones (7) Six examples are large rounded cobbles which show evidence of pitting or heavy battering on at least one end or edge. Five of these are large, naturally-pitted cobbles of biotite gneiss, while the smallest is a smoother, more rounded diorite cobble. They range in weight from 517 g to 3061 g (mean = 1336 g). All would have been suitable for heavy hammering or pounding tasks. Five came from the upper black silt and one from the lower brown silt-clay.

The largest object exhibits extensive battering

at one end, removing part of the rock to produce a flattened and pitted striking surface. Another shows evidence of heavy battering along one end and both sides. The remaining four display less evidence of use and are more questionable due to the naturally pitted rock surface. Three show possible pitting or battering at one end and one along one side.

The seventh object in this category is very different in size. It is a small rounded elongated pebble, 6.6 cm in length and 44 g in weight. A pitted area at one end shows evidence of use for light hammering or tapping. It came from a shell layer.

Anvil stone (1) Extensive battering is evident across most of one face of this naturally rounded beach cobble (11.5 x 8.1 x 4.1 cm; 700 g) (Fig. 57). The battering has produced a slight oval depression, approximately 5.7 x 4.6 cm, on the surface. Slight battering can also be seen on the opposite face and one side. Such an object may have been used in the bipolar reduction of pebbles evident in some cores and debitage from this portion of the site. It came from the top of the shell layer.

Artifacts of shell

Shell disk bead (1) This complete well-made small bead, with flat faces and circular outline, is made from hard white shell, presumably purple-hinged rock scallop. It is 0.5 cm in diameter and 0.3 cm thick. The drilled straight central perforation is 0.2 cm in diameter. This small object was found in the column sample from near the bottom of the deep shell deposit in the eastern unit, just above a radiocarbon date of 4850–4450 cal BP.

Olivella shell beads (2) The attractive shells of the Purple Olive (*Olivella bipicata*) were made into beads simply by grinding away the spire at one end to allow stringing. Both examples from this part of the site came from the crushed shell layer, one from just below a radiocarbon date of 3440 to 3000 cal BP.

Olivella shell beads were more commonly encountered in the main village deposits, particularly in EA 3. They are reported for the nearby site of T'ukw'aa (McMillan and St. Claire 1992:54) and were relatively common in the Ozette house remains (Wessen 1994: 352).

Scallop shell ornament (1) This curving, elongated, parallel-sided section of highly polished purple-

hinged rock scallop shell is broken at both ends (Fig. 52, right). It is nearly uniform in width (at 1.0 cm) throughout its curving length and is 0.3 cm in thickness. Both faces are flattened and all intact surfaces are ground and polished. The fragment is (8.9) cm in length. It came from near the top of the deep shell deposit in the eastern unit, from the same level as a date of 3440 to 3000 cal BP.

This object resembles a bracelet fragment and is assumed to be some form of personal ornamentation. A very similar, although smaller, object came from the False Narrows site in the Strait of Georgia region, where it was interpreted as an unfinished gorget or pendant (Burley 1989:126). Several complete pendants and gorgets from that site were made from purple-hinged rock scallop shell.

Features

Cairn burials (3)

In three cases, large rocks forming a cairn have been placed over human skeletal remains. None show evidence of a pit under the cairn, indicating that the body had been placed on the ground, then covered with rocks. The largest cairn, when completely exposed, extended across much of the 4 x 2 m unit excavated in 2000. The other two were only partially exposed, as they extended into the walls of their excavation units. When the rocks which make up the cairns were encountered during excavation they were exposed in place, along with any skeletal remains that protruded from below. No rocks or bones were removed from their original position and study of the human remains was restricted to what could easily be observed with them in place. No artifacts were encountered, although such associations may have existed below the rocks of the cairns. When all elements were exposed, photographed, and mapped, the units were backfilled with everything intact in the original location.

The large fully-exposed cairn is composed of rocks with an average diameter of about 30 centimetres (Fig. 62). It covers an area of about 2.7 by 1.5 metres and has a depth of about 60 centimetres. Some of the rocks sit directly on the surface of Layer E, the red-brown clay at the base of the site, while others seem to have their bases in the thin Layer D, consisting of crushed shell with silt and smaller rocks (see stratigraphic profile, Fig. 49). The upper rocks are surrounded by the thicker Layer C matrix, consisting of grey silt with finely crushed shell. The radiocarbon age of 4090 to



Figure 62. The rocks of a large burial cairn (Feature 52) at an early stage of exposure.

3640 cal BP came from a sample collected among the rocks of the cairn in Layer D.

This rock feature was clearly a burial cairn as is shown by human skeletal elements protruding from below the rocks in Layer D. The remains of one individual are evident along the northern margin of the cairn. At its northwestern edge a cluster of visible bones includes the proximal end of the left humerus articulated with the scapula and a fragmentary clavicle, as well as several lower cervical vertebrae, the sternum and some ribs. On the other side of the rock the left ulna and radius can be discerned. Under the rock directly to the west, a small portion of skull could be seen. To the east of these remains, projecting furthest from the cairn, is the left innominate, with lumbar vertebrae visible below. Further east along the northern margin of the cairn, a largely complete foot (metatarsals and phalanges) projects from beneath another rock. These all appear to belong to one individual, placed on the right side, fairly tightly flexed, with the left arm folded across the chest. A relatively wide sciatic notch on the innominate indicates that this person was female, although that identification is tentative. The individual was of small stature, although all elements visible have fused epiphy-

ses, indicating that she was an adult. In addition, a few bones of a second individual, including an innominate, are visible below the eastern edge of the cairn, although they barely protrude from the rocks and no effort was made to expose them further. As both of these individuals are located at the margins of this large cairn, it seems likely that at least one additional person may lie buried more centrally under the rocks.

Another burial cairn was located a short distance southeast of the larger cairn, in the same excavation unit. It extends into the south wall of the unit (see stratigraphic profile, Fig. 49), with only a small portion exposed within the unit. Again, it consists of large rocks (about 30 cm average diameter) piled over human skeletal remains that are visible at the base of the cairn. The human remains sit at the bottom of Layer C, with the rocks extending upward into Layer B. Only the individual's lower limbs (tibiae, fibulae, and bones of the feet) were exposed in the wall of the excavation unit. These suggest that the individual was buried in a flexed position lying on the left side. The small size of the limb bones and the presence of unfused epiphyses indicate that this was an immature individual.

A concentration of rounded cobbles, considerably smaller than the rocks of the above two cairns, was exposed in the westernmost unit, near the base of the upper silt layer. Only part of this feature was visible as it extended into the north wall of the unit. Total depth of the feature was about 30 cm and width at the wall was about 50 cm. The rocks were pedestalled and left in place until completion of the unit, at which point some of the cobbles were removed. This exposed articulated skeletal remains of an immature individual. Only the lower limbs extended into the unit; the rest remained undisturbed to the north of the unit. The distal portion of a femur, the proximal end of two tibiae, and part of a fibula were visible. After these immature elements were mapped, the unit was filled in with no further disturbance of the human remains.

Cairn burials have now been found at a number of sites in the Nuu-chah-nulth area and may be a characteristic of a stage predating the late village sites, where midden interments are very rare. A close comparison, both in space and time, is with the Little Beach site at Ucluelet. At that site, a series of burials covered with low rock cairns was exposed in a midden deposit dated between about 4600 and 3500 cal BP (Arcas Consulting Archeologists 1991). Another close comparison is with the deposits at the back of the Ch'uumat'a village site, where two cairn burials closely resembling the Ts'ishaa examples were excavated and dated to about 2600 cal BP (McMillan and St. Claire 1996: 20–23). Another cairn burial came from the early component at Shoemaker Bay, at Port Alberni (McMillan and St. Claire 1982: 90–1).

Other burials (1)

Articulated skeletal remains of two individuals were found in the same location, although they were separate burial events dating to different times. Despite quite close proximity to the two large cairn burials, neither had cobbles placed over them. Both individuals had been placed in shallow pits (visible in the stratigraphic profile, Fig. 48).

The first remains to be encountered were those of an immature individual in the upper black silt layer. This person had been placed in a small pit about 40 cm in depth which had been dug into the underlying shell layer. This pit placed the individual directly on top of an earlier burial in the shell layer. The immature remains were only partially exposed, as much of the skeleton extended into the wall of the unit. The bones were poorly preserved in the shell-free upper matrix. Only traces were noted of

the skull, although the teeth were present. The pelvis was considerably deeper than the skull and extended the furthest into the unit. Because of the poor preservation gender could not be determined and little can be said of this individual except that he/she was a young adolescent at death (based on permanent dentition with incomplete root formation).

Directly below the immature remains were those of an older adult male in the shell layer. He was in a loosely flexed position on his right side, with hands between his legs near the pelvis. The skull was not visible as it extended into the wall of the unit. The feet were under the remains of the immature individual. The bones of the arms and legs are best preserved; the ribs and pelvis were crushed and crumbling. He had been placed in a shallow pit, about 50 cm in depth.

Immediately over the adult burial was a small chunk of whalebone and one or two large *Pecten* (weathervane scallop) shells (which were fragmentary and in very poor condition). These may possibly have been placed with the individual, although they may also be accidental pit inclusions. Fragments of four large barbed bone points and one unbarbed point were also found in the pit fill, some distance above the burial.

Hearths (2)

Both features classified as hearths were encountered in the upper black silt layer. One consisted of a circular cluster of rocks (each about 15 to 20 cm in length), extending into the wall of the unit. A substantial quantity of charcoal was evident among and inside the rocks. The second hearth consisted of a circular concentration of smaller rocks and pebbles, with only a few large cobbles. Although no charcoal was present, many of the rocks were crumbling and exfoliated due to heat. Each hearth was roughly 70 to 80 cm in diameter.

Rock concentrations (4)

Features in this category tend to have rocks that are larger and more rounded than those comprising hearths, and show no evidence of charcoal or cracking due to heat. Their arrangement is assumed to be as a result of human activity, but the form is generally amorphous and gives no indication of their function.

Three were exposed in the upper black silt layer, while one came from the brown silt-clay in one of the western units. Of the former, two had large rocks extending above the surface that were

visible before excavation of the unit began. Several large stacks of rocks could be described as cairns, but no burials or other materials were encountered below the rocks. Two of these features had large pieces of whalebone associated with the rocks and one was immediately adjacent to several possible post holes.

Pebble concentration (1)

This feature was a concentrated cluster of small water-rolled pebbles, all roughly the same size (about 6 cm in length). A total of 31 pebbles was included in this concentration. It is assumed that their placement is intentional, but their function is not known. This feature occurred in a shell layer in the central excavation area.

Pits/post holes (3)

One designated feature consists of a cluster of four circular, straight-sided, slanting holes in the upper level of the site, immediately under the surface. Three holes are about 10 cm in diameter, while the fourth is about 20 cm. Three of the holes could be traced for considerable depths (between 65 and 90 cm). They may represent post holes dating to the latest occupation of this part of the site, or they may be a result of natural processes, such as root holes. The holes are immediately adjacent to one of the large rock concentrations which extends above the surface of the site, also dating to the final occupation of this area.

The two other features in this category are quite different from the above. Both are basin-shaped depressions dug into the red-brown silt-clay at the base of the site. Both are oval in outline at their surface (measuring about 20 x 30 and 25 x 45 cm), sloping down for a depth of about 35 and 45 cm. These could be the bases of pits for large structural posts dating to the early occupation of the site, or they could have served as storage pits. They may be associated as they occurred at the same stratigraphic level and were only slightly over two metres apart.

Faunal feature (1)

This feature consists of the nearly-complete articulated skeleton of a large adult male river otter (identification by Gay Frederick, Appendix D). The animal was positioned on its back and was surrounded by a loose circle of fairly large rocks (up to 14 cm in diameter) in a shell layer in one

of the central excavation units. Various natural agencies can deposit bones on archaeological sites, so caution must be taken in assigning a cultural interpretation. If this was a natural death event, it likely occurred during a time of site abandonment as it would be expected that the corpse would be quickly disturbed by village dogs. However, the encircling rocks suggest that this was indeed a cultural event, and that the animal may have been deliberately covered by the loose shell deposits.

Faunal Remains

Analysis of recovered shellfish remains is reported in Appendix C. This was based on examination of column samples from two units on the back terrace – one (S 62–64 W 62–64) with shallow shell deposits sitting almost directly over bedrock at the back of the main excavation area, and one (S 56–57 W 50–52) at the eastern edge of the excavated area where shell deposits had built up to a depth of almost 2.5 m on what might originally have been a point sloping down to the water. In both cases, the analysis was limited to odd-numbered levels. As in the later component, California mussel dominated the shellfish assemblage, comprising between 91.8 and 95.9% by weight of the total for the various shell layers in the two units. Barnacles and clams were the next most important categories in the shellfish assemblage. All other species made minor contributions to the total. In all, the two units yielded 22 and 23 different species of molluscs, barnacles, chitons and sea urchins.

Vertebrate fauna were examined for all levels of two relatively shallow excavation units (S 58–60 W 64–66, S 62–64 W 62–64) in the main excavation area. The results are reported in Appendix D. Of the 5345 elements recovered from these units, 2966 could be identified to a specific taxon. Fish dominate the identified specimens, although not as strongly as in the later component, making up 71% of the total. Of these, rockfish are the most common (31%), followed by greenling (23%), ling cod (13%), dogfish (9%), surf perch (6%), and anchovy (6%). When the fine-screened column samples are examined, however, the under-representation of herring becomes evident (Appendix E). In the column samples from the two units examined (S 56–57 W 50–52, S62–64 W 62–64) herring comprises 53 and 67.9% of the total identified fish elements. Greenling are also abundant (at

26.3 and 19.8%), more distantly followed by perch, anchovy, and rockfish.

Mammals make up 27% of the total identified sample, while birds comprise a meagre 1% (Appendix D). Land mammals (not counting dogs) make up 10% of the total identified sample, while commensal mammals (primarily dogs) make up another 9%. River otter is the most frequently identified land mammal, followed by mink, then by coast deer and racoon. The numbers for river otter and mink, however, may be inflated by the presence of several partial to largely complete skeletons. Dogs were also particularly abundant in the back terrace deposits, including two partial skeletons that may represent deliberate burials.

Sea mammals comprise 8% of the total identified sample. Of these, over half were classified as cetacean, but generally were too incomplete to be identified further. However, a rib fragment and a portion of a vertebra were identified through DNA analysis as humpback whale (Watt 2003). Humpbacks appear to have been the primary prey of Nuu-chah-nulth whalers in Barkley Sound for millennia (Monks et al. 2001). The second most abundant sea mammal species (at 14%) is the white-sided dolphin, although the high frequency is partially attributable to two clusters of articulated vertebrae. Fur seals (at 13%) were also important, but in much lesser numbers than in the later village portion of the site.

In an attempt to recover botanical remains, flotation analysis was undertaken on the column sample from the easternmost excavation unit (S 56–57 W 50–52). As this unit, on the slope down to the original beach, had almost 2.5 m of shell deposit, only the odd-numbered levels were examined. Overwhelmingly, the floated sample consisted of unidentified charcoal. Seeds that may provide evidence of past diet were very rare, occurring only in two widely-separated levels (Lynn 2003). At the top of the column, level one yielded two seeds identified to the genus *Sambucus* (Elderberry) and one identified to genus *Rubus* (Raspberry/Blackberry). Two metres below the surface (and above several radiocarbon dates greater than 4500 cal BP), level 20 yielded 36 charred seeds, all of which could be assigned to the genus *Rubus*. Members of this genus found on western Vancouver Island include the salmonberry, black raspberry, wild blackberry, and thimbleberry (Turner 1995). The seeds most closely resemble *R. parviflorus*, the thimbleberry (Lynn 2003), a plant known to have been harvested extensively by the Nuu-chah-nulth, who dried the berries as well as eating them fresh (Turner 1995:124; Turner and Efrat 1982:74). Drucker (1951:65) describes a “cake” consisting of layers of clams and thimbleberries dried in the sun. More intensive efforts at botanical recovery would almost certainly have yielded a broader picture of plant use over time at Ts’ishaa.